8. PROPOSED MEASURES TO PREVENT, REDUCE AND COMPENSATE ANY EFFECTS ON THE ENVIRONMENT OF THE PLAN OR PROGRAM

8.1 Proposed measures to prevent, reduce and compensate for adverse effects on water

The following measures will be implemented to protect water quality:

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

- > the construction works will not be achieved on the Tisa 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:
- 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 centers, 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 will be completely isolated from the water course by using piling enclosures;
- during construction and upon its completion, Tisa riverbed will be cleaned of any material which could hinder the normal water flow;
- during construction is prohibited extraction of sand and gravel from the Tisa riverbed;
- upon completion of construction works, the contractor will release the site of the temporary works;
- installing oil separators to prevent water pollution with oil:
- wastewater will be treated by wastewater treatment plant, sedimentation basin and oil separators before that will be discharged in 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 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 equipments 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;
- > the site organization will be located faraway from Tisa riverbed (at about 1000 m), that so will be reduced the risk of water pollution.

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 natural emissary, that so will not exist the risk of pollution of the Tisa water or of the soils in vicinity of road;
- drains, ditches and culverts within the road perimeter will be checked periodically;
- > will be limited the use of anti-skid substances;

Also, will be complied the provisions of the water management permit no. 55 / 04.07.2017 issued by the National Administration of Romanian Waters.

8.2 Proposed measures to prevent, reduce and compensate for adverse effects on air

The following measures will be implemented to reduce the impact on air:

During construction of the bridge over Tisa in Tepliţa area on 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 centers in order to reduce the air emissions pollutants;
- use of tight equipment for transport of aggregates to prevent emission of powdery materials and using the shortest route in order to reduce emissions of exhaust gases;
- > aggregate deposits will be covered to prevent their spread by wind or rain;
- the equipment and vans utilized for transport the raw materials will be revised periodically and will be utilized only if they falls 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 with filters and will be placed in works with specialized spread tanks;
- > 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 protected areas;
- 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;
- ➤ If during construction works and noise measurements will be recorded exceeding of the maximum permitted levels of noise will be mounted noise- absorbing panels.

During operation period of the bridge over Tisa in Teplita area on Sighetu Marmatiei

During operation period of the bridge over Tisa in Teplita 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 Teplita area in Sighetu Marmatiei 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 maximum allowable concentrations of certain substances in atmospheric air in protected areas.

Table 19. Maximum admissible concentrations of	f certain substances in air in p	protected areas
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Pollutant	en in a particular de la faction de la facti	MAC provided in	STAS 12574-87	
	Short-term average		Long-term average	
	30 minutes (mg/m³)	daily (mg/m ³)	monthly (mg/m ³)	annual (mg/m³)
TSP	0,5	0,15	-	75
Cd	n 3 	0,00002	-	-
Cr ⁶⁺	3 -	0,0015	-	- Marie
Pb	-	0,0007	-	-
Benzen	1,5	0,8	-	_
CO	6	2,0	-	-
As	- I - -	0,003	-	-
NO ₂	0,3	0,1	-	-
SO ₂	0,75	0,25	H	-

Also, the provisions of Law 104/2011 on ambient air quality and of the Order 462/1993 on the approval of technical conditions for atmospheric protection and methodological norms for the determination of atmospheric pollutant emissions from stationary sources will be respected.

The air impact generated by the execution of the analyzed plan it is temporary and reversible and occurs only at the plan site and up to 100 m from its limit without affecting the air quality in residential areas or the site of community importance ROSCI0251 Tisa Superioară.

In order to eliminate the risk of occupational illnesses, will be respected the limits on admissible concentrations of toxic substances and dusts in the atmosphere of the working areas stipulated in the "General Labor Protection Norms" elaborated by the National Institute of Research and Development for Labor Protection and the Institute of Hygiene and Public Health.

The admissible concentrations (mean and peak) are the maximum admissible concentrations in the working fronts area. These are shown in Table 20.

Beneficiary: National Company for Road Infrastructure Administration

Author: S.C. Expert Proiect 2002 S.R.L.

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Table 20. Maximum permissible concentrations of toxic substances in the working areas atmosphere

Name of the substance	Indicative	Maximum allowable concentration (mg/m³)	
	officers of the second	Average	Peak
Acetaldehyde		90	180
Ammonia	A An Effective	15	30
Benzene	CP	15	30
Sulphur dioxide (sulphur dioxide)		5	10
Hexavalent chromium	С	0.05	
Chrome nvalent		0.5	La ulu
Cadmium	pC	0.05	-
Copper (dusts)		0.5	1.5
Ethyl benzene	the Property of the Property o	200	300
Ethyl toluene		300	400
Formaldehyde	pC	1.2	3
Heptane (n)		1500	3000
Aliphatic hydrocarbons		700	1000
Polycyclic Aromatic Hydrocarbons	С	0.2	
Methane		1200	1500
Nickel (soluble compounds)	С	0.1	0.5
Octane		1500	2000
Ozone		0.1	0.2
Nitrogen oxides (expressed as NO ₂₎		5	8
Pentane		1800	2400
Lead and Lead compounds (except PbS)		0.05	0.1
Propane		1400	1800
Selenium		0.1	0.2
Toluene		100	200
Xylene	р	200	300

Legend

peak permissible concentration = concentration of pollutants in the work areas that should not be exceeded at any time during the working day;

average permissible concentration: results of a representative number of determinations for each work area in different technological stages and should not be exceeded during a work shift;

pC = potentially carcinogenic substances;

C = substances with carcinogenic action; require special measures of protection;

FD = very dangerous substances. Exposure to these substances is not allowed;

p = these substances penetrate the skin into the body, requiring special measures for protection of the skin and mucous membranes.

Table 21. Maximum permissible concentrations of dust in the working area atmosphere

No.	Name of powders	Maximum allowable concentration MAC
1	Dust containing free crystalline SiO2, between 1 and 5%	8 mg/m ³
2	Dust containing amorphous SiO ₂ (natural diatomaceous soil - necalcitated)	8 mg/m ³
3	Other types of dust	15 mg/m ³

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Comparing the data related to emissions in working fronts are under the limits imposed by the general rules for Labour Protection, that so the emissions in the plan area will fall below the maximum allowable limit. Because these concentrations are under the maximum allowable limits and the exposure period it is limited, these emissions will have no significant impact on the workers performing the construction of the new bridge over Tisa in Tepliţa area in Sighetu Marmaţiei.

8.3 Proposed measures to prevent, reduce and compensate the adverse effects on the soil

The following measures will be implemented in order to protect the soil quality:

During construction of the objective

- 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 construction works;
- > will be used modern equipments and construction technology, that so to be limited the pollutants emissions;
- the construction equipments and the vehicles utilized for transport the construction materials and waste will move only in existing service roads. It is strictly forbidden their movement outside service roads and working fronts;
- 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 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 in site organization location;
- 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 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;
- 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 centers, 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 case of occurrence of accidental pollution will use the services of a firm specialized in pollution cleaning, so as to limit the area affected and to remedy pollution.

During operation 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. Will be adopted the following measures:

- the road state will be verified periodically (according to maintenance plan of beneficiary of the bridge) 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;
- regular 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 appearance;
- > soil quality parameters will be monitored according to monitoring plan proposed in the present environmental impact assessment report.

8.4 Proposed measures to prevent, reduce and compensate the adverse effects on the subsoil

For the protection of the subsoil, the measures imposed by the geotechnical study will be respected. In addition to the measures proposed in the geotechnical study will be accomplished the following measures:

- > ensuring road platform geometric elements;
- road platform support;
- reparation of construction equipment and vehicles utilized for transport of construction materials will be conducted only in authorized centers, outside of the plan location. It is strictly forbidden achievement of these operation in the plan location;
- wastewater generated in the site organization will be collected and treated appropriate;
- > waste will be collected in the special arranged areas within in the site organization and will be eliminated trough specialized company.

These works will considerably decrease the potential impact on the subsoil.

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

Normal operation of the bridge over Tisa in Tepliţa area on Sighetu Marmaţiei will not lead to impairment of geological environment. Despite these, during operation period will comply with the following measures:

- rainwater that washing the road platform will be collected and pre-treated in oil separators;
- > in situation in which will occur oil leak on the ground will act urgently with absorbent material and if the pollution is significant, will be used the services of a firm specialized in pollution cleaning.

8.5 Proposed measures to prevent, reduce and compensate the adverse effects on biodiversity

The following measures will be taken to protect the biodiversity:

- > the construction works will not be carried out in Tisa minor riverbed (including shore defense);
- > 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 building 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 turbidity of the water as a result of the sedimentation of sedimentary particles by the precipitation waters and the penetration of the earth from the excavations into the river bed;
- the construction works will not be carried out during the reproduction period of the species identified in the plan site, ie 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 light sources would attract insects in 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 site organization will be located outside the natural protected areas (about 174 m), in arable / non-productive land, at a distance from the Tisa riverbed (about 1,000 m);
- the site organization will be equipped with wastewater treatment plant;
- the waste water generated within the site organization will be proper treated before to be discharged in the natural emissary (Tisa river). It is strictly forbidden discharge of the wastewater before to be adequate treated;
- 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;
- 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 authorised centers;
- 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;
- will be utilised modern equipments and construction technologies, that so to be limited the pollutant emissions;
- > vans that transport construction materials and construction equipments will move only on the existing service roads. It is strictly prohibited to park or use areas with spontaneous vegetation from the plan site;
- the construction materials and waste will be stored in special arranged areas within the site organization. It is strictly forbidden their storage direct on soil or in vicinity of Tisa riverbed;

- > the fuels storage within the site organization will be concreted in order to avoid the loose on soil, and machinery refuelling will be carried out only within the site organization;
- > it is strictly forbidden machinery refuelling within the working fronts;
- the construction materials and waste will be transported only in vans equipped with protection means against their spread on the route, with compliance on the legal norms in force;
- inspection and repairs of the machinery will be carried out only in specialized centers, 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 the fuels and lubricants on soil;
- > at the exit of the site will be arranged spaces for cleaning machinery and commercial vehicle tires, so as not to be driven on public roads sediments or other materials from the working fronts;
- will be adopted measures for loosening the soils compacted during execution of the construction works, selection of the equipments and methods for loosening will be carried out depending on the compaction degree;
- if will occur accidental pollution, will act with absorbent material in shorter time in order to limit the area affected and to be remediated the pollution. If will be the case, will be utilised the services of a company specialised in pollution cleaning. Also, will comply with the measures proposed in the accidental pollution prevention and remediation plan;
- works will be carried out in stages, that so will not be affected simultaneously the entire area of the plan and to be reduced the restoration period of the areas temporary affected by the construction period of the bridge over Tisa in Teplita area on Sighetu Marmaţiei;
- areas in which will be carried out the works will be scrapped just before of commencement of the construction works, that so to be reduced the risk of wind erosion and up taken of sedimentable powders by the wind or water precipitation;
- > earth roads from the plan location will be sprayed periodically in order to decrease the dust emissions;
- > will be prevented the accidental spills of hydrocarbons, grout or other substances used for the works;
- > 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 on the authorised asphalt mixtures plant;
- machinery will be equipped with noise reduction devices, to match the maximum permissible noise level for that category of equipment;
- the road state will be verified periodical (according to the beneficiary maintenance plan), and if will appear degradation, these will be repaired;
- ➤ in case of accidental spills of hydrocarbons on soil will act in shorter time with absorbent material, after which will be utilised the services of a company specialised in pollution cleaning. Also, will comply with the measures proposed in the accidental pollution prevention and remediation plan;
- limiting the use of anti-skid substances;
- > regularly inspection of the culverts, ditches and gutters and will be cleaned / unclogged if necessary;

- the moving speed will be limited that so to be reduced / eliminated the risk of accidents occurrence;
- will be monitored the restoration degree of the areas temporary affected by the construction works;
- periodic monitoring of the soil parameters according to the monitoring plan proposed in this environmental impact assessment report;

8.6 Proposed measures to prevent, reduce and offset the adverse effects on the landscape, cultural, architectural and archaeological heritage and material values

The measures proposed for the other environmental factors will be respected. No additional measures are required.

8.7 Proposed measures to prevent, reduce and compensate for adverse effects on the population health

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

- 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;
- > will be utilized modern equipements 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 signaled by warning signs and will be fenced to limit emissions of air pollutants and noise;
- the access roads will be permanent kept clean and will be provided the access of intervention teams;
- > the working fronts will be equipped with fire fighting 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 in order to limit the uptaking of the particles by the precipitations or wind;
- the construction equipements will be periodic inspected and repaired in order to limit the emissions of noise and pollutants;
- 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 analyzed area;
- although in the bridge location have not been detected the presence of archaeological site, if during construction work will be discovered such vestiges, 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.

9. MODES FOR SELECTING THE CHOOSEN ALTERNATIVE, THE IMPACT ASSESSMENT METHOD, DIFFICULTIES IN THE PROCESSING OF THE REQUIRED INFORMATION

9.1. Alternative analyze

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

- 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, so 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 Teplita 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.

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 variant 1.

Equipments: The bridge will be equipped with the same equipment as in variant 1.

The both proposed technic solutions have the same impact on the environment, that so have been selected the most feasible alternative from tehnico-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 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 cost are relatively close for both superstructure type;
- > replacement of damaged items in case of events (earthquakes, accidents) can be achieved more easily and guickly 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 shoulder:
- 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 Maramures County and Ukraine, near the most important locality from north of the county – Sighetu Marmaţiei.

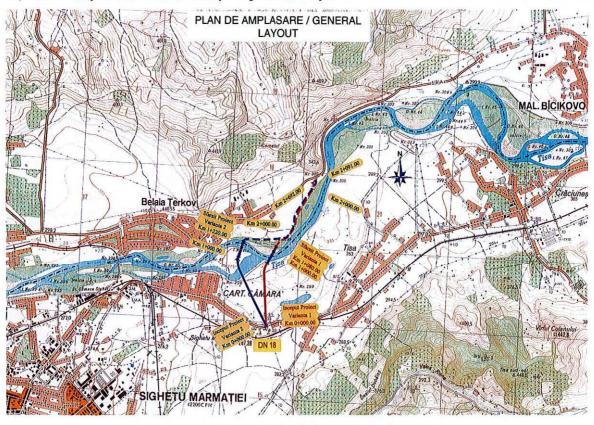


Figure 55. Studied route alternatives

For the achievement of this objective have been studied two route alternatives. These are presented in figure 55 and are the followings:

- Alternative 1 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.

9.2. Impact assessment

In order to select the route alternative have been used the multi-criteria analysis, applying the criteria from table 22.

Table 22. Criteria used for multi-criteria analysis application

Objectives	Criteria	
1. Technical	Relief conditions, problems of employment and nature of the terrain, with sub-crite	
	topographical, geological, geotechnical, hydrologic / hydraulic, seismic, land occupation probler	
	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	
	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	
	The cost of obtaining and arrangement the land	
2. Financial	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	
	Served population	
	Benefits to users, sub-criteria: time savings, vehicle operating and accident savings	
	Positive impact on the zonal development (agricultural, industrial, urban, tourist, commercial, et	
3. Socio	Negative impact on the construction areas, military areas, industrial areas, residential are quarries, landfills etc.	
economical -	Negative impact of relocation or separation of human communities	
o o o o o o o o o o o o o o o o o o o	Employment opportunities in the area	
	The acceptability by the public / civil society / diverse groups	
	ACB financial indicators: VANF, RIRF	
	ACB economical indicators: RIRE, B/C-E	
4. Environment	Environmental impact during construction (air pollution, climate, soil, water, noise)	
z omnone	Environmental impact during operation (air pollution, climate, soil, water, noise)	
	Impact on wildlife and flora during construction and operation	

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Impact on the landscape
Negative impact on natural protected areas, Natura 2000 and other sensitive environmental are
(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 potential impact of construction of the bridge over Tisa and the connection road is presented in chapters 3 and 6. Below are presented the differences between the two analyzed route alternatives.

C1. Environmental impact during construction (air pollution, climate, soil, human settlements, noise)

Air pollution

To the air pollution can contribute: activities conducted in the site organization (storage and handling of building materials, refuelling machinery), activities in the working fronts (scraping / covering areas, excavation / filling, achievement of embankments, placement of concrete / asphalt), traffic on the plan site and traffic on access roads to the site.

The impact on air is measured in the number of pollution sources, concentrations of air pollutants, their action time.

Since alternative 2 has a longer route than the alternative 1 (1,340 ml to 1,200 ml) involves the execution of more works, handling and placing of larger quantities of raw materials, the action of larger number of machines, so the impact on air will be higher in the case of alternative 2.

> Soil

The impact on soil is quantified in base of the areas occupied permanent / temporary by works, the degree of soil pollution (pollutant concentrations in the soil).

The areas temporary occupied are similar in both analysed route alternative (20.000 m² respectively).

Since the alternative 2 has a longer route than alternative 1, involves occupying larger areas compared to alternative 1, that so the impact on the soil will be higher if will be adopted alternative 2.

The area permanent occupied by alternative 1 is 100.600 m².

The area permanent occupied by alternative 2 is 113.500 m².

> Water

Implementation of alternative 1 does not involve the achievement of works in Tisa minor riverbed. Instead, alternative 2 require execution of two piers in Tisa minor riverbed, that so the impact on water and default on the aquatic ecosystem will be significantly higher if will be adopted alternative 2.

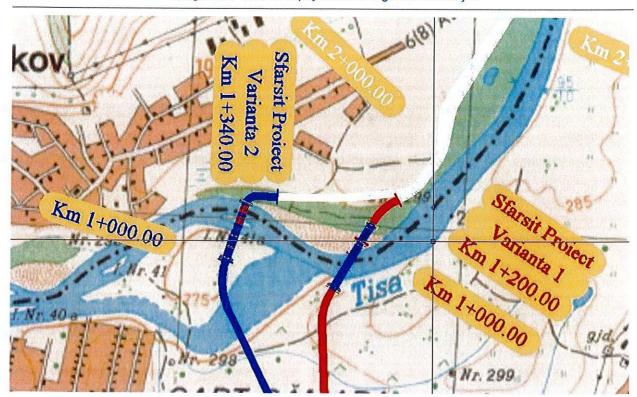


Figure 56. Location of the route alternatives in relation with minor riverbed of Tisa River

> Human settlements

Route alternative no. 1 involves expropriation of about 82.229 m² and alternative no. 2 of the route involves expropriation of 87.950 m² on a surface, areas represented by arable lands / unproductive lands. Also, the distance from dwellings is higher in case of alternative 1 compared with Alternative 2, so the impact on human settlements will be higher in case of adopting alternative 2.

None of the proposed route alternatives does not involve demolition of houses. Instead, adopting another route alternative (in areas where the surface of natural protected area is narrower), would require the demolition of houses. Ukrainians authorities have expressed disagreement with the demolition of houses to achieve the connection road, that so cannot be chosen other locations for building the bridge overTisa and the connection road.

Noise

Noise level produced during execution of the construction works depends on:

- the nature of machinery and their distribution on the land;
- weather phenomena: wind speed and direction, air temperature;
- acoustic waves absorption by soil and air;
- topography;
- the level and density of vegetation.

Since for achievement of route alternative no. 2 are required a larger number of machines, the noise level will be higher during construction work necessary for achievement of the route alternative no. 2.

Given these criteria, adoption of alternative 2 would have a greater impact on the environment during the construction works period.

C2. Environmental impact during operation period (air pollution, climate, soil, human settlements, noise)

During operation period, the impact on air, climate, soil, human settlements will be similar in case of both studied route alternatives.

C3. Impact on flora and fauna during construction and operation period

The impact on flora and fauna it is quantified in base of:

- number of potential affected species;
- number of breeding and shelter areas affected.

Despite the fact that the two studied alternative have common starting point and located in close proximity to each other, their impact on flora and fauna is different.

The route alternative no 1 cross at about 200 m from Tepliţa Lake (an important breeding area and shelter for wildlife identified in the review, without any impact on it). Instead alternative 2 runs through the island formed on Tisa course (another important area for reproducing and refuge of the wildlife present in the analysed area). Also, the number of species potentially affected by execution of the construction works is higher in case of alternative 2, given the fact that the implementation of the alternative 2 supposes construction of two piers in Tisa minor riverbed.

During operation period, the impact on flora and fauna is similar for both analyzed route alternatives.

C4. Landscape impact

The impact on the landscape is similar in both proposed alternatives, both during construction and operation period.

C5. Negative impact on natural protected areas, Natura 2000 and other sensitive environmental areas (wetlands, forests, etc.)

The negative impact on natural protected areas, Natura 2000 and other sensitive environmental areas is quantified in base of:

- number of protected areas crossed;
- route length in natural protected areas;
- > area occupied within natural protected areas;
- number of water bodies crossed;
- area occupied in the minor riverbeds;
- deforested area.

The two route alternative cross through two natural protected areas. Since the entire border area in the neighbourhood of Sighetu Marmaţiei Municipality it is occupied by the overlapped territories of the site of Community

importance ROSCI0251 Tisa Superioară and special bird protection area ROSPA0143 Tisa Superioară, could not be avoided establishment of the plan within natural protected areas.

The route length in natural protected areas is 950 m in case of alternative 1 and 1,180 m in case of alternative 2 and areas occupied within natural protected areas is 76.260 m² in case of alternative 1 and 91.230 m² in case of alternative 2.



Figure 57. Location of ROSCI0251 Tisa Superioară and ROSPA0143 Tisa Superioară related to human settlements Could not be achieved crossing the two protected areas in areas where the surface is narrower because these areas are built or floodplains.

In the location of the two studied route alternatives have not been identified habitats for whose protection was designated the site of Community importance ROSCI0251 Tisa Superioară

On the Ukrainian territory, the plan will be achieved outside natural protected areas in case of both studied route alternatives. The minimum distance between plan location and limits of the natural protected areas it is about 30 km measured in straight line, that so, construction and operation of the bridge over Tisa in Tepliţa area on Sighetu Marmaţiei will not have any form of impact on the natural protected area from Ukraine.

Both proposed route alternative assume crossing a single water body (Tisa river), but alternative impact on water bodies is significantly different. Implementation of alternative 1 does not involve achievement of the construction works in Tisa minor riverbed and therefore will not lead to the occupation of any area within the river. Instead, alternative 2 involves construction of two piers in Tisa minor riverbed and occupation of a surface of 152 m² in the minor bed.

None of the analysed route alternative does not involve deforestation, that so the impact of the two route alternative on the forested area it is similar.

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Due the fact that the route alternative no. 2 is greater than the route alternative no.1 and the area occupied by alternative 2 in the overlapped territory of the two protected areas is greater than the area occupied by alternative 1, alternative 2 involves achievement of construction works in Tisa minor riverbed, the impact of the alternative 2 on natural protected areas, Natura 2000 and other sensitive environmental areas (forests, water bodies) is greater than the impact of route alternative no. 1, that so have been adopted the route alternative no. 1.

9.3. Dificulties

There have been no difficulties in selecting the optimal version.

9.4. Conclusions

Based on the criteria mentioned above has been selected the route alternative no. 1 due the fact that this has the least impact on the environment.

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10. MONITORING IN CONFORMITY WITH ARTICLE 27 OF GD 1076/2004

During the execution period, the manufacturer shall accomplish the monitoring plan during the construction, including environmental protection measures during execution and which is subject to approval by the Maramures Environmental Protection Agency.

The environmental protection activities are structured in several directions:

- adoption in the period of development works of technologies and work equipment environmentally friendly, with low fuel consumption and low emissions of air pollutants;
- > use of effective technologies with role in decrease of execution time, reduction of material consumption and mitigation of energy consumption;
- > proper collection, storage and elimination of all waste categories (liquid, household, technological);
- > use of raw materials that accomplish high quality standards that will ensure decrease the amount of waste resulting from construction works;
- > use of building materials from local sources in order to reduce the fuel necessary for transporting the raw materials;
- implementing an operational management system with active measures for environment protection and monitoring;
- delegation of a person responsible with monitoring implementation of the authorised plan and measures to reduce the environmental impact.

Monitoring plan

Construction period

During execution of the construction works it is necessary to conduct activities to monitor the environmental factors in order to monitor the effectiveness of the applied measures and to establish corrective measures in case of not framing in specific norms. In this respect it is necessary to propose the following measures to be applied by the contractor:

- > identification and monitoring the pollution sources: location, specific pollutant emissions and immissions;
- complying with the measurements programme in order to determine the noise level during execution of the construction works;
- monitoring the operation manner of installations serving the site in order to ensure maximum yields;
- periodic inspection of the fleet of machines for detecting defects;
- management of hazardous waste resulting both on the site organization and in the working fronts;
- establishment of the intervention program in case in wich the specific quality indicators of the environmental factors: air, water, soil does not fit into the limits imposed by legislation in force;
- > compliance with the accidental pollution prevention and remediation plan: measures necessary to be taken, intervention teams, supplies and equipment for intervention in case of accident.

Monitoring the environmental factors during execution of the construction works, as implementation of the measures proposed have like aims ensuring function of the site in order to reduce the environmental impact.

10.1. Monitoring the plan location before commencement of the construction works

Monitoring the location of the bridge over Tisa in Tepliţa area from Sighetu Marmaţiei before commencement of the construction works in order to determine the current state of the environment includes analyzing the following parameters:

- > Soil: concentration of heavy metals and hydrocarbons from the site of the future bridge, the site organization and designed road;
- ➤ Air: concentration of SOx, NOx, NH₃, total particulate matter and sediment particles in future the plan site;
- > The noise level in the future site of the plan and at limit of residential areas in the vicinity of the site;
- Surface water: determination of Tisa river water turbidity;
- > Biodiversity: identifying all species of flora and fauna in the plan area (including those seen in the passage or nesting near the plan site)

These measurements will be used as control samples to determine the initial state of the environment at the analyzed site. Although the plan site was monitored during the elaboration of environmental impact assessment documentation, it is necessary monitoring this location a year before construction starts because local conditions can change and it is possible to change the composition of biota in site specific plan or in areas near the thereof.

10.2. Monitoring plan during the construction period of the bridge over Tisa in Tepliţa area in Sighetu Marmaţiei

In the construction period, it is necessary monitoring all environmental factors by up taking samples in working fronts and site organization. It is recommended that in the construction works period to be used the same monitoring points used to determine the initial state of the environment, to ensure the representativeness of the data obtained.

In the construction period, will be monitored the followings parameters:

- ➤ Air: concentration of SOx, NOx, NH₃, total particulate matter and sediment particles in site organization and in working fronts monthly;
- Level of noise and vibration: monthly measures in each working fronts;
- > Water: turbidity determination in the location of the bridge over Tisa in Teplita area in Sighetu Marmatiei;
- > Soil: concentration of heavy metals and hydrocarbons in the working fronts monthly;
- Biodiversity: by-monthly monitoring in the plan location;
- ➤ Waste: keeping evidence of quantity and types of waste according to GD 856/2002, manner of removing them).

In the period of construction works on the bridge over Tisa in Teplita area on Sighetu Marmatiei, the manufacturer must adopt technologies and working equipment environmentally friendly, which will ensure reduction

of toxic emissions and comply with all environmental protection measures proposed in this environmental impact assessment documentation.

During execution of the bridge over Tisa in Teplita area in Sighetu Marmatiei will be required to constructor to accomplish with the following measures regarding increasing energy efficiency and improving existing environmental conditions:

- use of effective technologies with role in decrease the execution time, decrease of material consumption and mitigation of energy consumption;
- > use of raw materials that accomplish high quality standards that will ensure decrease the amount of waste resulting from construction works;
- > use of modern equipment, from latest generation, with low fuel consumption or using alternative energy sources (biodiesel);
- use of building materials from local sources in order to reduce the fuel necessary for transporting the raw materials:
- hiring an authorized company who will regularly monitor the environmental impact of construction activities and performances achieved towards environmental protection.

10.3. Monitoring plan during the operation period of the bridge over Tisa in Tepliţa area in Sighetu Marmaţiei

In operation period of bridge over Tisa, will be monitored the following parameters:

- > water: inspection of the state of the system for collecting and treatment of rainwater that washes the road platform (the oil separators);
- air: biannual determination of the concentration of SOx, NOx, NH3, total particulate matter and sediment particles;
- noise: noise level measurement in the location of the bridge over Tisa in Teplita area and near populated
- soil: biannual monitoring of pH and pollutant concentrations in the soil, about 2 m of road footprint;
- biodiversity: monthly monitoring of the state of vegetation and fauna, near the bridge and degree of restoration works temporarily affected areas.

The monitoring plan of the bridge over Tisa location it is presented in table 23.

Table 23. The monitoring plan of the location of the bridge over Tisa

Environmental factor monitored	Monitored parameters	Monitoring frequency	Monitoring location
Water	- Tisa river turbidity	Once, before commencement of the construction works	- Tisa minor riverbed in the location of the future bridge
Air	 SO_x, NO_x, NH₃ 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

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	A Provided to the Company of the Com		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;
	The second secon		- 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
Diam in a diam area.	4	ti an accorden	
Environmental factor monitored	toring during execution of the construct Monitored parameters	Monitoring frequency	Monitoring location
Water	- Tisa river turbidity	- monthly	Tisa minor riverbed in the location of the future bridge
Air	 SO_x, NO_x, NH₃ concentrations; total particulate matter and sediment particles concentrations; noise and vibrations level; 	- monthly	 site organization location; 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 moni	toring during operation period		
Environmental factor monitored	Monitored parameters	Monitoring frequency	Monitoring location
Water	- oil separators efficiency	- half – year	 oil separators location
Air	 SO_x, NO_x, NH₃ 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 of the site organization;bridge over Tisa location;

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			- km 0+200 and 0+600 of the connection road;
Biodiversity	 flora and fauna species; restoration degree of the areas temporary affected by the construction works; 	- lunar	- entire plan location

Biodiversity monitoring involves the identification of all flora and fauna species present in the plan location and in its vicinity, but will in particular monitor the presence of species identified during the period of the appropriate assessment study and the environmental report (presented in Table 4) 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 witnesses samples during the construction and operation period of the bridge over Tisa.

The species will be inventoryzed, their abundance, mortality (number of individuals) will be determined.

The monitoring results will be reported annually to the Maramures 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.

Monitoring of the environment 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.

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11. SUMMARY WITHOUT TECHNICAL CHARACTER

11.1. Activity description

For the achievement of the plan will be carried out the following construction works:

bridge works:

- infrastructure bridge will consist in two abutments and two piers;
- the superstructure of each bridge will be made of a metal box with variable height, provided at the top with prestressed reinforced concrete flooring;
- the path on each bridge will provide a carriageway of 8.00 m and 2.50 m wide sidewalk;
- the bridge will be equipped with rainwater collection and disposal system;

> road works:

- achievement of a connection road of 1.200 ml, which include a bridge over Tisa river;
- road platform: 19,53 m;
- carriageway width: 4 x 3,75 m = 15,00;
- width of frame strips 2 x 0,90 = 1,80 m;
- directional separators concrete cross-beam H2 type 0.67 m;
- width for concrete cross-beam H2 type 2 x 1,03 m;
- left right footway 2 x 2,50 m;
- safety barriers + left right metallic pedestrian parapets;
- transverse profile in the carriageway will be type roof with a slope of 2.5%;
- the transverse slope of the shoulders will be 2.0%.

water drainage works:

- ditches and culverts for collecting the rainwater;
- oil separators for purifying rainwater;
- culverts to maintain natural drainage system existing before construction of the connection road;
- discharge brisges at km 0+530, 0+620 and 0+720;
- customs checkpoint provided with parking area for cars and freight scales, parking for cars, office building.
 Access to the country and out of country will be made in five lanes for each direction of movement.
- consolidation works: for slope stabilization and strengthening existing land where appropriate;
- works for traffic safety: traffic signs and horizontal marking.

11.2. Potential impact assessment

Potential impact on water

For the achievement of the plan it is not necessary the diversion of Tisa water course and execution of construction works in minor riverbed, that so will not be modified the water flow regime and water level. Will not increase the water turbidity and will not change the water physic-chemical characteristics.

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Works will be carried out in two phases, in first stage will be built the piers on the right bank, and in the second stage will be achieved the piers on the left bank.

For execution of the construction works will be used modern construction techniques, and the construction equipments will be inspected and repaired periodically. The construction material and the waste will be stored in specially designated areas within the site organization located outside the protected areas and faraway from the Tisa riverbed, that so it will not exist the risks of ingress of the raw materials in Tisa water course.

The wastewater generated within the site organization will be treated within the treatment plant before being discharged into the natural emissary so that will comply with provisions of NTPA 001/2002 standard. Also, the rainwater that washes the site organization platform will be conducted to the sedimentation basin before to be discharged in the natural emissary (Tisa river).

Execution of the construction works will have no impact on the water quality and implicitly on the aquatic species of flora and fauna.

Operation of the bridge over Tisa in Tepliţa area in Sighetu Marmaţiei will have no impact on the surface water or on the groundwater.

For drainage of the rainwater have been designed 3 culverts, ditches and gutters and oil separators. Due the fact that have been provided installation of the oil separators and sedimentation basins, the rainwater that wash the road platform will not lead to the pollution of the water or the environment.

Potential impact on air

Activities conducted within the site organization, within the working fronts and on the access / service roads from the plan location can lead to the air pollution.

Concentration of the air pollution varies from day to day, being directly dependent on the works specific, weather conditions, average fuel consumption and of the site area in which the works are carried out.

Generally the atmospheric pollutant emissions occur within the working fronts and up to 10- 15 m width of service roads used for the access in the plan location. Emissions of sedimentable powders are temporary, normal at the end of working day the environment will return to the initial state, without affecting the air quality. Daily values will frame in the maximum admissible values imposed by the law 104/2011 regarding the ambient air quality.

Construction of the bridge over Tisa in Tepliţa area on Sighetu Marmaţiei will have insignificant, temporary and reversible impact on the air quality, that so will not be side effects (even on the other environmental factors). Upon completion of the construction works, the environment will return to its initial state.

During the exploitation of the bridge over Tisa in Tepliţa area in Sighetu Marmaţiei, the impact on air will be generated especially by the combustion of motor fuels and the wear of tires. Due to traffic conditions, the concentration of air pollutants will be reduced that so the impact on air will not be significant.

Potential impact on biodiversity

Construction and operation of the bridge over Tisa in Tepliţa area in Sighetu Marmaţiei will not lead to the significant impairment of the flora and fauna from analysed area.

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Plan will be achieved in the overlapped territory of the special bird protection area ROSPA0143 Tisa Superioară and of the site of community importance ROSCI0251 Tisa Superioară, but in an area in which have not been identified the species and habitats for whose protection have been designed the two natural protected areas.

Plan location is antrophic, with intense traffic and does not represent breeding areal for the observed fauna specimens, but it is used only like feeding areal or during migration. .

Achievement of the construction works and operation of the bridge over Tisa in Teplita area in Sighetu Marmaţiei will have insignificant and reversible impact on biodiversity. The only form of residual impact on biodiversity is represented by the permanent occupation of some land areas, but because these represent a very small percentage related to the analysed area and are not occupied by protected habitats, the residual impact will not be significant.

Construction and operation of the bridge over Tisa in Teplita area in Sighetu Marmatiei will not affect the population of species identified on the bridge location and of those from its vicinity, including those for whose protection have been designated the site of community importance ROSCI0251 Tisa Superioară and the bird special protection area ROSPA0143 Tisa Superioară because:

- Removal of some land areas from farm-use classification will not have significant impact on biodiversity because:
- in the location of the bridge over Tisa included in the overlapped territory of the ROSCI0251 Tisa Superioara and ROSPA0143 Tisa Superioara have not been identified flora species or habitat of conservative interest, but only a reminiscence of degraded grove;
- > the land permanently occupied by the bridge represent a very small percentage by total area analyzed and in present is occupied by crops, whithout a stable biocenosis, Ruderal communities habitat and a reminiscence of degraded grove;
- > the land temporarly affected by the construction works will be restored at the completion of the works and will be integrated in agricultural circuits;
- The aquatic species living in the Tisa river will not be affected because:
- the construction works will not be carried out in the minor riverbed of the Tisa River:
- construction works will not be carried out within the minor riverbed of the Tisa River (including shore defense);
- will not be deviated the course of Tisa river, the flow regime and the depth of water will be preserved;
- the physicochemical characteristics of the water will not be altered;
- the construction works from watercourse boundaries will be executed using metallic pilling enclosures, that so will not be any risk of the construction materials in waters of Tisa rivers;
- Will not be affected habitats of community importance because:
- in the location of the bridge over Tisa in Teplita area on Sighetu Marmatiei and in its vicinity are not present habitats of community importance, but only a reminiscence of degraded grove;

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- ➤ at the completion of the construction works, in boundaries of the bridge location will be carried out a buffer area within will be planted willows and poplars specimens, so that to be restored the Tisa grove;
- d. Achievement of the plan would not lead to habitat fragmentation because:
- In the analysed area already exist several service roads;
- the structures achieved within the plan will not obstruct the movements of the individuals present in the plan location;
- upon completion of the construction works will be planted willows and poplars specimens which will ensure the restoration of the Tisa grove and will ensure areals connection;
- e. will not be lost or degraded the feeding habitat of the fauna identified on the plan location or listed in the standard forms of the ROSPA0143 Tisa Superioară and ROSCI0251 Tisa Superioară because:
- the land permanently occupied for plan achievement represent a very small percentage of the analysed area, so that will not significantly decrease the feeding area of the species observed in the plan area and its vicinity;
- in the vicinity of the bridge location exist similar habitats that the fauna specimens observed in the plan location could use for feeding or shelter during execution of the construction works;
- the impact will occur only within each working fronts, so that will not be an impact on the entire plan location;
- f. The nesting, resting and shelter areas will not be affected because:
- the plan location does not represent nesting habitat for the identified species, but only feeding habitat;
- ➤ in the plan location have not been identified nests or juvenils of the birds for whose protection has been designed the ROSPA0143 Tisa Superioara or of the birds species observed in the plan location, but not listed in the standard form Natura 2000 of this protected area;
- plan achievement does not affect the areas from ROSPA0143 Tisa Superioara known as nesting, resting or shelter area (Teplita Lake, forested area on the bank of Tisa River);
- the construction works will not be carried out during the reproduction period of the identified fauna species, respectively will not be carried out in March June period;
- g. The plan implementation will not lead to significant changes in the population density (no. of individuals / area) because:
- construction and operation of the bridge over Tisa in Teplita area on Sighetu Marmatiei will not lead to the reduction of number of individuals from species identified in the plan location;
- the specimens observed in the plan location will move to similar habitats from plan boundaries wherefrom will return at the completion of the construction works, so that will change only tempory the relative density;
- construction and operation of the bridge over Tisa will not lead to increase of the mortality rate because have not been estimated the traffic density increase, but only improving of traffic conditions;

- h. The noise generated by the bridge construction will not lead to the significant impairment of the fauna species identified in the plan location because:
- > the specimens observed in the plan location will move in the similar habitats existing in the vicinity of the location as a result of noise level and the presence of machinery and workers;
- the noise impact will occur only in each working front, so that will not be affected the entire plan location;
- upon completion of the works construction, the noise levels in the analyzed location will be lower than the limits imposed by STAS 10009-88 urban acoustics, due to improvement of the traffic conditions;
- Will not be deflected the migration routes because:
- despite the fact that the plan is located on an important migration route (northern branch of the east-elbic migration route), because the flight height during migration is much higher than the height at which the construction works occur, these works will not constitute a barrier to bird migration;
- the birds specimens observed in passage above the plan location will not be affected in any forms by the construction and operation of the bridge over Tisa in Teplita area on Sighetu Marmatiei;
- Indirect effects on the fauna population on the plan location and its boundaries will not be significant because:
- fauna specimens observed in the plan area will move in similar habitats in the vicinity of the plan;
- at completion of the construction works, will not be any indirect impact on fauna identified in the plan location.

Considering all the aspects presented in this report, it can be concluded that the negative impact of the construction and operation of the bridge over Tisa in Teplita area on Sighetu Marmatiei is insignificant, temporary and reversible.

The study presented the initial conditions at the location of the bridge over Tisa and the connecting road, the impact of the proposed works and the proposed measures to reduce / eliminate the impact.

The temporary / permanent occupied area represents a very small percentage of the total area of ROSCI0251 Tisa Superioară and ROSPA0143 Tisa Superioară, respectively 0,2664% of ROSPA0143 Tisa Superioară and 0,1214% of ROSCI0251 Tisa Superioară and is located outside any area of strict protection.

In the plan location, a degraded area was identified on a very narrow surface, the area being anthroped, having a level of degradation comparable or superior to that which is foreseen by the construction and operation of the bridge over the Tisa River, the other areas being occupied by agricultural crops or by Ruderal communities habitat.

On the area destinated to the yard there are no species of flora of conservative interest, and the fauna specimens will move or will be relocated in similar habitats near the plan location.

Due to the small areas of scattered vegetation, the impact on terrestrial invertebratesl, amphibian, reptile, bird, mammal species will be very low until absent. Near the site location are similar habitats in which fauna specimens can retreat due to noise, vibration and site traffic.

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Habitats present in the vicinity of the plan location are receptive, with high availability, not overpopulated, so that mobile elements can easily colonize these receiver habitats. Also, little mobile specimens can be easily translocated.

By construction of the bridge the fragmentation of habitats will be punctuated, the ecological functions of the Natura 2000 site will not be affected, nor will there be lost areas occupied by habitats of conservative value. Upon completion of the construction works, local flora trees (willows and poplars) will be planted to ensure the restoration of Tisa's initial grove and the connectivity of the areas.

In the long term, in the post-construction and the operation phase of the bridge, the impact on the two Natura 2000 sites will decrease, in relation to the current situation and the impact recorded during the construction works.

The investment has no impact on the bird migration routes and has no cross-border impact on the environment.

No difficulties are foreseen to ensure the long-term "favorable conservation status" of the species for which protection have been designated the brisrd special protection area Tisa Superioară and the site of community importance Tisa Superioară, if the mitigation measures will be implemented.

It is obligatory to restore the vegetation after the construction works and to renaturate the area with plant species characteristic of the regional flora and to comply with all the environmental reduction / elimination measures proposed in this environmental report.

Considering all the aspects presented in this environmental report and in appropriate assessment, the negative impact of the construction and operation of the bridge over Tisa in Teplita area on Sighetu Marmatiei is limited, temporary and reversible, except the areas permanent occupied by the new infrastructures.

Implementation of the plan is strictly necessary in order to ensure the road connection with Ukraine and to ensure the traffic safety.

Potential impact on soil and subsoil

Soil

Impact on soil occurs only within the working fronts and the site organization. The areas temporary / permanent affected by the construction works have been limited to the minimum. Those will be delimitated in the field and will be strictly completed during construction works period.

It is strictly forbidden the movement and stationary of the construction equipment outside the service roads and of working fronts, that so to be avoided supplementary compaction of the soil in the plan location.

During the construction works of the bridge over Tisa in Tepliţa area on Sighetu Marmaţiei will be used machines with proper features, and those will be inspected and repaired periodically, that so the oil pollution risk will be reduced / eliminated.

All the construction materials and waste will be stored in specially designated areas, within the site organization so there is no danger of soil contamination.

Environmental report

"Bridge over Tisa in Tepliţa area in Sighetu Marmaţiei

The areas affected temporary by the construction works will be restored with the soil excavated at the beginning of the construction works and if will be areas compacted, their structure will be rebuilt so as to allow ingress of water, air and rooting plants.

During the operation period of the bridge over Tisa in Teplita area will not be registered impact on soil.

Subsoil

Construction and operation of the bridge over Tisa in Tepliţa area on Sighetu Marmaţiei will not have significant impact on subsoil. During achievement of the construction works, will be completed all the measures imposed in geological study and all the legal provision in force.

Impact on human settlements and other objectives

Bridge over Tisa in Tepliţa area in Sighetu Marmaţiei will be achieved mainly outside the residential areas (except the detachment area of the connection road from the national road DN 18), that so will have no direct impact on the human settlements. Also, the site organization will be located at high distance from the houses.

If case in which during the construction works the level of noise and vibrations will exceed the legal limits, will be taken the necessary measures to reduce them (installing sound absorbing panels, using more efficient construction machinery, ceasing the construction works in some periods).

During construction period of the bridge over Tisa in Tepliţa area in Sighetu Marmaţiei will comply with the legal resting hours and the construction works will not be carried out during the night.

Impact on socio-economic environment

Achievement of the bridge over Tisa in Tepliţa area in Sighetu Marmaţiei will have positive impact on the socio-economic environment by creating new jobs (90 new jobs during construction period and 3 jobs during operating period) and by improvement of the traffic conditions.

Improvement of traffic conditions could lead to the decrease of accidents numbers.

Considering the results of the assessment of impact on each environmental factor, the negative impact on the environment of the bridge over Tisa in Tepliţa area in Sighetu Marmaţiei it is insignificant, temporary and reversible, except the areas permanent occupied by the new infrastructures (residual impact),

The plan is strictly necessary to ensure the traffic safety.

Beneficiary: National Company for Road Infrastructure Administration

Author: S.C. Expert Project 2002 S.R.L.

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- Directive 2006/12/EC on waste
- Directive no. 1999/31/EC on waste disposal transposed in the Romanian legislation by GD no. 349/2005 on landfills, as amended and supplemented;
- Council Directive no. 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, transposed by the GEO no. 57/2007 on protected natural areas, natural habitats, wild flora and fauna preservation;
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Conventions

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13. ANNEXES

Current situation plan

Urban regulations plan – the proposed situation

Urban regulations plan- utilities network

Water management permit no 58 from 14 March 2018

Permit no. AH/002 from 26.03.2018 of HEIDENROSLEIN Association – ROSCI0251 Tisa Superioară Custodian

Beneficiary: National Company for Road Infrastructure Administration

Author: S.C. Expert Proiect 2002 S.R.L.



6

ADMINISTRAȚIA NAȚIONALĂ "APELE ROMÂNE" ADMINISTRAȚIA BAZINALĂ DE APĂ SOMES-TISA

str. Vânătorului nr. 17, 400213 Cluj-Napoca Tel: 0264 433 028, Fax: 0264 433 026

E-mail: apecj@dast.rowater.ro Cod Fiscal: RO18269681, Cont IBAN: : RO43TREZ2162OF330800XXXX









Cod: F - AA - 1

AVIZ DE GOSPODARIRE A APELOR Nr. 58 din 14.03.2018

privind: PUZ pentru amplasare Pod peste Tisa in zona Teplita – Sighetu Marmatiei, jud. Maramures Cod cadastral: I 1.000.00.00.00.00

I. Date generale

Proiectant de specialitate: Asocierea EXPERT PROIECT 2002 SRL & BETARMEX SRL

Beneficiar: COMPANIA NATIONALA DE ADMINISTRARE A INFRASTRUCTURII RUTIERE SA,

Bucuresti, B-dul Dinicu Golescu nr. 38, Sector 1

Amplasament: jud. Maramures, localitatea Sighetu Marmatiei, curs de apa Tisa, la 7,40 km amonte de confluenta cu raul Iza.

Corp de apa de suprafata RORW 1.1_B1 Tisa

II. Necesitatea si oportunitatea investitici

Proiectul are ca scop stabilirea reglementarilor specifice pentru o zona din teritoriul administrativ al orasului, traseaza caile de circulatie, propune zonificarea teritoriului, asigurarea dotarilor si infrastructurii necesare, de asemenea stabilirea unei metodologii unitare si concrete in vederea identificarii si delimitarii terenurilor destinate construirii unor obiective precum si stabilirea conditiilor de utilizare.

III. Elemente de coordonare si cooperare

Obiectivul este o investitie noua si nu a fost reglementat anterior din punct de vedere al gospodaririi apelor. Pentru obiectivul propus s-a eliberat de catre Consiliul Judetean Maramures - Certificat de Urbanism nr. 115 din 23.07.2015, cu termen de valabilitate prelungit pana la data23.07.2018.

Pentru investitia Pod peste Tisa in zona Teplita din Sighetu Marmatiei s-a emis Aviz de gospodarire a apelor nr. 55 din 04 iulie 2017, de catre Administratia Nationala Apele Romane.

Urmare solicitarii si documentatiei tehnice inaintata si inregistrata la nr. 831/25.01.2018 si tinand seama de prevederile Schemei de amenajare a bazinului hidrografic Somes - Tisa, in conformitate cu prevederile Legii apelor nr. 107/1996, cu modificarile si completarile ulterioare, ale Legii nr. 400/2005 privind aprobarea O.U.G 73/2005 pentru modificarea si completarea O.U.G. 107/2002 privind infiintarea Administratiei Nationale "Apele Romane" si ale Ordinului ministrului mediului si gospodaririi apelor nr. 662/2006, privind emiterea avizelor de gospodarire a apelor, se emite:

AVIZ DE GOSPODARIRE A APELOR

privind: PUZ pentru amplasare Pod peste Tisa in zona Teplita – Sighetu Marmatiei, jud. Maramures

conform documentatiei care prevede:

- regimul juridic al terenului este partial in intravilanul localitatii, partial in extravilanul localitatii, aflat in prorietarea privata a Primariei si in proprietatea privata a persoanelor fizice si juridice;
- conform prezentului PUZ, zonele functionale cu caracter obligatoriu sunt: zona pod, zona punctului Edectre ce ra frontierei, zona drumului de legatura si zona de amenajare a sensului giratoriu,

 A.B.A. SOMES TISA Serv. Avize Autorizatii 6

ULLAT SPRE NESCHIMBARE

- conform bilantului suprafetelor zonelor functionale propuse, se propun: culoar destinat expropierii 82.228,62 mp, din care suprafetete fiecarei zone functionale, incluzand doar suprafata circulatiilor carosabile, circulatiilor pietonale, spatii verzi, spatii mediane si constructii sunt determinate astfel:
- zona transporturilor rutiere TR- suprafata 65850,6 mp, POT max 4%, CUT max 0,2 si este compusa din TR1a zona pod 7619,17 mp circulatii carosabile 4450,32 mp si circulatii petonale 1036,9 mp, spatiu median 2131,95 mp; TR1b zona punct de trecere a frontierei 44874,59 mp POT max 3,8%, CUT max 0,03, din care circulatii carosabile 33525,21 mp, circulatii pietonale 4452,63 mp, spatiu verde 4572,11 mp, constructii 1716,16 mp, spatiu median 608,48 mp; TR1c zona drum de legatura 6682,74 mp, din care circulatii carosabile 4903,55 mp, circulatii pietonale 1779,19 mp; TR1d zona amenajare sens giratoriu 6674,1 mp din care circulatii carosabile 4649,29 mp, circulatii pietonale 928,78 mp si spatiu verde 1096,12 mp.

Echiparea hidroedilitara propusa:

- alimentarea cu apa in scop igienico sanitar, in perimetrul platformei aferente punctului de trecere a frontierei se va realize din magistrala de alimentare cu apa a oarsului Sighetu Marmatiei si se va executa din teava PEID (PN6):
- retelele de canalizare a apelor uzate in perimetrul platformei aferente punctului de trecere a frontierei vor fi realizate din teava corugata din polipropilena SN 8, cu Dn max 200, apele uzate fiind evacuate in 4 bazine etans vidanjabile;
- evacuarea apei din precipitatii: sistemul de canalizare pluvial compus din conducte PVC KG Dn 250 mm si L=505,2 m, cu racorduri de tip PVC KG DN 110 mm si L=41 m.

Inundabilitatea amplasamentului - vor fi executate lucrari de scoatere a obiectivelor de sub efectul inundatiilor deoarece terenul este situat in zona inundabila..

Avizul de gospodarire a apelor se emite cu urmatoarele conditii:

Dupa aprobarea documentului PUZ in cadrul Consiliului Local, precedand obtinerea Autorizatici de Construire pentru obiectivul propus, pentru lucrarile privind echiparea hidroedilitara propusa este necesara obtinerea **Avizului de gospodarire a apelor**, in baza unei documentatii tehnice intocmita conform Normativului de continut al documentatiilor tehnice de fundamentare necesare obtinerii avizului de gospodarire a apelor, aprobat prin Ordinul M.M.P nr.799/2012, de un proiectant certificat de catre Ministerul Mediului si Padurilor

Nerespectarea prevederilor prezentului aviz atrage dupa sine raspunderea administrativa, dupa caz, precum si raspunderea civila sau penala conform prevederilor Legii Apelor nr.107/1996, cu modificarile si completarile ulterioare, in cazul producerii de prejudicii persoanelor fizice si/sau juridice.

Un exemplar din documentatie, stampilat si vizat spre neschimbare, s-a transmis solicitantului, impreuna cu un exemplar din aviz.

DIRECTOR

ing. Cristian CIULBEA

DIRECTOR TEHNIC, R.A.P.M

ing. Ioan ROSU

SEF SERVICIU AVIZE AUTORIZATII

biolog Iulją SELAGEA

INTOCMIT Mihaela MOCAN

Mhoca.

A.N. "APELE ROMÂNE" A.B.A. SOMEŞ:TISA Serv. Avize Autorizaţii - 6 VIZAT SPRE NESCHIMBARE



ASOCIATIA HEIDENROSLEIN

Str. Unirii 12A/95, 430272 Bala Mare

-mail: payerma@yahoo.com; tel/fax.: 0262-224166
0040743177454 /CUI 13964563
Custode pentru sit Natura 2000 . ROSCI0251/ROSPA0143 Tisa Superioară si Padurea
Ronisoara 2573.cf contract nr 293/7.12.2011

ROSCI0358 Pricop-Huta-Certeze of contract322/27.02.2014

Avizul custodelui

Nr. AH/002 din 26.03.2018

Ca urmare a notificării transmise de către autoritățile competente APM MMdin 08.01.2018 catre custozi și a cererii de emitere a avizului înregistrate nr AH/00/16.03.2018. la Asociatia Heidenroslein de catre Beneficiar SC CNAIR SA prin SC EXPERT PROIECT 2002 SRL, RO 14329624, BUCURESTI, RO88BTRL04301202S25038XX BANCA TRANSILVANIA, /custodelui ariei naturale protejate, conform prevederilor art. 28 și 281 din Ordonanța de urgență a Guvernului nr. 57/2007 privind regimul ariilor naturale protejate, conservarea habitatelor naturale, a florei și faunei sălbatice, aprobată cu modificări și completări prin Legea nr. 49/2011, pentru planul/programul/proiectul/PUZ pentru POD peste Tisa in zona Teplita din Sighetul Marmatiei desfășurat (ă) în aria naturală protejată.....sit Natura 2000, ROSCI0251/ROSPA0143 Tisa Superioară

□ în urma analizării documentelor transmise de către APM MM si beneficiar inclusiv studiul EA

□ în urma corelării cu prevederile a măsurilor de management, Payer Maria Magdalena Custode pentru sit Natura 2000 ROSCI0251/ROSPA0143 Tisa Superioară si Padurea Ronisoara 2573.cf contract nr 293/7.12.2011. emite avizul favorabil pentru. PUZ"Pod peste Tisa in zona Teplita din Sighetul Marmatiei"

. Prezentul aviz se eliberează:

🗆 cu condiții;

X cu următoarele condiții:

- Se vor respecta prevederile OUG 57/2007 privind regimul ariilor naturale protejate, conservarea habitatelor naturale, a florei si faunei salbatice cu toate modificarile ulterioare; L49/2011
- Se vor respecta masurile minime de conservare si regulamentul ariei protejate iar dupa aprobarea planului de management al ariei protejate de catre MMP ,prevederile planului devin obligatorii
- Veti anunta custodele cu 7 zile inainte de inceperea organizarii de santier
- Comunicarea cu custodele la toate fazele de executie este obligatorie; veti anunta custodele pentru orice problema ivita in termen de 24 ore pentru a gasi solutii legale impreuna cu APM MM
- Cercetarea preliminară şi cu atenție a zonelor prevăzute pentru şantier inainte cu 90zile
 de inceperea organizarii de santier şi eventuala relocare a tuturor exemplarelor de faună
 care ar putea fi în zonă pe cheltuiala beneficiarului
- De asemenoa se va realiza circulația cu vehicule pe drumurile deja utilizate pentru alte funcțiuni antropice.
- Pentru limitarea impactului pe care această activitatea îl va avea asupra mediului înconjurător și a populației din zonă, recomandăm titularului de activitate următoarele măsuri:
- 1. Respectarea stricta a calendarului de efectuare a activităților.
- 2. Restrângerea, pe cât posibil a suprafețelor afectate din jurul șantierului, în sensul în care pentru montarea utilajelor de săpare și derularea activităților ce provoacă vibrații să se utilizeze un minimum de timp și de personal pentru a nu afecta suprafețe prea mari din jurul șantierului.
- 3. Pe cât posibil, premergător șantierului se vor desprinde brazde înierbate ce se vor păstra, conserva și reașeza la locul de unde au fost desprinse.

- 4. Derularea activităților cu maximă operativitate pentru a da posibilitatea animalelor care eventual au părăsit zona, să se reîntoarcă rapid.
- 5. Acoperirea oricăror tipuri de gropi rezultate fie din foraje, fie din depozitarea utilajelor pentru evitarea apariției în primăvară a unor false habitate de reproducere pentru amfibieni.
- 6. Respectarea tehnologiilor de lucru prezentate în proiectul propus, pentru care se solicită acordul de mediu.
- 7. Determinarea periodică a nivelului emisiilor de gaze de eşapament al utilajelor destinate implementării proiectului, iar în cazul în care nivelul de nivelul acestora îl depăşeşte pe cel maxim admis, se va lua măsura înlocuirii lor sau montarea unor echipamente mai performante de reducere a nivelului noxelor;
- 8. Determinarea periodică a nivelului de zgomot, iar în cazul în care nivelul de zgomot îl depăşeşte pe cel maxim admis, montarea unor echipamente mai performante de reducere a zgomotului la motoare.
- 9. Dotarea permanentă a punctului de lucru cu recipienți adecvați depozitării și transportului deșeurilor menajere și transportul periodic al acestora la groapă de gunoi autorizată.
- 10. Instruirea personalului care va activa în punctul de lucru, privind măsurile de prevenire şi stingere a incendiilor şi a celor privind conduita în cuprinsul ariei naturale protejate.
- 11. Transportul și depozitarea carburanților necesari în recipienți corespunzători normelor de depozitare și transport a produselor petroliere.
- 12. Pentru impactul datorat diminuării de habitat în timpul fazei de lucru se recomandă:
- 13. translocarea speciilor cu mobilitate redusă sau a celor cu cerințe stricte de habitat (ex. amfibieni, reptile, unele mamifere mici etc.) apărute în zona de lucru în timpul operațiunilor. Pentru că suprafața nu este mare și numărul exemplarelor nu poate fi
- semnificativ, se recomanda translocarea tuturor indivizilor de amfibieni, reptile, mamifere mici întâlnite în perioada lucrărilor, indiferent de specie.
- 14. Menținerea unde, și cât este posibil a șirurilor de tufărișuri ca și culoare de trecere între habitatele în curs de afectare și habitate naturale din afara zonei de impact.
- 15. Restricționarea suprafețelor săpate și a deponiilor la minimul necesar
- 16. Reducerea impactului cauzat de pierderea habitatelor pentru amfibieni și reptile. În cazul amfibienilor se recomandă translocarea lor înainte e începerea acțiunilor de construcțiilor.

Speciile (adulți) vor fi colectate și translocate în zonele învecinate ale arboretelor sau pajiștilor neafectate de decopertare.

- 17. Reptilele colectate și relocate în habitate neinflunțate de activitățile de forare.
- 18. Se vor acoperi și umple orice gropi produse intentionat sau accidental în cursul lucrărilor pentru a evita crearea în primavară a unor habitate false de reproducere.
 - Pentru impactul datorat mortalității directe cauzate de omorârea animalelor
 de către lucrători, capturarea involuntare a diferite specii în gropi, șanțuri,
 canale etc, apariția de false locuri de reproducere (ex gropi, șanțuri, canale
 temporar inundate care sunt secate în scurt timp, determinând mortalitatea
 ouălor, larvelor etc.), se recomandă:
- organizarea de ședințe de conștientizare în care să se explice faptul că aceste animale sunt strict protejate de lege;
 - Pentru impactul datorat poluării datorate accidentelor, managementul defectuos al hidrocarburilor, folosirii unei tehnologii neadecvate şi managementului defectuos al deşeurilor, impact ce poate apărea în toate fazele proiectului cu efect asupra tuturor speciilor şi habitatelor se recomandă:
- 1. aplicarea unei discipline în circulație
- 2. realizarea unui management eficient al depozitării hidrocarburilor și a altor substanțe toxice în perimetrul șantierului
- 3. folosirea de tehnologii noi, performante
- 4. Realizarea unui management eficient al deșeurilor; asigurarea evacuării deșeurilor prin efctuarea unui contract o firmă autorizată de profil;
 - Pentru diminuarea impactului provocat de mortalitatea directă a speciilor mobile de faună, cauzată de accidentele auto pe drumurile industriale, se recomandă:
- 1. limitarea vitezei pe drumurile din perimetrul proiectului.
- curățarea regulată a drumurilor industriale şi a marginilor acesteia de cadavrele de animale (ex. câini, păsări etc.) produse de către accidente pentru a nu atrage eventuale specii necrofage (corvidele, păsări răpitoare, vulpi etc.)

 Se va proceda la amenajarea scuarurilor şi a marginilor de drumuri după perioada de construcție pentru a nu lăsa terenuri deranjate ca potențial de instalare a speciilor alogene invazive. 1.52 ... 1.2

- 4. Prevederea unor aliniamente de arbuști și/sau arbori, din flora caracteristică regională (Salix sp. Populus sp.), eventual cu căsuțe pentru păsări, în special pentru paseriforme în vederea susținerii acestor specii.
 - Este obligatorie refacerea vegetației în urma lucrărilor și renaturalizarea zonei cu specii de plante caracteristice florei regionale
 - Toate aceste costuri vor fi acoperite de benefiicarul investitiei
 - Veti respecta prevederile Legii Apelor 107/1996cu modificarile si completarile ulterioare si conditiile impuse prin Avizul de gospodarire a apelor
 - In cf cu art 94.lit.I din OUG 195/2005 aprobata prin Legea nr 265/2006
 persoanele fizice si juridice au obligatia sa informeze autoritatlie competente de
 protectia mediului in caz de pouare accidental sau de accident major
 - In cf cu art.15 alin (2) din OUG 195/2005 aprobata prin Legea nr 265/2006 cu
 modificarile ulterioare Titularul proiectului are obligatia de a notifica APM MM
 daca intervin elemente noi ,necunoscute la data eliberarii
 autorizatiei/avizului/acordului de mediu
 - Titularul proiectului va notifica custodele in 24 ore daca intervin elemente noi ,necunoscute la data eliberarii
- Veti informa custodele in fiecare an situatia lucrarilor executate pentru refacerea mediului
- Veti anunta custodele in termen de 1 ora in caz de poluare accidentala iar refacerea mediului este in sarcina exclusiva a poluatorulu
- La finalizarea lucrarilor veti notifica custodele in vederea efectuarii unui control de specialitate pentru verificarea respectarii prevederilor acestui aviz
- Procesul verbal intocmit va face parte integranta din procesul verbal de receptie la terminarea lucrarilor

Veti obtine avizul custodelui pentru oricefel de modificare de proiect Veti respecta toate masurile de reducere al impactului din studiul EA Veti prezenta planul de monitorizare pentru conservarea speciilor/habitatelor de interes comunitar ,elaborat lunar -custodelui - cf studiului EA

Nu se permite executarea lucrarilor in perioada de reproducere amfibieni ,in perioada de cuibarit

Nu se permite arderea vegetatiei ,depozitarea deseurilor ,defrisarea zavoaielor

Veti utiliza materiale de constructii verzi acolo unde structura si rezistenta lucrarii o permite

Motivele care au stat la baza deciziei de emitere a avizului favorabil fără/cu condiții sunt următoarele: . ..

Activitatea se desfasoara in sit Natura, 2000 iar e	executantii lucrarilor sunt neglijenti .
□ avizul nefavorabil pentru	
(Se va scrie numele	•
planului/programului/proiectului/activității, confort	m documentației analizate.)

Acest aviz este valabil numai împreună cu documentația care a stat la baza emiterii sale

Custode, Payer Maria Magua

(semnătura și stam