National Environmental Protection Agency
Maramureș Environmental Protection Agency

ENVIRONMENTAL PERMIT
No. 2 from 19.11.2018

As a result of the notification of the NATIONAL COMPANY FOR ROAD INFRASTRUCTURE ADMINISTRATION, with headquarters in Dinicu Golescu Boulevard, no. 38, sector 1, Bucharest, registered at no. 8514 of 29.08.2017 and the subsequent additions, as a result of the analysis of the documents submitted and the verification, due the integral examination of the procedural steps, based on Government Decision no. 19/2017 on the organization and functioning of the Ministry of Environment and for the amendment of some normative acts, with subsequent amendments and completions, of the Government Decision no. 1000/2012 regarding the reorganization and functioning of the National Environmental Protection Agency and of the public institutions under its subordination, as subsequently amended, GEO no. 195/2005 on environmental protection, approved by Law no. 265/2006, as subsequently amended and supplemented, Government Decision no. 1076/2004 on establishing the procedure for carrying out environmental assessments for plans and programs is issued

PERMIT

for PUZ – BRIDGE OVER TISA IN TEPLIȚA AREA OF SIGHETU MARMAȚIEI, MARAMUREȘ COUNTY

promoted by the **NATIONAL COMPANY FOR ROAD INFRASTRUCTURE ADMINISTRATION,** with headquarters in Dinicu Golescu Boulevard, no. 38, sector 1, Bucharest,

for the purpose of adopting / approving the plan which states:

Achievement of a bridge over Tisa in Tepliţa area in Sighetu Marmaţiei, namely the achievement of a road connection between Romania and Ukraine, near the most important village in the north of the Maramureş county, Sighetu Marmaţiei, by contributing to the integrated development of the region and the border area from the north-western Romania.

- the land current use: water course (Tisa river – border), road communication routes – national road DN 18, local roads, agricultural lands – arable and meadows.

The plan proposes:

The general objective of the zoning plan (PUZ) for the bridge over Tisa in Tepliţa area in Sighetu Marmaţiei is to regulate urban, legal and technical infrastructure and ensuring the legal base, obtain clear provisions for the area where it is located the regulated plan,

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namely the achievement of a road connection between Romania and Ukraine, near the most important village in the north of the Maramueş county, Sighetu Marmaţiei, by contributing to the integrated development of the region and the border area from the north-western Romania.
The P.U.Z. documentation for the establishment of the road bridge over the Tisa River is aimed to regulate the ways of achieving a modern communication route with implications for the regional development of the area, streamlining the traffic, increasing the safety of the users, reducing the travel times and also shortening the road link with Russia, Baltic countries, Poland, Hungary and Slovakia.

Provisions of the village development program for the studied area:

The project for the achievement of the road bridge over the Tisa River aims to build a road connection between Romania and Ukraine in the area of Sighetu Marmaţiei, Maramureş County. The route alternative approved by the feasibility study will be located in the Tepliţa area of Sighetu Marmaţiei, Maramureş County on the territory of Romania and in the area of the Biserica Albă in Ukraine.

The approved route alternative consists of a connecting road that branches from the national road DN 18 (km 69 + 260), crosses the Camara district and then the Tisa River. The length of the connection road (separated from DN 18) plus that of the bridge (up to the territory of Ukraine) is 1.200 m.

The approved route alternative is located in the incorporated area and in unincorporated area of Sighetu Marmaţiei Municipality, in present the land is occupied by private ploughing fields and grove in the immediate vicinity of the Tisa River, on the territory of Romania and land classified in the fourth category on Ukraine territory.

The Urban Zonal Plan establishes the specific regulations for an area in the administrative territory of the city, draws the roads, proposes the territory zoning, providing the necessary facilities and infrastructure. The purpose of the work is to provide to local authorities and advisers a unified and concrete methodology for identifying and delimiting land to build objectives and setting conditions for use. It is very important the rational land use, correlation of the general interests of the local community with private interests.

The urban zonal plan pursued in principle the following:

- analysis of the existing situation;
- dimensioning of the proposed constructions and facilities corresponding to the surface of the studied ground and according to the design theme;
- equipping with utilities;
- integration and harmonization of new constructions in the built environment and the existing natural environment;
- ensure conditions for environmental protection.

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Functional zoning - Territorial balance for the studied area:

According to the PUZ for the bridge over Tisa river in Tepliţa area of Sighetu Marmaţiei, the obligatory functional areas are:

1 - bridge area;
2 - the border crossing point area;
3 - connecting road area;
4 - the roundabout area.

BALANCE SHEET		
PROPOSED FUNCTIONAL AREAS		
ZONAL URBAN PLAN FOR LOCATION OF NEW BRIDGE OVER TISA RIVER		
	Surf.	
	mp./Ha.	
EXPROPRIATION CORRIDOR	82228,62 mp.	
	8,22 Ha.	
out of which:		
From above areas, each proposed functional sub-area has been calculated. Calculation was done only for carriageway, pedestrian ways, green areas, road median areas and constructions		
FUNCTIONAL AREA	Total area WITHOUT side slopes and land vertical planning	Proposed indicators
	mp./Ha.	P.O.T./C.U.T./H.max
TR - ROAD TRANSPORT AREA	65850,60 mp.	
P.O.T. max. (%)		4%
C.U.T. max.		0,2
R.M.H.		10,00 m.
divided in:		
TR1a - BRIDGE AREA	7619,17 mp.	*without indicators*
	0,76 Ha.	*without indicators*
	area calculated only for	
carriageway	4450,32 mp.	
pedestrian ways	1036,90 mp.	
median area	2131,95 mp.	
TR1b - CROSS BORDER AREA	44874,59 mp.	
	4,48 Ha.	
P.O.T. max. (%)		3,80%
C.U.T. max.		0,03
R.M.H.		10,00m.
	area calculated for	
carriageway	33525,21 mp.	

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pedestrian ways	4452,63 mp.	
green area	4572,11 mp.	
constructions	1716,16 mp.	
median area	608,48 mp.	
TR1c - CONNECTION ROAD AREA	**6682,74 mp.**	*without indicators*
	0,66 Ha.	*without indicators*
	area calculated only for	
carriageway	4903,55 mp.	
pedestrian ways	1779,19 mp.	
TR1d - ROUNDABOUT AREA	**6674,10 mp.**	*without indicators*
	0,66 Ha.	*without indicators*
	area calculated only for	
carriageway	4649,29 mp.	
pedestrian ways	928,78 mp.	
green area	1096,12 mp.	

Maximum Urbanistic Coefficients according to Opportunity Notice no. 6 of 20.04.2016, issued by the Maramureş County Council:

- Maximum proposed POT 10.00%;
- Maximum proposed CUT 0.2 - for construction.

Water supply:

Water supply network for hygienic and sanitary purposes (in the perimeter of the platform of the border crossing point)

The constructive solution adopted took into account the following:

- the characteristics of the location area;
- safety in execution;
- safety in operation.

The water supply networks in the perimeter of the platform of the border crossing point shall be executed with a PIED (PN6) pipe, buried below the freezing depth, at -1,25 m from the final road surface and at 0,50 m distance from the rib, towards the outside of the pavement. The networks will be equipped with connections to sanitary consumers (customs office, administrative buildings, toilets located in control areas, etc.). Individual water consumption will be counted for each consumer individually.

The water supply line of the state border crossing area will be made from the city and will be made of PIED pipe (PN6) mounted buried below freezing depth.

The water supply networks will be equipped with shafts with slicing and drainage valves (CV, placed from place to place at a distance of approximately 300 m) and a fire pit with a general water meter (CA) at the entrance to the perimeter of the area.

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Household wastewater discharge:

Wastewater sewerage networks (in the perimeter of the border crossing platform) and rainwater sewage (in the area over the bridge over Tisa and in the perimeter of the border crossing platform)

For collecting and evacuating the rainwater have been designed a modern water evacuation system, with drainage wells located in curbs and piping for directing them to the wastewater pre-treatment stations, equipped with hydrocarbon separator and sand trap, mounted on the abutment and discharging them into the emissary, respectively the Tisa River. This drainage system consists of PVC-KG Dn 250 mm pipes with a total length of 505,20 m and the connections are PVC-KG Dn 110 mm with a length of 41.00 m.

In order to avoid problems caused by adverse winter frost, piping for directing rainwater from spouts to oil separators will be provided with modern defrost systems. This system consists of special heating cables with UV protection which will be installed on the piping rain water directing and will be controlled via thermostats with temperature and humidity sensors by the related electrical switchboards fully equipped. The system also includes elements for sealing the heads, junction doses, clamps and other items that are provided by manufacturers. The components are provided by system manufacturers.

At the base of the backfill slope have been designed concrete ditches and culverts for collection the rainwater from the connection road area. At backfill heights greater than 2.00 m have been designed verge gutters to be discharged trough chase located on the backfills. For treatment of the rainwater that washes pollutants deposited on the road platform have been designed oil separators.

Power supply:

The electricity supplier in the area where the investment objective is located will analyse and propose the technical solution for the execution of the power supply connection and the networks related to the construction and specific facilities for the control and verification of the border crossing point.

Two solutions for public lighting have been proposed:

- solution 1: lighting fixtures with LED tele-management system;
- solution 2: High pressure sodium vapour lamps.

It is proposed to mount a transformer station that will be connected to the LEA 20 kV medium voltage line by a 6 m long underground cable at the remote splitter with a recloser mounted on a pole.

It is proposed to expand the electricity network (about 200 ml) and establishement of a transformation station.

The access to the studied area is made from DN 18 on an operating route.

Adoption with the following conditions:

a. Measures for the protection of the water environmental factor

During execution of the construction works at the bridge over Tisa in Teplița area in Sighetu Marmației

- the construction works will not be achieved on the Tisa minor riverbed;

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- all the construction works in the vicinity of the water will be carried out at the shelter of piling enclosures, so that there will not be any risk of the entrance of the construction materials in the Tisa minor riverbed;
- works must be carried out outside rainy periods, when there is an increase in the water turbidity due to the carriage of sedimentary particles by storm waters;
- the site organization will be located at great distance of the Tisa riverbed, outside natural protected area;
- accidental spills of hydrocarbons, grout or other substances used for the construction works will be prevented;
- it is strictly prohibited the discharge of liquid waste (grout coming from machines washing) in the Tisa riverbed or in its vicinity;
- cleaning and repair of equipment shall be made only in approved centres, far from the Tisa riverbed and outside natural protected areas;
- it is strictly forbidden refuelling equipment in working fronts. Refuelling shall be done only within the site organization;
- hydraulic equipment that will operate in the vicinity of Tisa watercourse will use non-toxic and biodegradable hydraulic fluids;
- to prevent contamination by oil, a sand bed will be located in sensitive areas, and workers will be trained to perform decontamination. Sand will be collected in a metal container and recovered at the asphalt mixtures plant;
- because the grout is strongly alkaline and therefore very toxic to aquatic species, the contractor will ensure that all works using cement, mortar or other binding substances are poured into moulds that do not allow leakage of substances;
- concreting works will be completely isolated from the water course by using piling enclosures;
- during execution of the construction works and upon its completion, Tisa riverbed will be cleaned of any material which could hinder the normal water flow;
- during construction is prohibited the extraction of the construction materials from the Tisa riverbed;
- upon completion of the construction works, the contractor will release the site of the temporary works;
- installing oil separators to prevent water pollution with oil;
- the wastewater will be treated through wastewater treatment plant, sedimentation basin and oil separators before that will be discharged in the emissary. It is strictly forbidden discharge of wastewater before appropriate treatment;
- buildings materials in bulk will be stored in closed spaces or will be covered until they will be used in order to avoid their uptake by the wind or rains;
- waste will be collected and stored in specially designated areas within site organization and will be eliminated through an authorized company. It is strictly forbidden storage of waste in unequipped spaces, near the Tisa riverbed;
- all equipment that acts in working fronts and vans used for transport of raw materials will be periodically inspected in order to avoid leakage of oils or hydrocarbons and emissions of atmospheric pollutants;

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- the site organization will not be located near Tisa riverbed either within the natural protected areas;

During the operation period of bridge over Tisa in Tepliţa area on Sighetu Marmaţiei

- rain water that washes the road platform will cross to a sedimentation basin and oil separators before discharge in the natural emissary, that so will not exist the risk of pollution of the Tisa water or of the soils in vicinity of the road;
- the drains, ditches and culverts within the road perimeter will be verified periodically and, if applicable, will be unclogged;
- will be limited the use of anti-skid substances.

Also, will be complied the provisions of the water management permit no. 58 / 14.03.2018 issued by the National Administration Romanian Waters – ABA Someş-Tisa.

b. Measures for atmosphere protection

During execution of the construction works of the bridge over Tisa in Tepliţa are in Sighetu Marmaţiei

- the cement concrete and asphalt mixtures necessary for the achievement of the construction works will not be prepared on the plan location, but will be procured from authorized centres in order to reduce the air pollutants emissions;
- aggregates will be transported only with tight equipment in order to prevent emissions of powdery materials and using the shortest route so as to reduce exhaust gases emissions;
- aggregate deposits will be covered to prevent their spread by wind or rain;
- the equipment and vans utilized for transport of the raw materials will be revised periodically and will be utilized only if they fall in legal standards;
- the working fronts and the service roads will be sprayed periodic in order to limit the emissions of the sedimentable powders;
- the powdery materials will be stored in silos / warehouses equipped with filters and will be placed in works with specialized spread tanks;
- it is recommended the use of equipment with diesel engines because they do not generate emissions of lead and the carbon monoxide emissions are much lower than for gas engines;
- equipment refuelling shall be done only in special arranged area within the site organization, located faraway from Tisa riverbed and outside natural protected areas;
- the technological processes that produce dust (uncovering / covering, excavation / fillers) will be limited in windy periods or the working areas will be wetted stronger;
- machines will be equipped with noise absorbers, noise sensors, speakers and dampers for fans that so will be respected the legal limits for noise;
- if during construction works and noise measurements will be recorded exceeding of the maximum permitted levels of noise will be mounted noise-absorbing panels.

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During operation period of the bridge over Tisa in Teplița area on Sighetu Marmației

During operation period of the bridge over Tisa in Teplița area the main pollution source is the road traffic, represented by mobile sources of pollution and pollution level will not be significant due the traffic conditions.

During this period, it is not necessary the use of installations for collection / dispersion of emissions of air pollutants or adoption of specific measures for air quality protection.

During the operation of the bridge over Tisa in Teplița area in Sighetu Marmației the road will be well maintained in order to prevent the formation of pits which would lead to a decrease of speed and increase of air pollutant emissions and in this period will be limited the use of anti-skid substances.

Applying these mitigation measures will lead to compliance with the provisions of STAS 12574/1987 which sets the maximum allowable concentrations of certain substances in atmospheric air from the protected areas.

c. Measures for soil and subsoil protection

During construction of the bridge over Tisa

- the areas proposed in plan to be affected temporary / permanent by the construction works will be limited to the minimum, will be marked in the field and will be monitored their compliance;
- the topsoil will be stored separately from the infertile material and will be used to restore the areas temporarily affected by the construction works;
- will be used modern equipment and construction technology, that so to be limited the pollutants emissions;
- the construction equipment and the vehicles utilized for transport of the construction materials and waste will move only on the existing service roads. It is strictly forbidden their movement outside service roads and working fronts;
- the construction materials and waste will be deposited in special arranged area within the site organization. It is strictly forbidden their storage directly on ground or in the vicinity of Tisa riverbed;
- the fuels deposit within the site organization will be concreted in order to avoid leakages on soil, and equipment refuelling will be carried out only within the site organization;
- equipment refuelling will be carried out only within the site organization, on an inclined concrete platform with drainage in a steel tray or other sealed container;
- it is strictly forbidden fuel supply equipment in working fronts;
- all large tanks / tankers with integral exhaust hose and nozzle will be provided with means of protection and blocking the nozzle above the maximum fill line. In periods when they are not in use, the nozzle will be locked in place;
- in case of accidental leakage of fuels or chemical substances on the site, the construction works near the leakage will be ceased, the source will be stopped and will be utilised the service of a company specialized in pollution cleaning;

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- the construction materials and waste will be transported in vans equipped with protection means against their spread on the route, will comply with the legal provisions in force;
- inspection and repairs of the equipment will occur only in authorized centres, faraway from Tisa riverbed and outside natural protected areas;
- are strictly forbidden reparations of the equipment in working fronts, in order to avoid leakages of fuels or oils on soils;
- at points of entry / exit in construction site will be installed cleaning areas for vehicle wheels in order to reduce the amount of sediment transported and avoid damages in the areas from the vicinity of the plan location;
- will be adopted measures for loosening the compacted soil during the building works, selection of the equipment and methods for raising will be done according to the compaction degree;
- in order to prevent the risk of accidental pollution or to combat the effects of accidental pollution, the measures proposed in the accidental pollution prevention and control plan shall be respected so as to limit the affected area and to remove the pollution.

During operation period of the bridge

During operation period of the bridge over Tisa in Tepliţa area in Sighetu Marmaţiei, the impact on soil it is not significant, that so it is not necessary adoption of special mitigation measures. Despite that, will be adopted the following measures:

- the road state will be verified periodically (according to maintenance plan of the beneficiary) and in case of appearance of degradations, these will be corrected;
- prompt intervention with absorbent material in case of oil leaks on the ground and further will be used the aid of authorized company in pollution cleaning;
- will be limited the use of anti-skid substances;
- periodic inspection of the gutters, ditches and culverts and cleaning them in case of natural or artificial clogging;
- decreasing the speed limit in order to be reduced / eliminated the risk of accident occurrence;
- soil quality parameters will be monitored according to monitoring plan proposed in the environmental report.

d. *Measures to protect the fauna, flora and natural reservations:*

In order to protect the biodiversity will be complied the following measures:

- the construction works will not be carried out in Tisa minor riverbed (including shore defence);
- the flow regime and water depth of the Tisa river will be preserved throughout entire construction works period;
- the construction works in the vicinity of the watercourse will be carried out at the shelter of metallic pilling that so there is no danger of entering the construction materials in the watercourse;
- the construction works in the vicinity of the Tisa minor riverbed shall be carried out outside rainy periods so as not to accumulate the effect of increasing the

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turbidity of the water as a result of the sedimentation of sedimentary particles by the precipitation waters and the penetration of the soil from the excavations into the river bed;

- the concrete pouring works will be completely isolated from the water course by using appropriate technologies;
- the construction works will not be carried out during the reproduction period of the species identified in the plan site, i.e. they will not be carried out between March and June;
- the construction works will not be carried out during the night, because the use of the light sources would attract insects into the working fronts;
- the plan location will be verified by a biologist. If nests or specimens with reduced mobility are noticed, they will be moved to areas where no construction works will be carried out;
- the works will be carried out in stages, so that the entire surface of the site will not be affected simultaneously and the restoration period of the areas temporarily affected by the construction works of the bridge over Tisa in Tepliţa area in Sighetu Marmaţiei will be reduced;
- the site organization will be located in arable / non-productive land, outside the natural protected areas;
- the site organization will be equipped with wastewater treatment plant;
- the waste water generated within the site organization will be proper treated through the wastewater treatment plant before to be discharged in the natural emissary (Tisa river). It is strictly forbidden discharge of the wastewater before to be adequate treated;
- the concrete and asphalt mixtures necessary for the achievement of the construction works will not be prepared on the plan location, but will be brought from authorized centres in order to reduce the air pollutants emissions and the noise level;
- the areas proposed in the plan to be temporary/permanent affected by the construction works will be strictly limited in the field to prevent damage to surrounding areas and will be strictly monitored their compliance;
- it is forbidden impairment of the construction works of other surfaces to those set strict under the plan or movement of the construction equipment outside the service roads existing in the analysed area;
- avoiding damage to areas near the location of the site location in order to prevent habitat loss. At the same time this measure ensures the existence of similar spaces in the vicinity of the site where the animals can be withdrawn during the execution of the construction works;
- the working site will be fenced to limit emissions of air and noise pollutants and damage to areas in the vicinity of the site;
- the areas where the construction works will be carried out will be uncovered only before starting the construction works so as to reduce the risk of wind erosion and entrance of sedimentary powders by the wind or precipitation waters;

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- prior to the commencement of the construction works, shall be cut off furrows which shall be maintained, preserved and restored upon completion of the construction works;
- topsoil will be excavated and stored separately from the infertile soil and will be utilized for restoration of the areas temporary affected by the construction works that so will not exist the risks of occurrence of alien / invasive species;
- the use of the best construction techniques in order to reduce emissions and comply with the legal limits throughout the execution of the works;
- use of silent vehicles and means of transport to reduce noise due to construction activity that chase away the animal species (including birds), as well as the provision of performant systems to minimize and retain the atmospheric pollutants and to reduce the noise level;
- vans that transport construction materials and construction equipment will move only on the existing service roads in order to prevent soil compaction and habitat damage in the vicinity of the site;
- the installation of excavating machines and the execution of the activities that generate vibrations shall be carried out in the minimum possible time and with the use of a minimum number of personnel;
- hydraulic equipment that will operate in the site location will use non-toxic and biodegradable hydraulic fluids;
- used equipment and vans will be verified daily. It is strictly forbidden entry of machinery that is not watertight and loses oil;
- washing machines at the exit from the site, in specially designed spaces, far away from the Tisa riverbed;
- inspection and repairs of the machinery will be carried out only in specialized centres, at far distance of Tisa riverbed and outside natural protected areas;
- it is strictly forbidden that the machinery and vans to be repaired within the working fronts, in order to avoid leakages of fuels and lubricants on soil;
- the transport of the powdery materials at the working points shall be carried out only in wet condition or covered in order to avoid particle loss during transport;
- the construction materials and waste will be stored in special arranged areas within the site organization;
- it is strictly forbidden the storage of the waste and the construction material direct on soil or in vicinity of Tisa riverbed;
- the construction materials (especially those in bulk) will be stored in compartmented and covered deposits in order to avoid their uptake by the wind or rains;
- waste will be stored selectively and will be removed periodically from the working fronts through a specialized firm in order not to affect the quality of the fertile soil and not to attract specimens of fauna;
- it is forbidden the waste storage in the site location or in its vicinity;
- staging of dust-generating operations and wetting of exposed surfaces from the working front during dry periods so that the level of powdery substances in the atmosphere will be below the limit value for the protection of ecosystems;

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- the ground roads in the plan location will be periodically sprinkled to reduce dust emissions;
- the fuelling of the technological equipment will be made at the power points within the site organization or in the specialized units;
- accidental leakage of hydrocarbons, cement paste or other substances used to carry out the construction works will be prevented;
- hydrocarbon separators will be installed to prevent water pollution with hydrocarbons;
- it is strictly forbidden taking over the necessary construction materials for the execution of the construction works from Tisa riverbed;
- prevent the formation of pits in the Tisa riverbed and within the working fronts so that there will not be any danger of catching the amphibian and reptile species;
- the holes resulting from boreholes or machinery storage will be covered to avoid the emergence of false reproductive habitats for amphibians in the spring;
- complying with the accidental pollution prevention plan and designation of a person responsible for the protection of environmental factors;
- temporary affected areas by the construction works will be restored with the initial excavated soil in the shortest time after completion of the construction works;
- it is forbidden to use soil from other areas to avoid the introduction of invasive species and to modify the specific composition of biocenosis;
- it is strictly forbidden to chase or capture the fauna species identified in the site of the plan by the employees of the builder;
- have been provided alignment of shrub and / or tree from the regional flora (*Salix* sp, *Populus* sp), possibly with boxes for birds, especially for Passeriformes in support of these species.

During the operation period of the bridge over Tisa in Tepliţa area in Sighetu Marmaţiei, for biodiversity protection will be adopted the following measures:

- inspection of the restoration degree of the areas temporary affected by the construction works;
- periodic inspection and maintenance of the bridge state;
- periodic inspection of culverts and hydrocarbon separators and their unclogging if will be necessary;
- limiting the use of anti-skid substances;
- collecting the rainwater and passing through decanters and oil separators.
- periodic monitoring of the plan site according to the monitoring plan proposed in the environmental report;

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e. **Other conditions:**

Monitoring plan of the location of the bridge over Tisa

Plan location monitoring before commencement of the construction works			
Environmental factor monitored	**Monitored parameters**	**Monitoring frequency**	**Monitoring location**
Water	- Tisa river turbidity; - hydrocarbons concentrations;	Once, before commencement of the construction works	- Tisa minor riverbed, in the location of the future bridge
Air	- SO_x, NO_x, NH_3 concentrations; - total particulate matter and sediment particles concentrations; - noise level;	Once, before commencement of the construction works	- future bridge location; - site organization location; - km 0+200 and 0+600 on the route of the future connection road; - near residential areas in the vicinity of the plan location;
Soil	- heavy metals concentration; - hydrocarbons concentrations;	Once, before commencement of the construction works	- future bridge location; - site organization location; - km 0+200 and 0+600 on the route of the future connection road;
Biodiversity	- flora and fauna species	Monthly during a year before commencement of the construction works	- entire plan location
Plan location monitoring during execution of the construction works			
Environmental factor monitored	**Monitored parameters**	**Monitoring frequency**	**Monitoring location**
Water	- Tisa river turbidity; - hydrocarbons concentrations;	- monthly	- Tisa minor riverbed, in the location of the future bridge
Air	- SO_x, NO_x, NH_3 concentrations;	- monthly	- site organization location;

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	- total particulate matter and sediment particles concentrations; - noise and vibrations level;		- each working front; - near residential areas in the vicinity of the plan location;
Soil	- heavy metals concentration; - hydrocarbons concentrations;	- monthly	- site organization location; - each working front;
Biodiversity	- flora and fauna species	- bi-monthly	- entire plan location
Waste	- amount and type of waste produced;	- constant	- site organization location; - each working front;
Plan location monitoring during operation period			
Environmental factor monitored	**Monitored parameters**	**Monitoring frequency**	**Monitoring location**
Water	- oil separators efficiency; - hydrocarbons concentrations;	- half – year	- oil separators location
Air	- SO_x, NO_x, NH_3 concentrations; - total particulate matter and sediment particles concentrations; - noise and vibrations level;	- half – year	- bridge over Tisa location; - km 0+200 and 0+600 of the connection road; - near residential areas in the vicinity of the plan location;
Soil	- heavy metals concentration; - hydrocarbons concentrations;	- half – year	- the location where has been the site organization; - bridge over Tisa location; - km 0+200 and 0+600 of the connection road;
Biodiversity	- flora and fauna species; - species abundance; - species mortality	- monthly	- entire plan location

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	(number of individuals); - restoration degree of the areas temporary affected by the construction works;		

Biodiversity monitoring involves the identification of all flora and fauna species present in the plan location and in its vicinity, but especially will be monitored the presence of species identified during the period of achievement of the appropriate assessment study and the environmental report and the species listed in the standard forms of the two natural protected areas.

If a period of time has elapsed between the period of obtaining the environmental permit and the environmental agreement and the commencement of the construction work, it will be necessary to identify the flora and fauna species present at the site of the plan prior to the commencement of the construction works and to use these determinations as witness samples during the construction and operation period of the bridge over Tisa.

Will be made an inventory of the species, their abundance, mortality (number of individuals) will be determined.

The monitoring results will be reported annually to the Maramureș Environmental Protection Agency and to the other competent authorities.

The Beneficiary will follow all proposed measures to reduce the potential impact that can be identified as a result of monitoring activities.

The environment monitoring on the site of the bridge over Tisa in Tepliţa area in Sighetu Marmaţiei will take place in the first two years after its commissioning (operation period). If there are no exceedances of the maximum permissible values under the current legislation, no further monitoring is required.

If the maximum permissible values are exceeded, the monitoring will continue and the necessary measures to reduce the impact (installation of hydrocarbon separators, filters / sound absorbing panels, etc.) will be taken.

The environmental permit was issued taking into account:

- GD no. 1076/2004 establishing the procedure for carrying out environmental assessments for plans and programs;
- Order no. 117 / 2006 approving the Manual on the implementation of the procedure for carrying out the environmental assessment for plans and programs;
- Government Emergency Ordinance no. 57/2007 on the regime of natural protected areas, conservation of natural habitats, wild flora and fauna, with subsequent amendments and completions;
- Order no.19 / 2010 approving the Methodological Guide on the appropriate assessment of the potential effects of plans or projects on protected natural areas of community interest;

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- Conclusions of the consultations in the meetings of the Special Established Committee.

The decision was made following the consultations of the Special Established Committee on 16.10.2018 at the Maramureş Environmental Protection Agency.
The decision to issue the environmental permit was taken as a result of the analysis of the submitted documents, carrying out the procedural steps provided by GD no. 1076/2004, of information and consultation of the public, of examination of the points of view sent by the authorities of the Special Established Committee for the plan at the level of Maramureş County.
The decision to issue an environmental permit is based on compliance with the legal requirements for integrating environmental considerations into the plan, identifying the environmental problems resulting from the implementation of the plan, consulting the authorities and interested public likely to be affected by its implementation.

Considerations fundamenting the decision to issue the environmental permit

The points of view submitted by the representatives of the Special Established Committee and of the Working Group as follows:
Public health specialized assistance issued by the Public Health Directorate, Maramureş County, no. 1033 / 15.01.2018;
Water management permit no. 58 of 14.03.2018 issued by the National Administration of Romanian Waters - ABA Someş - Tisa;
Permit no. AH002 of 26.03.2018 issued by the HEIDENROSLEIN Association (custodian of NATURA 2000 site Tisa Superioară).

The analysis of the environmental report considered the following elements:

- compliance with the framework content set out in Annex no. 2 and GD no. 1076 / 2004;
- the presentation of the alternatives studied, the reasons for choosing one of them, the manner in which the environmental considerations have been integrated into the draft plan, as well as the process of finalizing the project as a result of the information obtained during the environmental assessment;
- taking into account the issues raised during the consultation process with other authorities;
- presentation of graphic information - maps, schemes, sketches;
- the existence of an appropriate monitoring program of the effects on the environment.

Surface water quality

The water supply networks in the perimeter of the platform of the border crossing point shall be executed with a PIED (PN6) pipe, buried below the freezing depth, at -1,25 m from the final road surface and at 0,50 m distance from the rib, towards the outside of the pavement. The networks will be equipped with connections to sanitary consumers (customs office, administrative buildings, toilets located in control areas, etc.). Individual water consumption will be counted for each consumer individually.

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The water supply line of the state border crossing area will be made from the city and will be made of PIED pipe (PN6) mounted buried below freezing depth.

The water supply networks will be equipped with shafts with slicing and drainage valves (CV, placed from place to place at a distance of approximately 300 m) and a fire pit with a general water meter (CA) at the entrance to the perimeter of the area. The water supply network of the state border crossing point will be carried out under another project.

Water quality will be monitored both during the execution of the works and in the operation phase of the investment, in order to ensure the maintenance in the quality class.

Proposed measures:

- the measures proposed in the chapter Adoption under the following conditions, point a. Measures for the protection of the water environmental factor shall be complied;

Flora, fauna and natural reservations state

The area affected by the project and its associated structures will be approximately 82,228.62 sq., which represents only a small percentage of 0.2664% of the ROSPA0143 Tisa Superioară surface and 0.1214% of the ROSCI0251 Tisa Superioară surface.

The potential impact of the investment on the biodiversity of the area is low, and it is manifested locally over a short period (during the execution period).

The conditions imposed by the custodian's permit will be complied.

Population health status

The following measures will be taken to protect the health of the population:

- the site organization will be located outside the residential areas;
- the asphalt and concrete cement will not be prepared in the plan location, but will be brought already made in order to reduce the emissions of air pollutants and noise level;
- will be utilized modern equipment that generate a noise level as low as possible;
- will be complied the legal hours and days of rest and will not work at night;
- the site will be signalled by warning signs and will be fenced to limit emissions of air pollutants and noise;
- the access roads will be permanent maintained clean and will be provided the access of intervention teams;
- the working fronts will be equipped with firefighting equipment necessary for interventions in the event of fire;
- the route of vehicles transporting construction materials will be chosen that so to not affect the local population, as possible out of residential areas;
- the speed of the vehicles that transport construction materials will not be greater than 40 km/h within towns;
- deposits of bulk construction materials will be fenced or covered in order to limit the up taking of the particles by the precipitations or by the wind;
- the construction equipment will be periodic inspected and repaired in order to limit the emissions of noise and pollutants;

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- level of noise within the site organization and at the limits of residential areas will be periodically inspected;
- lighting the construction works will be carried out in order to not affect the inhabitants of the analysed area;
- although in the bridge location have not been detected the presence of archaeological site, if during construction work will be discovered such vestiges, the works will be suspended and will be complied with legal provisions.

During operation period of the bridge over Tisa in Tepliţa area in Sighetu Marmaţiei will be improved the traffic conditions, that so it is not necessary adoption of the special measures to reduce the impact on socio-economic environment and local population.

The choice of the optimal alternative took into account the following:

Have been analysed the zero alternative and several options for plan achievement:

- rehabilitation of the existing bridge or construction of a new bridge;
- location alternatives for the bridge and the connection road;
- technological alternatives for construction of the bridge and the connection road.

The zero alternative (not implementing the plan)

In the studied area, the transport infrastructure is underdeveloped and poorly maintained, limiting traffic speeds and increasing travel times, that so it can ensure the accessibility and connectivity to international standards, leading to an isolating effect.

The technical conditions and the capacity available for custom clearance are inadequate to handle the traffic volume. Queues and waiting periods are significant for tourism development in the plan area, as well as cooperation between its inhabitants.

Since the existing bridge has a wood structure, it cannot handle heavy traffic, **that so the zero alternative (not implementing the plan) cannot be adopted. Achievement of the bridge over Tisa in Tepliţa area in Sighetu Marmaţiei is strictly necessary to ensure the traffic safety and fluency.**

A. Bridge works

A1. Rehabilitation of the existing bridge over Tisa or construction of a new bridge

Due the fact that the existing bridge has a wood structure, cannot ensure the heavy traffic. That so, in order to ensure the traffic, it is necessary construction of a new bridge.

A2. Location alternative

Have been studied several location alternatives for the bridge over Tisa:

A2.1. emplacement of the new bridge in administrative territory of Sighetu Marmatiei Municipality, in Tepliţa area;

A2.2. emplacement of the new bridge in administrative territory of the Sighetu Marmaţiei Municipality, downstream of the alternative A 2.1.

The bridge location alternatives have been analysed with the alternatives for the connection road.

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A3. Technical alternative

For crossing the Tisa River have been proposed several technical solutions, based on the solution designed in the feasibility study prepared in 2009 by SC AEDILIS PLAN SRL. The technical solutions proposed are described below:

- **technical solution 1: parallel bridges with mixed deck steel – concrete, continuous beam with variable height (a bridge in each direction of movement)**

The proposed **static scheme** for art work will be continuous beam with three spans of 70 m + 100 m + 70 m and a total length of 261.20 m.

The infrastructure of the bridge will consist of two abutments and two piers. Reinforced concrete piers will have lamellar elevations with hydrodynamics forms upstream and downstream. Abutments will have the elevations made from walls of reinforced concrete.

Bearings used will be of modern type with seismic isolators.

The superstructure of each bridge will be made from metallic box with variable height, provided on top with prestressed reinforced concrete flooring.

The path of each bridge ensure a carriageway of 8.00 m and 2.50 m pavement width including pedestrian guardrail beam and space for mounting the safety parapet.

Equipment: The bridge will be equipped with system for collection and discharge of rainwater provided with heaters cables, lighting on the bridge and the box, warning and information systems for road users and modern systems for monitoring the behaviour in time of the structure.

- **Technical Solution 2: parallel reinforced concrete bridges - continuous beam with variable height** (a bridge in each direction of movement)

The proposed **static scheme** for art work will be continuous beam with three spans of 70 m + 100 m + 70 m and a total length of 261.20 m.

The infrastructure of the bridge will consist of two abutments and two piers. Reinforced concrete piers will have lamellar elevations with hydrodynamics forms upstream and downstream. Abutments will have the elevations made from walls of reinforced concrete.

Bearings used will be of modern type with seismic isolators.

The superstructure of each bridge will be made from prestressed concrete box with variable height.

The path of each bridge will have the same characteristics like the alternative 1.

Equipment: The bridge will be equipped with the same equipment as the alternative 1.

The both proposed technic solutions have the same impact on the environment, that so have been selected the most feasible alternative from technical-economic point of view.

The advantages presented by technical solution 1 (parallel bridges with mixed steel – concrete deck) compared with technical solution 2 (concrete deck executed in console) are:

- **In terms of execution technology and of the design process:**
  - the metal deck is a more delicate structure in terms of the design process, but the execution requires a technology easier than in case of concrete deck

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executed in the console;

- **In terms of structure applicability depending on the openings and the possibility of increasing the load of bearing capacity:**
  - in the selected structure, load capacity increase for eventual development of loading in time can be achieved more easily and with lower costs in case of mixed concrete steel deck;
- **In terms of the material use:**
  - mixed concrete steel deck is a modern structure with more judicious distribution of the used material and net weight lower than the reinforced and / or prestressed superstructures;
  - infrastructures dimensions are smaller (width, thickness) than in case of concrete superstructure;
  - lower bearings block corresponding to lower reagents of the mixed deck in comparison with concrete superstructure;
- **In terms of maintenance costs:**
  - maintenance costs are relatively close for both superstructure type;
  - replacement of damaged items in case of events (earthquakes, accidents) can be achieved more easily and quickly if it is used the mixed concrete steel deck towards in case of concrete superstructure;
- **In terms of comfort in traffic:**
  - elimination of expansion joints on each opening in case of continuous beam presents a clear advantage for the traffic amenity and in order to avoid leakage from joints that can lead to degradation in the concrete slabs or infrastructure benches;
- **In terms of aesthetics and of framing in the ambient environment created by the bridge existence in the site:**
  - the mixed concrete steel deck is a flexible structure than concrete superstructure executed in the console, with a high architectural value.

In base on these advantages and disadvantages has been selected solution 1: **twin bridges with mixed steel – concrete deck, continuous beam with variable height**

B. Road works

The plan aims to achieve a road connection between Maramureș County and Ukraine, near the most important locality from north of the county – Sighetu Marmaţiei.

For the achievement of this objective have been studied two route alternatives, according to below figure.

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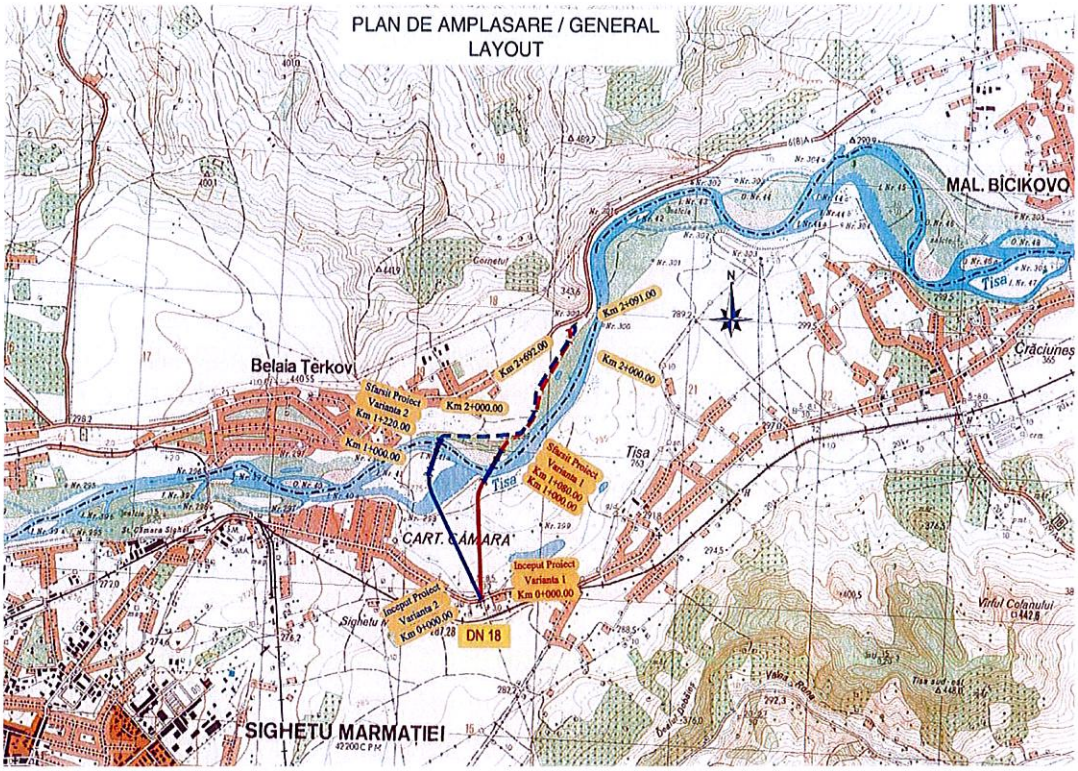

Studied route alternatives

The studied alternatives have the following characteristics:

- Alternative 1 (red) has a length of 1.200 ml and is located upstream of alternative 2.
- Alternative 2 (blue) has a length of 1.340 ml and have been proposed in the feasibility study prepared in 2009 by S.C. AEDILIS PROIECT SRL, beneficiary Maramureş County Council.

Impact assessment

In order to select the route alternative have been used the multi-criteria analysis, applying the criteria from the below table.

Criteria used for multi-criteria analysis application

Objectives	Criteria
1. Technical	Relief conditions, problems of employment and nature of the terrain, with sub-criteria: topographical, geological, geotechnical, hydrologic / hydraulic, seismic, land occupation problems, archaeological sites, difficulties in obtaining permits / authorization, utility relocation difficulties
	Security / Traffic Safety
	The design speed
	Geometrical elements
	Occupied area
	Traffic value
	Total length
	Execution time

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	Level of special technological complexity
	Other transport modes accessibility
	Intersections (CF, DN, DJ etc.) with and without attracting traffic
	Availability / proximity of material resources
	Availability / proximity human resources
2. Financial	The cost of obtaining and arrangement the land
	The cost of construction (C + M)
	Other major costs according to general budget (design, insurance, etc.)
	Total costs of operation, maintenance and repair on the lifecycle
3. Socio economical -	Served population
	Benefits to users, sub-criteria: time savings, vehicle operating a accident savings
	Positive impact on the zonal development (agricultural, industrial, urba tourist, commercial, etc.)
	Negative impact on the construction areas, military areas, industri areas, residential areas, quarries, landfills etc.
	Negative impact of relocation or separation of human communities
	Employment opportunities in the area
	The acceptability by the public / civil society / diverse groups
	ACB financial indicators: VANF, RIRF
	ACB economic indicators: RIRE, B/C-E
4. Environment	Environmental impact during construction (air pollution, climate, so water, noise)
	Environmental impact during operation (air pollution, climate, so water, noise)
	Impact on wildlife and flora during construction and operation
	Impact on the landscape
	Negative impact on natural protected areas, Natura 2000 and oth sensitive environmental areas (wetlands, forests, etc.)

According to multi-criteria analysis, **the most feasible option in terms of technical and economical and with lowest environmental impact is alternative 1.**

The competent authority for environment protection has ensured and guaranteed free access to information of the public and its participation in decision-making at the stage of completion and endorsement of the plan in terms of environmental protection. Thus, have been published in the local press announcements regarding the plan elaboration, its framing in the category of those requiring the environmental assessment, the finalization of the environmental report and the organization of the public debate.

The documentation was accessible to the public throughout the procedure at the Maramureș Environmental Protection Agency and at the headquarters of the project owner. The public did not comment on the entire environmental impact assessment procedure.

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Media coverage was done by:
Repeated announcements regarding the start of the classification stage in the Graiul Maramureşului journal from 28.08.2017 and 31.08.2017 respectively.
Announcement regarding the availability of the plan draft and of the environmental report published in the "Graiul Maramureşului" journal on 04.07.2018, respectively on 07.07.2018.
Announcement regarding the public debate of the plan draft and of the environmental report published in the "Graiul Maramureşului" journal on 01.09.2018.
Announcement regarding decision of issuing the Environmental permit published in the "Graiul Maramureşului" journal on 19.10.2018, respectively on 22.10.2018.

This environmental permit is an administrative act and may be subject to a legal action under Law no. 554/2004 of the administrative litigation with subsequent amendments and completions.
This opinion may be used only for the adoption of the plan by the competent public administration authority.

This permit is valid throughout entire validity period of the plan.

Failure to comply with the terms of this notice constitutes a contravention and is punishable under applicable law.

In order to obtain the building permit, the regulatory procedure according to GD no. 445/2009 on the assessment of the impact of certain public and private projects on the environment and according to the Joint Order MMP no. 135/2010, MAI no. 76/2010, MADR no. 84/2010, MDRT no. 1284/2010 approving the Methodology for the implementation of the environmental impact assessment for public and private projects will be followed.
The responsibility for the correctness of the information provided to the competent authorities for the environment protection and the public belongs to the plan owner, and the responsibility for the correctness of the studies and environmental assessments returns to their author, according to art. 21 paragraph 4 of GEO no. 195 / 2005 on environmental protection, with subsequent amendments.

Executive Director,
Gabriel TĂMÂIAN

Service Head
Permits, Agreements, Authorizations
Eva BOLDAN

Drafted,
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