M49 EXPRESSWAY M3 HIGHWAY, SECTION BETWEEN ÖKÖRITÓFÜLPÖS - COUNTRY BORDER

NOTIFICATION OF THE REPUBLIC OF HUNGARY ABOUT THE PLANNED ACTIVITY IN COMPLIANCE WITH ESPOO CONVENTION

Investor:

NIF National Instructure Development Private Limited Company

Client:

Roden Co. Ltd.

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CONTENTS

1. INTRODUCTION

NIF National Infrastructure Development Private Limited Company announced a public procurement tender invitation in the subject of **"elaboration of the development of the connection between M49 expressway, M3 highway - Mátészalka - country border, preparing of the environmental impact study and study plan for the section between Ökörítófülpös - country border",** and the tender was won by RODEN Engineering Office Co. Ltd. (company registration number: Cg. 01-09-160257, seat: 1089 Budapest, Villám str 13.

As a subcontractor VIBROCOMP Acoustic and Computer Technology Commercial and Service Co. Ltd. (company registration number: Cg. 01-09-166886, tax number: 10766323-2-43, seat: 1118 Budapest, Bozókvár str. 12.) will prepare the environmental impact examination related to the project, the surveys of the wildlife together with their documentation, Natura 2000 will prepare the impact assessment documentation and participate in the obtainment of the authority licences, and prepares the documentation about the examination of the environmental impacts spreading over the country border.

The section of the M3 expressway in question connects the part of M3 highway-Ökörítófülpös section of M49 with legally binding environmental protection licence, at the section 21+510 given in the licence.

The planned M49 2x2-lane expressway will later connect M3 highway with the Romanian border - bypassing Mátészalka.

The deficiencies of the present road network show their effect in the field of the economic life, too. Thegenus non-appropriate road network plays role in disadvantageous and difficultly developing economic situation of the region. At present, the road network of the region is composed of 2x1-lane main and side roads.

The design section ends at the Hungarian-Romanian border in the planned section of the selected track, at the joint border-crossing point, according to the existing bilateral agreements.

The section in question would be constructed as the continuation of the track that obtained environmental protection licence in 2014, into an expressway; that can be developed into 2x2-lane cross-sectional highway with 20,00 m of crest width; which investment requires obtainment of the environmental protection licence.

The expressway would ensure connection of M3 highway with the Romanian border, it would relieve the present, over-loaded road network with unfavourable track alignment, thus enabling and promoting the economic development of the region.

The **present documentation based on the** environmental impact study document **is the documentation showing investigation of the cross-border impacts according to Espoo convention, prepared in the framework of environmental impact examination proceeding initiated according to the stipulations of Governmental decree 314/2005 (25th Dec.)** "M49 expressway M3 highway, km section 25 + 670 section between Ökörítófülpös - country border"

The planned investment is a part of the traffic infrastructure investment being of outlined significance in respect of the national economy based on point 1.301 of enclosure 1. of the Governmental decree 345/2012 (6th Dec) about the qualification of administrative, authority matters related to certain traffic development projects to matters **of outlined significance in respect of the national economy** and about the appointment of the proceeding authorities.

For the purpose of the implementation of the Agreement signed on behalf of the Hungarian and Romanian Governments on 5th July, 2011 in Budapest, about the establishment of highway relation between Szolnok-Nagykereki (H) and Sántául Mare (Nagyszántó)-Cluj Napoca (Kolozsvár) (RO), the two concerned parties hold the fifteenth meeting of the working group as per article 4. of the Agreement on 16th October, 2018 in Csenger.

Subject of the environmental impact study

The design task is obtainment of the environmental protection licences needed for the implementation of the section Ökörítófülpös - country border and its related establishments - of M3 expressway with 2x2 lanes cross section or 20.00 m crest width - according to the dispositions of the Study plan, of the Environmental impact study (KHT), of the Preliminary archaeological documentation (ERD) including elaboration of NATURA 2000 impact estimates.

The investment designed according to point 37 a) of enclosure No. 1. of Governmental decree 314/2005 (25th Dec) (construction of highway, motorway together with the nodal elements) is an activity subject to environmental impact assessment.

Based on Governmental decree 275/2004 (8th Oct) about natural protection areas of significance in respect of the European community, in case the investment can exert influence on Natura 2000 area either in itself, or together with other investments, then the impacts of the investment on the Natura 2000 area must be examined. In the present case **elaboration of Natura 2000 impact assessment is not required.**

In the procedure of environmental impact examination **the present environmental impact examination documentation was prepared in compliance with Governmental decree 148/1999 (13th Oct) about the examination of environmental impacts crossing the border,** and it presents the environmental impacts of the investment on the neighbouring countries.

The planned intervention concerns the administrative area of Ökörítófülpös, Porcsalma, Tyukod, Pátyod, Csenger, Szamosangyalos and Csengerújfalu. **The planned road reaches the Romanian border South of the settlement Óvári (Oar).**

2. INTRODUCTION OF THE DESIGN PRELIMINARIES

M49 expressway M3 highway, section between Ökörítófülpös - country border:

Name of the documentation	Prepared by
The feasibility study, preliminary examination of main road No. 49 highway M3 between Ökörítófülpös - country border	UVATERV Plc.

The subject of the tender invitation for the feasibility study: **Elaboration of the feasibility impact study and detailed environmental impact examination for the section between M49 expressway M3 highway and Ökörítófülpös** (Project ID - A049.01).

The invitation included the designer's task of making the Detailed Feasibility Study (hereinafter MT) referring to the development to be implemented **on the whole M49 expressway**, presenting the sections before and after the road section to be developed, until the country border.

The purpose of the MT was to make an appropriate basis for the determination of the border section point for the Hungarian-Romanian intergovernmental agreement.

Each track version was examined during elaboration of the feasibility study.

OKTVF gave its environmental protection licence for the establishment of the road section between M49 expressway M3-Ököritőfülpös according to version "C".

Following the closing meeting of the committee of the European Union's public procurement procedure judging committee with the subject of "Preparations for the development of the connection of M3 highway - Mátészalka - country border, elaboration of licencing and construction plan with partial coming into force for the section between M3 highway - Ököritófülpös - the National Infrastructure Development Plc (NIF Plc) passed the public procurement documentation for quality assurance on 21st January, 2019, for the purpose of obtaining the regularity certificate.

The proceedings started on 17th April, 2018 when the open invitation No. 2018/S 074-164851 according to act 143 of 2015 (Kbt) was published in the official paper of the European Union.

As a result of the successful procurement procedure, the contract can be concluded with the winning tenderer predictably at the end of February or beginning of March,, 2019.

3. INTRODUCTION OF THE PLANNED ACTIVITY

3.1. REASONS OF THE NECESSITYAND LOCATION OF THE ESTABLISHMENT

The Governmental target of the construction of the expressway is reaching of the country border in the first place together with the promotion of the territorial development of Mátészalka - Csenger - Szatmárnémeti region.

In addition, the following goals can be defined in respect of the construction of M49 motorway:

- Reduction of the access time
- Provision of better travel comfort conditions
- Provision of higher level of service
- Improvement of the transport safety,
- Environmental protection (of the residents),
- Provision of reaching of the Cities with county rights through an expressway

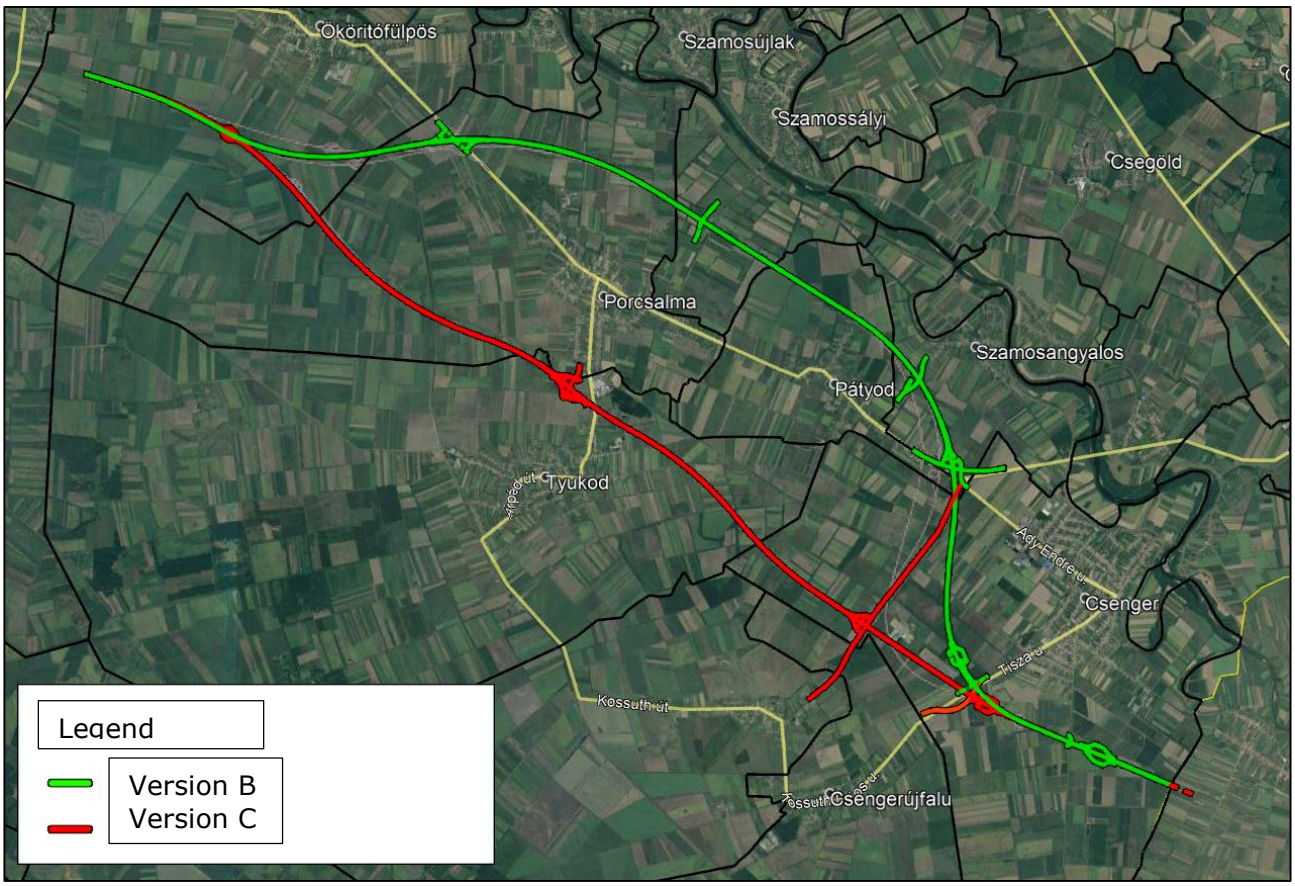
3.2. TECHNICAL DATA OF THE ACTIVITY

The planned intervention concerns the administrative area of Ököritófülpös, Porcsalma, Tyukod, Pátyod, Csenger, Szamosangyalos, Csengerújfalu (as per the tender invitation) and Ura and Szamossályi, to a small extent.

The length of the section to be designed - depending on the versions is ~ 21,4 or ~ 23,8 km. Staking of the road connects to version "C" with environmental licence in different sections. In order to ensure comparability of the track versions the tracks were started from section 21+510 km, this is the "theoretical initial section".

Track versions and sub-versions developed during the revision of the design are the following:

Version	Initial section	end section	Length (m)	*Length (km)*
C	21+510	42+891.80	**21381.80.**	***21.382.***
B	21+510	45+337.82	**23827.82**	***23.828.***



3.2.**1. Examined versions**

Technical characteristics:

- Road category: Design class - motorway type "A"
- Design speed: 110 km/h,
- Terrain conditions: A

2x2 lanes, crest width: 20.00 m

3.3. EXPECTED DATE OF THE CONSTRUCTION AND PUTTING INTO USE

Assuming an optimistic scenario the beginning and finishing of the construction of the section in question - despite the fact that the section in question is not included in the Governmental decrees - 1371/2016 (15th July) and 1505/2016 (21th Sep) - concerning realization of short- and medium-term public road development of Hungary - Can be expected, as follows:

- planned beginning: years 2020/2021
- planned finish years 2022/2023

3.4. THE MAIN WORKING PROCESSES OF THE CONSTRUCTION

The process of the implementation is not yet known, it will be prepared by the Contractor having obtained the construction licence.

4. TRAFFIC FORECAST

Separate traffic examination has been made for the affected section Ökörítófülpös - country border. The traffic data used for the environmental examinations are included in the below summary tables:

Present 2018

Number of the road	***Section limits***		***Acoustic vehicle categories (ÁNF J/day - pcs) (ÁNF J = Average Daily Traffic Vehicle category)***					
			Daytime (6 a.m. - 10 p.m.)			**Night-time (10 p.m. - 6 a.m.)**		
			I.	II.	III.	I.	II.	III.
49	Győrtelek	Ökörítófülpös	4256	115	727	440	18	94
49	Ökörítófülpös	Porcsalma	3586	193	764	372	29	100
49	Porcsalma	Csenger	3655	128	805	388	19	107
49	Csenger	Csengersima	3171	123	612	329	18	75
4923	Porcsalma	Tyukod	462	54	216	31	4	3
4923	Tyukod	Ura	246	15	198	17	1	1
4924	main road No. 49.	Csenger	2806	233	364	189	15	14
4924	Csenger	Csengerújfalu	352	16	224	24	1	3

Reference 2033

Number of the road	***Section limits***		***Acoustic vehicle categories (ÁNF J/day - pcs) (ÁNF J = Average Daily Traffic Vehicle category)***					
			Daytime (6 a.m. - 10 p.m.)			**Night-time (10 p.m. - 6 a.m.)**		
			I.	II.	III.	I.	II.	III.
49	Győrtelek	Ökörítófülpös	5275	142	678	546	22	116
49	Ökörítófülpös	Porcsalma	4441	239	724	460	36	124
49	Porcsalma	Csenger	4532	159	775	481	24	133
49	Csenger	Csengersima	3936	153	536	408	22	93

Number of the road	Section limits		Acoustic vehicle categories (ÁNF J/day - pcs) (ÁNF J = Average Daily Traffic Vehicle category)					
			Daytime (6 a.m. - 10 p.m.)			Night-time (10 p.m. - 6 a.m.)		
			I.	II.	III.	I.	II.	III.
4923	Porcsalma	Tyukod	588	68	46	40	5	3
4923	Tyukod	Ura	309	19	22	21	1	1
4924	main road No. 49.	Csenger	3535	294	231	239	19	17
4924	Csenger	Csengerújfalu	441	20	55	30	1	4

Perspective 2033 (B Version)

Number of the road	Section limits		Acoustic vehicle categories (ÁNF J/day - pcs) (ÁNF J = Average Daily Traffic Vehicle category)					
			Daytime (6 a.m. - 10 p.m.)			Night-time (10 p.m. - 6 a.m.)		
			I.	II.	III.	I.	II.	III.
M49:	**Győrtelek**	**Porcsalma**	**7570**	**204**	**871**	**783**	**32**	**157**
M49:	**Porcsalma**	**Csenger**	**7009**	**246**	**1082**	**744**	**37**	**195**
M49:	**Csenger**	**Csenger - Country border**	**5350**	**125**	**699**	**554**	**21**	**126**
49	Győrtelek	Ököritófülpös	1192	32	30	123	5	4
49	Ököritófülpös	Porcsalma	601	32	18	62	5	3
49	Porcsalma	Csenger	505	18	16	54	3	2
49	Csenger	Csengersima	1423	55	33	147	8	5
4923	Porcsalma	Tyukod	505	59	39	34	4	3
4923	Tyukod	Ura	307	19	22	21	1	1
4924	main road No. 49.	Csenger	3537	294	232	239	19	17
4924	Csenger	Csengerújfalu	440	20	55	29	1	4

Perspective 2033 (C Version)

Number of the road	Section limits		Acoustic vehicle categories (ÁNF J/day - pcs) (ÁNF J = Average Daily Traffic Vehicle category)					
			Daytime (6 a.m. - 10 p.m.)			Night-time (10 p.m. - 6 a.m.)		
			I.	II.	III.	I.	II.	III.
M49:	**Győrtelek**	**Porcsalma**	**7680**	**207**	**884**	**794**	**32**	**159**
M49	**Porcsalma**	**Csenger**	**7123**	**250**	**1100**	**756**	**38**	**198**
M49	**Csenger**	**Csenger - Country border**	**5373**	**125**	**702**	**557**	**21**	**126**
49	Győrtelek	Ökörítófülpös	960	26	24	99	4	3
49	Ökörítófülpös	Porcsalma	379	20	12	39	3	2
49	Porcsalma	Csenger	387	14	12	41	2	2
49	Csenger	Csengersima	1423	55	33	147	8	5
4923	Porcsalma	M49 csp.	784	91	61	53	7	4
4923	M49 csp.	Tyukod	700	81	54	48	6	4
4923	Tyukod	Ura	307	19	22	21	1	1
4924	main road No. 49.	Csenger	3537	294	232	239	19	17
4924	Csenger	Csengerújfalu	440	20	55	29	1	4

5. AFFECTED MEDIA AND AREAS

Protection of soil, surface and subsurface waters

Direct impact area

Geological medium

The direct impact area means in respect of the soil the full construction area of the track, including the precipitation water draining trenches, the stage and spoil areas, as well as, the established extraction places. Soil can be impacted within this area in the stage of the construction and we can account for direct pollution in this area in case of a contingency.

The geological medium can be polluted at the areas withdrawn by the investment and the related establishments in the period of the operation. Contamination can occur directly or indirectly by the mediation of sub-surface waters.

The neighbouring agricultural areas are affected by the establishment both during the period of the implementation and of the operation. The possibilities of further cultivation and successful economic activities must be ensured.

Surface and subsurface water

In case of the surface waters the direct impact area is determined by the emissions of the road traffic and the contingency situations on the track, as well as, the precipitation drainage system developed along the auxiliary establishment. In these areas the impacts of the surface contaminations getting washed with the draining precipitation can occur. The impact area referring to the surface waters can extend to the precipitation drainage trenched developed along the auxiliary establishment and the upstream side of the receiving water flows up to about 25-50 m and up to 100 m on the downstream side. The impact area is affected by the flow direction of the water, its yield and the kind of contaminants etc., so different impact areas can occur in case of every possible loading (however, as a result of the track construction no important change can be expected as compared to the present conditions).

In respect of the *sub-surface waters* direct impact area may be indicated difficultly, only with modelling (soil, as the mediating agent, its effects). In case of careful designing and implementation of the investment no pollution of the sub-surface waters is expected, so the impact area should not be delimited.

Indirect impact area

Geological medium, surface and sub-surface water

The direct impact area is combined in case of the *soil and the sub-surface waters.* In case of contamination of the two environmental elements the direct impact area is determined by the emissions of the establishment and of the related road traffic and the contingency situations. The impact area - whose hardly estimated extension - depends on the quality of the geological medium, on the contaminant and its properties, on the volume involved, and the time passed from the contamination and it can change from some centimeters to even several hundred meters.

On the direct impact areas the impacts of the surface contaminations getting washed with the draining precipitation can occur.

The impact area of the surface waters involves the water collection area of the water flow affected by the investment and the surfaces affected by the changes caused in the surface drainage conditions.

Air purity protection

The direct impact area is the area directly used by the construction and the area along the planned road track.

The impact area of air contamination can be estimated during operation on the basis of harmful matter emission and spreading, regularities coming from the size and composition of the vehicle traffic.

Protection of wildlife

In respect of the protection of the wildlife the direct impact area is the most important, where all of the stationary creatures will die and from where those with great movement capacities will move away. The areas expropriated and irrevocably transformed occupy 25-25 m width from the axle on the average, where no other establishments will be built. For the sake of simplicity, we have rounded the area for expropriation for a zone of 50 m on the map, and we used this value for our calculations.

The width of the indirect impact area importantly depends on the affected species, the surface forms, the use of the area, the plantation and other disturbing effects. As we know significant impact has not been evidenced so far in case any of the highways at the distance of more than 200 m from the axle of the road.

Protection of the built environment

In respect of the built environment, we can speak about direct impact reason, if involvement of artificial values and archaeological findings can be expected along the track as a result of the area occupation by the public road development.

Indirect impact areas are those territories, in respect of townscape protection, from where the planned investment appears as a noticeable change from the settlements - this distance cannot be exactly defined, it changes point like.

Landscape protection

In respect of landscape protection the direct impact area is the same as the area affected by the direct use of the planned track (crest width of the road, node branches, embankment cutting), and the territorial use of the related establishments and planned engineering structures, and the parts affected by change of the cultivation due to the establishment and those landscape details, from where well sensible quality change is expected in the view, in the landscape foreground (300 m from the viewpoint) (masking of the sight, or just the opposite).

In respect of landscape protection the direct impact area is the same as the actually used territory (border of expropriation), indirect impact area includes all the territories from where the planned track together with its related establishment can be seen (max. 500 m distance). Enforcement of visibility depends on the height above the sea level, on the bend and length of the slopes, on the properties of hill-valley formations and on the vertical and horizontal track of the road. Visibility, view and line of sight is determined, in addition to the geomorphologic properties, by the coverage of the surface, the way of use of the area and the measure of built-up density. It must be considered in case of vertical track that the 1-3 m high slope constructed in the characteristically plane area can be seen in the landscape even from 500 m. In sections, where embankment slope does not reach the height of 1 m, or the road runs in a cut, visibility area is shorter, and where it exceeds it, there it is longer.

Noise- and vibration protection

Noise examination was prepared for the establishments to be protected in the direct impact area, in compliance with the stipulations of § 5., 6 and 7 of Governmental decree 284/2007 (29th Oct) about certain rules of protection against environmental noise and vibration.

Delimitation of the direct impact area was stated from the night noise loading value for 2033, by means of calculations. The direct impact area has been determined for the night time for 1.5 m height in each case, with respect to the height of the noise source and the location of the establishments to be protected. Smaller impact area can be delimitated in the daytime, therefore its presentation is ignored as per point (3) of § 6.

Measurement of background loading needed for delimitation of the impact area was performed according to point 6.4.2. of standard MSZ 18150-1:1998.

Noise loading in the direct environment of the tract to be established in characteristically determined by the noise load from the further loads and the sounds of the nature. The examination site was determined so that it would characterize the background loading of the areas along the track.

The examination results of the determination of background loading are included in the below table.

3.41.1: Noise examination of the background loading

Examination points	present background loading at night / (daytime)
	L_{Aeq} (dB)
Pátyod	**37.0** (45.1)

It can be stated from the results of the measurements of background loading that in the supposed impact area of the environmental noise source, noise loading as per the type of the source is characteristically lower by at least 10 dB, without the operation of the planned (examined) noise source than the limit value.

In compliance with the above we have stated for the direct impact area presented in the impact study to 45 dB at night, in case of the residential areas, in compliance with section (1) (a) §. 6. of the Governmental decree 284/2007. The impact area selected by the delimitation in question has been determined on the basis of the noise criterion providing the greatest delimitation.

The direct impact area is presented and characterized by the data of table 3.4.2. "impact area distance".

3.42.2: Data of the direct noise protection impact area

SETTLEMENT / ROAD SECTION	***Perspective (2033) with the implementation of the development of M49 highway***		
	Noise loading limit value/distance of the fulfilment of impact area (m)	Noise loading limit value/delimitation of the impact area at night (dB)	Speed (km/h) passenger car/truck
„B0", „B1", „B2" Track versions			
Győrtelek – Porcsalma	55/120	55/45	110/70
Porcsalma - Csenger	57/123	55/45	110/70
Csenger - Country border	45/97	55/45	110/70
"C" Track version			
Győrtelek – Tyukod	56/120	55/45	110/70
Porcsalma - Csenger	58/124	55/45	110/70
Csenger - Country border	45/97	55/45	110/70

Impact area of the connecting roads

In respect of noise and vibration protection the part of the area affected by the impact of the planned establishment (examined area) can be considered as the impact area of the connecting roads, where vehicle traffic related to the planned establishment causes additional noise loading or change in noise loading.

We have examined the noise conditions of the direct impact area on the following roads

- road No. 49.
- road No. 4923
- road No. 4924

Impact area of transportation for the construction

Noise protection impact area of the transportation for the construction lasts up to the asphalt mixing sites. Transportation can access the design area on main road No. 49.

Transportation and forwarding activity along the access roads will not expectedly cause change of additional noise loading over 3 dB.

The constructor has to select the transportation route so that the possible smallest road and other environmental damages would be involved.

Waste management

In respect of waste management the construction area can be considered as the direct impact area, where waste generation is expected during the construction activity.

In respect of waste management the region receiving the generated waste from the construction and during the operation and the transportation routes can be connected to the indirect impact area of the investment.

6. EXAMINATION PER ENVIRONMENTAL ELEMENTS

6.1. PROTECTION OF SOIL, SURFACE AND SUBSURFACE WATERS

Basic condition

Soil conditions of the design area

Based on the agrotopographic map of Hungary the track versions affect alluvial soil on the longest section. At the end of the design section the soil of paludal forests is concerned. The alluvial soils characteristic for the large part of the design area are mainly strongly water-bearing, clay and clayey loam soils.

The design area does not involve hydrocarbon and natural gas resources, neither the area of solid mineral raw material research and no mines are found in the environment of the border intersection.

Sub-surface water conditions

Based on the subsoil water map of Hungary the level of sub-surface water in case of version "B", in the region of Ökörítófülpös, Porcsalma and Pátyod runs along at 2-4 m depth, while in the region between Pátyod and Csenger it is higher, between 1-2 m.
At the initial section of version "C" in the region of Ökörítófülpös the subsoil water level is between 2-4 m, between Porcsalma and Csenger it is between 1-2 m.

Deeper subsoil water level is characteristic again at the section before the country border in case of both examined versions, meaning soil water level between 2-4 m.

Sensibility test of the examined area

Based on the KvVM decree 27/2004 (25th Dec) about the classification of settlements on sensible areas in respect of the condition of sub-surface water each affected settlement is situated in the area of sensible sub-surface water quality protection area.

Based on the enclosures of the National and Szamos-Kraszna Water-collection Plan supervised by the planned investment altogether 2 pcs of drink water taking, operating, sub-surface drinkwater bases are concerned. Version "C" crosses the "B" hydrogeologic protecting zone (30+823 – 32+710 km section) of Tyukod region. The edge of protecting zone "B" of the Water Works of Csenger is reached by version "B" between 41+97-42+410 km section and version "C" at around 39+600 km section at the axle weight measuring station. Due to the fact that the crossed water bases are having only estimated protective profiles and they are not vulnerable, no construction of watertightly covered precipitation water trench system is necessary.

The full area concerned by the investment is qualified as nitrate-sensitive.

Sub-surface water conditions

The affected area belongs to the water collection territory of the Eastern channel, whose receiver is Szamos. The planned tracks cross inland water drainage channels.

Based on the data supply of Felső-Tisza-vidéki Water Affairs Directorate the examined track versionsdo not involve ameliorated, drained areas.

Based on the Country planning design of Szabolcs-Szatmár-Bereg county the great area of the design territory is situated on inland water fields. Based on the data supply of Felső-Tisza-vidéki Water Affairs Directorate the design area affects the territory of the inland water system of Szamos-Kraszna square.

Based on the Country planning design of Szabolcs-Szatmár-Bereg county, there is no large river basin in the design territory.

Introduction of the planned water drainage

According to the plans the precipitation waters flowing from the carriageway and the neighbouring site are gathered, drained and led to the crossed water drainage channels.

Before introducing the gutter into the receiver alluvium-catch-inhibitor engineering structures must be located. By using the inhibitor spreading of the contamination from a probable contingency can be limited.

Based on the declaration of FETIVIZIG the extra water delivery capacity of the channel used as receivers is limited, the condition of the water flows and water system is deteriorated.

Because of the condition and the capacity of the receivers the trenches ... are constructed with reservoir function, delaying and significantly reducing the water yields loading the receiving channels. The expanded section gutters are sectioned with water permeable "earth cores", so the developing storing space cannot drain forward the receiver by leakage, but the solution greatly reduces the extra loading of the receivers.

Impacts during the construction

Impacts exerted on the geological medium and on the sub-surface water during the construction

Quality and surface reduction of the soil is inevitable in respect of the investment, the area occupied by the carriageway and the related facilities will be the part of the infrastructural establishment.

The examined track runs through mainly agricultural areas, so the establishment involves important use of the territory, however no areas with excellent site quality characteristics are involved, so the unfavourable affect of area occupation will be less important in this respect.

For temporary extracting of the areas occupied by the investment, the staging and depositing areas from the cultivation must be licenced by the territorially competent land registry.

The upper humus layer must be produced on the basis of the humus-management plan, then stored selectively in the temporary deposits, and after the implementation it can be used again.

During the construction works the soil will be compacted because of the use of heavy-weight machinery.

Public utility replacements related to the investment involve extra expropriation in respect of the sub-surface waters, however no direct impact area can be indicated. In case of a transmission line the foundation of the columns can modify the spatial position of the soil water mirror, but the columns can be considered as point-like and their impact is minimal.

Despite of the possible contingency situation on the working areas no soil contamination should be accounted for. For the case of a contingency the constructor, - then during the operation the operator must have an appropriate contingency plan.

Impacts exerted on the surface waters during the construction

The impacts exerted on the quality of the water flows and other surface waters may be significant during the construction. The examined tracks cross several channels. In course of the construction unfavourable impact can be induced by making machine maintenance or repair in the neighbourhood of the water flows and channels. So care must be taken not to pollute the water flows during the construction of the engineering structures and the carriageway structures.

The establishment will exert influence - from among the elements of water economy balance, - on evapotranspiration and leakage of the surface waters. Thanks to the covered surfaces evaporation of the area increases, however, leakage in the same place is reduced and balance is kept. There will not be sensible impact of the establishment on the water economy.

The track running on the embankment may change the water collecting areas, it can cut them in pieces. However, this impact can be counterbalanced with culverts, bridges and careful designing of the trench system.

Impacts during the operation

Impacts exerted on the geological medium and on the sub-surface water during the operation

Dewatering of the road is characteristically performed with trenches of earth bed, covered trench will be constructed on sections where the track touches water basis protective zone.

Soil and sub-surface water contamination during the operation can arise from the emissions of road traffic, from the contaminants absorbed by the dust settling from the air and due to the oily contaminated dust grains along the road. These are the wearing materials, the lubricants, the petrol and diesel drops and the liquid from winter salting, and the settling dust. In case of normal operation these materials pass away from the carriageway by the precipitation and they are caught by the shoulder and the trench.

The expected pollutants, CH derivatives and heavy metals leak into the soil to a small degree, however on the basis of the results of the professional literature and the research these contaminants are absorbed in the upper 30 cm thick layer of the soil and the pollutants washed to the trench with the precipitation are deposited in the form of a thin mud layer, absorbed by the soil grains. The penetrating pollutants are decomposed by the biofilm living in the root zone of the plantation. CH derivative removal of the uncovered earth-bedded trenches along 500 m in case of low volume of precipitation of 70-80 %. This means that their volume is negligible when they reach the reservoir. The storing water draining system further reduces the pollution concentration.

The concentration of the air contaminants diffusely falling out will be diluted and its does not exert important influence at the areas next to the road.

Winter anti-slippery activity may also contaminate the soil or the sub-surface waters by leaking in during operation. Its risk is importantly reduced because the harmful effect exists for a relatively short time and within the 10-15 m distance from the axle of the road, in a decreasing concentration when moving away from the edge of the road.

Strongly water-retaining clayey and loam soils are characteristic in the design section, which have very poor water absorption and water draining capacities both in vertical and horizontal directions. As a result, a possible pollutant can reach the deeper layers or leak into the sub-surface water more difficultly.

The implementation of the planned investment does not change the existing water flow conditions, and the relations between the surface and sub-surface waters.
By observing the protection measures (e.g. modern, environmentally friendly machines and technological equipment) the realization of the public road development does not mean unfavourable impact on the sub-surface waters.

Impacts exerted on the surface waters during operation

The impacts influencing the condition of surface waters will be regulated by the method and efficiency of water drainage of the new road section in the period of operation. The geological features and public utility supply of the area must be considered during planning of water drainage.

During the operation the surface water flows can be affected by contamination mainly indirectly. This can reach the water flows by the mediation of the sub-surface waters, through the metal, rubber parts from wearing of the vehicle parts, from leaking fuels, other oils and pollutants, the dust coming from the wearing road cover and the anti-slippery materials scattered on the road surface. Due to the diluting effect of water coming from snow melting the unfavourable impact of salting may prevail only for a short period of time and to a small extent.

The water flows can be directly impacted by contamination; this can be mainly localized and eliminated in the framework of damage prevention. The size of the impact depends on the water yield of the watercourse, the condition of the bed and not at least on the fall conditions of the bed. From among the contingency contaminations that can occur during operation of the road the hydrocarbon derivatives can have the most unfavourable impact on the water quality of the water flows and not at least on the wildlife. However, the probability of occurring of a contingency - and just near to the water flows - is very low.

According to the plans the precipitation waters flowing from the carriageway and the neighbouring terrain are characteristically gathered by he earth-bedded trenches at the two sides. The studies prove that the pollutant retaining effect of the earth-bedded trench catches about 60 % of the contamination possibly generated by the water washing from the carriageway and leaking in. The storing water draining system further reduces the pollution concentration.

During operation of the road no contamination effect is expected that would cause quantitative or qualitative changes of the surface waters with the leaking waters.

Environmental protection measures, monitoring

Measures proposed for the protection of sub-surface waters

After finishing of the works the arable lands temporary occupied by the staging areas, containers, mobile mixing machines must be recultivated.

In order to prevent pollution only machines and transporting means in excellent condition may be used, whose regular technical supervision is obligatory. In course of the implementation getting of the pollutants into the environment may be prevented by keeping of the technological discipline.

In case of a possible contingency immediate measures must be taken against spreading of the pollution. The leaked contaminants, together with the soaked medium must be collected into a closed reservoir and managed as per the stipulations of Governmental decree 225/2015 (7th July).

In course of the construction only mineral raw materials (stone, gravel, sand, clay or their mixture in any ratio) extracted on the basis of legally binding and effective authority licence may be used. When selecting the raw material resources the places nearer to the construction sites have been chosen in order to reduce the transportation distances.

Soil is compacting during the road construction; its measure can be minimalized by reducing of the size of the working area, by avoiding wider trampling than necessary, by shorter loading time of the machinery and good labour organization. After finishing of the construction the soil must be recultivated by soil loosening.

In the protection area of the water bases attention must be paid to preventing pollution during the construction, to observation of the technological discipline and to the maintenance of the machinery. One must be prepared for the probably occurring contingencies, prevention of soil water contamination must be separately dealt with in the contingency plan.

Measures proposed for the protection of surface waters

The technological equipment and establishments must be operated and the working processes must be organized so that the activity would not cause water contamination. On the average, it is recommended to use up-to-date, environmentally friendly machines and technological equipment.

In order to avoid extraordinary, unexpected contamination observation of the technological regulations and the technical condition of the equipment must be increasingly and continuously controlled.

During the construction time it must be endeavour during cleaning of the machines, that the contaminated water would not get into live water flows. In the environment of water flows concerned by the tract no activities involving pollutant leakage can be performed (maintenance of the machinery, fuel filling etc.) and not site for storing of the machines can be made. Cleaning of the vehicles may exclusively be performed in washing places meeting the purposes.

When constructing the water flow crossings and culverts free flow of the waters must be ensured and the concerned water flow bed must be reconstructed after finishing of the construction.

The precipitation waters of the road trenches next to the engineering structures (culvert/bridge) can be connected do the channel through estuary engineering structures combined with sand catch in order to protect the receiver (VGT2).

Communal wastewaters generated at the site of the works during the construction must be collected in closed tanks and their disposal must be performed at a waste water treatment site with pre-treatment facilities.

The establishment of a monitoring system for showing the expected contaminations coming from the investment on the Hungarian side is not justified on the Romanian side.

6.2. AIR PURITY PROTECTION

Present conditions

The basic air contamination of the design area can be considered favourable, and the impact of the air pollution from the remote public road on the Hungarian side cannot be evidenced on the Romanian side.

Impact of the construction

In the environment of the construction dust generation must be accounted for from the road traffic and transportation, from loading of the transported materials, from the construction technology, from earth excavation and landscaping. The impact of air loading expected for the period of the construction is only temporary, it should be accounted for outside the construction site, it can occur only within 100 m from the construction site.

The establishment of the road network on the Hungarian side will not cause air protection risk for the direct vicinity of the Romanian side.

Impact of the operation

Based on the immission values received on the basis of the perspective reference conditions of 2033 performed for the Hungarian side, it can be stated that as compared to the present condition characteristically improvement is expected in the concentration of each examined component in the perspective reference condition. The presently determined daily and annual limit values are fulfilled in case of all the three distances.

Based on the immission values received on the basis of the perspective condition of 2033 it can be stated that the daily and annual limit values determined for the direct and indirect impact areas can be safely fulfilled in case of all the three distances.

The investments on the Hungarian side do not exert influence on the Romanian side.

Environmental protection measures, monitoring

The planned development does not cause important air loading change in the direct environment and in the indirect impact areas they do not cause air loading above the limit value, so the investment can be implemented without any air-pollution protection measure.

The establishment of air monitoring because of the expected contaminations coming from the investment on the Hungarian side is not justified on the Romanian side.

6.3. PROTECTION OF WILDLIFE

Present conditions

The design area is situated in a strongly transformed, essentially in an agricultural landscape. The greatest part of the present peripheral land cover is arable land. Using of the arable lands for other purpose is a process going on even now, mainly forests are installed instead. Grassland cultivated as pasture or meadow for decades is rarely found in the design area. 90-95 % of the grassland of the seventies have been plowed and transformed into apple gardens and tree plantation. There are practically not habitats of natural condition in the impact area. There is no protected natural area, no Natura 2000 area on the impact area, the track versions cross only some elements of the ecological corridor of the National Ecological Network which have mainly lost their importance in respect of nature protection by now. The nearest protected natural area, the marshy bed of Szamossályi-Holt-Szamos is situated more than 1600 m from the track version "B". Track version C approaches grasslands and forests under local protection in the vicinity of Ura.

There is no important wetland habitat in the area, the grasslands are of secondary origin, they are disturbed and featureless, their botanic value is low. A single protected plant - the meadow aster (Aster sedifolius subsp. sedifolius) can be found. Its existence is not endangered by the construction of the road. The area is an agricultural region poor in species being important in respect of zoology and nature protection, where the great part of the detected species and those known from earlier are frequent and well-adapted to disturbance by human activities, especially to field cultivation. Corncrake (Crex crex) is outlined from the natural values of the region, it had previously bred on the impact area. Transformation of the use of lands and the drier years did not favour settlement of the bird, so it had not been noticed in the area for almost ten years, and the number of its possible habitats had strongly reduced. European roller (Coracias garrulus) irregularly breeding in the grassland of Ura and nesting of raven (Corvus corax) in the periphery of Porcsalma should be still mentioned.

The investment does not affect habitats crossing the Romanian side and being valuable in respect of nature protection. There is no known species from the area with living space crossing the border.

Impact of the construction

Really valuable habitats of natural condition are not endangered by the construction, and destruction of protected plant cannot be accounted for in case of the implementation of any version. The tracks do not affect habitat of animal species being important in nature protection, and they will not be of significant impact to the natural protection situation of the protected or especially protected species. The tracks do not affect important, known, underground wintering areas. Fragmentation, based on the measurable features, will not be important. In respect of wildlife protection no impacts of the construction passing through the border should be accounted for.

Impacts of the operation

Amphibians most endangered by running over are not present, or are only in a very low number on the places, from where they can reach the road. According to our present knowledge not traps will be formed for the bird fauna of the area, and the tracks do not cross landscape elements being important in respect of the bird migration. The greatest trouble in respect of traffic safety can be caused by big games and stray pets.

By means of the efficient measures coming from the operation for important reducing the light pollution can cause trouble mainly in case of version B, because of relative vicinity of Holt-Szamos.

The known fauna of the area has greatly adapted to human disturbance, it consists of species of partly unknown noise tolerance, but frequent and countrywide and locally common species, so no important restructuring can be expected as compared to the present condition.

Operation of the highway expectedly does not involve wildlife protection impacts over the country border.

Environmental protection measures, monitoring

The proposed measures have local effects, monitoring aims at following up of the impacts in a small area, no consequences over the borders should be accounted for.

6.4. PROTECTION OF THE BUILT ENVIRONMENT

Present conditions

It can be said in respect of the track in the design phase, that it involves mainly areas of agricultural use, so it does not exert important impact on the built environment. The monuments of the affected settlements are located in the inner areas, and they are bypassed by the planned highway.

Preliminary Archaeological Documentation (ERD-I) was prepared for the examined area. During the archaeological inspection of the terrain scattered findings and new archaeological sites were found, at about 400 m from the border. The exact age of the sites is still unknown, the extension can be determined only by probing or further research; this should be performed prior to beginning of the construction.

Impacts of the construction and operation

The construction can exert important impact on inhabited environment, if the construction is performed directly next to the inhabited area, or the transportation routes pass through inhabited areas.

The tracks planned at the Hungarian side affect mainly agricultural areas. Approaching of inhabited areas within 100 m can be accounted for in the area of Tyukod and Porcsalma in case of track version "C". At the Northern part of the inhabited area of Pátyod, version "B" passes at about 70 m for about 370-400 m.

The values of the built environment are not endangered by the planned investment, however it involves new archaeological sites at the Hungarian side of the border.

6.5. LANDSCAPE PROTECTION

Present conditions

The planned expressway section is situated within the Great Plain at the middle of the Upper-Tisza-region and the Southern part of the Szatmári plain small region, the track is in the direction of North-West -South East, passing through periphery of Ököritófülpös, Porcsalma, Tyukod, Pátyod, Csenger, Szamossályi and Szamosangyalos.

The examined area is at 108-123 m above the sea level, it is a complete plain sloping from South-East to North-West. It is flood basin, with relative relief below 1 m/km2, plain, with the dense network of abandoned river basins, differently filled up. There are 3 flood-free backs in the reion from South-Eat to North-West. Inhibited watery meadows with bad drainage lay among the plain backs.

The region is the flood basin of the Tisza and its affluents, previously it was covered with forests. Gallery forests, hornbeam and oaky forests determined the landscape, for making grasslands, arable lands and settlements deforestations were made in many places. Today, the important part

of the region is arable land and grassland, but thanks to the afforestations of the past years the ratio is changing. (*2010, Dövényi)* Considering landscape use of the region affected by the investment in question, agricultural use is having characteristically the largest spatial extent, (arable land, orchards) irrigated arable lands can be found at several places and a part of them is involved by the examined tracks. Mosaically impacted forests, grasslands and settlements were formed between them.

The examined track versions involve/approach also individual landscape values. Such values are found scattered in the region affected by the planned investment (mainly shadooves, crucifix)

Impact of the construction

Changes occurring in the way of landscape use may fundamentally arise in the areas for expropriation: the earlier cultivation branches, natural regions, and individual landscape values can be ceased by the development of the traffic areas instead of them, should the area be involved by the development.

The impact exerted on the individual landscape values is double: negative, if the establishment of the carriageway liquidates the landscape value; positive, if it contributes to revealing and showing it. The planned development affects or approaches individual landscape value; nearest to the carriageway there is the crucifix at the border of Szamosangyalos and Pátyod.

The implementation of public road development retransforms the previous relation system of the region to a certain degree. First of all, the public road network is transformed, but the changes also affect the ecological relations and the water network. Coming from the changes in the access conditions of the cut areas, the intensity of the economic activity can reduce at certain places, while at other point more intensive economic activity can be expected and even recultivation of the earlier abandoned areas can also occur.

The most conspicuous change in respect of the given project that affects the landscape is that the existing vegetation along the new track section will completely disappear in the planned crest width; the partial or full liquidation of the agricultural and forestry areas or parts of them which are affected directly by the use of the territory; the establishment of new carriageway; liquidation of the existing earth roads and construction of new ones.

The biologically active surfaces on the design are characteristically arable lands, grasslands, forest patches, orchards, certain parts, edges of which will be split or liquidated as a result of the use of the planned expressway zone, consequently small degree reduction of the biological activity value of the area can be supposed.

The sight of the earthworks, engineering structures and other establishments can appear in the landscape as different and determinant elements.

The road sections led in the cutting and the water drainage trenches along the road will hardly affect the appearance, the sight of the landscape, while the bridges, the overhead bridges and pronounced engineering structures will give noticeable changes. Depending on the construction in height of the road led on the embankment it can be seen easily or it is less visible in the plain area. The planned motorway runs in the embankment on the whole length. The embankments are characteristically 1.5-3.5 m high, with the exception of the MÁV crossings, where the carriageways have overhead crossings.

Impacts of the operation

Operation affects the landscape as a complex unit, through changing of the different environmental elements. Expectedly, one of the most important impacts along the carriageway is the raising potential of extraction of the areas between the bypass sections and the border of the inner area

from cultivation. Due to the good transport relations these areas can get better appreciation in respect of producing and service activities.

During the regular maintenance works the gauge, the slopes, the side trenches and the plants will be cleared mechanically or by chemical control. The chemical residues can spread to the related areas in case of non-appropriate use. Salting in winter can have unfavourable effect on the health condition of the plantation along the road.

Environmental protection measures

In respect of landscape protection, special attention must be paid to the ecologically valuable areas and those with outlined protection, as well as the in the sections affected by the landscape protection zones of the county's development plan, to the rehabilitation of the remaining destroyed surfaces after the construction of the planned road and the related establishments.

The remaining destroyed surfaces must be rehabilitated on the whole section of the planned track. In addition, attention must be paid in these places, for the period of 3-5 years after completion of the landscaping and plantation, to post-care of the rehabilitated area and of the appearing plantation (mainly by manual control of the weeds and invasive species).

Plantation can be performed in the expropriated areas after rehabilitation of the abandoned earth roads and trenches. Rehabilitation must be performed in addition to the carriageway and the trench, within the expropriation frontiers; and also on the areas used during the construction over the expropriated areas by ensuring the basic conditions of the pre-construction use of the territory and of the ecological gifts. The area thus rehabilitated should be returned to cultivation according to the neighbouring cultivation area.

Rehabilitation of the other destroyed surfaces remaining from the implementation of the other establishments needed for the realization of other activities related to the investment (e.g. bed corrections, replacement of other engineering structures, public utilities) must be provided for, too, similarly to those of the above mentioned sections.

Sloping surfaces developing in case of embankments/cutting of higher than 5 m should be devoted outlined attention, their matching into the landscape can be best promoted by the appropriate plantation, and this will contribute, at the same time, to stabilization of the slope.

The staging routes must be organized so, that natural and landscape values and areas being sensible in respect of landscape protection would not be damaged permanently (lastingly) and irrevocably. It is also important to bypass the non-protected natural areas with the staging routes; out of them the habitats, the forests and grasslands that can be identified along the existing ecologic network represent the greatest value. Their exact designing and designation will become realizable in aware of the more detailed and exact technical data and technologies needed for the construction phase.

Woody plants cut because of the road construction must be replaced, ensuring an optical way promoting safe traffic on the road. During further designing the stipulations of Road Technical Stipulations (ÜME) must be considered in the licencing and construction plans when planning the detailed plantation.

Grassing can be recommended on the slope of less then 5 m high, and woody (shrubs or scrubs) plantation in case of the slopes of embankments-cuttings with more than 5 m high level difference at the nodes and crossings of separate levels, and in the direct vicinity of the other establishments along the road.

The requirement for the plants used for plantation is resistance against the effects of the traffic, compliance with the specificities of the terroir, and being native species, if possible.

Further, in respect of the species applied, the host plants of the pests and pathogens endangering the cultivated plants must be especially avoided (e.g. ulmaceae, wild pear).

Replacement of the possible air lines is an activity, whose end result - coming from their nature - will inevitably appear as an artificial landscape element in the area; the unfavourable effect on the landscape can be reduced a bit by painting of the columns with olive green paint.

6.6. NOISE- AND VIBRATION PROTECTION

Present condition

There is no public road at the place of the planned connection at present.

Impacts of the construction

Because in the environment of the road connection of the planned new highway there are no areas and residential function to be protected against the noise directly along the border, the establishment of the road connection in the Hungarian side does not mean any noise-protection risk to the direct environment of the Romanian side.

The existing Hungarian road network and the track of the carriageway to be constructed will be used for approaching the construction sites on the Hungarian side (in case of implementation of any version). The minor additional traffic from the construction transportation on the access road along the construction-transportation routes during the implementation will not practically change noise loading (sensible difference by human ears is about min. 2 dB.) It is important to note that it is not recommended to choose road number 4923 in settlements Porcsalma and Tyukod for transportation because of the nearby built-up density.

Impacts of the operation

Change in the condition in case of failure to implement

Reference condition is the noise situation developing by 2033; this would develop, if the planned public road developments would not be implemented (on the Hungarian side).

Along the planned new track, where no effect of other noise source arise, because we speak of areas without traffic, we should not account for change in the noise level in the reference state. Further is can be stated that without the construction of the planned road the inner areas of the settlements along main road 49 will be affected by higher noise loading, due to the natural growth of traffic.

Change in the condition in case of implementation

Because in the environment of the road connection of the planned new highway there are no areas and residential function to be protected against the noise directly along the border, the establishment of the road connection in the Hungarian side does not involve any noise-protection risk to the direct environment.

Track "B" led on the Hungarian side does not result in noise loading above the limit value, so noise protection measures are not justified. In case of track "C" noise pollution at certain residential buildings of Tyukod settlement approaches the limit value, so noise protection measures are justified.

The impact of the new public road noise source of the Hungarian side on the nearest residential areas on the Romanian side (several hundred meters) will not be detectable.

Environmental protection measures, monitoring

The planned development results in decisive change in noise loading in the direct environment in case of "C" track version, due to the increasing noise load of road number 4923 in Tyukod, and due to the relative closeness of the track and of the node to be constructed to the settlement, **noise-shielding wall construction is** recommended.

The establishment of air monitoring because of the expected change in noise loading coming from the investment on the Hungarian side is not justified on the Romanian side.

6.7. WASTE MANAGEMENT

Present conditions

The competent public road management company (Hungarian Public Road Nonprofit Plc. - Directorate of Szabolcs-Szatmár-Bereg County) provides for the collection and disposal of communal wastes generated on the public roads to be constructed.

Impact of the construction

The construction on the Hungarian side does not have any affect on the waste management of the Romanian side.

Impacts of the operation

Waste management of the establishments in the Hungarian side do not concern the Romanian side.

Environmental protection measures, monitoring

During the construction-demolition works care should be taken to minimalization of the volume of the generated waste, to utilization of the generated construction-demolition materials within the implementation.

The generated non-dangerous, dangerous and communal wastes will be handed over a receiver with licences for the purpose of disposal. In respect of the receivers, those managing the wastes with recovery are preferred, with consideration to the principle of economicalness and vicinity when choosing the waste deposit site. Delivery of the wastes must be performed through the indicated material delivery routes.

The temporary reservoirs of wastes and dangerous wastes generated by the construction works and the fuel tanks of the earth machinery must be placed on already covered surfaces or surfaces supplied with an insulation layer, using damage recovery vessels and excluding the possibility of contamination to the soil and sub-soil waters.

Collection and disposal of the different types of wastes must be performed by the Constructor during the construction and by the competent public road operator during the operation. Management with recovery must be preferred in case of waste management, considering the principles of economicalness and vicinity.

Using of the set soil during recultivation must be done in compliance with the stipulations of the Soil Protection plan.

By completion of the construction the construction site - including also the temporarily used areas - must be cleared off the wastes, construction debris and unnecessary construction materials.

In course of the construction classification, treatment, disposal of the produced materials as well as the detailed management rules of the generated wastes must be included and regulated within the Construction Plan.

It is recommended to include the regulations referring to the operation period in the treatment plans.

Procedures and data supply obligations specified by the relevant legal rules must be observed both in the construction and the operation periods.

Inert wastes generated during the construction (construction debris not containing dangerous materials) must be deposited at the nearest, licenced inert waste deposit.

Municipal solid waste generated during the construction and operation (communal waste) must be collected in closed waste reservoir and it should be regularly transported to the communal waste deposit.

Collection and disposal of the different types of wastes must be performed by the Constructor during the construction and by the competent public road operator during the operation. Deposition is recommended into the solid waste deposits operated by the county or settlement self-governments.

Dangerous waste generated by the construction and the operation must be collected separately, as per the stipulations of the legal rules, excluding the possibility of environmental pollution, records must be kept of them, they must be reported and their further treatment of disposal in the dangerous waste deposit must be arranged. Transportation and treatment of dangerous wastes may only be performed by an authorised, licenced company.

7. IMPACTS OF LEADING THE TRACK FORWARD AT THE ROMANIAN SIDE, IN ENVIRONMENTAL ASPECTS

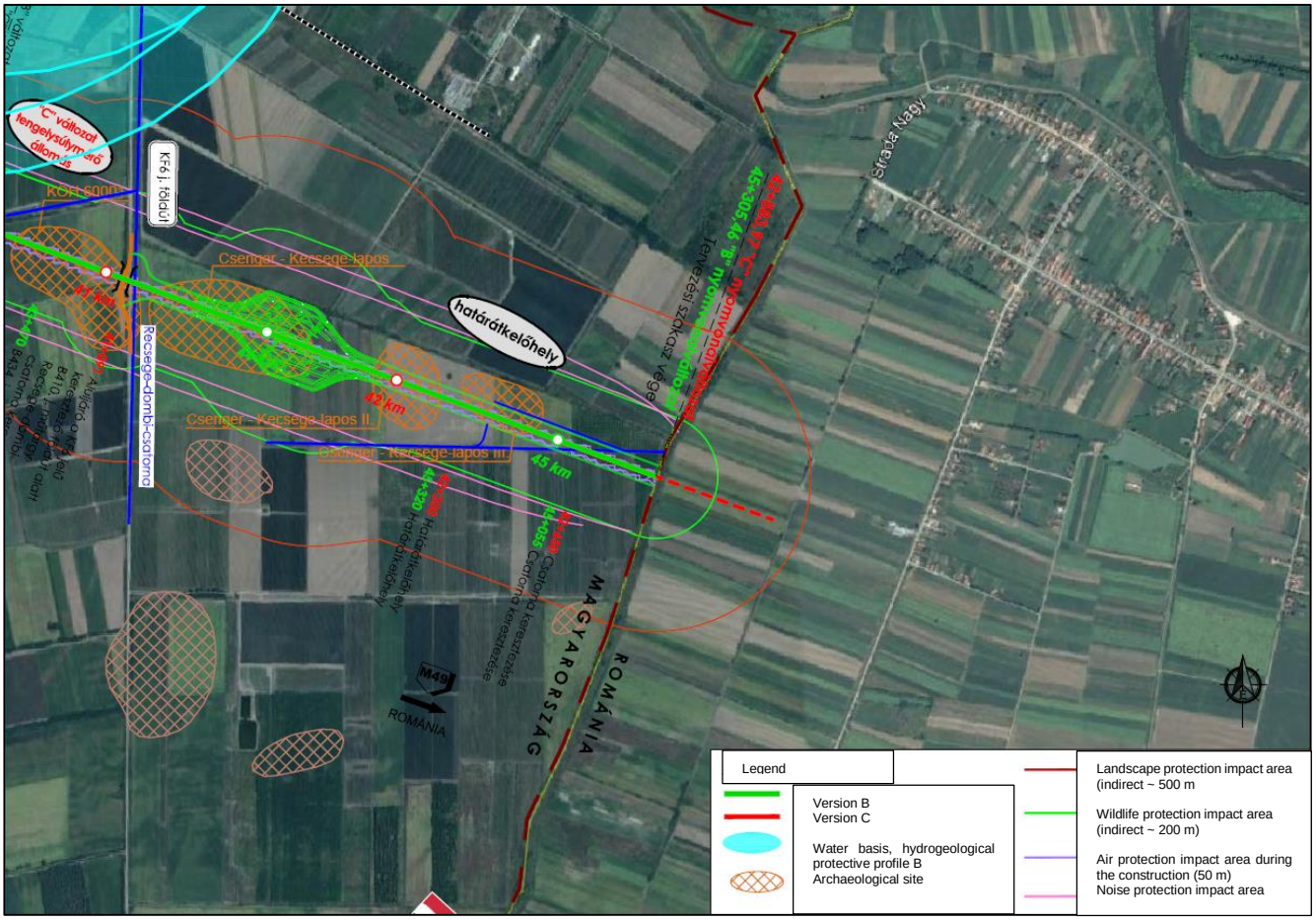
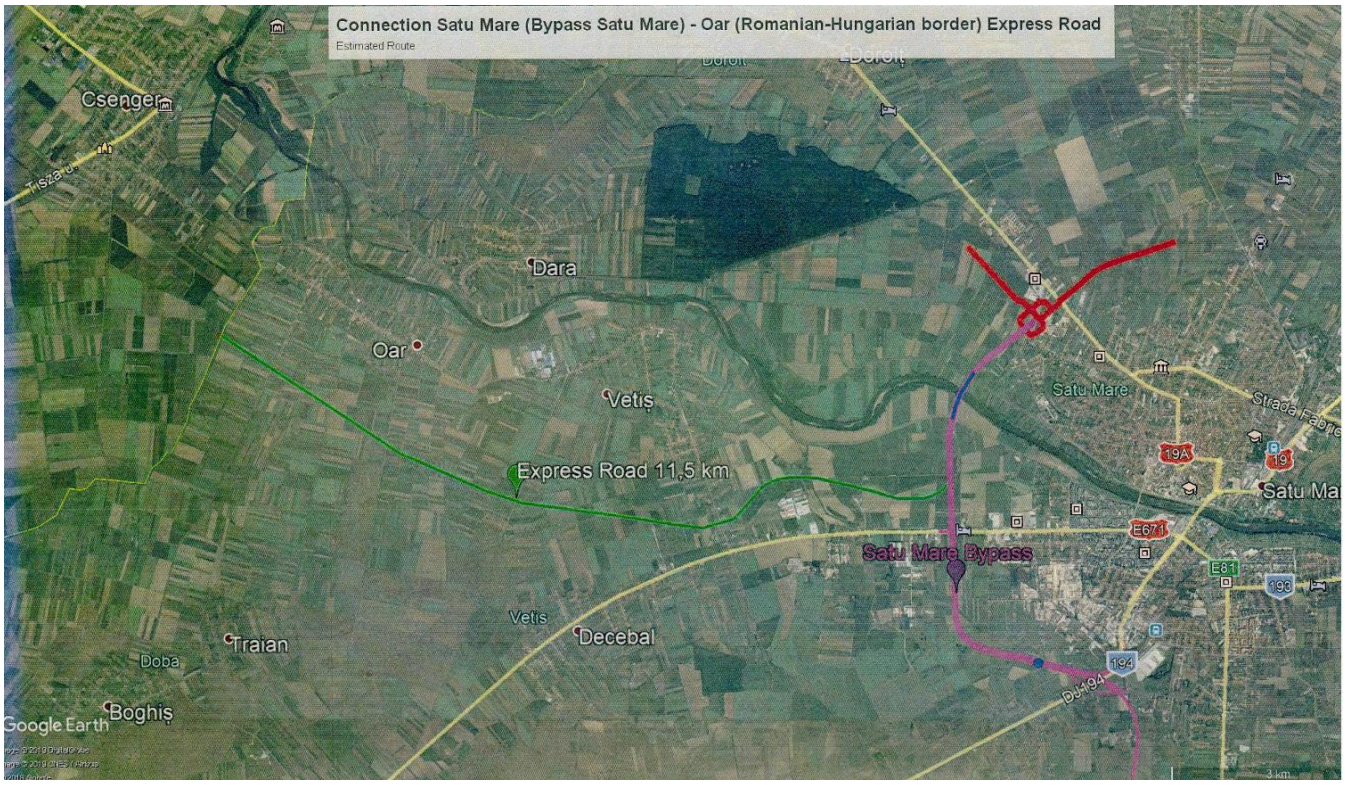


Figure6.7.1. Further leading at the Romanian side and border section

„C" változat tengelysúly mérő állomás	Version „C" axle weight measuring station
KF 6J földút	Earth road marked KF 6J
Recsege-dombi csatorna	Channel of Recsege hill
Határátkelőhely	Border crossing



6.7.2. Planned further leading at the Romanian side

7.1. THE IMPACTS OF SOIL, SURFACE AND SUBSURFACE WATER PROTECTION

Impacts of the construction

In respect of earth protection the negative impacts of the implementation period include the occupation of the area, the size of the earthworks and the use of the material resources. As a consequence of the implementation of the investment at the Hungarian side, we should not expectedly account on these effects possibly crossing the border.

The condition of the surface and sub-surface waters in the periods of the construction and operation are equally determined mainly by the methods and efficiency of the water drainage of the investment. Further, the condition of the sub-surface waters is influenced also by the involvement of the wells, water bases and areas of outlined importance of the site.

Agricultural region is found on the area along the border. Deeper ground-water level is characteristic at the section before the country border - between 2-4 m.

There are no water bases, or their protective area, neither surface water flow in the environment of the state border that could be affected by the planned investment.

In respect of soil- and water protection the development on the Hungarian side will not unfavourably affect the neighbouring Romanian area.

Impacts of the operation

Soil and sub-surface water contamination during the operation may arise mainly from washing of air pollutants. The air contaminants diffusely fall out, concentration is diluted and therefore it does not exert important influence on the areas next to the road.

The impacts on the condition of the surface and sub-surface waters in the periods of the construction and operation are mainly determined by the methods and efficiency of the water drainage.

There is no affected water flow in the environment of the state border, that would be negatively influenced by the investment.

The operation of the establishment on the Hungarian side will not affect the characteristics of the soil, surface and sub-surface waters on the Romanian side.

Only in case of contingency it may occur that the impact by the operation of the road section on the Hungarian side exerts influence on the Romanian side. In such cases prevention of spreading of the contaminants must be begun and removal and damage protection of the contaminant must be provided for. The competent environmental control authority and the Romanian side must be notified, if necessary.

7.2. THE IMPACTS OF AIR PURITY PROTECTION

Present conditions

Emission limits referring to the air contaminants in the environment that should be considered in the Romanian relations are included in legal rule No. 104/2011.

Oar (Óvári) settlement is found in the vicinity of the road connection of the planned track on the Romania side.

Thanks to the favourable climatic (wind of North-South direction) and dispersion conditions of Szatmár county the air quality is acceptable on the whole.

Impacts of the construction

In the environment of the construction dust generation must be accounted for from the road traffic and transportation, from loading of the transported materials, from the construction technology, from earth excavation and landscaping. The impact of air loading from the construction is only temporary, it is not expected outside the construction area.

Impacts of the operation

In respect of the present air quality no important air pollution increase is expected on the direct impact area in case of the implementation of the road junctions of the planned tract at the Hungarian and the Romanian sides. The concentration of air contaminants experienced now in the direct impact area will be reduced in case of the implementation of the project.

In case of completion of the investment the measure of air loading will be characteristically reduced according to the immission calculations based on the traffic forecast for the road network of the Romanian side. The calculated immission value of the air contaminant will not expectedly exceed the permitted limit values, not even together with the existing basic air pollution.

7.3. IMPACTS OF WILDLIFE PROTECTION

Impacts of the construction

The planned expressway ends in an agricultural area within Hungary and Csenger. On the Romanian side, directly along the country border small parcel agricultural areas are found with similar utilization. At 840 m from the border crossing point there is Óvári settlement.

The nearest valuable natural area from the planned investment on the Romanian side is Somesul Inferior (ROSCIO436) Special Nature Preservation Area at 1.9 km North of the border crossing. On the other side there is no area belonging to Natura 200 at the state border.

Based on the above further leading of the road on the Romanian side will expectedly cause natural protection conflict.

Impacts of the operation

In aware of the impact factors the traffic does not endanger natural values in Romania. The expected impacts will be of local nature, and they are not in causal relationship with the impacts of the road operated on the Hungarian side.

7.4. IMPACTS OF THE BUILT ENVIRONMENT

Impacts of the construction and operation

The construction of the planned expressway does not endanger the values of the built environment. During the operation the planned expressway can affect the built environment due to the increased environmental loadings, where it approaches inner areas, because the built values of the settlements are concentrated there. These impacts, however will not be important, expectedly.

The road construction on the Hungarian side and the results of the archaeological excavations will not exert influence on the Romanian side.

7.5. LANDSCAPE IMPACTS

Impacts of the construction

The construction of the planned investment affects the present structure of the landscape. Liquidation of the affected agricultural areas will mean changing together with partial disappearance of the plantation along the track. The public road development can accelerate other developments in respect of the region. The new expressway can be seen from the Romanian side mainly from Óvári (Oar) settlement.

The planned expressway ends in an agricultural area within Hungary and Csenger. On the Romanian side, directly along the country border small parcel agricultural areas are found with similar utilization, as per https://www.google.com/maps. At 840 m from the border crossing point there is Óvári settlement.

The nearest valuable natural area from the planned investment on the Romanian side is Somesul Inferior (ROSCIO436) Special Nature Preservation Area at 1.9 km North of the border crossing.

In respect of landscape protection the impact of the Hungarian road section will not be expectedly significant on the Romanian side due to the terrain conditions of the affected area and the distance from the natural values and settlements.

Impacts of the operation

The operation of the public road can have unfavourable effect on the neighbouring agricultural areas, due to the environmental impacts (settlement of the air contaminants on the soil) caused by the traffic.

7.6. NOISE- AND VIBRATION PROTECTION IMPACTS

Noise-impact of the construction

Because in the environment of the road connection of the planned new highway there are no areas and residential function to be protected against the noise directly along the border, the establishment of the road connection in the Hungarian side does not mean any noise-protection risk to the direct environment of the Romanian side in neither versions..

In case of the traffic for construction transportation of the Hungarian side the utilization of the Romanian road network is not envisaged.

Impact of the operation

Along the planned new track, where no effect of other noise source arise, because we speak of areas without traffic, we should not account for change in the noise level in the reference state.

Because in the environment of the road connection of the planned new highway there are no areas and residential function to be protected against the noise directly along the border, the establishment of the road connection in the Hungarian side does not involve any noise-protection risk to the direct environment.

7.7. THE IMPACTS OF WASTE MANAGEMENT

Waste generation must be considered both during the construction and the operation of the road.

The non-dangerous, dangerous and communal wastes generated by the construction activity will be handed over by the Constructor for the licenced receiver, and it will be recorded in the construction contracts.

On the area of the road section - following the construction and putting into use - one must account on the generation of a small volume of dangerous and non-dangerous wastes during the repair and maintenance activities, at the time of contingency events and the solid wastes from careless goods delivery and from the maintenance of the green surfaces along the road. Their kinds are only partly known now, or they can be only prognosed, there is no information about their exact volume as per types in the present stage of the design. Removal of these wastes is the task of the operator.

The regulations referring to the operation period will be included in the treatment plans. Procedures and data supply obligations specified by the relevant legal rules must be observed both in the construction and the operation periods.

Continuous depositing of the generated waste must be performed in the assigned waste deposits. The carrier is obliged to provide for disposal of the waste in a contract.

8. SUMMARY

Below, we are summarizing our statements about the impacts of the investment on the Romanian side.

Protection of soil, surface and subsurface waters

The negative impacts of the implementation are space occupation of the investment, size of the earthworks, involvement of the areas and water bases of increased and outlined sensitivity.

Agricultural region is found on the area along the border, but no arable lands with excellent site quality characteristics are involved. Deeper ground-water level is characteristic at the section before the country border - between 2-4 m. There are no water bases, or their protective area, neither surface water flow in the environment of the state border that could be affected by the planned investment.

The impacts on the condition of the surface and sub-surface waters in the periods of the construction and operation are mainly determined by the methods and efficiency of the water drainage.
There is no affected water flow in the environment of the state border, that would be negatively influenced by the investment.

In respect of soil- and water protection the development on the Hungarian side will not unfavourably affect the neighbouring Romanian area.

Air purity protection

In respect of air protection it can be stated that air contamination of the planned investment during the operation will depend on the size, composition and velocity of the traffic. In summary, the impacts of the investment of the Hungarian side can be considered favourable in respect of air purity protection, they do not have negative impacts on the Romanian side.

The impact of the air contamination sources of the new public road will not be detectable on the Romanian side. The air protection impact area of the construction and operation do not involve Romanian territory.

Protection of wildlife

It can be stated, in summary, that further leading of the road on the Romanian side will not expectedly cause natural protection conflict. In aware of the impact factors the traffic does not endanger natural values in Romania. The expected impacts will be of local nature, and they are not in causal relationship with the impacts of the road operated on the Hungarian side.

Landscape protection

In respect of landscape protection the landscape details are dominated with agricultural use (arable land, orchards) in the affected region. Forestry can be considered as an area use determining the landscape character of the region affected by the project to a lesser degree. The full section characteristically bypasses the larger, continuous forest block, forest block group if we consider the terrain properties and the proportions of area utilization, but it affect at certain sections scheduled forest regions, too.

In summary, landscape disturbing effect in respect of landscape protection and changing of the present landscape structure can cause small-sized unfavourable impacts, because the new track and the related establishments result in changes of the ratio of the artificial landscape forming elements.

In respect of landscape protection the impact of the Hungarian road section will not be expectedly significant on the Romanian side due to the terrain conditions of the affected area and the distance from the natural values and settlements.

Protection of the built environment

According to the available data the planned track versions do not involve monuments, but they partly affect architectural resources. The road construction on the Hungarian side and the results of the archaeological excavations will not exert influence on the Romanian side.

Noise and vibration protection

In respect of noise- and vibration protection it can be stated that the construction of the new expressway on the Hungarian side - the impacts of the establishment and operation - do not mean any noise protection risk on the direct environment of the Romanian side. The impact of the air contamination sources of the new public road will not be detectable on the Romanian side.

Noise protection impact area of the construction and operation does not affect functions or areas to be protected against noise on the Romanian side.

Waste management

By minimizing, appropriate collection and removal of the generated wastes no impact of the investment is expected in respect of waste management for the Romanian side.

Budapest, 11 April, 2019.