REPUBLIC OF BULGARIA

SECOND TRADE AND TRANSPORT FACILITATION PROJECT

COMPONENT II: 3.4 KM ACCESS ROAD TO KAPITAN ANDREEVO BCP, PART OF MARITSA MOTORWAY

ENVIRONMENTAL MANAGEMENT PLAN (EMP)

May, 2009

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Abbreviations List

BCP	Border Crossing Point
DNCS	Directorate for National Construction Supervision
EEA	Executive Environmental Agency
EMP	Environmental Management Plan
ES	Executive Summary
FEA	Full Environmental Assessment
MC	Ministry of Culture
MES	Ministry of Emergency Situations
MF	Ministry of Finances
MH	Ministry of Health
MI	Ministry of Interior
MoEW	Ministry of Environment and Water
MRDPW	Ministry of Regional Development and Public Works
MW	Motorway
NGO	Non Governmental Organization
NMAH	National Museum of Archaeology and History
NRIA	National Road Infrastructure Agency
PIT	Project Implementation Team
RIoEW	Regional Inspectorate of the Environment and Water
TEM	Trans-European Motorway
TEN-T	Trans-European Network - Transport
TTFSE	Trade and Transport Facilitation in South-Eastern Europe
RTP	Road Trafic Police
RIPHPC	Regional Inspectorate of the Public Health Protection and Control
SIRT	State Inspectorate on the Road Transport
VOC	Volatil Organic Compound
WB	World Bank

A. GENERAL INFORMATION AND MITIGATION MEASURES

1. Background

The Government of Bulgaria (GOB) has requested the assistance of the World Bank in financing the Second Trade and Transport Facilitation (TTFSE II). The Project aims to enhance regional trade and transport through optimizing the use of Trans-European Network corridors, with a focus on the core network, i.e. Corridors IV (Kapitan Andreevo-Sofia-Vidin), Xc (Kapitan Andreevo-Sofia-Kalotina), and VII (Danube River) for transit and trade. In addition to improving the border control stations at Kalotina at the border with Serbia, and Kapitan Andreevo at the border with Turkey, the GOB has also requested the Bank's support in financing part of the Maritza Motorway; a stretch which is about 3.4 km long.

Maritsa Motorway is an important transport way of national and international significance. It is an integral part of the Trans-European Transport Network (TEN-T) Corridor No.4, the Trans-European North-South Motorway (TEM), linking the countries from Eastern and Central Europe to the Middle East and Asia. The TEM total length, including Maritsa Motorway on Bulgarian territory, is 365 km.

The project will finance the construction of a 3.4 km-long access road, linking the Maritsa Motorway to Kapitan Andreevo BCP. This new road will remove the existing bottleneck on TEN-T corridors IV and Xc. Currently the entire traffic to and from the BCP passes through Kapitan Andreevo Village. The new access road will by-pass Kapitan Andreevo Village to get to BCP and will provide a multi-lane access to BCP. The integrated design of the access road and of the BCP will provide an adequate cross border traffic management avoiding potential bottlenecks following the expansion of the crossing point.

The present Environmental Management Plan (EMP), Executive Summary (ES) and Full Environmental Assessment (FEA) are based on the design available at this point. After consideration of the cost estimate and resources available for this component, the Bulgarian Authorities intends to proceed with a redesign of the road for its optimization regarding reduce of cost, earth works and land for acquisition. Accordingly, the ES, EMP and FEA will be adjusted once the design is updated to reflect any possible environmental impacts assessed in relation with the new proposed alignment. The revised ES, EMP and FEA will be re-disclosed accordingly.

2. Environmental issues related to the access road, segment of Maritsa Motorway

The implementation of that part of the TTFSE II Project will result in: emissions of pollutant in the ambient air, surface water and soils; alteration of the acoustic ambience; waste generation; plant and animal species habitats disturbance; and landscape modifications.

During the construction mainly dust and exhaust gases from the construction and transport equipment will be emitted in the ambient air. During operation the basic air pollutant will be nitric oxides, carbon oxides, particulate matter and VOC.

Concerning the surface water, during construction pollution of the Kalamitsa river by spoil and oil products may occur. During operation no changes in the quality of the surface water are expected.

During construction changes in the acoustic characteristics of the environment and of the settlement may occur as a result of the congestion of construction and transport equipment. During the operation of the access road over limited noise impact on the residential areas are not expected.

Waste will be generated in the construction phase as well as during operation. The waste will be evacuated and disposed on the dedicated places.

The expected main disturbances of the biodiversity will occur in the construction phase and will consist in the annihilation of the existent flora in the frame of the road route and in the damage of some fauna species habitats.

The present vegetation populations, being affected by the access road construction, refer to biocenoses, created by man or under the strong anthropogenic influence, with poor species variety and lack of uniqueness in populations, with high degree of tolerance and recoverability (based on the analysis made in the Full Environmental Assessment).

Subject of protection in the region are the natural habitats, included in Annex 1 to the Biodiversity Act (BA) and Annex 1 to the Directive 92/43/EEC, namely: 6210 Semi-natural dry grass and bush populations on limestone (Festuco- Brometalia); 6220 Pseudo-steppes with wheat and annual plants of the class Thero-brachypodietea; 62AO East Sub-mediterranean grass populations; 91AA Eastern forests of white oak (Quercus pubescens); 91MO Balkan-Panonian oak and durmast forests; 92AO Riverside galleries of willows and poplars (Salix alba, Populus alba).

Such natural habitats types are not identified in the frame of the access road route, where the construction effects will be well noticed.

In the process of assimilation of the territory for building of the section of 3,4 km of the access road will be disturbed the natural habitats of representatives of the reptiles (**Reptilia) (**the Hermann's tortoise (Testudo hermanni), the Spur-thighed tortoise (Testudo gracea), the Caspian whip snake (Coluber caspius), the Aesculapian snake (Elaphe longisima)); of small mammals **(Mammalia) (**the Hedgehog (Erinaceus concolor), the Weasel (Mustela nivalis)) and birds **(Aves) (**the Partridge (Pedrix pedrix), the Quail (Coturnix coturnix), the Field-lark (Alauda arvensis), nesting on the soil). Among the species identified in the access road route there are no habitats of fauna species of conservation significance.

During the operation of the road segment insignificant impact is expected affecting only some fauna species consisting in the worsening of the adjacent habitats quality resulting of noise contamination and disturbance in the scope of the territories immediately adjacent to the roud route. In this aspect the bird sensitivity in comparison with the other animals is bigger (the Partridge (Pedrix

pedrix), the Quail (Coturnix coturnix), the Field-lark (Alauda arvensis), the Tawny Pipit (Anthus campestris), Pied Wagtail (Motacilla alba), Chaffinch (Fringilla coelebs), Short-toed Lark (Calandela brachydactyla). Other neagtive impact is the mortality from collision of animal species with motor cars on the road. The most vulnerable in this respect are slow moving reptiles (terrestrial turtles), small mammals (hedgehogs), as well as the nocturnal rodents. With respect to the birds, the most vulnerable are the songbirds and the young birds.

Changes will occur in some landscape characteristics too in result of the earth works during construction and the new technological elements introduced with the project implementation (Trumpet junction, reconstruction of rural roads with implementation of flyovers and a railway flyover).

Mainly the possible negative impacts on the environmental aspects and factors are expected during the construction phase, for which mitigation measures are included in the project design. It should be noted that no people are living close to the border crossings, as during the previous regime settlement was not allowed closer that 1 km from the border, and currently no new settlements close to the border crossings have been identified.

In accordance with Bank safeguard policies OP 4.01 on Environmental Assessment, an Environmental Management Plan (EMP) for the two border crossings at Kalotina and Kapitan Andreevo was developed during project preparation; it was agreed that for the 3.4 km segment of the Maritza Motorway a Full Environmental Assessment and a separate EMP is necessary to be prepared as soon as the feasibility study is available during project implementation.

The Full EIA was developed by the "Dango Project Consult" Ltd. and disclosed publicly according to the national and World Bank requirements.

The first working meetings and consultations held with the stakeholders – public groups, institutions and NGOs were held on January 9th and 10th, 2008 in the offices of the Municipality of Svilengrad town, Municipality of Kapitan Andreevo Village and Kapitan Andreevo Border Crossing Point.

The second group of meetings was held on January 24th, 2008 in the Municipality of Svilengrad and Kapitan Andreevo Village with the head of "Ecology" Dept. to the Municipality as well as with village inhabitants.

The Environmental Management Plan (EMP) for the 3.4km segment of the Maritza Motorway, included in Component II of the TTFSE II Project, was proposed in the Final EIA Report of the Consulting firm.

The public hearing of the Full Environmental Assessment was held on 28 March 2008 in the Kapitan Andreevo Village.

The EMP for Component II of the TTFSE Project is this separate document. Mitigation measures are outlined in Annex 1. The related monitoring activities are described in the Environmental Monitoring Plan (EMoP) attached in Annex 2.

3. Mitigation measures during construction phase and operation phase

3.1. Mitigation measures during the construction

To ensure the implementation of the environmental mitigation measures, in the process of preparation of bidding documents for selection of contractor for execution of construction, special provisions will be stipulated in the Technical Specifications and in the Bill of Quantities. They will be included as a part of the Construction Contract according to the requirements of the provisions of the actual Spatial Development Act, as well as to the Annex 1: Environmental Mitigation Plan and Annex 2: Environmental Monitoring Plan.

3.1.1. Air Quality

The measures to be taken to mitigate or reduce the adverse impact on the ambient air are: operation of road-building machines and vehicles with defective engines shall not be allowed; idle running of the engines of construction machinery and vehicles shall not be allowed; overloading of trucks with bulk materials shall not be allowed; sites for temporary storage of bulk materials and construction waste in dry and windy weather shall be moistened; equipment for preparation and laying of asphalt mixture should not be warmed up after completion of the respective works; upon completion of construction works at a specific section, the areas dedicated to temporary storage of inert materials and construction waste shall be duly cleaned.

3.1.2. Surface water

The measures to be taken to mitigate or reduce the adverse impact on the surface water are related to interdiction of any disposal of construction waste materials in the Kalamitza river bed. The construction and transport equipment used shall be in good parameters working stage in order to prevent the pollution of the surface waters by oil products.

3.1.3. Soil

The measures to be taken to mitigate or reduce the adverse impact on the soil include: proper storage of excavated humus layer from the affected high category land that will be used in the landscaping of the roadside areas; organization of an information campaign for the land owners to keep the strip of 100m on both sides of the road free of agricultural crops.

3.1.4. Flora

The measures to be taken to mitigate or reduce the adverse impact on the flora are: maximum compatibility of the tree and bush varieties with the environment conditions and the existing local vegetation shall be pursued for the arrangement of the roadside areas; largest contribution of Quercus species in the broad-leaved tree variety shall be envisaged; the arrangement of roadside areas shall exclude invasive bush species.

3.1.5. Fauna

The measure to be taken to mitigate or reduce the adverse impact on the fauna is the construction of protective enclosures along the access road to BCP Kapitan Andreevo against access of the animals to the roadbed.

3.1.6. Waste management

The measures to be taken to mitigate or reduce the adverse impact of waste generation are: collection of the hazardous waste in closed vessels; temporary waste storage on the dedicated sites whose bottom layer is sealed with compressed insulation materials; preliminary planning and lying down of the borrowed excavations, storage areas for additional materials, disposal facilities for

humus and for unsuitable materials only in the road easement zone in order to avoid impact on sensitive areas.

3.1.7. Noise

The measures to be taken to mitigate or reduce the possible adverse impact of noise generation are organization and management measures, namely: in order to reduce the noise impact on the residential area, the construction activities in the road sections close to the settlement area shall be well organized and conducted mainly during the daytime period; idle running of construction machines shall be avoided; the heavy vehicles participating in the construction process shall observe preliminary delineated routes and shall observe strictly the allowable traffic speed when crossing settlements.

3.1.8. Occupational safety protection

The main requirements for the occupational safety and health at working places shall be observed: during operation using drilling equipment anti-vibration gloves shall be used; crane, excavator and bulldozer operators shall be provided with ear protectors; in the hot season the excavators and bulldozers cabins shall be provided with ventilators and the operators shall wear suitable working clothes for the season.

For the improvement of the living conditions in Kapitan Andreevo Village, proper work organization shall be created – strictly delineated route for the construction vehicles, ban on idle running of the equipment engines; implementation of the construction works only in daytime period, between 07.00 and 19.00 h.

3.1.9. Cultural heritage

As a result from the previously performed investigations and studies four archaeological findings were recorded in the region (however, these are not part of the project area): a prehistoric, antique and medieval settlements in Kush tepe country; Sacrificial pits dating from the Iron Age and the Antiquity in Kissiova mogila country; Settlement dating from the Early Iron Age in Kichuk Chair country and Prehistoric settlement in Hauza country.

Before the start of the construction phase of implementation of the access road, connecting Maritsa Motorway to Kapitan Andreevo BCP, archaeological prospecting investigations shall be performed for the four known archaeological findings in order to clarify the extent of affecting each of them.

3.2. Mitigation measures during road operation

3.2.1. Air Quality

The measures to be taken to mitigate or reduce the adverse impact on the ambient air are: timely cleaning of sections contaminated by bulk material or spilling of other harmful substances; transportation of bulk materials with adequate cover in closed-type platforms; the overloading of the transport equipment by bulk and powdered materials shall be prohibited.

3.2.2. Soil

The measures to be taken to mitigate or reduce the adverse impact on the soil are as follows: cleaning shall be made of the faced trench system, providing the drainage of the contaminated oil run-off water; organization shall be established by municipality offices for cleaning of the roadside area and the temporary parking areas from household and other waste and penalties for the offenders shall be introduced as well.

3.2.3. Waste

The emergency decontamination from different liquid or solid hazardous waste in emergency situations or road traffic accidents shall be performed only by specialized organizations and the waste shall be handed over for destruction to licensed legal persons depending on the type of waste concerned.

3.2.4. Noise

Noise impact reduction in the residential area shall be ensured by permanent maintenance of the road pavement. Noise level measurement in front of the roadside village buildings shall be performed and comparison with the forecasted levels shall be made. In case of exceeding of the forecasted levels and of the sanitary limits, anti-noise measures shall be planned.

3.2.5. Health protection

For the improvement of the living conditions of Kapitan Andreevo Village population, it is required to perform: regular maintenance of the cleanness and good working condition of the road aiming to reduce dust concentrations, including particulate matter in the ambient air; forestation by a dust- and aerosol–detaining green belt of suitable tree species around the access road from the site of Kapitan Andreevo Village.

4. Environmental monitoring plan during construction and during operation

The environmental monitoring plan is an important element of the project environmental management. The objectives of the environmental monitoring are: to check the impacts forecasted in the Environmental Assessment (EA); to determine the actual extent of the impact; as well as to identify the unexpected impact. A detailed monitoring plan for the proposed road construction works is attached as Annex 2.

The National Road Infrastructure Agency (NRIA) shall be the responsible entity for the monitoring implementation and is the organization which shall elaborate a plan for carrying out the monitoring surveys in compliance with the proposed monitoring actions stipulated in the Environmental Assessment Report and this Environmental Monitoring Plan (EMP), in close collaboration with the TTFSE II PIT.

The EMP (Annex 2) shall be submitted for approval to the respective Regional Inspectorate of Environment and Water (RIoEW) and to the Executive Environmental Agency (EEA) at the start-up of the construction works.

NRIA shall assign an authorized laboratory to implement the appropriate monitoring surveys during the construction and operation of the access road.

The results from the monitoring studies shall be summarized by NRIA and the Agency shall prepare an annual report which shall be submitted to the competent authorities (RIoEW and EEA). In the cases when discrepancies are found as compared to the regulatory provisions on environmental protection, NRIA shall develop additional mitigation measures against unexpected impact in excess of the permissible limits (according to the routine national procedure).

The competent authorities (RIoEW and EEA) shall approve the results from the performed monitoring surveys and the proposed additional measures when applicable.

The approved Monitoring Report shall be submitted to the supreme control authority – the Ministry of Environment and Waters (MoEW) and to the Council of Ministers in the structure of which NRIA is included.

The TTFSE II (the Project) PIT shall submit the Monitoring Report to the World Bank upon request.

5. Institutional arrangements

The TTFSE II Project is implemented by a Project Implementation Team (PIT) at the Ministry of Finance (MOF). The PIT have the overall responsibility for project implementation and coordination, for all components, including planning, procurement, disbursement of funds, monitoring the use of funds, auditing arrangements, monitoring and evaluation, supervising the implementation of the Environmental Management Plans (EMPs), and reporting on the progress of implementation and use of project funds.

A Deputy Minister of Finance has been appointed as the National Project Coordinator of the proposed Project. This enables a direct and active participation of the management of the Ministry of Finance in the project implementation.

The National Customs Agency (NCA), the Border Police Directorate (BPD), and the National Roads Infrastructure Agency have an active role in the proposed project. The PIT directly involves each entity for matters relating to that entity in order to ensure an efficient implementation of the proposed project. The NRIA in particular is represented in all matters concerning the access road to Kapitan Andreevo BCP under Component 2. This covers detailed design, land acquisition, procurement and contract execution. The NCA, BPD and NRIA have appointed a Project Coordinators. The PIT together with these three organizations is implementing the Project.

The leading role for the Construction of 3.4 km access road to Kapitan Andreevo Border Crossing Point (BCP), part of Maritsa Motorway, is assigned to the Ministry of Finance and in particular to the Project Implementation Team (PIT) together with the National Road Infrastructure Agency. The PIT, acting under the Project Manager, in coordination with the NCA Project Coordinator, the BPD Project Coordinator and the NRIA Project Coordinator, is performing all technical responsibilities for Project implementation,

The organization responsible for the feasibility study and the detailed design is NRIA. The design documents are elaborated by a design company and are submitted for approval to DNCS to MRDPW.

The responsible entities for the implementation control during the construction of the designed mitigation measures are the Directorate for National Construction Supervision (DNCS) at the Ministry of Regional Development and Public Works (MRDPW), the Regional Inspectorate of the Environment and Waters (RIoEW) at the Ministry of Environment and Water (MoEW), the Regional Inspectorate of the Public Health Protection and Control (RIPHPC) at the Ministry of Health (MH), the local Mayoralty, the Municipality, the National Museum of Archaeology and History (NMAH) to the Ministry of Culture (MC), the Road Traffic Police (RTP) at the Ministry of Interior (MI), the National Road Infrastructure Agency NRIA, the Executive Environmental Agency (EEA) at the MoEW and the Ministry of Finances through the TTFSE II PIT (Project Implementation Team).

The control over the implementation of the mitigation measures during the operation of the access road shall be exercised by: the National Road Infrastructure Agency, the Municipality, the Regional Inspectorate of the Environment and Waters (RIoEW) at the Ministry of Environment and Water (MoEW), the Executive Environmental Agency (EEA) at the MoEW, Svilengrad Municipality, the Road Traffic Police (RTP) at the Ministry of Interior (MI), the State Motor Vehicles Inspectorate (SMWI), the Ministry of the Emergency Situations (MES).

During the construction and operation of the access road to Kapitan Andreevo BCP responsible entities for the monitoring are NRIA, RioEW, EEA and MoEW.

6. Public disclosure, consultation and public hearing

The first set of consultation working meetings was dedicated to the disclosure of the project to the interested institutions and the concerned population were held on 9 January and 10 January 2008 on the territory of Svilengrad Municipality, Kapitan Andreevo Mayor Administration and Kapitan Andreevo BCP. NGO representatives approved the project promotion initiative. The implementation of the intended project will solve a considerable social problem, such as re-routing of the traffic outside the populated area, and will contribute to the improvement of the environmental situation on the territory of the village.

Local residents expressed an opinion that the project is very good and will solve a lot of environmental problems such as air pollution, intensive traffic and high traffic velocities. Besides, the noise problems and the traffic accident problems in the village will be solved as well. In view of the lands occupated by the road route, the general opinion of the attendees was that the incomes from the lands are minimal, because they are mainly leased. Only a small number of people work their lands and the lands are their only income source. The main crops grown there are wheat, sunflower, corn and tobacco. Also, a few estates with perennial plants such as vineyards are affected and the concerned owners of these estates will be recompensed in accordance with the LAP.

Some of the residents expressed the opinion that all of the people are eagerly waiting for the traffic re-routing out of the village and that the benefits of such a change are obvious for them. The noise is loud and the houses are shaken by the traffic of heavy trucks. The residents of the village are ready to contribute with their land to the solution of these problems.

In conclusion of the meeting the attendees expressed the shared opinion of the population that the access road of 3.4 km needs to be constructed, passing North to the village. The existing problems will be solved despite the discomfort associated with the free access to their lands and the free movement of people and animals. It is well understood by all attendees that the construction of the motorway and its extension by an access road to the BCP at the northern part of the village will solve the health-related problems of the people from Kapitan Andreevo Village, as well as their environmental problems.

A meeting has been organized with the mayor of Kapitan Andreevo Village and the issue of road traffic accidents on the existing road has been discussed. The population of the Kapitan Andreevo Village supported the solution for re-routing of the traffic out of the populated area. According to the information provided by the Mayor, recently there have been some victims of traffic accidents including children and adults. The traffic through the village causes considerable problems to the local people and livestock.

The public hearing of the Full Environmental Assessment was held on 28 March 2008 at 10.00 o'clock in the Kapitan Andreevo Village. In addition to the residents of Kapitan Andreevo Village the public discussion was attended by a representative of an NGO (Scientific Technical Organisations – Svilengrad), representatives of Bulgarian Telecommunication Company, Border Police, Svilengrad Regional Police Office, District Police Directorate of Haskovo, Svilengrad Regional Police Office.

The consultant has acquainted the attendees with the result of the environmental assessment, has informed the stakeholders of the above-the-limit emissions of nitrogen oxides emitted by the traffic passing through the village, as well as of the above-the-limit noise levels. The attendees were interested in the project implementation term. The village inhabitants supported the project and mentioned some tragic inevitable traffic accidents and indicated the adverse effect of the daily noise and hazardous emissions discharged by the motors of the vehicles passing through the village. The

project implementation will solve some considerable environmental problems associated with the pollution of the atmospheric air and high noise levels, as well as some safety-related problems.

The attendees at the public discussion accepted the report and expressed their support to the intention to re-route the traffic out of the village

Annex 1

Environment Mitigation Plan

Environmental issues	Measures taken or to be taken	Approx. cost (EUR)	Implementing organization	Responsible organization
A. Construction stage				
1. Dust/air pollution	After completion of the construction and assembly works, the temporary open storage areas for inert materials should be cleaned	2,000	Contractor	Directorate for National Construction Supervision (DNCS)
	The vehicles that deliver construction materials should be covered in order to reduce risk of spilling and further contamination	--	Contractor	DNCS
2. Soil erosion/ water pollution	Humus and inert materials should be stored in piles and fences to prevent spreading during rain weather should be foreseen	--	Contractor	DNCS
	Storage of inert materials close to the river Kalamitsa bed should be avoided	--	Contractor	DNCS
3. Construction camp related organization aspects	Garbage tanks and sanitation facilities should be provided in the construction camp, waste evacuation and disposal should be organized	8,200	Contractor	DNCS
	Waste in septic tanks will be cleared periodically	3,000	Contractor	Regional Inspectorate of the Public Health Protection and Control (RIPHPC)
4.Noise pollution	Personal protective means for noise protection and noise exposure limitation of the construction workers should be foreseen in the areas of the construction site with noise overload, according to the regulatory requirements	2,600	Contractor	Ministry of Labor and Social Policy (MLSP)
	In the road sections next to population area the construction activities should be completed in	--	Contractor	DNCS

Environmental issues	Measures taken or to be taken	Approx. cost (EUR)	Implementing organization	Responsible organization
	daylight period			
	The construction and transport equipment should be maintained in good engineering conditions and idle running should be avoided	--	Contractor	DNCS
5. Impacts on conservation of the environmental resources	Humus topsoil should be conserved and reutilized for reclamation measures.	2,600	Contractor	DNCS, Svilengrad Municipality, Regional Inspectorate of the Environment and Water (RIoEW)
	Construction vehicles should run at temporary accesses roads to avoid damaging arable lands and cattle-raising lands	--	Contractor	DNCS, Kapitan Andreevo Village Mayor Administration
6. Risks related to accidents	During the construction works safety measures should be taken to prevent accidents for workers and population	--	Contractor	MI, MLSP, RIoEW
	Safety techniques should be strictly observed while carrying out earthworks	--	Contractor	DNCS, MLSP
7. Cultural relics	Implementation of archaeological prospecting investigations of the four archaeological findings aiming to clarify the extent of affecting them	30,000	Contractor	DNCS, MC
8.Impacts form communication and transport	Local materials should be used as much as possible so as to avoid long distance transportation, esp. that of earth and stone	--	Contractor	MF, NRIA, DNCS
	Timely evacuation of the surplus earth material to the dedicated disposal sites for storage and re-use at other construction sites.		Contractor	DNCS
	Temporary access outside the boundary of motorway construction site should be built for the	--	Contractor	MI, Svilengrad Municipality

Environmental issues	Measures taken or to be taken	Approx. cost (EUR)	Implementing organization	Responsible organization
	agricultural machines, animals and people passage			
B. Operation stage				
1. Accidents involving hazardous substances	The transportation of hazardous substances and cargos should strictly observe the requirements lying down in Regulation № 40/14.01.2004 on the conditions and methods of hazardous goods transportation (SG issue 15/24.02.2004)	--	Road Traffic participants	MI, Ministry of Emergency Situations (MES)
	In case of spilling of hazardous materials, it is required to inform the competent services (Civil Protection, RIoEW, Police, Regional Service for Fire and Emergency Protection (RSFEP), RIPHPC) and appropriate measures should be taken to limit and eliminate consequences related to emergency situation.	--	Road Traffic participants	NRIA
2. Noise pollution	According to monitoring results, at places with excessive noise, sound barriers measures should be adopted	--	EEA – Regional laboratory	NRIA
3. Impacts from poor maintenance of drainage system	Drainage and outflow systems to be periodically cleaned in order to assure passing of water outflow	--	NRIA	NRIA
4. Other impacts	Building construction at the distance of 50m is not allowed	--	Svilengrad Municipality	MRDPW

Annex 2

Environmental Monitoring Plan (EMoP)

The environmental monitoring plan is an important element of the project environmental management. The objectives of the environmental monitoring are: to check the impacts forecasted in the Environmental Assessment (EA); to determine the actual extent of the impact; as well as to identify the unexpected impact. A detailed monitoring plan for the proposed road construction works is attached as Annex 2.

The National Road Infrastructure Agency (NRIA) shall be the responsible entity for the monitoring implementation and is the organization which shall elaborate a plan for carrying out the monitoring surveys in compliance with the proposed monitoring actions stipulated in the Environmental Assessment Report and this Environmental Monitoring Plan (EMP), in close collaboration with the TTFSE II PIT.

The EMP (Annex 2) shall be submitted for approval to the respective Regional Inspectorate of Environment and Water (RIoEW) and to the Executive Environmental Agency (EEA) at the start-up of the construction works.

NRIA shall assign an authorized laboratory to implement the appropriate monitoring surveys during the construction and operation of the access road.

The results from the monitoring studies shall be summarized by NRIA and the Agency shall prepare an annual report which shall be submitted to the competent authorities (RIoEW and EEA). In the cases when discrepancies are found as compared to the regulatory provisions on environmental protection, NRIA shall develop additional mitigation measures against unexpected impact in excess of the permissible limits (according to the routine national procedure).

The competent authorities (RIoEW and EEA) shall approve the results from the performed monitoring surveys and the proposed additional measures when applicable.

The approved Monitoring Report shall be submitted to the supreme control authority – the Ministry of Environment and Waters (MoEW) and to the Council of Ministers in the structure of which NRIA is included.

The TTFSE II (the Project) PIT shall submit the Monitoring Report to the World Bank upon request.

1. Monitoring during construction

1.1. Air

During the construction phase the expected air pollution will come from the dust and exhaust gases released in the construction work sections (according work stages) and at the storage areas (temporary storage areas) for bulk, spoil materials and construction waste.

Table 1 summarizes the main requirements for monitoring carrying out.

Table 1

Monitoring point	Pollutant	Measurement parameters	Frequency	Duration	Timing	Approx. cost per year (EUR)	Responsible organization
In the frame of the settlement, next to the nearest building to the construction site	Total particulate matters, dust (PM_{10}), nitrogen oxides NO_X	Dust concentration, air temperature, barometric pressure, relative air humidity	Every 6 months (alternating seasons)	24 hours	Monitoring shall be done when 70% of the construction and transport equipment is in operation	1,125	Haskovo regional laboratory, subordinated to the Environmental Executive Agency
In the frame of the settlement, next to the nearest building to the temporary storage for bulk or construction waste	Total particulate matters, dust (PM_{10}), nitrogen oxides NO_X	Dust concentration, air temperature, barometric pressure, relative air humidity	Once per year (in dry season/weather)	24 hours	Monitoring shall be done when 70% of the construction and transport equipment is in operation	565	Haskovo regional laboratory, subordinated to the Environmental Executive Agency

1.2. Surface water

Measurements to be performed during construction works on Kalamitsa River, see Table 2.

Table 2

Monitoring point	Measurement parameters	Frequency	Duration	Note	Cost per year (EUR)	Responsible organization
Km 115+725, Kalamitsa River	Suspended solids, Oil products	Once in tree months	24 hours	According Ordinance No5/08.11.2000 on the terms and procedure for water monitoring	110	Haskovo regional laboratory, subordinated to the Environmental Executive Agency

1.3. Noise

Measurements to be performed during intense construction works, see Table 3.

Table 3

Monitoring point	Measurement parameters	Frequency	Duration	Timing	Note	Cost per year (EUR)	Responsible organization
In the frame of the settlement, next to the nearest building to the construction site	Level of nise (dBA)	Twice in the course of the construction works in this section	Three times during 5 minutes	Daylight period 07:00 – 19:00	According Ordinance No6/26.06.2006 on the environmental noise indicators	130	Haskovo regional laboratory, subordinated to the Environmental Executive Agency

1.4. Soils

The monitoring point used for soils monitoring shall be at km 114+550 where sampling and soil analysis is performed in 2008 in the course of the Full Environmental Assessment carrying out, which focuses on the background status of the soils.

Table 4 summarizes the main requirements for the monitoring performance.

Table 4

Monitoring point	Measurement parameters	Frequency	Duration	Timing	Remark	Approx. Cost per year (EUR)	Responsible organization
km114+550 - 50 m from roadbed; - 150 m from roadbed	pH, concentration of lead (Pb), cadmium (Cd)	Twice – once at construction works beginning and once at construction works finishing	Once, at the depth of 20cm	Single sample	Conventional monitoring BSS	65	Haskovo regional laboratory, subordinated to the Environmental Executive Agency

2. Monitoring during the operation

2.1. Atmospheric air

Monitoring during the operation of the 3.4 km access road to Kapitan Andreevo BCP will address the main pollutants causing significant atmospheric air contamination. It should be conducted once in five years, when data for the vehicles traffic counting are available. This condition is required to be observed because if sampling for emission analyses was made without taking into account the traffic, there is a possibility to distort the real pollution status due coming from MV traffic.

Table 5 summarizes the main requirements for the monitoring performance.

Table 5

Monitoring point	Pollutant	Measurement parameters	Frequency	Duration	Timing	Approx. Cost per year (EUR)	Responsible organization
Immediately to the counting point	Total particulate matters, dust (PM_{10}), nitrogen oxides NO_X, CO, Total Organic Carbon (TOC)	Pollutant concentration, air temperature, barometric pressure, relative air humidity	Once per 5 years	24 hours	Monitoring shall be done simultaneously with the counting of the passing vehicles	565	Haskovo regional laboratory, subordinated to the Environmental Executive Agency

Additionally, monitoring measurements are made in reference to wind speed and direction.

Data with the results from analyses will be drawn up in accordance with regulatory requirements and within 15 days after their completion the reports will be submitted to the Controlling authority (RIoEW, the town of Haskovo).

2.2. Noise

Upon the commissioning of Maritsa MW, we recommend to conduct measurement of noise level in real conditions closely to the village spatial planning border in monitoring points located in front of the bare road sections (from km 114+300 to km 114+665; from km 115+140 to km 115+340; from km 115+700 to km 116+000). The measurements should be carried out during the heaviest traffic. If standard noise level is exceeded in these road sections, the foreseen elastic barrier shall be combined with antinoise barrier.

Table 6 summarizes the main requirements for the monitoring performance.

Table 6

Monitoring point	**Measure-ment parameters**	**Frequency**	**Duration**	**Timing**	**Remark**	**Approx. Cost per year (EUR)**	**Responsible organization**
From km 114+300 to km 114+665 – at the nearest village spatial planning border in points, located in front of the bare road sections.	Leq dBA	Upon road commissioning. In parallel to noise measurement, a counting of vehicles, forming the traffic shall be carried out.	According to the regulatory frame for the three phases subject to assessment.	Day Time 07:00 – 19:00 Evening 19:00 – 23:00 Night Time 23:00 – 07:00	According Ordinance No6/26.06.2006 on the environmental noise indicators	100	Haskovo regional laboratory, subordinated to the Environmental Executive Agency
From km 115+140 to km 115+340 – at the nearest village spatial planning border in points, located in front of the bare road sections.	Leq dBA	Upon road commissioning. In parallel to noise measurement, a counting of vehicles, forming the traffic shall be carried out.	According to the regulatory frame	Day Time 07:00 – 19:00 Evening 19:00 – 23:00 Night Time 23:00 – 07:00	According Ordinance No6/26.06.2006 on the environmental noise indicators	100	Haskovo regional laboratory, subordinated to the Environmental Executive Agency
From km 115+700 to km 116+000 – at the nearest village spatial planning border in points, located in front of the bare road sections	Leq dBA	Upon road commissioning. In parallel to noise measurement, a counting of vehicles, forming the traffic shall be carried out.	According to the regulatory frame for the three phases subject to assessment	Day Time 07:00 – 19:00 Evening 19:00 – 23:00 Night Time 23:00 – 07:00	According Ordinance No6/26.06.2006 on the environmental noise indicators	100	Haskovo regional laboratory, subordinated to the Environmental Executive Agency

2.3. Soils

The monitoring point used for soils monitoring shall be at km 114+550 where sampling and soil analysis is performed in 2008 in the course of the Full Environmental Assessment carrying out, which focuses on the background status of the soils.

Table 7 summarizes the main requirements for the monitoring performance.

Table 7

Monitoring point	Measurement parameters	Frequency	Duration	Timing	Remark	Approx. Cost per year (EUR)	Responsible organization
Km 116+980 BCP - 50 m from roadbed; - 150 m from roadbed	pH, lead (Pb), cadmium (Cd)	Once per 5 years	Once, at the depth of 20cm	September-October	Conventional monitoring BSS	60	Haskovo regional laboratory, subordinated to the Environmental Executive Agency