

REPORT FOR ENVIRONMENTAL IMPACT ASSESSMENT

ROAD RECONSTRUCTION FROM BYLIS ARCHAEOLOGICAL PARK TO NEW ROAD LEVAN-TEPELENE

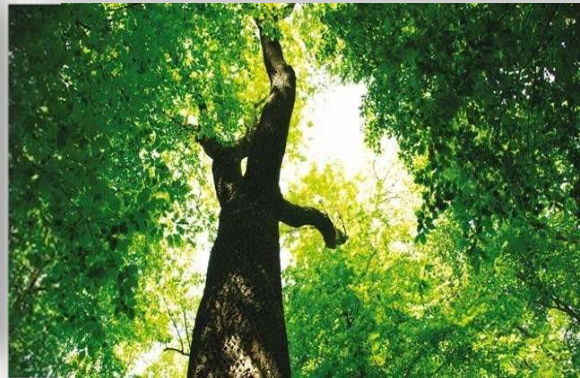


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1. INTRODUCTION

1.1 GENERAL

Environmental Impact Assessment (EIA) identifies, describes and evaluates the direct effects of the project on: people, flora and fauna, surface and groundwater, climate, terrain and construction, and the interaction of these factors with cultural, social and environmental heritage; . This topic is based on the principles of preventive action, and as such the best policy is to avoid pollution and other problems that have been raised, rightly and from the outset, rather than to combat their effects on consequently.

In Europe, such a procedure was introduced by the EU Directive of 27 June 1985 (85/337 / EEC) on the assessment of the effects of certain private and public projects on the environment and consequently modified by Council Directive no. 97/11 / EC of 3 March 1997. Furthermore, on 26 May 2003, the European Parliament and the Council of the EU adopted Directive 2003/35 / EC, which provides for "Public participation in the process of such environmental plans and programs". and modification of Council Directives 85/337 / EEC and 96/61 / EC in accordance with public participation and legal access".

The purpose of Directive 2003/35 / EC remains to contribute to the implementation of the obligations deriving from the Aarhus Convention:

- a) enabling public participation in the process of such environmental plans and programs;
- b) improves public participation and enables arrangements for legal access to Council Directives 85/337 / EEC and 96/61 / EC.

In particular, he gets acquainted with:

- defining the terms "public" and "stakeholders";
- the possibility of another type of assessment in special circumstances for the exclusion of particular projects from the EIA procedure and from relevant public information;
- tasks related to cross-border impacts;
- source procedure for third parties.

Council Directive no. 97/11 / EC enables the client to be provided with the appropriate information in the following way:

- a description of the physical characteristics of the whole project, with the land use requirements throughout the construction and intervention period and the primary characteristics of the production processes;
- an assessment of the type and amount of emissions calculated on site (water, air and soil pollution, noise, vibrations, lighting and heat, radiation, etc.) resulting from the proposed project activities;
- summary description of the main alternatives evaluated by the Client, with indicators of the main justifications of the solutions, according to the environmental impact profile;
- a description of the most important environmental components that have a very significant impact from the proposed project, with particular reference to population, flora and fauna, groundwater, air, climatic factors, including cultural and archaeological heritage, terrain and intervention between these a variety of factors;
- a description of the possible environmental effects associated with the proposed project, of the measures envisaged in order to avoid, reduce and, if possible, compensate for such adverse environmental effects of the project;
- a non-technical summary of the transmitted information, based on the previous points;

*EIA REPORT " RECONSTRUCTION OF ROAD FROM
ARKEOLOGICAL PARK OF BYLIS - NEW ROAD LEVAN-TEPELENE"*

This study takes into account all the requirements of the Environmental Legal Acts in Albania for the reconstruction of the road "Bylis Archaeological Park-Rruga e Re Levan-Tepelene".

Assessment Team

Environmental Impact Assessment is undertaken by the Company "Atelier 4" Sh.pk

Structure of the EIA Report

The EIA report is divided into the following nine sections for ease of use.

Section 1: Introduction

Section 2: Policies, Legal and Administrative Framework

Section 3: Project Characteristics

Section 4: Cultural Heritage

Section 5: Natural Resources

Section 6: The Human Environment

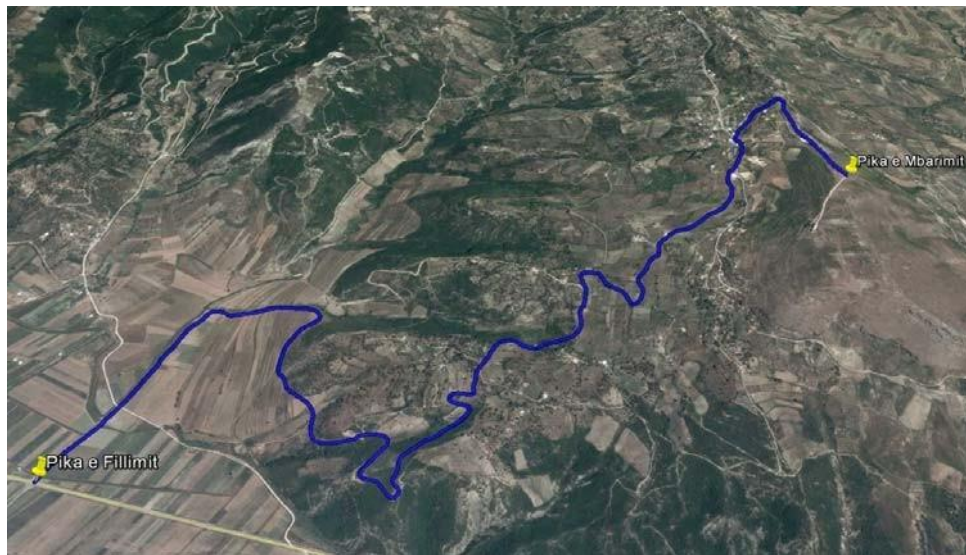
Section 7: Environmental Management Plan

Section 8: Environmental Monitoring Plan

Section 9: Public Consultation and Dissemination of Information

1.2 PROJECT SUMMARY AND CONTEXT

The Albanian Road Authority with funds from the state budget for 2014 has planned: "Study Design Reconstruction of the road from the Archaeological Park Bylis-New Road Levan Tepelena".



Location of the road on the Map

This project includes the road segment that connects the Archaeological Park of Bylis with the national road axis Levan Tepelena, with a total length of about 7 Km.

The most important point from the point of view of cultural and historical heritage in this area is the Bylis Archaeological Park. The latter, an ancient city with interesting ruins, is one of the most important archeological sites in Albania in terms of its monumental values. It was the largest city of Southern Illyria and had a dominant position over the hills of Mallakstra and the Vjosa valley. The origin of the city dates back to the IV century BC, when it was founded by the Illyrians. The first walls, the foundations of

which are still today, were built by the Illyrians during the third century. The ruins cover a wide, triangular surface, for about 2 kilometers.

The Project area is located in Hekal Commune, which is part of Mallakstra district of Fier district, and includes 4 villages: Hekal, Klos, Mollas, Rome.

The importance of the reconstruction of this road segment lies not only in facilitating the movements of the inhabitants of Hekal commune (where the villages are connected to the national road axis) but also in the tourist importance of this road, as it is frequented by many tourists. visit the Bylis Archaeological Park.

2. POLICIES, LEGAL AND ADMINISTRATIVE FRAMEWORK

2.1 policies

Over the last ten years the government has begun to develop a legal framework and has taken various initiatives to reverse the environmental degradation which has come as a result of previous industrializations during communist rule, which has bypassed environmental protection almost completely. Environmental management and protection are part of the Constitution which requires the Government to:

"To maintain a suitable healthy and ecological environment for present and future generations".

Furthermore, the legislation requires that natural resources be used rationally in accordance with sound principles.¹ Developed environmental policies are reflected in the 2011 law. Chapter IV "Environmental protection in the planning process" sets out the government's policy for:

1. State environmental policy - determines the position of the environment in legislation, the place of national sector strategies and local plans as part of environmental policy and determines the bodies that will administer these policies.
2. Environmental strategies and plans - designates the Ministry as the body responsible for the periodic drafting of environmental strategies and plans for each of the components of the environment.
3. Local action plans for the environment - require the local government to develop local prepare action plans, local, for the environment periodically, in accordance with the strategies and plans referred to in Article 21 of this law. The mayors of the local government units, at the beginning of each year, report to the regional council on the implementation of the respective local plans for the environment, for the previous year.
4. Development plans - include the instruments envisaged in national, local and inter-local planning, and integrated planning, and require the relevant public authority to take particular account of the environmental sensitivity of a particular area when drafting and approving development plans.

The Albanian government published the first National Environmental Action Plan (NEAP) in 1993, which sets out the environmental goals intended for an action plan for the country, the first environmental structure being set up in 1994.

2.2 Legal framework

Legislation governing environmental protection has been enforced relatively quickly in Albania. The first Law on Environmental Protection was issued in 1993 and was amended in 1998, 2001 and 2008. This law stipulates in Chapter II (Environmental Impact Assessment) Article 7 that:

"All natural activities and legal persons, local or foreign, who exercise their activity in the territory of the Republic of Albania, will be subject to environmental impact assessments."

Article 8 sets out in general terms the types of activities for which the authorities will require Environmental Impact Assessments (EIAs). Article 9 specifies the responsibility of the authority that will be the Environmental Protection Committee, and its regional activities. The law does not specify the individual stages of the EIA process.

With the release of Law no. 10431 "On Environmental Protection" dated 09/06/2011 was repealed Law no. 8934, dated 5.9.2002 "On environmental protection", as amended.

Law no. 10431 "On Environmental Protection" dated 09/06/2011 stipulates that the protection of the environment from pollution and damage is a national priority and is mandatory for every resident of the Republic of Albania, for all state bodies, as well as for natural persons and legal, domestic and foreign, exercising their activity in the territory of the Republic of Albania. Article 28 requires that the activities that cause pollution in the environment, are provided with the relevant environmental permit, which defines, in writing, the necessary conditions to guarantee that the activity / installation will meet the requirements of applicable environmental legislation.

Regarding the Environmental Impact Assessment in Law no. 10431 "On Environmental Protection" dated 09/06/2011 in Article 25 states that:

The environmental impact assessment of a proposed development project is the assessment of the significant, potential impacts of that activity on the environment.

2. During the environmental impact assessment, the identification, description and proper assessment of the environmental impact of an activity, referred to in point 1 of this article, are performed, determining the possible direct and indirect effects on land, water, sea, air, forests, climate, human health, flora and fauna, natural landscape, material wealth, cultural heritage, given their interrelationships.

3. Environmental impact assessment applies the principle of prevention from an early stage of project planning, in order to avoid or minimize negative effects on the environment, through its harmonization and adaptation to the carrying capacity of the environment.

4. The environmental impact assessment is performed by the developer, as part of the preparations for planning a development project and before seeking the relevant development permits.

Also in Law no. 10431 "On Environmental Protection" dated 09/06/2011 Article 13 states that:

1. CDoperson has the right to be provided in a timely manner with information on the state of the environment, its pollution and the measures taken, in accordance with this law, the legislation to which it refers, as well as law no. 8503, dated 30.6.1999 "On the right to information regarding official documents".

2. During the institutional solution of environmental protection problems, the relevant public authorities ensure that the public and stakeholders have a real opportunity to participate in the procedures for identifying the state of the environment, drafting and approving strategies, plans and programs that have related to the protection of the environment and the components of the environment, as well as in the drafting and approval of regulations and acts of general character, related to the protection of the environment, decision-making for the issuance of relevant environmental permits, in accordance with the provisions of this the law and the legislation to which he refers.

Law No. 10 440, dated 7.7. 2011 "On Environmental Impact Assessment" aims to ensure:

- a) a high level of environmental protection, through the prevention, minimization and compensation of environmental damage, from projects proposed before their approval for development;
- b) ensuring an open decision-making process, during the identification, description and evaluation of negative impacts on the environment, in the right way and at the right time, as well as the involvement of all stakeholders in it.

The Law on Environmental Impact Assessment requires that the following information be included in the EIA:

Article 4

General requirements for the environmental impact assessment of a project

1. Environmental impact assessment includes the determination, description and assessment of the expected direct and indirect environmental impacts of project implementation or non-implementation.
2. The environmental impacts of the project are assessed in relation to the state of the environment in the affected territory at the time of submission of the relevant environmental impact assessment report of the project.
3. Environmental impact assessment includes its preparation, implementation, operation and closure, as the case may be, also the consequences of closing the activity, and decontaminating / cleaning or returning the area to the previous situation, if such an obligation is provided by law. The assessment includes, as appropriate, both normal operation and the possibility of accidents.
4. The project evaluation also includes proposing the necessary measures to prevent, reduce, mitigate, minimize such impacts or increase the positive impacts on the environment during project implementation, including the assessment of the expected effects of the proposed measures.

Article 10

Submission of the request for environmental impact assessment by the developer

The developer for projects with environmental impact, which are subject to this law, submits to the NLC, in addition to the documentation required by law no. 10 081, dated 23.2.2009 "On licenses, authorizations and permits in

Republic of Albania ", as well as the relevant documentation for the EIA procedure, including:

a) For Annex II projects:

- i) preliminary EIA report, drafted according to the type of project;
- ii) the technical project of the activity;
- iii) the invoice for the payment of the service fee, according to the provisions of article 27 of this law.

b) For the projects of appendix I:

- i) in-depth EIA report, drafted according to the type of project;
- ii) non-technical summary of the EIA report;
- iii) the technical project of the activity;
- iv) information for informing and consulting the public;
- v) the invoice for the payment of the service fee, according to the provisions of article 27 of this law.

2.3 LEGAL BASIS

- Law No. 10431 dated 09.06.2011, "On environmental protection",
- Law No. 10440 dated 07.07.2011, "On environmental impact assessment",
- Law No. 10448 dated 14.07.2011, "On environmental permits",
- Law no. 10463, dated 22.09.2011, "On integrated waste management",

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- Law No.8897, dated 16.5.2002 "On the protection of air from pollution", amended by law no. 10 266, dated 15.4.2010 "On some changes and additions to law no. 8897, dated 16.5.2002" On the protection of air from pollution "
- Law no. 8905, dated 6.6.2002, "On the protection of the marine environment from pollution and damage",
- Law no. 9587, dated 20.7.2006 "On the protection of biodiversity",
- Law no. 81/2017 ON PROTECTED AREAS
- Law No. 10119, dated 23.04.2009. "On territorial planning",
- Law no. 9385, dated 4.05.2005 "On forests and forest service" amended by laws: Law no. 9533, dated 15.05.2006 "On some changes in Law no. 9385, dated 4.05.2005 "On forests and forest service"; Law No. 9791, dated 23.7.2007 "On some additions and changes to the law no. 9385, dated 4.5.2005" On forests and forest service ", as amended,
- Law no. 111/2012 "On integrated management of water resources",
- Law no. 9244 dated 17.06.2004 "On the protection of agricultural land",
- Law No. 9108, dated 17.07.2003 "On chemical substances and preparations",
- Law no. 9115, dated 24.07.2003 "On the environmental treatment of wastewater",
- Law no. 9103, dated 10.07.2003 "On the protection of transboundary lakes",
- Law no.9774, dated 12.7.2007 "On the assessment and management of noise in the environment",
- Law No.9048, dated 7.4.2003 "On cultural heritage",
- Law no. 8561, dated 22.12.1999 "On the expropriation and temporary use of private property for public interest".
- VKM Nr. 502, dated 13.07.2011 "On the approval of the uniform regulation of the control of the development of the territory" amended by: - DCM No. 88, dated 07.02.2012 - DCM No. 139, dated 22.02.2012
- VKM Nr. 345, dated 09.05.2012 - DCM no. 314, dated 13.3.2013 - DCM no. 488, dated 14.06.2013,
- VKM no. 177, dated 31.03.2005 "On the allowed norms of liquid discharges and the zoning criteria of the receiving water environments,
- DCM no. 435, dated 12.09.2002 "On the approval of air emission norms",
- VKM Nr. 103, dated 31.03.2002 "On Environmental Monitoring in the Republic of Albania",
- VKM Nr. 13, dated 4.1.2013 "On the approval of rules, responsibilities and deadlines for the development of the environmental impact assessment procedure"
- Decision of the Council of Ministers no. 247, dated 30.4.2014, dated 12.05.2014 "On determining the rules, requirements and procedures for informing and involving the public in environmental decision-making",
- DCM no. 676 dated 20.12.2002 "On the proclamation of a protected area of monuments of Albanian nature",
- Instruction no. 6527 dated 24.12.2004 "On the permissible values of air pollutants in the environment from the emissions of gases and noise caused by road vehicles, and the ways of their control",
- Instruction no. 8 dated 27.11.2007, of the Ministry of Environment, Forests and Water Administration and the Ministry of Health "On the noise limit levels in certain environments",
- Regulation no.1 dated 15.03.2006 "On the prevention of negative impacts on health and the environment of construction activities",

- Order No. 146 dated 08.05.2007, "On the approval of the red list of flora and fauna".

Law 8561, 22/12/1999, stipulates that private persons have rights in respect of private property that they possess and that the right of public property is exercised only for public interests and can not be exercised and protected otherwise. It further states that the rights of the owners are protected and that the rights of third parties to their property have been devalued as a result of the expropriation.

In cases of expropriations for public interests by the state, the competent Minister (in this case the Minister of MTI) appoints a special commission to appropriately administer the expropriations and decide vmuck e proprietarye otr t. U expropriatesuar. decision e expelsESIMIT ngor anor e Send it to meTaoiseach of presentn The PM for the decision and the property owners have the right to appeal, but the appeal should not delay the expropriation.

2.4 INSTITUTIONAL FRAMEWORK

According to Law no. 10431 dated 09.06.2011 "On environmental protection":

1. The National Environment Agency is a central public institution under the Minister, which exercises its jurisdiction throughout the territory of the Republic of Albania, through the central office and regional branches. in counties, which will be referred to hereafter as regional environmental agencies.
2. The National Environmental Agency is funded by the State Budget and its own resources.
3. The National Environmental Agency has independence in decision-making and performance of its functions, provided in this law.
4. The Council of Ministers, in accordance with the requirements of this law, approves detailed rules for the organization and functioning of the National Environmental Agency and the Regional Environmental Agencies, the division and organization of work, the status of employees and its relations with other institutions.
5. The Prime Minister, on the proposal of the Minister and in accordance with the legislation in force, approves the structure and staff of the National Environmental Agency and the Regional Environmental Agencies.

Also according to Article 60 of the same law, the functions of the National Environmental Agency are:

1. The National Environmental Agency is the competent authority for determining the conditions for the relevant environmental permits, in accordance with the provisions of this law, the legislation on environmental permits and the provisions of other relevant laws and has the following functions:
 - a) drafting the National Program for Environmental Monitoring and monitoring of the state of the environment, in accordance with the provisions of this law;
 - b) preparation and publication of annual reports on the state of the environment;
 - c) performing emission measurement services in the environment at the request of the ministry; ç) advising local bodies on the implementation of environmental policies;
 - d) creation and management of environmental information system;
 - dh) creation and management of the Pollutant Discharge and Transfer Register;
 - e) providing environmental information to the public, in accordance with the provisions of this law;
 - ë) providing information to the public on the decision-making process on environmental issues, in

accordance with the provisions of this law;

- f) ensuring the implementation of the principle of environmental responsibility for each operator, in accordance with the provisions of this law;
- g) forest data system management.

2. This agency also performs other functions assigned to it by special legislation.

In addition to the tasks set directly by the Ministry of Environment, Forests and Water Administration, a number of other state organizations have an important role to play in monitoring and protecting flora and fauna, including:

- Institute of Flora and Fauna
- Aquaculture and Fisheries Laboratory

Despite this many institutes responsible for monitoring, currently few studies have been conducted in this field on the state of flora and fauna in Albania, which comes mainly as a result of budget constraints.

Other institutions that have an important role in the environment are:

- Ministry of Transport and Infrastructure (MTI)
- Ministry of Energy and Industry (MEI)
- Ministry of Health (MoH)
- Institute of Public Health - responsible for monitoring drinking water quality and air quality.
- Institute of Energy, Water and Environment - responsible for meteorological data collection and responsible for monitoring water and air quality.
- National Council of the Territory (KKT) - responsible for issuing infrastructure permits with conditions which include requirements for environmental protection.

2.5 NATIONAL FRAMEWORK FOR NATURE CONSERVATION

In 2017, the Albanian Parliament approved LAW no. 81/2017 ON PROTECTED AREAS that together created a new legal structure for Protected Areas. The Law on Protected Areas establishes rules for the creation, administration, management and sustainable use of PAs and biological and natural resources. The law also provides the principles for the development of environmental tourism, other economic benefits as well as those of conveying information and education to the public.

National Agency of Protected Areas, established by Decision of the Council of Ministers Decision. Nr. 102, dated 4.2.2015, aims to manage, protect, develop, expand and operate the areas of protected areas in our country, which today constitute about 16% of the territory of Albania. AKZM manages the network of protected areas and other natural networks such as Natura2000 according to the drafted management plans. NEA monitors and inventories the flora and fauna in these areas, and a very important aspect is the generation of revenues from services to others. NEA will use this income to invest in the same areas. The National Agency of Protected Areas has a staff of 274 persons, of which 20 in the head office and 204 in the Regional Administration of Protected Areas

Box 1 IUCN Protected Areas Management Categories¹

I Strict Protection (Strict Nature Reserves)

Terrestrial or marine surface with special or representative ecosystems, geological characteristics with / or important species. Valuable features for scientific research and environmental monitoring.

II Ecosystem conservation and recreation (National Parks)

Terrestrial and / or marine natural areas, created to (a) protect the ecological integrity of one or more ecosystems for present and future generations, (b) exclude exploitation for purposes contrary to those of the PA and (c) providing a basis for spiritual, scientific, educational and visiting development, where everyone should be pro-environmental and pro-cultural.

III Conservation of natural features (Natural Monuments)

Areas that contain one, or more, natural / cultural features of exceptional or unique value due to their unusual rarity, representative, aesthetic or cultural qualities.

IV Conservation through active management (Managed Nature Reserves)

Land or sea surface subject to active interventions for management purposes to ensure habitat maintenance and / or fulfillment of specific species requirements.

V Land / Marine Landscape Conservation (Land / Marine Protected Landscape)

Terrestrial and / or marine surface where the perennial human interaction with nature has provided a space of pronounced aesthetic, ecological and / or cultural character with high biological diversity in many cases. Ensuring the integrity of this traditional interaction is vital to the protection, maintenance and evolution of such an area.

VI Sustainable use of natural ecosystems (Multiple Use Area)

Areas dominated by unmodified natural systems, managed to ensure the protection and long-term conservation of biological diversity. At the same time, they support the sustainable use of natural products and services to meet the needs of the community.

BI WISH: IUCN (1994b)

The basic purpose of the Law on Protected Areas is to provide special protection to key natural features through the establishment and strengthening of a network of Protected Areas based on IUCN categorizations (Box 3). The law defines the priorities and strategic objectives for the management of each category of PAs.

The map on the following page provides information regarding the appearance of protected areas, natural monuments and managed nature reserves.

¹ Categories set at the 19th Session of the IUCN General Assembly, Buenos Aires, January 1994.

2.6 EBRD REQUIREMENTS (EBRD ENVIRONMENTAL AND SOCIAL POLICY)

The methodology applied for compiling the structure of the EIA report is based on the requirements of ERDB Environmental and Social Policy. The 2019 Environmental and Social Policy and related Performance Requirements were approved by the EBRD Board of Directors on 25 April 2019 and apply to projects initiated after 1 January 2020. The Policy will be reviewed in 2024.

The European Bank for Reconstruction and Development (EBRD) is committed to promoting "sustainable and environmentally friendly development" throughout its range of investment and technical cooperation activities, pursuing the EBRD Founding Agreement.

The Bank believes that environmental and social sustainability is a fundamental aspect of achieving results in line with its transition mandate and confirms that projects promoting environmental and social sustainability enjoy the highest priority in its activities.

Performance requirements (PR):

The projects are expected to meet good international practice regarding environmental and social sustainability. Specific performance criteria for the areas of environmental and social sustainability are as follows:

- PR 1 Assessment and Management of Environmental and Social Risks and Impacts
- PR 2 Labor and Working Conditions
- PR 3 Resource Efficiency and Pollution Prevention and Control
- PR 4 Health, Safety and Security
- PR 5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement
- PR 6 Biodiversity Conservation and Sustainable Management of Living Natural Resources
- PR 7 Indigenous Peoples
- PR 8 Cultural Heritage
- PR 9 Financial Intermediaries
- PR 10 Information Disclosure and Stakeholder Engagement

As per EBRD standard the projects are classified in project of category A, B or C.

Category A projects could result in potentially significant adverse future environmental and / or social impacts which cannot readily be identified or assessed and will require the client to carry out a comprehensive Environmental and Social Impact Assessment (ESIA). The ESIA process will include a scoping stage to identify the potential future environmental and social impacts associated with the project. The ESIA will include an examination of technically and financially feasible alternatives to the source of such impacts, including the non-project alternative, and the rationale document for selecting the particular course of action proposed. It will also identify potential improvement opportunities and recommend any measures needed to avoid, or where avoidance is not possible, minimize and mitigate adverse impacts.

The ESIA may need to be carried out or verified by independent experts. The ESIA process will also include a public disclosure and consultation process as specified in PR 10.

For Category B projects, where potential adverse future environmental and social impacts are typically site specific and / or readily identified and addressed through mitigation measures, the client will undertake an environmental and social assessment that is proportionate to the project's nature, size and location, as well as the characteristics of the potential impacts and risks. The assessment will characterize potential future adverse impacts associated with the project, identify

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potential improvement opportunities, and recommend any measures needed to avoid, or where avoidance is not possible, minimize and mitigate adverse impacts.

For Category A and B projects which involve existing facilities, an assessment of the environmental and social issues of past and current operations will be required. The purpose of this assessment is to identify potential risks, liabilities and opportunities associated with existing facilities and operations, to confirm the current status of regulatory compliance and to assess the client's existing management systems and overall performance against the PRs. Any investigations of existing facilities must be carried out by experts that are independent of the facility that is being investigated.

For Category C projects, which are likely to have minimal or no adverse future environmental and social impacts and that are readily identified and addressed through mitigation measures, the client will implement an ESMS proportionate to the impacts and risks in accordance with paragraphs 14- 22 of this PR and monitor and report on the project's compliance with the PRs as per paragraphs 23-28 of PR 1.

This project is not in the list categorized as type A projects.

Based on the technical project that will be implemented on the footprint of the existing road already built years ago, based on this project, the asphalt layer will be laid and the signage of the existing road will be installed, based on the environmental and social impacts that will have during the construction phase (of about 12 months) which are estimated to be minimal and easily addressed through mitigation measures.

2.7 APPLICATION FOR ENVIRONMENTAL DECLARATIONS

DCM No. 13, dated 4.1.2013 "On the approval of rules, responsibilities and deadlines for the development of the procedure of environmental impact assessment" states that:

The developer, who intends to implement a project, which is subject to the requirements of Article 8 of Law no. 10 440, dated 7.7.2011 "On environmental impact assessment", which in the initial stages of project planning (project idea), submits to the NLC, in addition to the documentation required by law no. 10 081, dated 23.2.2009 "On licenses, authorizations and permits in the Republic of Albania", and the relevant documentation, which contains:

1.1. Description of the proposed project, which includes:

- a) description of the purpose of the proposed project;
- b) planimetry of the project location to reflect on the topographic map the required land area, boundaries of the required land area, photographs and data on the existing use of the land area that will be used temporarily or permanently by the project during the construction phase or operation of the project activity;
- c) information on the residential centers in the area where the project is proposed to be implemented, accompanied by photographs and data on the distance from the place where the project is proposed and to the local government unit (municipality / commune) that administers the territory where the project is proposed;
- ç) sketches and planimetry of the project objects and project structures;
- d) description of construction and technological processes, including production / processing capacities, quantities of raw materials and final products of the project;
- dh) information on the necessary infrastructure for connection to the electricity network, water supply, wastewater discharges and waste, as well as information on existing access roads or the need to open new roads;
- e) the program for the construction, the duration of the construction, the planned duration of the project operation, the possible time of completion of the project operation and, as the case may be, the planned phase of surface rehabilitation after the completion of the project operation;
- ë) ways and methods to be used for the construction of project facilities;
- f) raw materials to be used for construction and how to provide them (building materials, water and energy);
- g) information on possible project links with other existing projects around / near the project area;
- gj) information on the alternatives considered regarding the selection of the project location and the

technology to be used;

- h) data on the use of raw materials during operation, including the quantities of water needed, energy, fuels and how to provide them;
- i) other activities that may be needed for the implementation of the project, such as: construction of camps or residences, etc .;
- j) information on the permits and licenses required for the project, in accordance with the provisions made in the legislation in force, as well as the competent institutions for permitting / licensing the project.

1.2 Preliminary EIA report, which includes:

- a) a brief description of the vegetation of the surface where the project is proposed to be implemented, accompanied by images;
- b) information on the presence of water resources in the area required by the project and in its vicinity;
- c) an identification of potential adverse environmental impacts of the project, including impacts on biodiversity, water, soil and air;
- ç) a brief description of possible discharges into the environment, such as: polluted water, gases and dust, noise, vibrations, as well as the production of waste;
- d) information on the possible duration of the identified negative impacts;
- dh) data on the possible spatial extent of the negative impact on the environment, which means the physical distance from the location of the project and the impacted values included in it;
- e) the possibility of rehabilitating the affected environment and the possibility of restoring the affected surface environment to its previous condition, including the return of agricultural land (if any is in existing use) and the approximate financial costs for rehabilitation;
- ë) possible measures to avoid and mitigate negative impacts on the environment;
- f) potential impacts on the transboundary environment (if the project is of such a nature);
- g) the relevant certificate and license of the NLC of the specialist who drafted the preliminary EIA report.

1.3 Service fee payment invoice

2.7 CITIZENS 'RIGHTS

Law no. 10431 dated 09.06.2011 "On environmental protection", defines the role and rights of the public in environmental issues. Chapter VII Environmental Information includes the following issues:

- Purpose and functioning of the environmental information system
- Informing the public about environmental issues
- The right to have environmental information
- The right to sue
- Public participation and the public involved in decision-making

DCM No. 247, dated 30.4.2014 "On determining the rules, requirements and procedures for informing and involving the public in environmental decision-making", defines the rules, requirements and procedures for informing and involving the public during the environmental impact assessment.

3. PROJECT CHARACTERISTICS

3.1 DESCRIPTION OF THE EXISTING ROAD

The existing road is about 7 km long and 4 - 4.5 m wide. The part from the Archaeological Park Gate to the village of Hekal is an asphalt paved road in relatively good condition and recently systematized. The rest is partially paved with bituminous sand, and partly located up to the gravel layer, in a very damaged condition and unsafe for users. There are no important works of art along the entire length of the existing road, and there are no side channels.

For the purpose of study, as well as in function of the condition of the road layers, we will divide this road segment into two parts:

1. Road axis from the Archaeological Park Gate to the village of Hekal

For the purpose of the study, the orientation of the project analysis was made starting as point 0 (km 0 + 00) at the Gate of the Archaeological Park. The road axis from the gate of the Archaeological Park to the village of Hekal extends to a length of 1.2 km and is generally in good condition.



Km 0 + 100



Km 0 + 340

From km 0 + 000 to km 0 + 300 the road is asphalted with a width of 4 m, with the embankment 30-50 cm unpaved. After this point, on the left side of the road in the direction that leads to the village of Hekal, we have the concrete paving of the kuneta and the placement of concrete curbs. In some parts of the road this is repeated on its right side (photos below).



Km 0 + 420



Km 0 + 450

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Km 0 + 650



Km 0 + 725

On the left side of the road we have many retaining walls with a height of about 2 m in good functional and visual condition, which may impose that the expansion of the road in these areas is done only on its left side.



Km 0 + 900



Km 1 + 130

As this segment generally passes in residential areas, there is the problem of surrounding walls and buildings near the road, which makes it difficult to adopt the trail in accordance with the standard. In this area there will be a need for small expropriations of garden territories or displacement of surrounding walls.

The road has different slopes, which accompany it along its entire length, creating problems in drainage, especially in periods of heavy rainfall.

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2. Road axis from the center of Hekal village to the national road axis Levan - Tepelene



Km 1 + 150



Km 1 + 180

This segment is presented in different conditions both by the condition of the layers but also by the geometry (with the exception of a small part at the exit of Hekal village).

We generally have extremely damaged layers and the bituminous sand layer is almost non-existent on a good part of the road. In fact, such an outfit is not at all suitable for a street of this category and for the conditions in which it takes place.

At km 1 + 180 we have a landslide in a length of 50 m, for which an urgent intervention is needed, because as seen from the photos, we have a damage to the body of the road, which poses a risk to homes and businesses that are located below road level.

Such phenomena are not repeated on the other side of the road, but there are signs of deformations and partial movements of weak rock masses.



Km 1 + 200



Km 1 + 300

At km 1 + 300 on the right side of the road is the surrounding wall of the school of Hekal village. It is located almost on the inside of the road and therefore will have to be moved after its widening.

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Km 1 + 500



Km 2 + 000



Km 2 + 500



Km 2 + 720



Km 3 + 800



Km 4 + 200

The road continues to wind in low-radius turns and with very difficult visibility conditions, which makes it dangerous for users. It has a considerable longitudinal slope which continues uninterrupted up to km 5 + 500 and then crosses the flat ground until the meeting with the national road Levan-Dames. As the road

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runs on a slope, special care must be taken to evacuate suitable for rainwater. This system is currently completely non-existent causing the torrential rain to create a bed on the body of the road and severely damaging it.



Km 4 + 700



Km 5 + 570



Km 5 + 870



Km 6 + 580



Km 6 + 800



Km 6 + 950 (intersection with Levan-Tepelene road)

From the point of view of the stability of the foundation, the road does not present major problems but there are deformations, which generally belong to the inappropriate dimensioning and typology of the layers, as well as the lack of sewers for its drainage.

3.2 REALIZATION OF THE NEW PROJECT

The temporary union JV GEOSAT-ATELIER4 has seriously assessed the requirements of TeR and has fully assimilated the overall objective of this project, which requires: improvement of planimetric and altimetric parameters of this road axis, realization of protective structures, realization of a road and tourist signalization, drafting a road safety audit to realize a safe movement towards the point of archaeological importance such as Bylis Archaeological Park, as well as improving the movement for the inhabitants of the area.

The main objective presented in the ToR is the realization of a project as complete and sustainable as possible, which meets all the requirements required in KTP 2001 for a category C2 road, in the road segment Bylis Archaeological Park - Levan - Tepelena Road.

The specific objectives of this report are:

- Providing the best possible solution for this road axis at the lowest possible cost, thus ensuring an appropriate technical-economic balance;
- Analysis of socio-economic benefits and ensuring the highest possible ratio of Cost / Benefit analysis, as a result of the reconstruction of this road axis;
- Realization of different possible variants during the project-idea phase and drafting of the project-implementation, including all the necessary geological, hydrological, environmental investigations, etc.
- Identification of the impact on the environment and implementation of the expropriation plan.

For the realization of the project in an accurate and stable way, we will refer to the following materials:

- Standards: KTP-2001, EUROCODE, EN, AASHTO, ASTM, BS, CNR, etc .;
- Required licensed software for project calculations;
- The legislation in force of the Albanian state where the basic law is the Road Code, but where the legal and sub-legal frameworks will be taken into account;
- Collection of data from various public or private institutional sources such as: data on traffic, hydrology, climatic conditions, geotechnical, topographic, etc .;
- Accidents and black spots of traffic on road axes;
- Surveys (or surveys) conducted in the past;
- Thematic maps (geological, environmental, seismic, photogrammetric, etc.);
- Photographs and film recordings (video);
- Information received from the Institute of Archeology for studies conducted in this area.

In accordance with the Terms of Reference, the design of the road will be performed according to the Albanian design standards for roads of category "C2".

Road parameters are predefined for category IV "C2". Road axis Bylis Archaeological Park - New Levan Tepelene Road (~ 7 km) will have the following characteristics:

- a- The width of the crossing track will be taken 2 x 3.0m
- b- Two unpaved external sidewalks 2 x 1.00 m
- c- The width of the guide strip 2 x 0.20m
- d- Width of the road crown 8.0 m

Based on the technical conditions of the design, the road to be designed will be of hilly-mountainous type of category "C2", with a design speed of 30-50 km / hour.

Some of the main indicators that will be respected for this category of roads are:

- 1- Minimum radius (R): 75 m for the plain part, 30 m for the hilly part, 25m for the mountainous part.
- 2- Maximum longitudinal slope: 8% for the hilly part, 11% for the mountainous part.
- 3- Average daily traffic density: 800 - 1250 TDM

- 4- The locations for roads of this category are 40 m long, 5 m wide, and the entrances and exits to the highway are built with an angle of 300.

4. ARCHAEOLOGICAL AND CULTURAL HERITAGE, LAND AND LANDSCAPE

This chapter examines objects of historical and cultural interest.

4.1 ARCHAEOLOGICAL AND CULTURAL HERITAGE

Bylis National Archaeological Park is located 40 km away from the city of Fier, 15 km from the city of Ballsh and 9 km from the national road Tirana - Gjirokastra, near the village of Hekal in the district of Mallakastra. The park is located on the plateau of a hill and has an area of 30 ha. This park has a favorable position as it extends over the Vjosa river valley. Bylis has been declared a national archeological park by decision of the Council of Ministers no. 396 on 31.03.2005.

Bylis is one of the most important archeological centers of Albania, ranked in terms of monumental values, along with Apollonia and Butrint. With its dominant position on the hills of Mallakastra and on the area of the Vjosa valley, this Illyrian center offers us a very special view compared to the cities of Classical Antiquity. Bylis was the largest Illyrian city in southern Illyria, yet it was mentioned relatively late by ancient historians and geographers. First, the name of the city appears in the form of Bulis in the events of 49-48 BC, when it was handed over to Caesar and served as a base for the supply of his army. Years later it was Cicero, who informed the Roman senate, that Bylis had been conquered by the men of Mark Antony. Pliny

, in the first half of the 1st century AD described Bylis as a Roman colony, while Ptolemy in the 2nd century AD. and Hierocles in the 6th century BC classified it as one of the main cities of Illyria. The earliest source for the history of the Bylins is the Greek geographer Pseudo-Skylaksi, who left a description of the Adriatic and Ionian coasts around 380 BC.

In a broader sense the Bylin community was part of the great Illyrian province of the Atintans, which included the entire lower and middle Vjosa valley. In the events of 429 BC, related to the Peloponnesian War, Atintania was under the rule of the Molossians. After 385 BC, when King Bardhyl defeated the Molossian army, this province gained independence and experienced a rapid development of civilian life. Consequently, sometime before 350 BC, the city of Bylis was founded.

In fact, the planimetry of Bylis and the technique of building the walls do not lead to earlier than the years 370- 350 BC. The creation of tombs near the eastern entrance of the city also begins exactly after this time. The immediate construction of a large city was the result of an early development of Illyrian civic life in that area. The economic strengthening, but also the aggression of the Macedonian kingdom of Philip II to the east, in the middle of the 4th century BC, seems that determined the decision of this community for the construction of the capital Bylis. have left traces in Bylis, at least until the middle of the 3rd century BC.

Archaeological Treasury of Bylis and byline centers

Portrait of Emperor Hadrian

The white marble head was found during the excavations of a simple dwelling north of dwelling B, where it was certainly brought from the town agora. It was part of a life-size statue , dedicated to the emperor Hadrian (117-138 AD).

Slave on the altar (height 0.95 cm)

The Altar of Dionysus was an inseparable element of the ancient theater, because ceremonies in honor of the god of every opening of the theatrical season were performed there.

Aphrodite Terracotta (height 44.5 cm)

It was found during the excavation of an apartment in the bylin town of Margellic, but it was produced in Apollonia

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Hallcoma of the Balaites (height 38 cm).

It comes from the territory of the Bylins, but the exact location of the find is not known. The bronze tablet was once exhibited in a square in the center of the Koinon of the Balaites, probably the Illyrian city of Gurzeza near Cakran.

Inscriptions of Victor

In the monastery of St. Mary Ballsh have been found four inscriptions carved in limestone blocks: the first, during the First World War (lost), and the other three in the 1983 excavations.

Tombstone

The limestone slabs of Karaburun once adorned a tomb of the 3rd century BC. near the Illyrian city of Gurezeza.

Prytaneoni

The Prytaneon is a monument measuring 20.10 x 5.80 m proof of its importance.

Altar

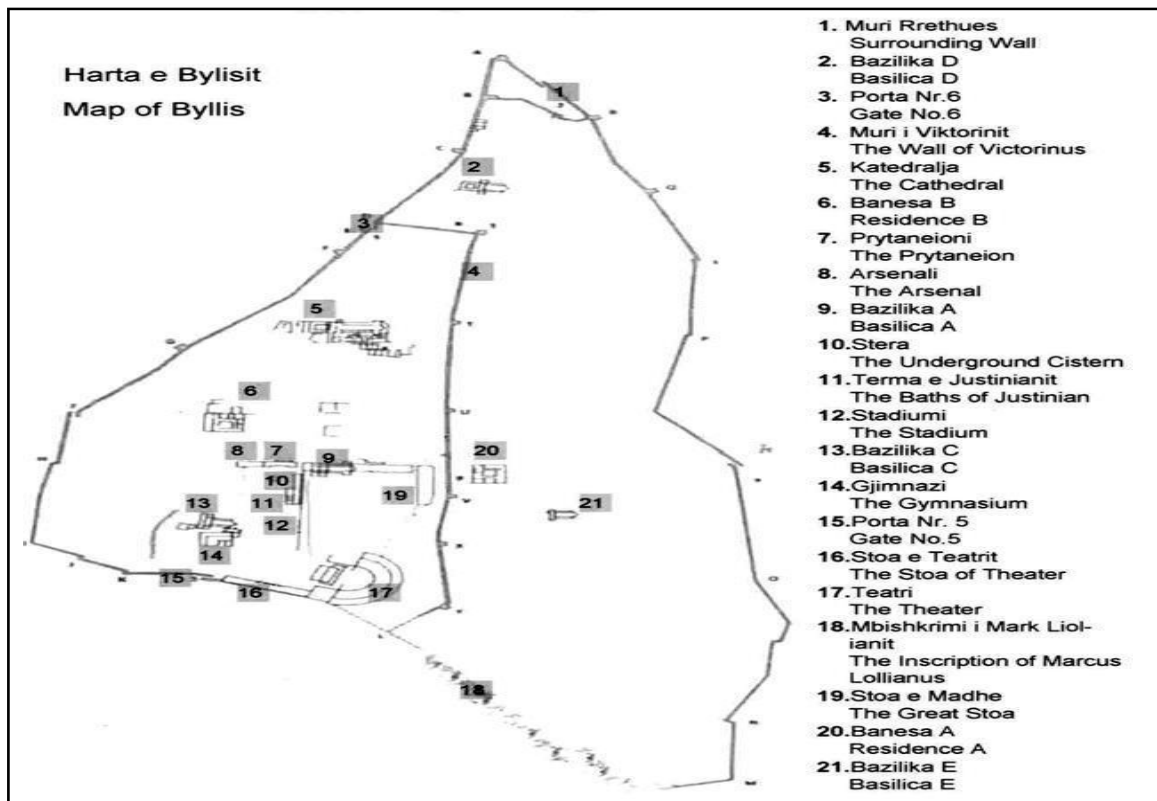
It is a quadrangular monument measuring 7 x 5.88 m (area 41m²) located in the middle of the agora square.

currencies

Symbols of byline currencies were quite different from those of Apollonia, aiming to compete with them in the local market.

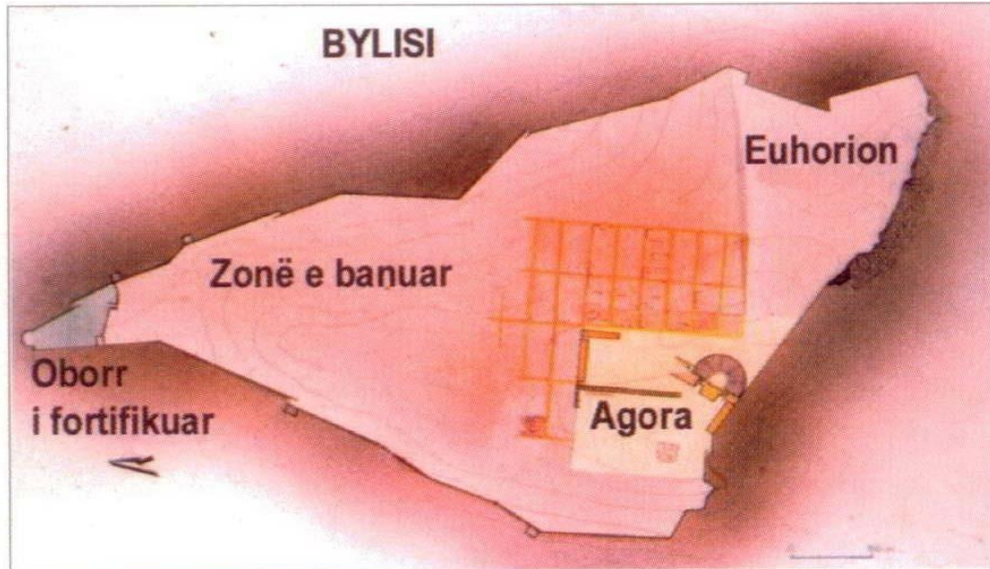
Inscription of Mark Loliani

From gate no.5, a hillside crossroads leads to the village of Klos, where the ruins of an early bylin town, probably Nikaia, are located.



Byllis Urbanism

Bylis is one of the most typical examples of acropolis-free towns perched on a hilltop. The construction of Bylis, as an initiative of the Koinon of Bylis, had foreseen not only the creation of a safe fortification, but also the provision of a normal life of its inhabitants. From the initial plan were defined three main areas within the surrounding walls. on the south side, in the highest and most picturesque part, was defined the public space called agora. The whole southeastern part of the city was reserved for housing the inhabitants of the villages and their property in case of war. the existence of the city no dwelling was ever built. The other part, which constituted about two thirds of the surface of the city, constituted the inhabited area.



Bylis plan according to urban subdivisions

Agoraja. Entrance and prytaneioni

The entrance to the agora corresponded to the plateau D and has a width of 8.30 m. It opens into a decorative wall, of beautifully worked square blocks, which separated the inhabited area from the public space. The visitor was in front of the perspective of the stadium stairs on the left side, while on the right side there was a building measuring 20.10 x 5.80 m, built on the agora wall. The building had two alcoves and a porch with wooden colonnades among them. It can be thought to have been the prytaneion, the office of the highest executive function of the koinon.

Stadium and stera

Bylis Stadium is a special solution compared to the horseshoe-shaped stadiums of ancient cities. Due to the adaptation to the terrain it has only one arm, which rests on the slope of the terrain. Also, due to the lack of space this staircase has a length 134m and the standard length of the stadium of about 190m was supplemented by the extension of the runway in front of the theater. .

Justinian's theme

The stera continued to be used until the Byzantine period. To the west of the stera, using its water, a public bath was built. The building has a quadrangular shape 24.50 mx 6.40 m, with several alcoves, where the apodyterium (rooms of undressing), frigidarium (fresh water baths), tepidarium (lukewarm environment), sudatio (sweat bath), caldarium (hot room), praefurnum (oven and fire room).

Gimnazija

To the south of basilica C are the ruins of a social building, which has been identified with the city gymnasium due to its quadrangular planimetry, with a row of alcoves that develop around an inner courtyard. The monument was part of the architectural complex of the agora, as evidenced by its orientation according to the urban axes of the city. It was built in the second half of the III century BC. with the typical technique of this time, with quadrangular blocks, which are stored only in one row of the foundation.

Theater

The theater is the most important monument of Bylis of the ancient period. Together with the large stoa and the stadium it has defined the architectural composition of the agora around the middle of the 3rd century BC. The southeast corner of the agora was chosen for the construction of the theater, where the immediate elevation of the terrain provided the opportunity to use the slope for the construction of stairs. Also, this position next to the city wall and gate no. with the rural area of koinon, from where a large part of the spectators came, without having to go through the neighborhoods of the city.

Stoa of the theater

Theatrical performances in antiquity were associated with the feasts of Dionysus, which took place in March-April. They lasted for several days from morning to evening, so the spectators needed a place to rest, eat, or take shelter in case rain. For this purpose served not only the porches of the theater building, but also a stoa built next to it, along the perimeter wall. The stoa was a two-storey building. It had dimensions 60m x 11.40 m (20 x 40 ancient legs).).

Banesa A

Next to the stoa, on the east side of the Byzantine wall, is apartment A. It once stood at the intersection of platea C and that III, and covered an area of 30 x 24 m. In order to fit the orthogonal system, the apartment was built on a terrace created by a strong wall with buttresses and partially carved rock.

Banesa B

After passing the Bektashi tekke and climbing towards the agora, we encounter on the right side an antique dwelling with peristyle. This flat measuring 29.5 x 24.8, once occupied one-sixth of an island, at the intersection between plateia C and that IV. It was located on a terrace created by strong walls of thick blocks, partially leveled the sloping terrain

Necropolis

During the 3rd century BC, a monumental necropolis was built outside the entrance no.4.

Bylis Basilica and Cathedral

Basilica A

The basilica was built within the agora of the Hellenistic period, partly utilizing the constructive remnant of the north wing of the L-shaped stoa in a dominant position over the northwestern part of the city. Bylis Cathedral, consisting of the basilica, the baptistery and the episcopal complex, is the largest monument of the city for Late Antiquity, occupying an area of more than one hectare in its most important part.

Canteen and workshop

The wine cellar in Bylis is best preserved in the Mediterranean not only for the period of late Antiquity, but for all periods, there can be seen the whole process of wine production, from the arrival of the grapes to the extraction of the wine. It is a porch with a yard where grapes were put, unloaded and stored inside.

Management and direction of Bylis park

Bylis Archaeological Park is managed by the Office of Administration and Coordination of Bylis Archaeological Park established by the Decision of the Council of Ministers no. 396, dated 31.03.2005, "On the Approval of the Borders and the Regulation of the Administration of the Archaeological Parks of Shkodra, Lezha, Apollonia, Bylis, Amantia, Orokum, Antigone, Finiq and Butrint" Chapter III of this decision specifies the tasks of ZAKPA (Offices of Administration and Coordination of Archaeological Parks) which are institutions under the Ministry of Culture.

4.1.1 Impacts on Archaeological and Cultural Heritage

Previous studies have identified significant remains in the Bylis Archaeological Park. Road works can bring to light other unexpected and valuable waste. Archaeological remains can also be found along the route, during its construction.

Although the road goes beyond the boundaries of the PAB and will not have any significant negative impact on the Bylis Archaeological Park, it is potentially considered important to proceed with specific investigations, prior to the construction of the road.

There is a possibility that the reconstruction of Bylis Archaeological Park-Rruga e Re Levan-Tepelena Road will be related to the increase in the number of visitors who will come to this park. This is an important positive impact from the point of view of tourism development in Albania, as well as from the point of view of the spread of Albanian culture and cultural heritage. The level of importance is high.

4.1.2 Mitigation measures for archeology and cultural heritage

Although the road passes outside the boundaries of the PAB and will not have any significant negative impact on the Bylis Archaeological Park, but in case of unexpected finds, the archaeologists of the PAB and ASHA will be notified in order to conduct studies to determine if the findings are more interest.

As it is known, the Law on Cultural Heritage passed in the Albanian parliament in 2003. During the works for the construction of a road, a constant cooperation with specialized archaeologists is needed, in order to minimize the potential damage to the archeological areas and monuments.

4.2 LAND AND LANDSCAPE

Ky section Receivet me environmentn ne conditionat current. ae accent of apartto mustt t "i given the fact qe mjedisi has a well-balanced unit that is heavily influenced by changes. The environment seems to be considered very dynamic and especially interrupted by human intervention.

4.2.1 Terrain Character

The road "Bylis Archaeological Park-New Road Levan-Tepelene" passes along the existing agricultural lands and a rural landscape with scattered villages and houses. The area where the road passes is entirely land planted with arable crops and less orchards, while the hills are planted mainly with olive groves.

On this basis, the protection of rural and residential values and the enrichment of the landscape along the sides of the road are intended. The objectives of the landscape works related to the reconstruction of the road are as follows:

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- *To develop a landscape, the character of which is related to the types, scale and diversity of the existing landscape;*
- *To develop a landscape structure which physically and visually integrates the proposed road with the surrounding terrain.*
- *Reduce the negative effect of visual disturbances.*
- *To protect, re-create or enrich the existing landscape, which is directly or indirectly affected by the road;*
- *Facilitate the creation of conditions for increased safety and travel satisfaction, and*
- *Increase to a maximum the number of attractive views during the trip without deteriorating the view from the properties along the road.*

4.2.2 Impact on the ground and landscape

Landscape and visual impact will be emphasized more during the construction phase and for a short time further, as mitigation of this impact is not implemented or effectiveness is limited.

In general, the negative visual impact will increase from residential areas to other properties that are close to the construction site. Visual impact will be enhanced through visual disturbance and visual interference from trees and the lack of protective fences, change of land quotas and construction traffic. Properties in the vicinity of the building may present visual obstacles.

As long as the road generally follows the existing trail, the impacts through visual disturbance and visual interference, from the point of view of tree loss and vegetation cover, will be limited.

Cultural heritage elements are also out of the way so their visual context will not change much from the project.

The overall impact from short to medium term on the proposed terrain character path is considered to be low.

4.2.3 Landscape and Landscape Facilitation Measures

General

In this respect the road route has been selected to have as few impacts as possible on private property, topographic features, trees and forests wherever possible. However, as with any other construction some types of impacts are inevitable and wherever they will appear the necessary measures have been proposed to mitigate them.

Construction Phase

The contracts will be concluded in order to ensure the best working practice as well as to reduce the negative impacts that come as a result of construction at the lowest possible level and to ensure that the machines operating within the scheme in the construction area implement them. those.

Storage areas will be positioned in order to avoid further impacts on private property and existing dwellings, trees, fences, drainages, etc. and as such will have priority to be built.

The permanent nature of the impact will also affect the properties of the surrounding private homes only in those sections where this property is in the vicinity of the proposed road. However, mitigation measures have been proposed to minimize such impacts on residents.

5. NATURAL RESOURCES

5.1 CLIMATE

Climatic conditions

The study area is part of the Central Mediterranean Plain Climate Zone. This sub-area is characterized by mild winters with strong marine impact and hot summers. Average annual rainfall fluctuates in the range 950-1200mm. The number of days with the heaviest 1.0mm rainfall ranges from 85 to 100 days. The rains, in general, are not torrential. Snowfall is a rare occurrence and we can not talk about its stable layer. The maximum height of snow usually reaches 5 to 10 cm and rarely 15-17cm.

The thermal regime is uniform. The average annual temperature ranges from 15-16 .C. Winter is generally mild. Thus, the average January temperature fluctuates from 6 -7 °C. Absolute temperature minimums range from -3 to -5 °C, while only in rare cases can lower temperatures be observed. The frosty period is short and the number of frosty days can reach up to 15-20 days per year, during which the minimum temperature drops below zero or is equal to it.

The vegetation period with temperatures above 10 .C starts on average in the first decade of March and continues until the beginning of the first decade of December.

The wind generally blows from two directions. During the cold half the southeast prevails, not excluding the north. The warm half prevails in the northwest. Wind speeds in this area are among the highest observed in our country.

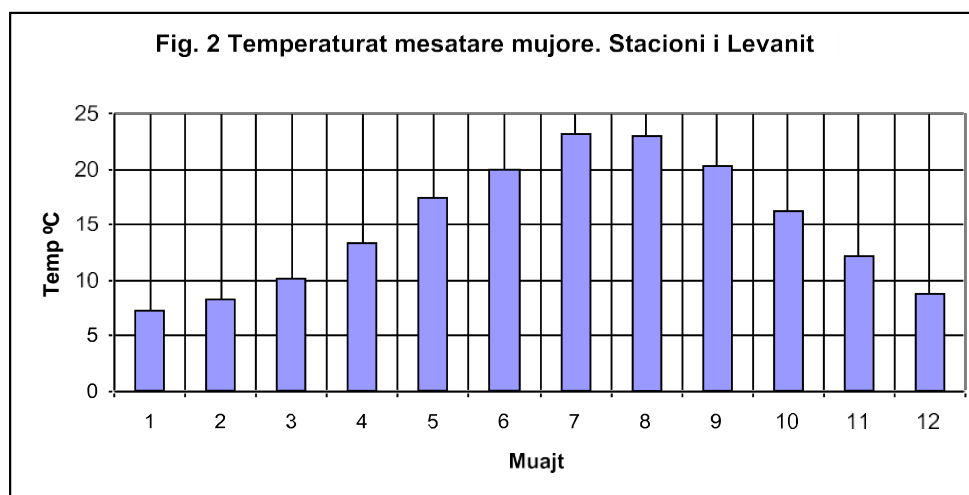
Air temperature

Air temperature is an important climatic element, which represents the degree of solar energy in the vicinity of the earth.

Table 1 gives the monthly temperature values while in fig. 3 their graphic presentation. From these data it appears that the maximum average value is reached in August (23.9 °C) and the minimum value in January (6.0 °C). The average value for the whole year is 14.7 .C.

Tab. 2 Average monthly temperatures. Levan Station

Months	1	2	3	4	5	6	7	8	9	10	11	12	year
Temp. .C	7.2	8.3	10.1	13.3	17.4	19.9	23.1	23	20.3	16.3	12.2	8.7	15.0



rainfall

Precipitation is an important element in the design of roads, especially their intensity.

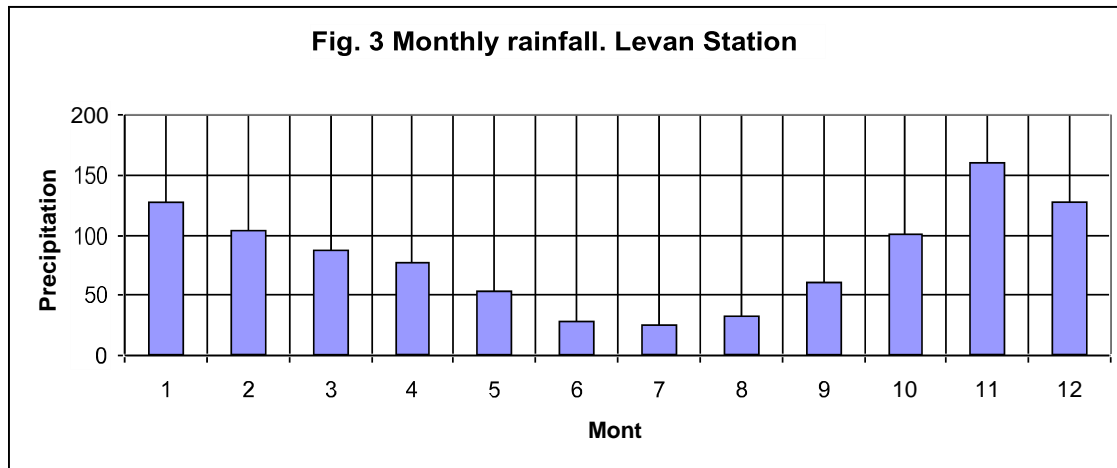
Table 3 gives the values of monthly precipitation for an average year and in fig. 5 graphical representation of their intra-annual distribution. From these data it appears that the maximum average value is reached in the winter months and the minimum value in July. The average value for the whole year is 985mm.

The number of days with heavy rainfall of 1.0mm ranges from 85 to 100 days. The rains, in general, are not torrential.

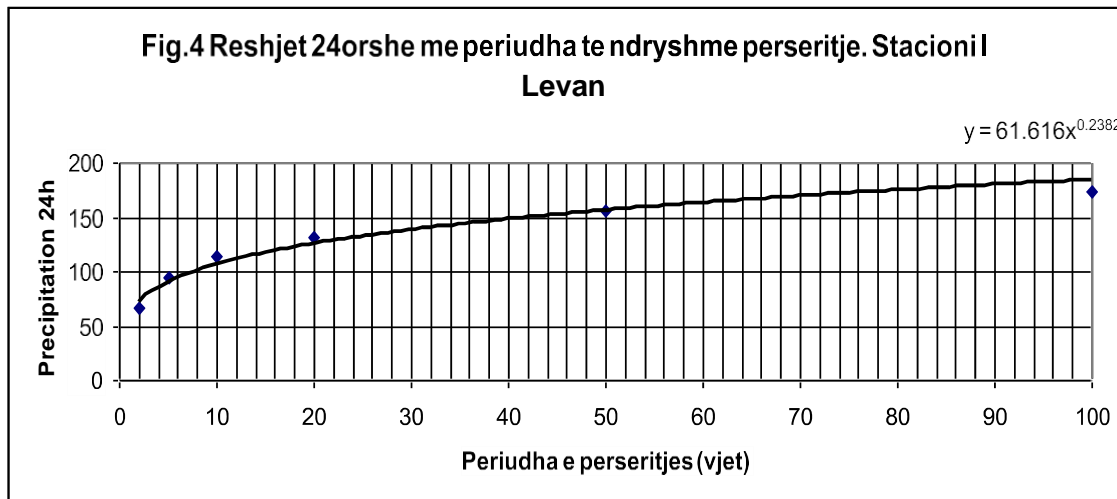
Snowfall is a rare occurrence and we can not talk about its stable layer. The maximum height of snow usually reaches 5 to 10 cm and rarely 15-17cm.

Tab. 3 Intra-annual rainfall distribution (mm). Levan Station

Months	1	2	3	4	5	6	7	8	9	10	11	12	year
rainfall	127.6	103.7	87.7	77.2	53.3	28.7	25.6	32.3	61.4	100.9	159.3	127.6	985.3



Another rainfall parameter is the maximum 24 hour rainfall. Fig.6 shows the relationship of maximum 24-hour rainfall with different repetition periods T. Through this connection and the corresponding equation, the maximum 24-hour rainfall for different repetition periods for the study region can be calculated.

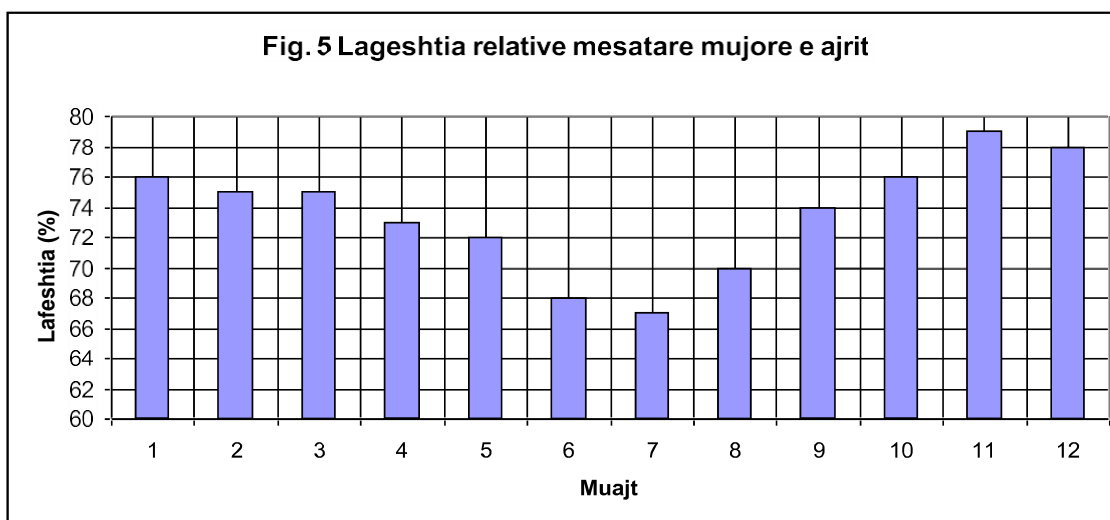


Air humidity

Humidity is also an important climatic element. In fig. 4 shows its intra-annual distribution. From this figure it appears that the average value of humidity is reached in the winter months (78-79%) and the minimum value in the summer months (67-68%). Fig. 5 graphically shows the intra-annual distribution of relative humidity for the Fier station, because only there there is data on humidity and in addition humidity is an element that varies slightly in a surrounding area that also captures the path under study.

Tab. 4 Relative humidity (in%). Fier station

Months	1	2	3	4	5	6	7	8	9	10	11	12	year
Lag. rel.	76	75	75	73	72	68	67	70	74	76	79	78	74



The fog consists of very small water droplets that are not visible to the naked eye and are suspended in the air. The fog is usually gray. In cases where the fog is dense the sight can be several meters.

In designing roads related to fog, it is important to know the number of foggy days and its duration. The number of foggy days varies greatly from one area to another. Monthly analysis of foggy days shows that there is no regularity of fog distribution in different months of the year. However in mountainous and partly hilly areas the largest number of foggy days is observed in late autumn, winter and we - the first half of spring. In the study area, the average number of foggy days is 8-9 days per year, with a maximum in October, November. Table 6 shows the average number of foggy days.

Months	1	2	3	4	5	6	7	8	9	10	11	12	year
Foggy days	0.7	0.8	0.7	0.6	0.9	0.5	0.0	0.1	0.4	1.5	1.3	0.7	8.2

As can be seen from the table, the number of foggy days in the study area is small and does not present any significant difficulties in the circulation of vehicles.

5.2 GEOMORPHOLOGY, GEOLOGY AND LAND

5.2.1 Geomorphology and Geology

The relief of the area where the road will pass in general is very variable both in terms of quota differences and the morphology of the relief.

The road starts at the quota of about 471 meters above sea level, which is the highest point of the area, where the Archaeological Center of the Old Town Bylis is located and ends at the quota of 38 meters which is the junction with the national highway.

- In the first 700 meters the road passes along the ridge of the hill of Hekal village, where the old town is, in a stable relief with little deluvial cover, without stability problems, and with a slope of about 7-9 degrees.
- Then for about 800 meters the road passes through the village of Hekal, in a very good, rocky area, with thin deluvial cover, although the slope of the slope is large.
- After that, for about 2000 meters the road passes through the lands of the village, on a steep slope, with low stability, with relatively large deluvial thickness, about 3 meters and rarely up to 6 meters as in the case of slip no. 1 and no. 2. In this area are noticed: steep slope, frequent slips both along the road axis and outside it in fields and plots, collapsed road slopes, unsystematic free water that affect further destabilization, deformations of the track base and the lack of tall plants that would positively affect the stability of the slope.
- After this difficult interval for about 1800 meters we have a good area, where the rock comes to the surface or has thin deluvial cover. at this interval, despite the slope, the road appears stable.
- In the interval pk 4850 to pk 6000 meters, the road passes through slopes with variable slope, from 15 to 30 degrees, with relatively large deluvial cover in general stable with the exception of slide no. 3 in which to intervene to increase road safety.
- The last interval for about 820 meters is the only plain part of this road that stretches across the first terrace of the Vjosa River. The deluvial cover in this area is 3-4 meters thick and is placed on the gravel of the river bed.
- Their treatment will be discussed in more detail in the chapter "On the Geological-Engineering conditions of the road route."

5.2.2 Geological-tectonic construction of the region

During the reconnaissance and field studies, for the examination of the construction conditions of the road route, the following types of deposits have been met which are treated briefly below:

- **Paleogene deposits.**
- **Quaternary Alluvial Deposits**
- **Quaternary Deluvial Deposits**

Paleogene deposits

Are represented by the upper Oligocene flakes (Pg33).

These rock formations build the Hekal area where the highway will be developed and are part of the Ionian Geological-Structural Zone. These deposits are in stratified forms with thin rhythms and where the sandy and conglomerate composition predominates. The upper bouts featured two cutaways, for easier access to the higher frets. Upper Oligocene deposits have a more limited prevalence compared to Lower and Middle Oligocene. They take part in the construction of syncline ranges and northern extensions of the Berat and Kurvelesh subzones. In the eastern part, in the syncline of the Permet, they are represented by clay-alevrolito-sandy interweaving, with massive sandstones, underwater screw and rarely limestone layers. Further west, starting from the Memaliaj syncline, the abundant presence of biomicritic limestone layers is observed.

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gradually in clay marls. From the east to the west there is an increase in the number of vitthises horizons.

In the upper part of the Upper Oligocene, sandstones predominate, which sometimes turn into massive sandstones. On the eastern edge of the syncline of Memaliaj and in the northern continuation of the Kurvelesh subzone (north of the Griba anticline), these deposits are reduced and are represented by clay flysch belonging to the "Sefaj" formation.

Thus, as can be seen, the Upper Oligocene deposits undergo marked changes from east to west and from south to north.

The deposits of the area with *Globorotalia kugleri*, in addition to the surface, are also found in the springs of Gorisht, Koculi, Amonice Cakran, Mollaj, Ballsh, Visoka, Marineza, etc. In general, these deposits are normally placed on those of the area with *Globigerina ciperoensis ciperoensis*, while in the paleocultures of Cakran, Gorisht-Kocul, Amonice structures, they are placed with stratigraphic rest on the older deposits (Gjoka, etc. 1986). The area with *Globorotalia kugleri* in cases when the cutting is clayey is characterized by rich microfauna, but when the cutting is sandy it presents with dystrophic fauna with poor preservation.

Quaternary Alluvial Deposits

These deposits in our square do not meet on the surface. They were caught drilling in the terrace of the Vjosa River. These consist of rounded river gravel, up to 10 cm in size, slightly rounded, rounded, compacted and water-bearing.

In our works they met below the depth of 4 meters from the ground surface.

Quaternary Deluvial Deposits

Quaternary deposits are widespread throughout the region. Their lithological composition is predominantly predominated by clayey.

The thickness of these deposits varies from 0-2 -4 and rarely up to 9 meters.

these types of deposits are not aquifers. There is a predominance of light to heavy clays, fine-grained to medium-grained clays and sands.

The constituent soils of deluvial materials are mainly loamy, slightly to moderately compacted and cover most of the area where the road lies. They pose a problem on the slope, as their large thickness favors sliding.

5.2.3 Seismicity

The study area is part of a relatively active seismic region, with a known magnitude activity up to 5.8 Richter scale and with intensity 9 Mercali degrees

5.2.4 lands

The gray to brown soil belt represents the relief of the hill up to 600 m. They are poor in humus (2-5%), also the level of this humus reaches up to 60 cm thick. They are mineral-rich base soils (ph 7-7.5) because the evaporation process is common.

5.2.5 Impact during the Construction Phase for Soils and Facilitation Measures

Soils and Reuse of excavated materials

Excavated materials that are intended for reuse will be managed to a minimum and stored in a way that minimizes the effect of the weather. The time between digging and reuse during dry periods will be kept to a minimum. During prolonged periods of drought

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the contractor will stop excavations and place these materials to prevent degradation due to drought.

Impact during the Operation Phase and Mitigation Measures

Upon completion of the road, visual inspections will be undertaken on all structures along the road axis, including embankments and culverts, to ensure that road structures do not cause erosion, and to identify the requirements for carrying out any repair work. This can reduce the potential future impact on soil loss and terrain-related impacts caused by erosion.

Table 5-1 Impacts and mitigation measures for, Geology and Soils during construction

Activity	Sources of influence	the impact	Magnitude	Facilitation Measures
<i>Re-use of soil materials</i>	<i>Road construction.</i>	<i>The noise and dust that coming from transportation of materials. Loss of valuable land due to transportation AND deposit to incorrect.</i>	<i>Easy</i>	<i>Excavated soils to be used for replenishment will be transported and deposited as specified in the documents.</i>
<i>Soil contamination</i>	<i>Construction of the spill plant.</i>	<i>Accidental spills of vehicle fuel.</i>	<i>Easy</i>	<i>Certain pollution control measures to be implemented by the Contractor</i>

Table 5-2 Impacts and mitigation measures for Geology and Soils during operation

Activity	Sources of Impact	the impact	Magnitude	Facilitation Measures
<i>Soil erosion.</i>	<i>Road operation and weather conditions (surface water discharge).</i>	<i>opportunities for casuistry circle tobinove etj. due to rainwater spills that are not properly absorbed by the canals.</i>	<i>Easy</i>	<i>Maintenance inspections about the structures that should be done regularly after the completion of the road and any presence of corrosion that is done by the relevant prefecture or municipality</i>

5.3 HYDROLOGY, SURFACE AND GROUNDWATER

5.3.1 Hydrology

The study area is distinguished for its hydrographic springs (underground and aboveground). The surface runoff is represented by the Vjosa River. This river is one of the largest rivers in southern Albania, which is distinguished for its length (272 km). Along this section the Vjosa has 20 tributaries (3 rivers and 17 streams) mainly on the right side of its course. Most of the rivers and streams that end in the Vjosa have their basins created terrigenous formations impermeable to water flow so they differ for a high flow rates, and significant water discharges during the season.

According to the MoE report on surface water quality for 2013, the Vjosa River results as follows:

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In the Vjosa River, the monitoring is carried out in 2 stations: Tri Urat - Çarshovë, Vjetër Mifol Bridge, which represent the river at the point of entry into Albania, we can say the upstream and the point before the outflow - the downstream.

- **Temperature** of water varies from 24 to 25.30C for the stations 3 Carshovë and Mifol Bridges in the first monitoring phase and 15.8 - 17.6 in October.

- **pH** of UN varies from 7.82 - 8.22 8.35 respectively for the stations Mifol bridge and 3 Carshova bridges. Seasonal variations range from 0.53 - 0.67. According to the limit values of the Water Framework Directive, the norm for acidic and alkaline aquatic environment the waters of the Vjosa River are in good condition. They are neutral (Ph = 6.5 - 9).

Alkalinity- From the measurements performed in the laboratory we see that the values range from 145 - 168 mol / l according to the stations respectively 3 Bridges Carshovë and Mifol. Seasonal fluctuations are almost insensitive 15 - 23 mol / l.

- **Electrical conductivity**- Fluctuates in the values 397 - 568 μ S / cm respectively 3 Carshova and Mifol Bridges. The largest fluctuations from season to season are at the station Çarshovë at a value of 171 μ S / cm.

- **Dissolved oxygen content** in the Vjosa River fluctuates in the values 6.09 - 9.2 mg / l while the average values 8.27 and 7.65 mg / l. The oxygen content decreases significantly in the second stage as a result of the extreme point of the water-less period. Oxygen levels in the Vjosa River classify the waters of this river as of good quality.

-**Content values of BOD5** fluctuate from 0.1 to 1.42 mg / l, while the average values are 0.65 - 0.89 mg / l, respectively the stations Çarshovë and Mifol. From the values obtained we see that they are at a very good quality level.

Content values of chemical oxygen demand NKO fluctuates at 0.24 - 1.28 mg / l at the 3 Charshova and Mifol Bridges. Seasonal fluctuations are low up to 0.08 - 0.88mg / l

- **Total phosphorus content** in the Vjosa River fluctuates in the values 0.01 - 0.39 mg / l. Seasonal fluctuations are presented graphically and it is noticed that they are large, while the average values obtained during this monitoring year are 0.095 - 0.2 mg / l. They are classified as good to moderate quality water. The increase of values in the second phase is closely related to the hydrological conditions of 2013.

Nitrate content values range from 1.6 - 2.4 mg / l, for Tri urat and Mifol stations, while the average values range from 1.65 - 2.1mg / l. Seasonal fluctuations are slight from 0.11 to 0.6 mg.l According to DKU the limit values of nitrate content define the waters of the Vjosa River as waters with good to moderate condition NO₃ 4 10 mg / l. Areas where high nitrate content is encountered are agricultural areas.

5.3.2 Impacts during the construction phase for hydrology, surface water and groundwater

Ground water

There is a possibility of groundwater pollution from construction plant spills and accidental spills of gases and fuels. Appropriate measures will be taken for the control of the plants which will be performed by the Contractor during the construction in order to reduce the impacts as much as possible.

Surface Waters

The proposed route will run almost the entire existing route and therefore will not have adverse effects on water flows. A negative impact can occur in small drainage networks.

The following possible impacts may occur during construction:

- *in groundwater as a result of cracks and excavations for foundations or accidental spills of fuel and oils during construction by construction vehicles and machinery used indiscriminately during construction activities;*
- *In surface waters as a result of continuous temporary interruptions from drainage channels or*

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indiscriminate pollution during construction activities;

Where the road passes over a canal, water overpasses will be erected. These junctions / crossings are designed to meet the needs of 1 to 100 storms a year.

5.3.3 Mitigation measures for hydrology, surfaces and groundwater

Construction phase

Pollution control measures will be put in place during the construction process. This will include scaffolding equipment and clay fences.

Reserves of building materials, such as asphalt, oil and chemicals will not be placed near water lines or water wells. Reserves will be placed on enclosed surfaces, covered with locking layers or with a more stable roof or surrounded by a gate to prevent losses. Reserves will be protected to prevent vandalism and theft that could lead to loss.

During the concrete casting phase, necessary for the construction of structures (piles, plinths, retaining walls) in order to avoid the explosion of water and the breakdown of concrete in the ground and in groundwater, some measures will be taken such as the positioning of the protection than the cover to hold the spill.

Water coming from car washes and appliances will be treated by sedimentation in a stabilization tank (waste) for waste and oils to allow small parts and oils to be eliminated. The water coming from the washing of the aggregates and from the production of the conglomerates will be treated by sedimentation in the reservoirs and then used again or sent to another place.

In the event of a spill of chemicals or leaks during construction, the contractor will develop a program of measures for surface water and groundwater.

Operation Phase

Irrigation and drainage canals

Irrigation canals will be restored using underpasses or diverted as may be necessary as part of the project.

Table 5-3 Summary of impacts and mitigation measures on surface and groundwater during construction

Component Affected	Sources of influence	the impact	importance	Mitigation measures
Water quality surface e	Discharge of cracks in water channels / leaks.	Reduction of water quality.	Easy	Construction of wall fences.
As above	Other pollution related activities of construction will enter the stream.	Reduction of water quality.	Easy	Pollution control measures to be put in place during construction.
Groundwater during construction	Extraction of surface materials will increase vulnerability / vulnerability ine of groundwater.	Increased groundwater vulnerability.	Easy	Taking appropriate measures for the control of pollution that will be drafted by the contractor during construction
As above	Leakage from the construction plant	Accidental oil sales and car fuel.	Easy	As above

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Component Affected	Sources of influence	the impact	importance	Mitigation measures
<i>As above</i>	<i>Mobilized clay and clay pieces from precipitation and construction activities.</i>	<i>Impact on groundwater quality in the vicinity of construction works.</i>	<i>Easy</i>	<i>As above</i>

Table 5-4 Summary of impacts and mitigation measures on surface and groundwater during operation / operation

component affected	Sources of influence	the impact	importance	Mitigation measures
<i>Physiognomy of streams of water</i>	<i>Regarding existing flows of water as well as proximity and capacity of nearby streams</i>	<i>Discharge from the road can increase the value of peak flow of that water inside water channels / lines</i>	<i>Easy until locally average</i>	<i>Stopping the increase in risk by flooding through the construction of deceleration ponds.</i>
<i>Water quality</i>	<i>Water surface e collected from the canal of drainage to be discharged into streams and afferta</i>	<i>Reduction of water quality from the discharge of road and spills INCIDENTAL</i>	<i>Easy</i>	<i>See mitigation measures above geology, pollution and water underground during operation.</i>

5.4 HABITAT AND BIODIVERSITY

5.4.1 Description of habitats and species

5.4.1.1 Aquatic habitats

The aquatic habitats described below include rivers, irrigation canals and drainage canals and in particular the Vjosa River and drainage canals of the Mallakastra area.

This type of vegetation is divided into two layers. The main type of vegetation in the first layer is reed (*Phragmites australis*). This association has a high ecological plasticity. It is located along irrigation canals and its tributaries in some drainage canals and in some parts of the Vjosa River where the current is not very strong. In some places it grows more green algae (*Lemna minor*).

Ecological pasticity is also emphasized by the composition of plant classes which include: (*Typha angustifolia*), (*Lythrum salicaria*), (*Polygonum hydropiper*), (*Polygonum lapathifolium*), (*Sium latifolium*) etc.

Aquatic habitats are important for a wide range of species especially aquatic insects, fish, amphibians, birds and mammals.

Insects are represented by a number of hymenoptera coleoptera (wasps, bees and ants, butterflies, (Hemiptera, Lepidoptera) dragonflies, etc.

The Vjosa River hosts a large number of fish which are represented by eels (*Anguilla anguilla*), (*Alburnoides bipunctatus*) Mediterranean mulberry (*Barbus meridionalis*), trout (*Salmo trutta macrostigma*), etc.

Amphibians and reptiles: yellow nipple (*Bombina variegata*), pond frog (*Rana lessonae*) Greek frog (*Rana balcanica*) green nipple (*Bufo viridis viridis*) water turtle (*Emys orbicularis*), snake (*Natrix natrix*) inhabited fed and multiplied. Amphibians are more numerous than reptiles.

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The open parts of the Vjosa and the irrigation canals provide suitable food places for different species of waterfowl such as herons (*Ardea cinerea*), gray-headed gulls (*Larus ridibundus*), Caspian gulls (*Larus cachinnans*). Some other species use this place for breeding.

Land birds such as whistle (*Luscinia megarhynchos*), laramam (*Motacilla alba*) and gray (*Motacilla cinerea*) insectivorous birds (*Muscicapa striata*), thrush (*Sylvia atricapilla*), wood cactus (*Phylloscopus sibilatrix*) etc. use the aquatic environment to multiply, winter or migrate.

Mammals also associated with this environment include some important species such as otters (*Lutra lutra*) protected by several European Conventions. Other species are rabbit (*Lepus capensis*), nuselala (*Mustela nivalis*), wild bear (*Sus scrofa*) etc.

5.4.1.2 Terrestrial Habitats

Terrestrial habitats are represented by Mediterranean macchia and Mediterranean forests.



Views of the vegetation along the road

The main associations of Mediterranean forests and macchia are:

- Association *Quercetum cocciferii* - dominated by *Quercus coccifera*. Located here and there in the region interrupted by cultivated plants such as vineyards and olives, etc.
- Association *Asphodelo - Paliuro Adriaticum* - Association *Paliurus spina - christi* and *Asphodelus aestivus*.
- *Cisto-Micromerietum* Association - dominated by *Cistus incanus*, *Cistus salviefolius* and *Micromeria juliana*. It is poor in species (generally dominated by only one species) Represents the most extinct area.

Entomofauna is dominated by a large number of species of butterflies. There are also many different species of polyps, bees, and ants in arid areas. Insects are the largest source of food for many species of amphibians and reptiles.

Typical herpetofauna of the forest area, includes species such as green lizard (*Lacerta trilineata*) (*Anguis fragilis*), (*Elaphe longissima*), viper (*Vipera ammodytes*), tree lizard (*Hyla arborea*). some

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other species such as frog salamanders are also present but nevertheless associated with water sources. Some species are endangered both nationally and internationally. The most famous species is the Turtle (Testudo hermanni which is globally endangered.

The macaw avifauna is typical of the northern Mediterranean bird community. Mediterranean forests and macchia are the main habitat for many species of birds such as perennials, wintering, breeding and migratory. All these species depend on these habitats for food, nesting. Sparrows form the largest group of birds. It is dominated by different species such as (Sylvia atricapilla Sylvia melanocephala, Sylvia cantillans, (Cettia cetti), etc.

The most common species of wintering birds are (Buteo buteo), Erithacus rubecula, Parus major, Troglodytes troglodytes, Scolopax rusticola. For species such as Golden Oriola (Scolopax rusticola), Owl (Otus scops) and Parus major (Parus major) the forest is the only nesting habitat.

Among the birds of the Mediterranean forest should be mentioned the presence of the Little Falcon (Falco naumani) as a globally endangered species. These species use the forest environment as a habitat during the migration period.

Mammals also use the environment of Mediterranean macchia at different times of the year. Nuselala (Mustela nivalis,) bee martini (Martes foina) fox (Vulpes vulpes) as well as some species of mice are present here. Other species such as Grifsha (Crocidura suaveolens), hedgehog (Erinaceus concolor) have been observed in this environment.

The wolf (Canis lupus), a globally endangered species, is a visitor only during the winter. Different types of bats are seen during the summer season. Among them a species is considered a globally endangered species: (Rhinolophus blasi).

5.4.2 Impact of construction on the environment, biodiversity and mitigation measures

Table 5-5 Impacts during the construction phase, and mitigation measures

Source	Component AFFECTED	the impact	importance	Mitigation measures
<i>Camp workers'</i>	<i>Premises and kind</i>	<i>Permanent destruction of natural environments, degradation / reduction, Loss of biodiversity during construction, Migration i animal populations as well cause of concern, Creation of new environments for species invasive</i>	<i>Small</i>	<i>Avoiding jobs near watercourses, Construction work to be performed during the dry season and out of the opening season of poultry rehabilitation i habitats after the end of punes.</i>
<i>Solid waste and liquid from camp i workers'</i>	<i>facilities terrestrial and especially aquatic environments and fauna aquatic, quality of water</i>	<i>Soil pollution, Habitat degradation, Biodiversity loss, damage or destruction i breeding sites for for fish and species bentike.</i>	<i>Small</i>	<i>Creation of ponds sedimentary, avoidance of works in river bed, collection and recycling of solid waste of liquid in the workplace</i>

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<i>Fuel i machinery / network and lubricants</i>	<i>facilities terrestrial and especially aquatic environments and aquatic fauna</i>	<i>Soil pollution, degradation of water quality, Habitat degradation, Biodiversity loss, damage or destruction of breeding grounds for fish and benthic species.</i>	<i>Small</i>	<i>avoidance of works in river bed, measures to avoid accidental leakage of lubricants and fuel, collection and recycling of lubricants, construction work to be carried out during the dry season.</i>
<i>Accidents (lubricating fuel, hazardous waste)</i>	<i>All groups</i>	<i>Soil pollution, water quality degradation, habitat degradation, biodiversity loss, damage or destruction of breeding sites for for fish and benthic species.</i>	<i>Small</i>	<i>Construction of a proper drainage / drainage system for excess water, Immediate waste collection and recycling.</i>
<i>Noises</i>	<i>Birds, mammals, amphibians , reptiles</i>	<i>Animal population migration due to disturbance, Decreased reproduction success near the road</i>	<i>Small</i>	<i>Build stacks to minimize the powerful impact of noise on wildlife if necessary</i>
<i>tremors</i>	<i>All fauna groups</i>	<i>Animal population migration due to disturbance, Decreased reproductive success near the road</i>	<i>Small</i>	<i>There are no mitigation measures.</i>
<i>Lighting</i>	<i>All fauna groups</i>	<i>Animal population migration due to disturbance, Decreased reproductive success near the road</i>	<i>Small</i>	<i>There are no mitigation measures.</i>
<i>Gas emissions</i>	<i>All groups</i>	<i>Temporary removal from the area, Decreased reproductive success in the vicinity of road s</i>	<i>Small</i>	<i>There are no mitigation measures.</i>
<i>dust</i>	<i>All groups</i>	<i>Habitat degradation, reduction of resources food for fauna species.</i>	<i>Small</i>	<i>Road irrigation during the dry season.</i>

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Source	Component AFFECTED	the impact	importance	Mitigation measures
<i>Vegetation cleaning</i>	<i>Degradation of Mediterranean macchia</i>	<i>Habitat destruction, Migration of animal population as a result of disturbance, Creation of new habitats for invasive animal species</i>	<i>Small</i>	<i>Rehabilitation of affected areas.</i>
<i>Deposit i excavated materials</i>	<i>Aquatic habitats</i>	<i>Destruction and degradation of environments, Removal / movement of fauna,</i>	<i>Small</i>	<i>Works during the dry season.</i>
<i>Supply with inert materials</i>	<i>Aquatic and terrestrial habitats</i>	<i>Habitat destruction and degradation, Removal / movement of fauna, Damage or destruction of breeding sites for fish and benthic species.</i>	<i>Small</i>	<i>Do not use inert materials from rivers.</i>
<i>Water extraction</i>	<i>Aquatic habitats</i>	<i>Habitat destruction and degradation, Removal / movement of fauna, Damage or destruction of breeding sites for fish and benthic species Monitoring of water quality, Monitoring of indicators aquatic biotes.</i>	<i>Small</i>	<i>There are no mitigation measures.</i>
<i>Hunting</i>	<i>Large birds and mammals</i>	<i>Species reduction and their abundance, Migration of animal populations as a result of disturbance,</i>	<i>Small</i>	<i>Strengthen hunting legislation.</i>
<i>Cutting / transport mine of firewood</i>	<i>Mediterranean forests</i>	<i>Habitat destruction and degradation, Migration of animal populations as a consequence of concern.</i>	<i>Small</i>	<i>Strengthen relevant legislation</i>
<i>Accidental (unintentional) fire</i>	<i>Soil vegetation</i>	<i>Habitat destruction and degradation, Migration of animal populations as a result of disturbance.</i>	<i>Small to medium</i>	<i>Avoid fire in the workplace during the dry season.</i>

Table 5-6 Impact during the operation phase on the environment, biodiversity and mitigation measures

Source	Component i AFFECTED	the impact	importance	Mitigation measures
<i>Waste disposal of solid</i>	<i>Habitats and species</i>	<i>Pollution</i>	<i>Jo domethenese</i>	<i>Law enforcement. Awareness</i>
<i>Hunting</i>	<i>Birds, large mammals</i>	<i>Reduction of species and respective abundance, Migration of animal populations due to concern.</i>	<i>Small</i>	<i>Reinforcement of hunting legislation.</i>
<i>Cutting-transporting bodies for firewood</i>	<i>Mediterranean forests.</i>	<i>Habitat destruction and degradation, Migration of the population of animals due to disturbance.</i>	<i>Small</i>	<i>Reinforcement of relevant legislation.</i>
<i>Accidents (fuel, lubricants, hazardous waste)</i>	<i>All groups</i>	<i>Pollution, deterioration of water quality, Habitat degradation, biodiversity loss, Damage or destruction of breeding sites for fish and benthic species.</i>	<i>Small</i>	<i>Construction of a suitable drainage system for excess water, Immediate waste collection and recycling,</i>
<i>Noises</i>	<i>Birds, mammals, amphibians, reptiles</i>	<i>Migration of animal populations as a result of disturbance, Reduce the success of near-road reproduction.</i>	<i>Small</i>	<i>Law enforcement</i>
<i>tremors</i>	<i>All Fauna Groups</i>	<i>Migration of animal populations as a result of disturbance, Reduce the success of reproduction in the vicinity of road.</i>	<i>Jo domethenese</i>	<i>There are no relief measures</i>
<i>Lighting</i>	<i>All Fauna Groups</i>	<i>Migration of animal populations as a result of disturbance, Reduce the success of reproduction near the road.</i>	<i>Jo domethenese</i>	<i>There are no relief measures</i>

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Source	Component i AFFECTED	the impact	importance	Mitigation measures
Gas emissions	<i>All Groups</i>	<i>Temporary removal from the area, Reduction of reproductive success in the vicinity of road.</i>	<i>Jo domethenese</i>	<i>There are no relief measures</i>
<i>Urban development Future construction works</i>	<i>All Fauna Groups</i>	<i>Habitat destruction and degradation, Biodiversity loss, migration of animal populations as a result of disturbance, Competition for food between wildlife and domestic ones.</i>	<i>Small</i>	<i>Avoid urban development near the river bed, Construction works during the dry season,</i>
<i>Heavy traffic</i>	<i>Fauna</i>	<i>Accidental death of animals as a result of traffic.</i>	<i>Average</i>	<i>Tables showing places of importance for animal movements and migration. Road signs.</i>

6. HUMAN ENVIRONMENT

6.1 AIR QUALITY

Accurate and appropriate results describing air quality in Albania are unavailable except for some monitoring / observations undertaken by local authorities and the Ministry of Environment.

a. Pollution emissions from transport

In Albania are published: Albanian Inventory of greenhouse gas emissions for 1994 as well as Inventory of greenhouse gases for 2000 and for the time series 1994 - 2000. Transport was responsible together with the industry for most of the CO₂ (25%), emissions of sulfur and nitrogen oxides. Most carbon monoxide is released from traffic.

90% of all passenger vehicles registered in Albania are equipped with diesel engines and the age of the car engine is important as Albanians import large quantities of old cars from Western Europe. This explains why sulfur dioxide (SO₂) and vehicle specific emissions (PM) are relatively high. In addition, the sulfur content of the car fuel is likely to be above European standards (0.035% in 2000, sulfur-free fuel (value <0.005%) programmed in 2005), as well as the lead content.

b. Air quality monitoring

The legal obligation to control air quality and monitor industrial emissions comes from the 2011 Law on Environmental Protection and the Law on Air Protection from Pollution adopted in 2002.

The Ministry of Environment (MoE) operates the KTA laboratory as well as the Institute of Public Health and monitors large urban areas (Tirana, Korca, Durres, Elbasan, Shkodra, Fier and Vlora). The Institute of Hydrometeorology also undertakes air quality measures at 6 of its meteorological stations.

In the structure of air quality monitoring activities carried out by the MoD twice a year in the main cities of Albania,

According to the data collected by the MoD, the current concentrations of SO₂, NO₂, O₃ and direction do not seem to violate Albanian standards or WHO limits in any part of Albania.

However, emissions are expected to rise with economic development and other actions by the government will be needed to avoid air quality deterioration, the introduction of new fuel quality standards, cleaner tax incentives, and compliance with law with European air quality guidelines.

It is already known that the main sources of air pollution in the Fier region are oil extraction and processing, electricity generation, home heating, uncontrolled waste incineration and transportation. Although accurate data are lacking, it can be said that air quality in the Fier region is deteriorating due to pollution with SO₂, NO_x, Ozone, CO, and heavy metals. One of the biggest challenges for improving air quality in the Fier region is the creation of the necessary technical and institutional capacity for air quality monitoring. In the Fier region there was no systematic monitoring of air quality. There is no consistent data on emissions, air concentrations, pollution sources, exposure and health effects and the interactions between them.

The air monitoring program, planned by the government, is not fully operational, due to lack of resources and does not include all the indicators required to measure air quality. However, with the Decision of the Council of Ministers No. 541 dated 25 September 1995 "On the responsibilities of ministries, research institutions and natural and legal persons for environmental monitoring", some specialized central institutions are obliged to monitor the quality of water, air and land and provide relevant data to the Ministry of Environment. In the region of Fier some efforts have been made in

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this direction. The physico-chemical laboratory of the Directorate of Primary Health Care in the city of Fier, monitors the main pollutants (SO₂, dust, ozone, and NO_x). Albpetrol JSC and the Directorate of Health and Environment monitor the field operation of the oil industry.

Air pollution is a concern in the cities of Fier, Patos and Ballsh, mainly due to the power plant and oil industry located in these areas. Fier has the second highest concentration of PM₁₀ in Albania (Tirana is the first). The level of PM₁₀ has increased since 1976 due to the increase in the number of vehicles. The level of concentration has always been higher than national standards, and, as shown in the table, reached its highest level in 2000.

The Institute of Public Health (IPH) monitors the amount of pending materials for the country's major cities. The total content of suspension substances, in all cities monitored, significantly exceeds the daily average (120µg / m³) and the annual average (100 µg / m³) recommended by the World Health Organization. More precisely, the figures are especially high for the cities of Tirana and Fier. The annual average for these cities is three times higher than the allowed norms. The main contributor to this pollution is transport. During a year, the number of days in Fier, when rates are exceeded, varies from 80 to 90.

Other pollutants that are of concern include Nitric Oxide (NO), Sulfur Dioxide (SO₂), and aromatic hydrocarbons.

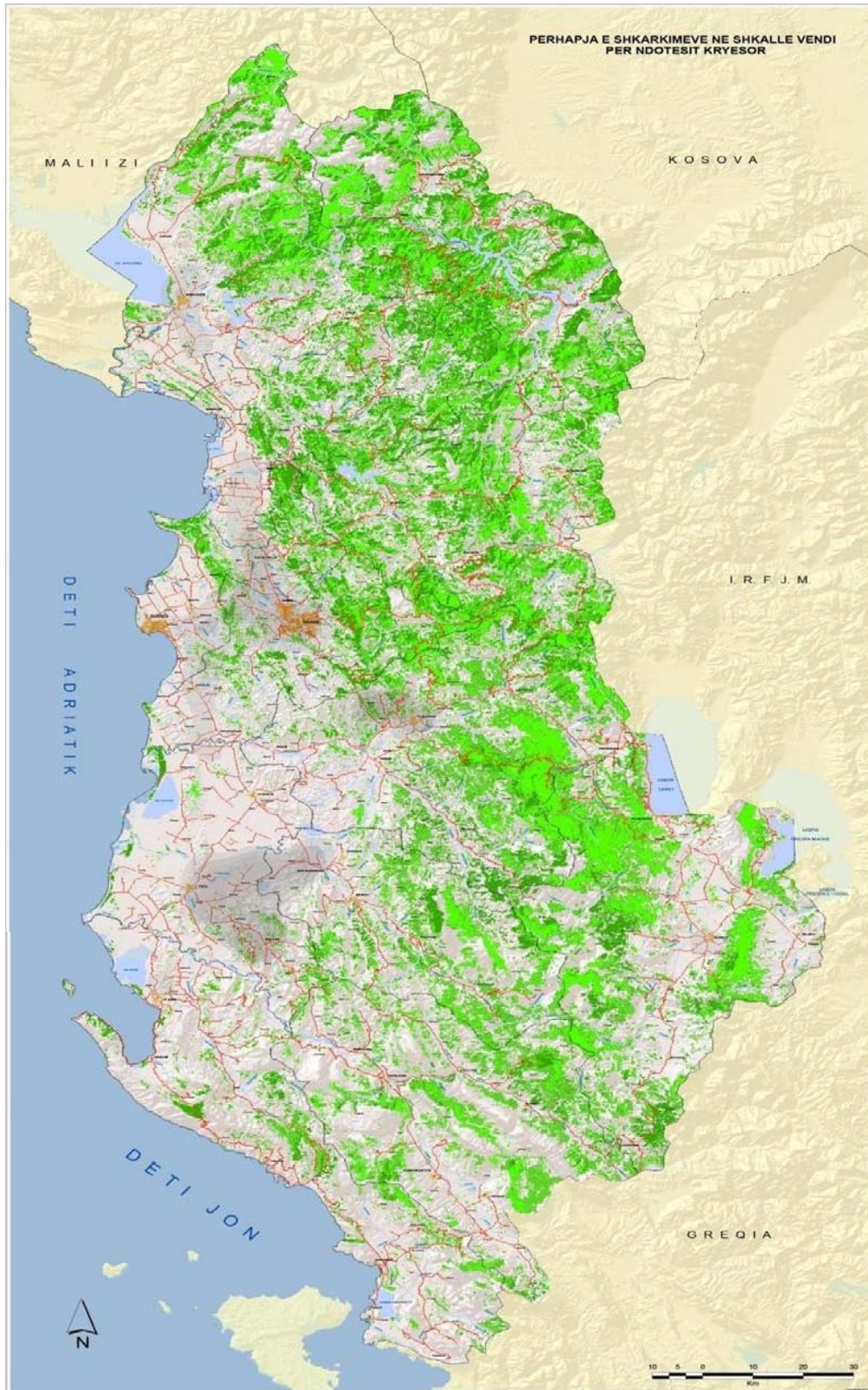
Persa i perket NO₄, limited measures (both in time and geographical distribution) have made it clearly impossible to estimate NO₄ pollution for previous years. Despite this, IPH has recently taken samples to monitor NO₄ pollution in some of the main cities of the country (including Fier); these samples showed that the city of Fier is within daily standards (150mg / m³ - average over 24 hours).

For sulfur dioxide (SO₂), 16 samples taken by IPH show a similar trend to that of NO₄, where again Fier remains within state norms (150mg / m³ for 24 hours).

Transport sector, one of the main sources of SO₂, has had a negative impact on air quality in the region of Fier, mainly due to the large number of old diesel cars. The concentration of aliphatic and aromatic hydrocarbons is of great concern to the region. The largest amount of hydrocarbons released comes from the oil fields of Marinza and Ballsh.

The storage of oil in open tanks in the oil-bearing area Fusha e Marinzes, Patos municipality, pollutes the atmosphere with light hydrocarbons that are released through evaporation. In addition, the wells pump about 8,000 m³ of sulfur-containing gas every day. Of this amount, only 1/5 is used to produce energy for wells, while 4/5 are released directly into the atmosphere; over a one-year period this amount goes to over 115 tons of sulfur. The air around these areas has a high percentage of H₂S, which causes damage to the respiratory tract.

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Dissemination of downloads nationwide (Source: Ministry of Environment)

6.1.1 Impact during the construction phase

The construction phase of a road project is a potential source of emissions of special small matter (PM) that may have a temporary effect on air quality in the area of construction sites.

During the construction phase, dust emission is associated with various activities such as cutting down trees and removing the topsoil, excavating soil material and placing the same material in embankments and building structures. Dust emission depends first of all on the weather conditions as well as on the level of activity and the type of works that are performed. Dust also rises from the wheels of heavy construction vehicles while passing along the construction site in bad weather conditions.

In the area of the road in question, the areas that will suffer the most due to the possible emission of dust during construction are those close to the road. However, it is recommended that air quality monitoring in the areas around the sites where it is built be carried out during the construction process in order to appear as early as possible any problems arising from emissions as a result of the construction process. But it should be noted that good construction site management and work planning should be organized in such a way that emissions impacts are concentrated in the shortest possible time.

6.1.2 Air quality mitigation measures

Construction phase

The most frequently recommended measures related to earthworks are:

- Implementation of dust minimization systems: irrigation of sidewalks, use of preservatives to limit dust emissions (for example: use of washing mechanisms in each warehouse, activity which must be performed daily);
- Limiting the speed of vehicles on the road.

In order to maintain air quality and avoid causing any inconvenience to local residents, it is advisable that soil stabilization should be done only:

- During periods of light wind;
- In the extraction area;
- In excavation areas in areas where there is no sensitive vegetation, in order to naturally assimilate air dust.

Reducing construction impacts also includes:

- Use of transport routes for the distribution of materials.

Operation phase

The road in question should not create an increase in emissions from cars, as emissions depend on the type of car, engine maintenance, and speed of the car. On the one hand, a uniform road surface will lead us to more constant speeds, which will cause a reduction in emissions. The amount of dust that spreads from passing cars will also decrease, as potholes on the road will disappear. On the other hand, an increase in the speed of cars on the new road is expected, which could easily increase emissions.

In terms of traffic levels and the open nature of the areas covered by the proposal, the road itself will not lead to any significant increase in pollutant levels.

No mitigation measures have been proposed as a result of the low impact of the project.

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Table 6-1 Summary of key impacts and mitigation measures for air quality

Phase	Sources of influence	the impact	importance	Mitigation measures
construction	Construction traffic and earthworks.	The project traffic levels are relatively low and may cause low emissions considering the improvement in unique vehicle emissions in the future.	Secondary	Dust minimization systems, Truck speed in and out of the workplace, Proper placement of warehouses and transport routes.
functioning	Increase in traffic, improvement of transport road surfaces.	The project traffic levels are relatively low and may cause low emissions considering the improvement in unique vehicle emissions in the future.	Easy	There are no relief measures.

6.2 Noises

This paragraph summarizes the purpose and methodology for calculating the effects of noise caused by the construction and operation of the road "Bylis Archaeological Park-New Road Levan-Tepelene" including the purpose of the EIA.

No environmental noise measurements were made during this study.

There are no precision measurements available for the road in question but it is not foreseen to have any place where the level of sounds do t "of approaching levels oxen padd up nare oathzdi to sensitivee tok residentst cafeteria, ose qe do to pose a threat to health.

According to Instruction No.8 dated 27.11.2007 "On noise limit levels in certain environments" noise limit levels are:

1. Noise limit levels for certain environments, to be in accordance with the World Health Organization (WHO) Guidelines.
2. As certain environments, for the effect of the implementation of this instruction, are identified the premises of residential areas (outside the apartment, interior of the apartment), institutions (educational, preschool and health), areas with socio-economic activity, urban environments and public parks.
3. The Ministry of Health and the Ministry of Environment, Forestry and Water Administration are in charge of the implementation of this instruction.

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environment	Critical effect on health	LAeq (dBA)	time base (ore)	LAmx Fast (dB)
Residential area				
Outside the apartment	Serious annoyance (disturbance) during the day and evening	55	16	
	Moderate discomfort during the day and evening	50	16	-
Inside the apartments	Comprehension of conversation and (annoyance) moderate anxiety during the day and evening	35	16	-
Inside the bedroom	Disruption of sleep at night	30	8	-
Outside the bedroom	Sleep disruption, window open (value from outside)	45	8	-
institutions				
Classrooms, institutions-preschool facilities (inside)	Comprehensibility of the conversation, difficulty in meaning of information, communication of message	35	During the lesson	
Bedrooms in the gardens (inside)	Sleep disturbance	30	Bedtime	-
Schoolyard, playgrounds at school	Annoyance - (external sources)	55	Rest time	-
Hospitals, rooms, rooms (inside)	Disruption of sleep at night	30	8	40
	Sleep deprivation during the day and in the evening	30	16	
Hospitals, treatment rooms (inside)	Impact on rest, relaxation	# 1		
Areas with socio-economic activities				
Industrial, commercial, traffic areas traffic (external and internal environment)	Hearing impairment	70	24	110
Urban environment				
Public, outdoor or indoor environments	Hearing impairment	85	1	110
Ceremonies, festivals and entertainment	Hearing impairment (clients <5 here / year)	100	4	110
Music through listening headset	Hearing impairment	85 # 4	1	110
Sounds - impulsive noises from fireworks and firearms	Hearing impairment (adults)	-	-	140 # 2
	Hearing impairment (children)			120 # 2
Public parks				
Natural parks and protected areas	Disruption of calm	# 3		

Explanations:

LA_{eq} (dBA) = Equivalent level measured in A grade Base
time (hours) = Time during which the measurement is made

LAmx Fast (dB) = Level measured at A level in Fast mode

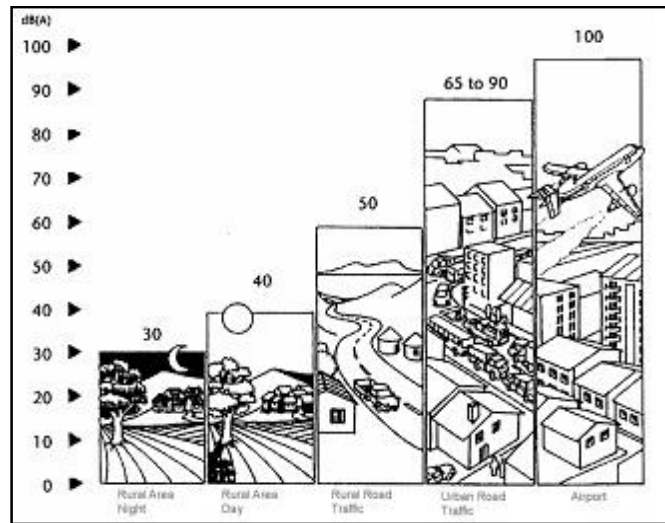
1 = As low as possible.

2 = Maximum sound pressure (LAmx, fast) measured 100 mm away from the ear.

3 = Quiet outdoor areas should be protected and the ratio of incoming / outgoing noise to natural background noise should be kept as low as possible.

4 = Lower to headset, adapted to free field values

Figure 6-1 Diagrams - Average levels of traffic noise



6.2.1 Impact of noise during the construction phase and appropriate mitigation measures.

Noise emissions from works and constructions will also be affected by the use of large machinery that can provoke annoyance and noise such as putting poles away.

Noise can be generated by many construction activities and depends on factors such as the type of equipment, the operations to be performed and the machinery to be used - the condition of the machinery and the machinery used. Leq (equivalent level) for some construction phases also depends on the length of time the appliance is in operation.

The main type of noise for most construction equipment is the engine, usually with diesel and without muffler.

Mitigation measures

The contract documents will clearly specify that the contractor who will build the road in question will be obliged to take specific measures to reduce noise which will be in line with Albanian legislation.

These measures will ensure that:

- No used plant in the country will be allowed to cause public disturbance due to noise,
- Implementation of best practices: which include proper maintenance of machinery and commitment to reduce noise created by works.
- All machines and machinery will be fitted with effective mufflers which will be maintained throughout the contract implementation period,
- The compressors will be models adapted with suitable and insulated acoustic caps, which will be kept closed during the whole period of operation of the machine, also the pneumatic machines will be adapted with silencers.
- Makinerite qe do to useen por Abortedby completing do to OFFen ose te ulet me Expjtesia ne minimum (ose t "the valve closes) during the period when not in use.
- Any plant such as a generator or pump, which will be put into operation before and after legal working hours, will be isolated by an acoustic shut-off or by a portable screen.

During the construction phase of the project, it will have an impact in or near residential or business areas as a result of noise emissions from traffic and other activities. Request for removal of noise restrictions and

working hours, as well as the implementation of appropriate measures for noise control, will ensure that the effect of noise is kept to a minimum.

Table 6-2 Summary of key impacts and noise mitigation measures

Phase	Sources of influence	the impact	importance	Mitigation measures
<i>functioning</i>	<i>Increase in traffic. Improvement of transport road surfaces.</i>	<i>Increasing traffic speed can potentially increase noise levels.</i>	<i>Easy</i>	<i>No mitigation measures are envisaged on the proposed road because it remains a road with low rural trafficking</i>
<i>buildingViewed</i>	<i>Construction traffic, plants, compressors, etc. Opening action.</i>	<i>Country activities of construction can cause local concerns as well consequence of the noise that teper.</i>	<i>Easy until locally e secondary</i>	<i>The contract documents will clearly specify that the contractor who undertakes construction works will be obliged to take action specific reduction of noise and match with instruction on MM noises.</i>

6.3 LOCAL COMMUNITY AND SOCIAL ECONOMY

This chapter describes the purpose and methodology adopted for calculating impacts on the local community and socio-economy. It focuses on change and community access to social services. They include schools, hospitals, churches, shops and other services, public spaces, and the access of the local population to these services.

6.3.1 Existing Environment

6.3.1.1 Socio-Economic Issues

The project area is included in the territory of Hekal commune, which lies on both sides of the Vjose River. This commune is in the district of Mallakstra and consists of 4 villages: Hekal, Klos, Mollas and Rome. The center of the commune is the village of Hekal. The main economic activities are agriculture and oil extraction industry.

The lands in the hills are planted mainly with olives and vineyards. The lowlands are planted with fodder, cereals and vegetables.

The territory of Hekal contains a series of communal roads that connect the villages of the commune with each other as well as the nearby communes. The road Cakran-Gjonce-Pocem-Fratar connects the villages of the municipalities of Cakran and Hekal with the national road Tepelene-Fier.

Rome is supplied with drinking water through wells. Mollaj village is supplied with water through water pumps of transparent water layers in the Vjosa valley.

In the hills of Pocem, there are 5 water springs. Water from these springs is collected from a tank and then taken, through a series of pumps, to the town of Ballsh and some other villages around the area. Hekali and Klosi are supplied with drinking water partly through wells and partly through the springs of Pocem village.

The lowlands are irrigated partly through the canals coming from the Vjose-Levan-Fier irrigation canal,

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from the Vjose river. In Klos, the lands in the northern part of the Povel River are irrigated through water pumps from the Povel River and the lands in the south of Povel are partially irrigated with water from the natural springs of the Pocem.

A national power substation connects the cities of Fier and Vlora and Vlora with Fier through the Selenica power substation, where the two municipalities intersect.

In the territory of Hekal there is an oil field called "Hekal oil field". The oil extracted from the well is sent by a network of pumps, to the oil reservoirs of Hekal and Klos and then to the oil refinery in Ballsh.

In Rome, Pocem and Mollaj there is an elementary school, and a nursing school. In Klos there is only one primary school. The village of Hekal has the best amenities for the municipality, there is a primary and secondary school as well as a center of public health, post office and other services.

In Pocem, in addition to agriculture, there is a series of industrial activities: a factory for water bottles and the production of fruit juices. There is also a station that supplies water to the town of Ballsh.

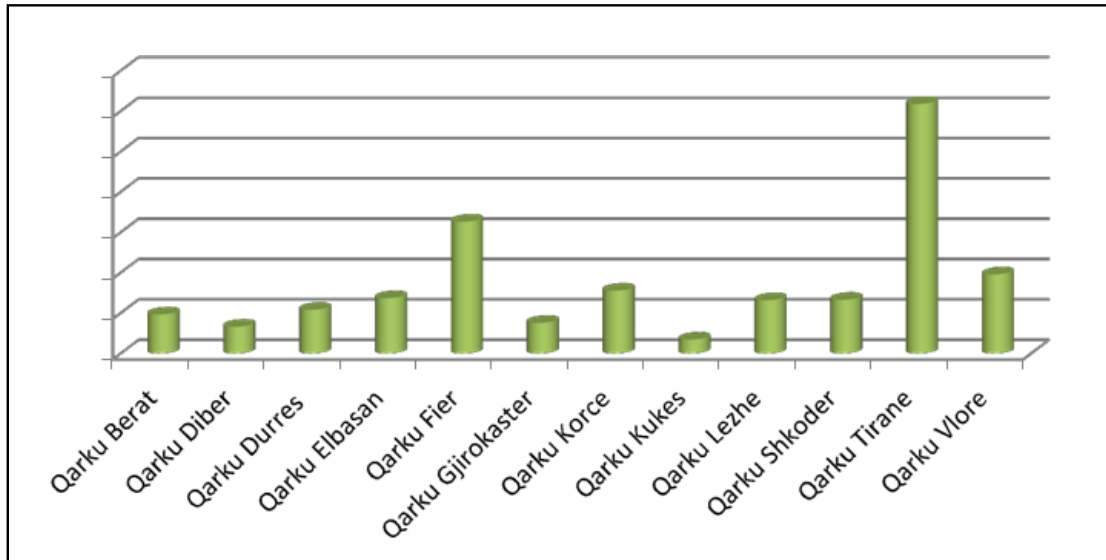
Near the water sources there is a small oak tree, which serves for traditional annual celebrations in the area of Mallakastra (Pocem festival).

Urban and inert waste

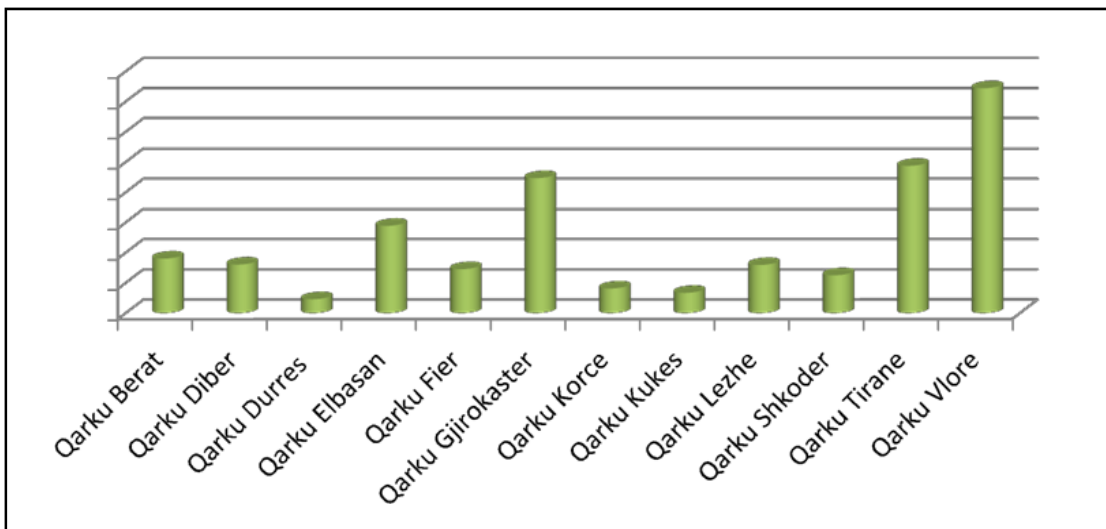
Based on the report on urban and inert waste published by the MoD in 2013, waste generated by regions, including the region of Fier are presented below respectively in the table and in graphic form:

Tab. Waste generation by counties, year 2013

Nr.	County	the population	Annual amount	Annual amount	Annual amount
			Tons / inhabitants	Mb.urbane / ton	Mb.inerte / ton
1	County BERAT	230764	0.209	48353	18050
2	County DIBËR	177974	0.186	33178	16080
3	DURRËS County	282600	0.191	54129	4597
4	County ELBASAN	285878	0.239	68461	28900
5	Fier county	501002	0.325	163214	14566
6	GJIROKASTËR County	103732	0.364	37862	44672
7	Korca district	376562	0.206	77846	8162
8	KUKËS County	116061	0.148	17232	6700
9	LEZHË circuit	210748	0.312	65910	15945
10	SHKODRA District	339072	0.195	66453	12510.5
11	Tirana district	1030508	0.328	308926	48751
12	VLORA County	368514	0.265	97891	74432
TOTAL		4023415	0.224	1039455	293360.5



Urban waste generation by counties for 2013



Generation of inert waste by counties

6.3.2 Impact during the construction phase on the local community and mitigation measures

impact

During construction, water supply and electricity to residents, farms and various industrial activities may be affected by the construction works of the project in question.

measures

During the construction, specific measures will be taken by the contractor in accordance with the EMP, in order to provide it to the inhabitants of the farms and industries. Drainage and irrigation canals will also be maintained.

6.3.3 Impact during the operation phase on the socio-economy and mitigation measures

Public Services - The main public services will be affected by the project. Temporarily during the construction period, the restoration of these utilities could create problems for users. These problems can have a greater impact on users during the process of connecting new cables and pipes to the existing network of users along the way.

In these cases the contractor must prepare a detailed action plan before each step of his activity at the scene. This should provide for the accommodation and protection of all public utilities located at the site of the activity, such as electrical cables, water supply pipes or other facilities that may result from an on-site surveillance. The Contractor may coordinate the activities with the responsible enterprises which own these networks, such as: KESH (Electric Corporation) and the Water Supply Company in order to reduce the possibility of damage and the time of reconnection with new connections to the existing network. This plan will be initially reviewed by the contracting engineer and the contractor must begin implementation after the final approval of the employer.

the population - there is a significant population and activity along this road. In this way, the reconstruction of the road will lead to the improvement of economic conditions for the inhabitants of the area. The reconstruction of the road will provide a better connection between the areas and the communities of Fier region.

Public health - Reconstruction of the road will increase the speed and thus will give a faster access for people to these services. Since the road has been reconstructed, there is another positive aspect to reducing air pollution within residential areas. However, there is a link between speed and fatal accidents that must be overcome along the way in question through the actions of the traffic police and through the correct use of road signs.

6.3.4 Impact

The new road will encourage the development of the area especially through the growth of tourism and related activities. Through some general recommendations which can help this investment as much as possible to become a powerful tool of continuous development for national and foreign business which will be directed towards the most important sectors of the economy with the help of various projects.

Land acquisition and other assets will be minimized as much as possible. Where expropriation is unavoidable (in some cases touching the perimeter walls of houses), all people affected by this project, who reside, work, do business, cultivate or have resource rights within the project area are entitled to compensation for their lost assets.

In the village of Hekal, for a length of about 260 m linear (from Km 00 + 410 - Km 00 + 670) as a result of the expansion of the road to meet its standards there will be an impact on the cemetery and more specifically on some graves along the road . This negative impact will be tried to be minimized by assisting relatives in cooperation with the Ministry of Interior and the municipality for the relocation of graves.

There is a possibility that the reconstruction of Bylis Archaeological Park Road-New Levan-Tepelena Road will be related to the increase in the number of visitors who will come to the park. This is an important positive impact from the point of view of tourism development in Albania, as well as from the point of view of the spread of Albanian culture and cultural heritage. The level of importance is high.

Public services- Improving the flow of traffic along the existing road should have a slight impact on public services. This will include hospitals, clinics, schools, municipal buildings, and other public service facilities. Reconstruction of the road will reduce travel time towards public services. Access to public services will be much better.

Improved access to public services and other facilities will have a positive effect on social welfare.

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Table 6-3 Summary of impacts and mitigation measures in the local community and in the social economy

Phase	Sources of influence	the impact	importance	Mitigation measures
<i>Operation / Construction</i>	<i>Access to existing villages.</i>	<i>Interruption of access in some villages.</i>	<i>Easy</i>	<i>Equipping with local road junctions to help maintain access to all villages.</i>
<i>Impact during construction</i>	<i>Water network, electricity, and irrigation system.</i>	<i>Residents, farms and industries may experience a loss of these services during project construction.</i>	<i>Easy to medium</i>	<i>The contract documents specify that the contractor who undertakes the construction of the works is obliged to take special measures in order to keep these difficulties to a minimum.</i>
<i>Impact during construction</i>	<i>Traffic disruption</i>	<i>Residents and businesses are affected by the temporary diversion of the road.</i>	<i>Small to medium</i>	<i>The contractor will arrange for easily distinguishable traffic direction, including the preparation of a Traffic Management Plan.</i>
<i>Impact during construction</i>	<i>Construction sites</i>	<i>The construction site is inadequately positioned and creates inconvenience</i>	<i>Small</i>	<i>The contractor will place the construction sites in locations approved by the local authorities. The camps should be fenced and the sewage system should be built, and the dumping of garbage should be done only in authorized places.</i>
<i>Impact during construction</i>	<i>Construction waste</i>	<i>Construction waste is not disposed of properly.</i>	<i>Small</i>	<i>The contractor will dump the waste at sites approved by the local authority.</i>
<i>Negative impacts during operation</i>	<i>Agricultural lands, private properties, cemeteries will be affected by the construction of the road</i>	<i>Loss of income from businesses and agriculture. Loss of property, relocation of graves.</i>	<i>Small</i>	<i>All persons affected by the project who live, work, or have different rights over the resources affected by the project will receive compensation for the loss of their assets. Those affected by the relocation of the graves will be assisted by the Ministry of Interior in cooperation with the municipality for their relocation.</i>
<i>Impact during operation.</i>	<i>Increase in speed and amount of traffic.</i>	<i>The severity of road accidents is increasing. Pedestrian safety.</i>	<i>Medium</i>	<i>Equipping with proper traffic signs and road signs (road markings).</i>

6.4 TRAFFIC AND ROAD SAFETY

6.4.1 Effect during the construction phase and mitigation measures for road safety and traffic.

The effects on traffic and road safety during road construction are not expected to be a problem. The contractor relying on the EMP will prepare a traffic management plan with appropriate measures for to check AND for to redirected traffic AND kembesoret, of who WILL to be of light for tKontroll was checked .. Also in the contractor's plan for traffic management should be included the appropriate lighting and road signs, which must be approved by the Contracting Authority and the police.

6.4.2 Impacts during the operation phase and mitigation measures for road safety and traffic

After the construction of the road, during the operation phase, the Regional Maintenance Directorate should regularly inspect the road in order to check for damage or lack of road signs and side barriers of the road. If deficiencies or damages are identified, the Regional Directorate should act for their immediate replacement. Also during the visual inspections of the road, the Directorate of Standards must mark any other problem that may be identified on the road. For example, in cases of accidents or identification of places where barriers have been broken as a result of car collisions. In such cases, the Regional Directorate should consider adding road signs to alert drivers to dangers and install warning signs (landslides,

7. ENVIRONMENTAL MANAGEMENT PLAN

7.1 GENERAL MEASURES

The Environmental Management Plan (EMP) presents a series of mitigation, monitoring and institutional measures that will be adopted during the construction and operation phases to eliminate or reduce adverse environmental or social impacts that may arise during construction. of the road "Archaeological Park Bylis-Rruga e Re Levan-Tepelene". EMP- mainly consists of the following components:

- Environmental mitigation measures, are a series of specific measures developed based on the understanding of the impacts that will have in the future during the construction and operation of the road. Mitigation measures are designed to mitigate these potential negative impacts and to reduce them to acceptable levels as may be required by applicable standards, where appropriate.
- Environmental monitoring plan, will be very important for environmental monitoring and management and will be held periodically to monitor specific components and provide data which indicates the value of the impact level.
- Institutional arrangements , to complete the definition of responsibilities for the implementation and monitoring of mitigation measures as defined.

7.2 ENVIRONMENTAL FACILITIES

To reduce the levels of negative impacts on the environment, mitigation measures have been defined. Mitigation measures will be implemented during the construction and operation phase. Implementation of Measures such as requirements for construction camps will be required. The following are envisaged as components of mitigation measures:

Construction phase

- Supply of materials
- Transport materials
- Noise and dust
- Traffic Management Plan
- Vehicle and pedestrian safety
- Removal of construction waste
- Solid waste
- Water pollution
- Soil erosion
- Flora and fauna
- Archaeological discoveries
- Establishment of construction camps and related facilities
- Health and safety at work
- Worker training

Road operation phase

- Road maintenance
- Road safety

Construction Phase

- *Supply with Materials:* Contractors will be required to use or purchase materials from existing asphalt machinery, quarrying and wells operating with valid environmental permits and other licenses. Appropriate guarantees for this effect will be given in the contract documents.
- *Quarrying activities.* Contracts should specify that only licensed quarries should be used for material resources. In the absence of licensed quarries, contractors may place crushing machinery on approved sites. The selection of quarries for project purposes will require the approval of the environmental authorities.
- *Asphalt machinery.* Contract guarantees will require that mixing and asphalt machinery be placed at least 500 m away from the nearest sensitive receptacle (school, hospital) and licensed and approved by the environmental authority, and that employees be required to install the control. of gases in accordance with local environmental regulations. It should be made clear that the specifications should apply to all such equipment, including those negotiated privately.
- *Transport of materials:* Truck workers will be required to cover or wet truck loads, retrieve materials off-peak hours, and use alternative routes. threadr te minimize gold increasing e traffic. contractor do t "i kis required to pergatisi AND tof provide the work supervisor with a traffic management plan that outlines the routes and times that can be used to deliver materials to and from the workplace.
- *Noise and dust:* Construction contractors will be required to limit activities within hours per day (not between 23.00 and 7.00 or by agreement with the public and authorities) and to use noise-canceling equipment. Construction sites and material collection sites will be wetted with water when needed to control dust.
- *Interruption of traffic and safety of vehicles / pedestrians:* Contractors will prepare a traffic management plan with appropriate measures to redirect traffic.
- *Elimination of construction waste:* Damaged asphalt and debris from the construction site will be disposed of in accordance with local environmental guidelines and sites approved by the local authority.

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- *Solid waste and sediments in drainage:* The cleaned solid waste will be handed over to the licensed employees, with the necessary insurances in their contract documents to perform visual inspection for toxic materials before delivery, separation of waste fractions as necessary, use the appropriate safety measures during the transportation and transportation of waste, and disposal in authorized places with the approval of local authorities.
- *Water pollution:*The Contractor will be required to properly organize and cover material collection areas; insulate cement, asphalt and other works from any water leakage using insulated forms of work; to isolate concrete washing areas and asphalt trucks and other equipment from water flow by selecting washing areas that do not have direct or indirect drainage through any water flow. Contractors will further ensure proper retention of lubricants, fuel, and solvents by safely maintaining them; to ensure proper loading of carburundumanti AND mirembajtjen e equipment; to grumbullojne to the entire or uketurinat fe t "i throw nof permitted waste sites.
- *Establishment of construction camps and related equipment:*The specifications of the project contract shall stipulate that the erection, construction and installation in the environment of equipment for the stay of construction personnel, storage of tools and vehicles, labor camps and similar buildings must be established with the consent of the authorities, and are subject to supervisor approval. It should be clear that these specifications include all such buildings, including those that have been negotiated privately.

Operation phase

- Program of SAFETY that the roads will join the control during the following phases:
- At the end of the road construction and at the beginning of its operation, the safety expert will inspect the road to ensure that safety elements are included and implemented. He or she will also recommend other administrative measures, such as speed limits. He will also draft a report confirming the approval of the road, and his recommendations for the administrative measures taken during the operation phase.
- Approximately 2 years after the start of the operation phase, the security expert will inspect the road and review security procedures with the authorities and police. He will prepare an audit report and recommend other security enhancement measures if necessary.

7.3 EMPLOYEE RELATIONS MANAGEMENT

The contractor must implement human resources policies in accordance with its size and workforce, which determines its manner of managing the workforce in accordance with the requirements of Albanian law. These policies should be clear, understandable and accessible to employees and focus on:

- establishing and maintaining healthy employee / management relationships;
- promoting fair, non-discriminatory treatment and providing equal opportunities for employees;
- labor and employment laws in the country; and the basic principles and main regulatory standards provided in the Labor Code of the Republic of Albania
- to protect and promote the health of workers, in particular by promoting healthy and safe working conditions

Labor Relations

The contractor must document and communicate to all employees their working conditions and terms of employment including their pay, working hours, overtime and compensation.

overtime hours and any benefits (such as sick leave, maternity leave or holiday).

Must apply the principles and standards expressed in the Labor Code of the Republic of Albania as:

- a) banning child labor;
- b) elimination of forced labor;
- c) elimination of discrimination in relation to employment;
- d) freedom of organization and group negotiation

Child labor

The contractor must comply with all provisions of the relevant national laws relating to the employment of minors. In any case, the contractor must not employ children in a way that is economically viable, that is dangerous or affects the education of the child, or endangers the health of the child, physical, mental, spiritual, moral or social development. Young people under the age of 18 should not be employed in hazardous work and all work of persons under the age of 18 will be subject to a separate risk assessment.

Forced labor

The Contractor shall not employ persons for forced labor, which is any work or service performed involuntarily by an individual under the threat of force or punishment. This includes any type of involuntary or forced labor, such as contract work, forced labor or similar combinations of employment.

Non-discrimination and equal opportunities

In particular, the contractor should not make employment decisions on the basis of personal characteristics, should base the employment relationship on the principle of equal opportunities and equal treatment, and should not discriminate in any aspect of the employment relationship, including recruitment and employment, compensation (including salaries and bonuses), working conditions and terms of employment, entitlement to training, promotion, termination of employment contract or retirement, and work discipline.

Salaries, bonuses and working conditions

Salaries, bonuses and working conditions offered, in general, should be comparable to those offered by the same employers in the respective region of that country / region and sector.

Occupational Health and Safety (OSH)

The contractor must provide employees with a safe and healthy work environment, taking into account the current risks in his particular sector and the specific risk levels in the work areas, which include physical, chemical, biological and radiological risks. The contractor must take steps to prevent accidents, injuries and illnesses that may come from, relate to or occur at the time of work by:

- identifying and minimizing as much as possible the causes of potential risks to employees
- take preventive and protective measures including modification, replacement or elimination of hazardous conditions or substances
- establishing the appropriate equipment to minimize risks and requesting and ordering their use
- employee training; and taking appropriate measures for them to use and comply with health and safety procedures and protective equipment
- to document and report accidents on work, diseases and incidents.

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**Table 7-1 Environmental Management
Plan**

Phase	issue	Facilitation Measures	Institutional Responsibility		reviews
			buildingVie wed	Exploitation	
Construct ion	<u>Equipping with materials</u>	<u>Equipment with Materials</u>			
	(a) Asphalt Plant castor- -employee health / safety	(a) Request for official approval or a valid license for intervention by the MoD, MEDETTTS and MoSWY specified in the tender documents	(a) Asphalt Plant Owner	(a) Asphalt Plant Owner	
	(b) Stone quarry castor- -employee health / safety	(b) See (a)	(b) The owner of the career	(b) The owner of the career	
	(c) Rera / Gravel - taking from river material / water quality / ecosystem	(c) Request for official approval by the MoD implementation of the Decision of the NCC, No. 1, dated 26.6.2006 "On the reduction of the use of gravel and sand in river beds"	(c) Sand / gravel contractor	(c) Sand / gravel contractor	
	(d) Construction sites	(d) Request for official approval by the LGU	(d) Construction Contractor	(d) Construction Contractor	(d) to be specified in the tender documents
	<u>Transportation of Materials</u>	<u>Transportation of Materials</u>			
	(a) Asphalt -powder / fumes	(a) ASPhAlt -covered truck	(a) The driver of the vehicle	(a) The driver of the vehicle	(a), (b), (c), (d) per tu specified in the tender documents
	(b) Gure castor-	(b) stone -truck with trailer covered	(b) The driver of the vehicle	(b) The driver of the vehicle	
	(c) Rere / Gravel castor-	(c) Rere / Gravel -truck with trailer covered	(c) The driver of the vehicle	(c) The driver of the vehicle	
	(d) Traffic Management - noise and old cars, road congestion	(d) Heavy material for peak hours in traffic Use of roads that minimize the most important parts of traffic	(d) The driver of the vehicle	(d) The driver of the vehicle	

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pheasant	issue	Facilitation Measures	Institutional Responsibility		reviews
			buildingViewed	Exploitation	
<i>Construction</i>	<p><u>Cultural heritage</u> Archaeological discoveries</p> <p><u>Landscape and beauties natural</u> (a) Fruits</p> <p><u>Land and water underground</u> (a) Groundwater sources that may be affected by construction works</p> <p>(b) Groundwater pollution from improper storage / management of materials</p> <p><u>Construction Site</u> (a) Noises</p> <p>(b) Dust</p>	<p><u>Cultural heritage</u> Obtaining approval from KKA and KKR Archaeological supervision during the works, in cases of discovery of ruins of archaeological interest. Notification of the Institute of Monuments and the Archaeological Service Agency under MK</p> <p><u>Landscape and natural beauties</u> Trees, groups of valuable trees identified in the EIA or by environmental management staff and located within the area will be marked and protected. construction works.</p> <p><u>Land and groundwater</u> (a) Resources that are near or within the construction area will be identified and protected. Measures will be taken to prevent the direct entry of water from the construction area into wells or pipelines. Where closing pools need to be made.</p> <p>(b) Coverage of material storage areas. Construction of canals leading to leaks in the sewerage system, or construction of a treatment plant</p> <p><u>Construction Site</u> (a) Restrictive activities for reasonable hours (not between 11 PM and 7 AM)</p> <p>(b) Construction site wetland and storage of necessary materials (during drought, wind conditions)</p>	<p>(a) (b) Construction Contractor</p> <p>(a) Construction Contractor</p> <p>(b) Construction Contractor</p>	<p>(a) (b) Construction Contractor</p> <p>(a) Construction Contractor</p> <p>(b) Construction Contractor</p>	<p>(a), (b), (c), (d) (e) and (f) to be specified in the tender documents</p>

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phase	issue	Facilitation Measures	Institutional Responsibility		reviews
			buildingViewed	Exploitation	
	<p>(c) Traffic jams (during construction activity)</p> <p>(d) vehicle safety / pedestrian (outside hours when there is no construction activity)</p> <p><u>Destruction of crops, trees, lawns, etc.</u></p> <p>l) <i>Safety of workers</i></p>	<p>(c) Appropriate measures to redirect traffic should be reflected in the traffic management plan</p> <p>(d) Adequate lighting and clearly defined signage included in the traffic management plan</p> <p>To minimize the damage of fields and the cutting of trees To compensate the damage according to the law one by three, etc.</p> <p>(f) provide workers with safety instructions and protective equipment (goggles, masks, helmets, boots, etc.); to be provided</p> <p>organization of secondary traffic</p>	<p>(c) Construction Contractor</p> <p>(d) Construction Contractor</p> <p>(e) Construction Contractor</p>	<p>(c) Construction Contractor</p> <p>(d) Construction Contractor</p> <p>(e) Construction Contractor</p>	

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pheasant	issue	Facilitation Measures	Institutional Responsibility		reviews
			implementing	Exploitation	
<i>Construction</i>	<u>Construction Site</u> (g) Protection of water resources (i) Construction camps Disposal of fertilizers	<u>Construction Site</u> (g) Taking measures (arching of ditches, etc.) to prevent the direct entry of water from the construction site into streams, canals, lakes, wells and aquifers; protection basins are provided where needed (i) Positioning of construction camps to be approved by the local authority and the camps to be fenced and monitored. Employee insurance based on the Labor Code and their training. Sewage waste must be disposed of	(g) Construction Contractor (i) Construction Contractor	(g) Construction Contractor (i) Construction Contractor	(g), and (i) for t "uspecified in the tender documents
	<u>Deposit i Wastes</u> (a) Construction waste (concrete paving, fuel, paints, contaminated soils) (b) Solid waste	in a suitable system, or to build respective wells. Waste to be sent to certain places. <u>Waste Disposal</u> (a) Available in approved positioning and covered with inert material. (b) Available in accordance with the guidelines of the LGU and the Institute of Public Health.	(a) Contractor Construction (b) Contractor Construction	(a) us (b) Contractor Construction	The LGU determines a place of writing (a) and (b) for t "uspecified in the tender documents

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phase	issue	Facilitation Measures	Institutional Responsibility		reviews
			implementin g	Exploitation	
<i>constructi on</i>	<i><u>Geology and SOILS</u></i>	<p><i><u>Geology and Soils</u></i></p> <p>(d) Soil filling where it is removed and must be supervised and stored for reuse.</p> <p>(e) the use of any soil material excavated by the construction sections of the wells and the installation of tombs that will be maximized by the mediation of construction techniques that require durability in the material for reuse</p> <p>(f) Reuse of excavated soils with material unsuitable for filling in landscape areas.</p>	(d) Construction contractor	(d) Construction Contractor + ARA	(d) for (f) to be specified in Documents e Contract (by way of Deviation Order if deemed necessary)
			(e) Construction contractor	(e) Construction Contractor + ARA	
			(f) Construction contractor	(f) Construction Contractor + ARA	
phase	issue	Facilitation Measures	Institutional Responsibility		reviews
			implementin g	Exploitation	
<i>constructi on</i>	<i><u>Hydrology, Surface and Groundwater</u></i>	<i><u>Hydrology, Surface and Groundwater</u></i>			

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phase	issue	Facilitation Measures	Institutional Responsibility		reviews
			implementing	Exploitation	
construction	<u>Habitat and Biodiversity</u>	<u>Habitat and Biodiversity</u>			
	(n) Degradation of terrestrial habitat	Inert dumping sites; excavations, rocks, and landfills should avoid sensitive habitats, agricultural lands, and forest forests and shrubs	(n) Construction Contractor	(n) Construction Contractor + ARA	
	(p) Degradation of aquatic habitat	(p) Excavation of materials and excavation of water from rivers should not be allowed.	(p) Construction Contractor	(p) Construction Contractor + ARA	(m) for (p) and (t) to be specified in Documents e contract
<u>Air Quality</u>	<u>Air Quality</u>				
	(t) during the construction phase implementation of dust compression systems by irrigation of construction sites, using washers in each deposition and limiting the speed of the plants to be carried out by the contractor to limit dust discharges. In addition, construction machinery needs to comply with EU standards.	(t) Construction Contractor	(t) Construction Contractor + ARA		

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phase	issue	Facilitation Measures	Institutional Responsibility		reviews
			buildingViewed	Exploitation	
constructi on	<u>Noises</u>	<p style="text-align: center;"><u>Noises</u></p> <p>(v) the contractor is obliged to take measures for the minimization of noise in accordance with Law no. noise in certain environments ”.</p> <ul style="list-style-type: none"> - All vehicles and mechanical installations will be fitted with silencers and maintained in good working order throughout the contract period. - The compressors will be fitted with certain models and will be sealed with acoustic caps that will be kept closed whenever the machinery is used and all pneumatic aids that will be fitted with suitable silencers. - Machinery used for special periods will be closed during periods that are not in use. - Any plant, such as generators or pumps required for intervention before and after work to be surrounded by acoustic shut-off or portable camera. 	(v) Construction Contractor	(v) Construction Contractor + ARA	(v) be specified in the Contract Documents

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phase	issue	Facilitation Measures	Institutional Responsibility		reviews
			installing	Exploitation	
Exploitation	<u>Landscape and beauties natural</u> (a) Visual impact from walls holders and other structures (b) Rehabilitation of storage, work site and noise barriers.	<u>Landscape and natural beauties</u> (a) When possible gabion structures are preferred over concrete structures (b) Once the work is completed the habitats should be rehabilitated and the area should be given the proper landscape to replace the habitat lost due to construction of the Site and the road.	(a) Construction Contractor (b) Construction Contractor	(b) Construction Contractor + ARA	(a) (b) specified in the Contract Documents
	<u>Land and water underground</u> (a) Contamination of soil and water supply by accidental spills of various chemicals	<u>Land and groundwater</u> (a) Generally, water from the track will diffuse throughout the project. However, in sensitive areas a closed drainage system should be used to collect surface water and bring it to filtration / collection in ponds or canals.	(a) Construction Contractor		
	<u>Natural habitat</u> Accidental death from collision with cars	<u>Natural habitat</u> Protective fences should be placed along sensitive areas.			

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phase	issue	Facilitation Measures	Institutional Responsibility		issue
			Installation	Exploitation	
Exploitation	<u>(a) Noise</u>	<u>Noises</u> (a) Activities with restrictions on certain hours (not between 23 - 07 in the morning except for maintenance during the winter) or as decided by the Local Authorities	(a) NA	(a) ARRSB	(a) be specified in the tender documents
	<u>Road Safety</u> (a) Erosion, or difficult road conditions	<u>Road Safety</u> (a) Appropriate signage installation (in damp places or difficult humid conditions, dangerous turns, passage of animals or pedestrians, school, slow movement of vehicles, ramifications), signage with mirrors to indicate danger of turns.	(a) ARRSB	(a) ARRSB	

8. ENVIRONMENTAL MONITORING PLAN

A monitoring plan will be prepared as part of the EIA study in order to identify the environmental measures and procedures to be adopted for the Scheme and to identify those responsible for their implementation.

The EMP determines the pace, frequency, duration and cost of mitigation measures in an implementation program and incorporates these actions into the overall project plan.

The Environmental Monitoring Plan sets out the ways in which environmental impact monitoring and mitigation measures will be implemented during the construction phase. Monitoring will focus on a limited number of impacts identified during the EIA in order to ensure the effectiveness of the planned mitigation measures.

The purpose of the environmental monitoring plan is to ensure that all work undertaken for the construction and rehabilitation of the road "Reconstruction of the Road Archaeological Park Bylis-Rruga e Re Levan-Tepelena" is environmentally safe, in accordance with Albanian law, and possibly meet environmental impact assessment forecasts.

This plan takes into account the mitigation measures presented in the environmental impact calculations and environmental conditions. The first concern will be to design all new job proposals for a potential environmental impact and to influence their design and implementation to ensure that they are environmentally friendly.

The net result of the project should be positive. With careful management and a contractor sensitive to its implementation, there is no reason not to overcome or avoid environmental risks, and to achieve maximum benefits for the improvement of the environment and the improvement of the work undertaken.

Occupational health and safety, as well as environmental health, are key aspects of having a good quality environment.

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**Table 8-1 Environmental Monitoring
 Plan**

phase	What <i>should be monitored</i>	Where	like <i>It is the parameter of monitoring / type of monitoring machinery</i>	When <i>It is the parameter to be monitored</i>	Why <i>It is the parameter to be monitored</i>	liability	
						Construction	Exploitation
Construction <i>Supply of materials</i>							
(a) Asphalt plant	(a) valid operating license	(a) NA	(a) ARrSh Supervision Consultant	(a) At the beginning of the Contract	(a) Provide the facility in accordance with the environment, health and safety requirements in Albania	(a) Asphalt Plant Owner	(a) Asphalt Plant Owner
(b) Stone quarry	(b) See (a)	(b) NA	(b) ARrSh Supervision Consultant	(b) At the beginning of the Contract		(b) Owner and Career	(b) Owner and Career
(c) sand / gravel	(c) See (a)	(c) NA	(c) ARrSh Supervision Consultant	(c) At the beginning of the Contract	(b), (c) and (d) provide the contractor with a permit for the extracted materials from the ground	(c) Sand / Gravel Materials Contractor	(c) Sand / Gravel Materials Contractor
(d) construction sites <i>Transport i materials</i>	(d) See (a) plus the final restoration of the Contract	(d) construction site	(d) ARA Supervision Consultant	(d) Careers are needed at all times		(d) Construction contractor	(d) Construction contractor

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(a) Asphalt	(a) Covered truck	(a) construction site	(a) ARrSh Supervision Consultant	(a) initiation of inspections just after the works start	(a) Ensure the Contractor complies with the requirements	(a) NA	(a) Asphalt Plant Owner
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phase	What should be monitored	Where	like It is the monitoring parameter / type of monitoring machine	When It is the parameter to be monitored	Why It is the parameter to be monitored	liability	
						Construc tion	Exploitation
Construction							
<u>Transport i materials</u>							
(b) Gure	(b) Covered or enclosed truck	(b) Construction site	(b) ARA Supervision Consultant	(b) After the start of the works, some unannounced inspections start	(b) Provide the Contractor's complaints in accordance with the requirements	(b) NA	(b) See (a)
(c) sand / gravel	(c) See (b)	(c) See (b)	(c) See (b)	(c) See (b)	(c) See (b)	(c) NA	(c) See (a)
(d) Traffic Management	(d) Selected hours and routes	(d) See (b)	(d) See (b)	(d) See (b)	(d) See (b)	(d) NA	(d) See (a)
<u>Construction site i Construction</u>							
(a) Noise	(a) Noise levels	(a) On site or near homes	(a) Noise level transmitter (dB [A] meter)	(a) once a week- (morning-afternoon) and when there are complaints from citizens	(a) ensure noise levels at acceptable levels	(a) NA	(a) MM + Supervision Consultant of ARA
(b) Dust	(b) air quality (Dust)	(b) No construction site	(b) Pamor	(b) during material distribution and construction	(b) ensure dust levels are kept to a minimum	(b) NA	(b) See (a)
(c) Traffic Interruption (during construction)	(c) Traffic labels + preparation of management plan traffic	(c) on site or near	(c) PMT approval and observations by ARA Supervision Consultant	(c) TMP as needed + once / a week in periods when there is work or not	(c) Ensure that the contractor's vehicles do not cause congestion	(c) NA	c) Supervision Consultant of ARA

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phase	What <i>should be monitored</i>	Wh ere	like <i>It is the monitoring parameter / type of monitoring machine</i>	When <i>It is the parameter to be monitored</i>	Why <i>It is the parameter to be monitored</i>	liability	
						Constructi on	Exploitation
<p>consttuction <u>Construction Site</u></p> <p>(d) Car / Pedestrian Safety (excluding hours when not available no construction activity)</p> <p>(e) Water pollution (from materials e material deposition / Management)</p>	<p>(d) Visibility and proximity + plan i traffic management</p> <p>(e) water quality (starting with solid waste)</p>	<p>(d) on or near the construction site</p> <p>(e) flows from the site or areas of storage of materials</p>	<p>(d) PMT approval and Consultant observation of the Supervision of ARA</p> <p>(e) To be monitored by the Consultant i Supervisions of ARrSh + water samples collected for analysis if needed</p>	<p>(d) TMP whenever seen e needed + once / a week during the evening</p> <p>(e) During precipitation (rain, snow, etc.) and periodically during the period that deposit of</p>	<p>(d) to secure the works of contractors that do not cause problems with traffic safety</p> <p>(e) to secure the works of contractors that do not cause water pollution</p>	<p>(d) NA</p> <p>(e) MM</p>	<p>(d) Supervision Consultant of ARA</p> <p>(e) MM + Consultant i Supervisions of ARrSh</p>

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phase	What will be monitored	Wh ere	like <i>It is the parameter to be monitored / type i monitoring machinery</i>	When <i>need the parameter to be monitored</i>	Why <i>need the parameter to be monitored</i>	liability	
						Construction	Exploitation
construction <u>Deposit i Wastes</u>	(a) solid waste of authorized loaders	(a) In authorized / tipster licensed areas	(a) ARA Supervision Consultant	(a) at the time of deposit	(a) ensure an accurate disposal of waste materials d	(a) LGU	(a) MM + Supervisor of ARrSh
interventions <u>Maintenance of Roads Built</u>	(a) Noise Levels	(a) On site or near homes	(a) Noise level transmitter (dB [A] meter)	(a) During maintenance activities or when there are complaints from citizens		maintenance Supervisors Contractors LGU	(a) Maintenance Supervisor Contractor LGU
<u>Safety traffic</u>	(a) Terms of signs	(a) along the way	(a) Visual observation	(a) Once or twice a year			(a) Maintenance / LGU
(a) Landslides, erosion i land, difficult conditions							

8.1 MODALITIES FOR ENVIRONMENTAL MANAGEMENT AND MONITORING

reporting

The results of the monitoring program will be included in official reports written within a period of time specified in the Environmental Permit prepared by the Responsible Consultant and will be submitted to the ARA and the MoD for review of the progress of the construction works. Contractors and construction companies will be required to report their environmental measurements and surveys on a monthly basis. They will also be required to report immediately any contamination or sudden impact so that the ARA and / or the contractor can take appropriate measures to alleviate them. Reporting the results of the monitoring program during operation will be the responsibility of the ARA.

Institutional agreements

The contractor will have the task of preparing a detailed monitoring plan, which must be developed in accordance with the requirements of the ARA and the MoD. ARA will have the responsibility to coordinate and control monitoring activities with the Supervising Consultant. The ARA will need to establish a group of specialists, who will oversee the elaboration of the Plan and the implementation of the measures (Environmental Sector).

8.2 TASKS FOR ENVIRONMENTAL MONITORING

Inspection of contractor vehicles and plants

Any tool installed by the contractor in order for him to continue with the construction works, must be approved by the relevant agencies, which are primary for any implementation of the works. They will be evaluated based on the fulfillment of the required environmental criteria. Special attention will be paid to:

- Noisy construction tools and supporting equipment, which will be present at the site of the works in order to maintain the noise level within acceptable standards on noise in construction according to obligations and contractual standards as well as according to the pollution regulation.
- Appropriate means for the collection and treatment of wastewater, collection and placement of solid waste in areas for which it has been decided together with the local authorities.
- Drying systems including sediments and sludge barriers.
- Proper positioning and protection of fuel supply and hydrocarbon storage vehicles.
- Suitable positioning for plants for the collection of processed and surplus materials.
- Equipment and tools for exhausting gases and dusts
- Trucks with pumps equipped with tools to prevent the flow of materials.
- Approval for quarries, landfills where applicable.

Construction traffic

Contractors' agreements to manage traffic in construction must also take into account the possibility of traffic disruptions, sidewalks and structures due to congestion, increased load and increased risk in terms of road safety.

There will also be arrangements for mud cleaning plants such as washing systems or cleaners at the entrance / exit of the construction site or similar, in order to ensure that there is no mud deposition on the highways and for this there will be regular inspections. In the event that the contractor causes any damage in any way, he will be required to repair it at his own expense as described in the contract.

Noise disturbances

The level of noise disturbance caused by construction plants will be monitored.

The contractor will be required to use only plants which are within the parameters set out in the contract documents. No work that causes noise will be allowed within the planned distances and only those that are equipped with noise reduction equipment will be allowed.

In general, measures will be taken not to allow any work outside of daylight hours.

Deprivation of water

Contractors' agreements to draw water will be monitored to ensure that these do not lead to disruption of local users' water resources, generally with reference to the relevant contract clauses. This contractor will be required to make appropriate arrangements for its supply, and to provide an alternative supply alternative to any user affected by water deprivation.

Storage of construction materials

The placement of contractor materials within the restricted area and outside the area will be monitored to ensure that an appropriate solution is provided for the storage of solid materials.

The deposition of these solid materials will be done only in officially designated areas.

In case of any contamination or any dangerous damage from the materials or any similar situation, the ARA and the municipality must be notified immediately.

Staff will be provided with full assistance by the ARA, which will be responsible for ensuring compliance with existing regulations and environmental technical specifications.

Approval of the competencies of the contractor

The proper competence of the contractor should be verified based on the requirements of the environmental specifications in the contracting documents. In particular, attention will be paid to:

- Avoid extracting materials from the river bed when possible and in no case without prior authorization,
- Avoid dumping materials in the water flow,
- Reduce plant damage as a requirement of the strict need for safe construction practices,
- Implementation of engineering practices to avoid erosion,
- Support the reuse of removed or displaced materials where possible,
- Organize works and give priority to the transport of materials in order to minimize impacts on the local community.

*EIA REPORT " RECONSTRUCTION OF ROAD FROM
ARKEOLOGICAL PARK OF BYLIS - NEW ROAD LEVAN-TEPELENE"*

General effects

Submission methods and environmental improvement plans prepared by the contractors will be considered in relation to other issues:

- Extraction and transportation of materials,
- Storage of materials on site,
- Movement of vehicles to and from the location and during works on site,
- Damage from construction practices,
- Erosion control,
- Noise and vibration,
- Waste management / minimization,
- Waste and toxic materials,
- Emergency response procedures,
- Air quality,
- Water quality,
- Stacks,
- Storage of chemicals and fuels,
- Clearing the road from mud, etc. on the traffic side,
- Working hours in the vicinity of apartments,
- Water surface displacement and regeneration,
- Deviation and safety of pedestrians and vehicles,
- Avoidance of mud and drying of river flow,
- Level of monitoring to be undertaken,
- Providing workers and training them.

Recommendations will be made regarding the modifications that are needed to achieve the desired level of environmental protection.

During the construction period, site inspections will be carried out to monitor the effectiveness of environmental protection measures, as well as to check for any unintended impact. If the latter occurs then additional safeguards will be recommended to ensure environmental protection.

The frequency of site inspections will vary depending on the nature of the works to be performed.

The frequency of inspections will be high during the commencement of works at each site so that any problems will be identified in a timely manner, and repairs or procedures will be carried out before irreparable damage occurs. Particular attention will be paid to control to ensure that no erosion or sedimentation problems occur, and that all temporary measures such as barriers work effectively.

Water pollution

The contractor's environmental management plan will be reviewed to ensure that no contamination of watercourses occurs in the future.

Pollution of lands, springs and water surfaces by various wastes is a significant impact, which will be covered by the contractor's plans. The latter should provide for a safe positioning of waste and debris to prevent contamination, or leakage of contaminants.

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CONTRACTOR he will be required to pay all costs associated with cleaning up any pollution caused by his activity and to pay full compensation for these damages. .

Restoration of the works area

we on an ongoing basis during the implementation of the works, the supervisor will assign to the contractor the restoration of the project area immediately after the use of the areas including:

To cover the quarry areas with layers of arable land.

To clean the entire construction area and camps after the completion of works.

To assist the regeneration of local plants by restoring the soil surface and by using degrading geotextiles when necessary and to use indigenous plants.