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ENVIRONMENTAL ASSESSMENTS AND MANAGEMENT FRAMEWORK DOCUMENT

MSIP2

MUNICIPAL SERVICES IMPROVEMENT PROJECT 2

Skopje, October 2015

ENVIRONMENTAL ASSESSMENTS AND MANAGEMENT FRAMEWORK DOCUMENT FOR THE MUNICIPAL SERVICE IMPROVEMENT PROJECT 2 (MSIP2)

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1. ABBREVIATIONS

ADKOM - Association for Communal Service Enterprise

AE (MoEPP) - Administration for Environment within MoEPP

BAT - Best Available Technics

CBA – Cost Benefit Analysis

CSEs - Communal Service Enterprises

DOO - Limited Liability Company

EA - Environmental Assessment

EIA - Environmental Impact Assessment

EC - European Commission

EMFD - Environmental Assessment and Management Framework Document

EMP - Environmental Management Plan

ESIA- Environmental and Social Impact Assessment

EU - European Union

FS – Feasibility Study

GDP - Gross Domestic Product

IFI -International Finance Institution

IPA -Instrument for Pre-Accession

IPARD - Instrument for Pre-Accession for Rural Development

IPPC - Integrated Pollution Prevention Control

LSG - Local Self-Government

MAFWE - Ministry of Agriculture, Forestry and Water Economy

MoEPP - Ministry of Environment and Physical Planning

MoE - Ministry of Economy

MoF - Ministry of Finance

MoH - Ministry of Health

MSIP- Municipal Services Improvement Project

MTC - Ministry of Transport and Communications

NEAP - National Environment Action Plan

NGO - Non-Governmental Organization

NUTS - Nomenclature of Territorial Units for Statistic

OP - Operational Policies

PAD - Project Appraisal Document

PMU - Project Management Unit

PE - Public Enterprise

RM - Republic of Macedonia

SAA - Stabilization and Association Agreement

SEA - Sectorial Environmental Assessment/Strategic Environmental Assessment

TA - Technical Assistance

ToR - Terms of References

VOC - Volatile Organic Compound

WB - World Bank

WEEE - Waste of electric and electronic equipment

WHO - World Health Organization

WWTPS - Waste Water Treatment Plants

ZELS - Association of local self-governments units

2. EXECUTIVE SUMMARY

Since 2006 when the decentralization started, the municipalities in Republic of Macedonia (80 municipalities and City of Skopje) are responsible for providing different services to the local population (e.g., public services and communal activities – drinking water supply, sewage and storm water systems, treatment of urban waste waters as well as environmental protection, local financing and social care).

All municipalities are facing great challenges in obtaining financial sustainability delivering quality service to their citizens due to the rigid tariff control, neglected maintenance of the already installed pipeline networks or waste water treatment plants, over-employment and poor financial management. Following decentralization, municipalities need to improve their own revenue mobilization and management of expenditure, especially for new investments. These investments will contribute to the improvement in performance in service provisions and strengthening municipalities' functions and competences already legally regulated.

The Republic of Macedonia has requested the World Bank's assistance in addressing these challenges and currently a loan of 75 M USD (for the Municipal Service Improvement Project – MSIP 1) has been signed to support municipal investments, capacity building and institutional strengthening activities, to deliver performance grants after successful implementation of the investments by the municipalities and to provide proper project management and communication with municipalities..

The Municipal Services Improvement Project 1 (MSPI 1) for Macedonia started in 2009 with main goal to improve transparency, financial sustainability, and delivery of targeted municipal services in the participating municipalities in the country. The Ministry of Finance has established the Project Implementation Unit for smoothly implementation of the project and assistance to the municipality to prepare all necessary project documentation according to WB and national legislation.

Until September 2015 within the MSIP 1 Project in total 43 projects have been completed and commissioned into operation and 23 projects are still ongoing. Mainly the completed projects are dealing with reconstruction of sewage network and drinking water supply systems in rural municipalities, reconstruction of streets and local roads in urban and rural areas, reconstruction of schools and kindergartens and procurement of waste collection vehicles and equipment.

The additional 25 M EUR loan from WB were requested by the Republic of Macedonia and are expected to be signed very soon in order to continue financially supporting the municipalities to improve their public services and communal activities and to improve the environment and human health of local residents. The Municipal Services Improvement Project 2 (MSIP 2) will present the second phase of the successfully on-going Municipal Services Improvement Project 1. The second Project will response to the continuing strong demand and growing interest by the municipalities for the local infrastructure financing, since the MSIP funds are already fully committed and cannot support new applications from the municipalities. The MSIP2 will be built upon the experience of MSIP 1 and its lessons learned to enhance the impact of a well-performing operation.

With reference to WB Environmental Assessment policy ***at the beginning of the Municipal Service Improvement Project 1 in Macedonia in 2008,*** **the** ***Environmental Assessment and Management Framework Document (EMFD) was prepared*** and disclosure procedure was performed in order to identify the adverse environmental impacts of future small-scale (Category B) projects with site-specific impacts that could be overcome with proposed mitigation measures.

The Environmental Management Framework Document (EMFD) aimed to identify the range of required environmental management measures that need to be taken during the planning, design and operation phases of small scale infrastructure sub- projects within the scope of Municipal services improvement project in Republic of Macedonia, in order to ensure compliance with the national and WB requirements related to environmental impact assessment procedures and national legislation. The EMFD served as guidance for the municipalities and their environmental consultants during the preparation of the Project Appraisal Document to identify all possible environmental, health, occupational and community risks occurred as a result of sub-projects implementation. Based on EMFD the contract-specific Environmental Mitigation Plan and Monitoring Plan were prepared as a part of Contract signed between the municipality and Sub-Contractor. The Sub-Contractor was obliged to implement the proposed environmental and OH&S mitigation measures and the Supervisor to monitor the implementation on proper way.

After several years of active implementation of the project activities, there was a need of EMFD upgrade taking into account the extension of the scope of the municipality's request for financing.

In the period 2009-2014 the municipalities applied with small scale projects which lead to the improvement of living conditions on local level (extension, reconstruction or construction of drinking water supply network, minor improvements of the sewage systems, storm water networks, reconstruction or construction of local streets, roads, street lighting, etc). However, new project activities have been prioritized by the community (e.g., construction of small scale WWTP) and those were not covered in the EMFD that was prepared in 2008. Also, the EU IPA for Rural Development financial instrument are planned to be utilized through the MSIP Project and several new project activities may be expected.

The updated Environmental Management Framework Document (EMFD) was prepared in September 2014 with main aim to provide general policies, guidelines, codes of practice and procedures to be integrated into the implementation of the all sub-projects submitted by the municipalities for financing. At the same time it was a "road map" for teams who are preparing the Environmental Mitigation and Monitoring Plans with main aim to provide the sustainability of the local community through protection of the environment and human health and infrastructure development. In the updated EMFD the lessons learned from almost four years practical experience within the MSIP project implementation in Macedonia were included as well. The EMFD disclosure procedure was conducted (public announcement in newspapers for public hearing event and distribution of the EMFD to relevant institutions) and public hearing event was organized in August 2014. Based on the comments and remarks received, the final version of the EMFD was prepared and published on web site of the Ministry of Finance .

According the WB Environmental Assessment policy prior the beginning of the Municipal Service Improvement Project 2 in Macedonia (Contract expected to be signed very soon), the Environmental Assessment and Management Framework Document (EMFD) for MSIP 2 need to be prepared and to be disclosure in front of all stakeholders in order to identify the adverse environmental impacts of future small-scale (Category B) projects with site-specific impacts that could be prevented, mitigated, compensated with proposed measures in order to protect the environment, human health, biodiversity and natural resources.

The Environmental Management Framework Document (EMFD) for MSIP 2 is based on the WB environmental safeguards policies and guidelines, codes of practice and procedures as well as national environmental legislation. It will support the teams who will prepare the site-specific Environmental Mitigation and Monitoring Plans (EMPs) for each particular project and sub-project within the MSIP 2. The site-specific EMPs will take into account the specific environmental conditions of the location

where the sub-projects are going to be implemented (e.g., if any protected area is located near the sub-project construction area, vicinity of family houses or any vulnerable groups – school students, hospitals, any water courses near by the construction area, etc.) and will ensure sustainability of the local community through protection of the environment and human health and infrastructure development.

The main Chapters within the Environmental Management Framework Document for MSIP 2 are:

- **INTRODUCTION AND BACKGROUND INFORMATION ABOUT MACEDONIA**

The Chapter provides general information about natural characteristics of the Republic of Macedonia in terms of geographical characteristics, climate and water resources, and basic demographic and microeconomic data. The overview of the decentralization process including number of municipalities and statistical planning regions in the country is also provided with number of population living in each region.

- **BASELINE ENVIRONMENTAL DATA**

Chapter provides background information on need for small scale infrastructure projects on local level and outlines some of the main environmental challenges and sensitive sectors in Macedonia. The focus is placed, among others, on the water sector (drinking water supply, sewage systems and waste water treatment plants already constructed and operational as well as planned), waste management, air emissions and air quality and noise.

- **OVERVIEW OF THE ENVIRONMENTAL LEGAL FRAMEWORK IN MACEDONIA**

The Chapter describes relevant national environmental and social policies, legislation and standards relevant to the MSIP 2 Project, as well as multilateral agreements and conventions signed/ratified by the Republic of Macedonia with the latest amendments and changes until September 2015. The main parts of the relevant local self-governmental legislation are also presented in this section.

- **RELEVANT ENVIRONMENTAL INSTITUTIONAL SET UP**

The main roles and responsibilities of governmental and local self-government level administration in reference to environmental protection, EIA procedure and public services are provided in this Chapter. It also describes the role of the Public Service Providers providing communal services on local level (water supply providers, waste water service providers and water and waste service providers).

- **NATIONAL EIA PROCEDURE**

The Chapter describes the national EIA procedure (including different steps of screening, scoping, development of EIA Study, public participation and public disclosure) and institutional setup within the EIA procedure. The Chapter contains brief description and "processing" scheme of the national procedure for environmental impact assessment of small-scale project and necessity of developing the EIA Reports-Elaborates for small-scale projects.

- **WB SAFEGUARD PROCEDURES**

The brief overview of the relevant World Bank safeguard procedures developed and implemented across the world, and applied in the MSIP 2 Project, with the main aim to ensure prevention, mitigation and compensation in case of adverse impacts of project development to environmental conditions, is provided in this Chapter. The WB international

transboundary waters safeguards, resettlement procedure, health and safety guidance and natural habitats are only part of important safeguards needed to be followed.

- **MUNICIPAL SERVICE IMPROVEMENT PROJECT DESCRIPTION**

The summary of the main goals, objectives of the MSIP 1 Project, status of implementation of small-scale infrastructure projects, type of sub-projects (implemented in the period 2009-2015) and additional possible type of sub-project activities and generic environmental assessments within the process of MSIP implementation is provided. The main aim of the MSPI 2 Project and expected sup-projects are provided as well.

- **ENVIRONMENTAL IMPACTS**

The Chapter describes the Environmental Management System in the Project Life Cycle and criteria (consequences and likelihood) that need to be applied during the environmental and social impact assessment for each specific small scale project.

- **ENVIRONMENTAL MITIGATION PLAN**

Within this Chapter the generic Environmental Mitigation Plans for several relevant sub-projects are provided (e.g., extension, reconstruction /construction of water supply network, storm water network, sewage network, rehabilitation/reconstruction or construction of local roads, streets, construction of waste water treatment plants, etc). These EMPs contain type of project activities, mitigation measures need to be applied by the Contractor and institutions responsible for their implementation. The site-specific EMP need to be developed for each sub-project based on the specific location, sensitive receptors and vicinity of protected areas.

- **ENVIRONMENTAL MONITORING PLAN**

The Chapter contains the generic Environmental Monitoring Plans for all sub-project types for which the Environmental Mitigation Plans were developed. Each Monitoring Plan present the parameters that need to be monitored, reason why the parameter should be monitored, responsible body and frequency of monitoring. The site-specific EMP need to be developed as well with particular parameters to be monitored.

- **ANNEXES**

In Annex 1 the template of the Environmental Screening Check List is provided and in Annex 2 the template of Environmental Monitoring Report is presented.

3. INTRODUCTION AND BACKGROUND INFORMATION ABOUT MACEDONIA

Republic of Macedonia is a country located in the central Balkan Peninsula in Southeast Europe with a total area of 25,713 km^2 and 2,022,547 inhabitants, according to the 2002 Census. It has 748km of borders, shared with Serbia, Kosovo, Bulgaria, Greece and Albania.

The country's capital is Skopje with 506,926 inhabitants. The geographical position of the country is very favorable and it is significant cross roads linking several countries in the Balkans and this part of Europe. Important traffic corridor is corridor 8 and 10, as well as the international highway E - 75 road M5 and international railway.

The country is 80% mountainous, rising to its highest point at Mountain Korab (peak 2,764 meters) with the lowest elevation (44m) on the Vardar River at the border with Greece. Three climatic types overlap in the country: Mediterranean, moderately continental and mountainous, producing hot, dry summers and cold, snowy winters.

The Republic of Macedonia is a landlocked country that is geographically defined by a central valley formed by the Vardar River and framed along its borders by mountain ranges. The Republic's terrain is mostly rugged, located between the Shara and Rhodope mountains, with the valley of Vardar between them. Three large lakes — Lake Ohrid, Lake Prespa and Dojran Lake — lie on the southern borders of the Republic, bisected by the frontiers with Albania and Greece. Lake Ohrid is considered to be one of the oldest lakes and biotopes in the world.

The natural conditions in the Republic of Macedonia (geology, relief, climate, hydrography, soil, flora, fauna) make it one of the rare countries in Europe with wealth of natural values. At the end of 2013 the designated area network comprises 81 areas, with total area of 231,385.6 ha or around 9% of the territory of Macedonia. Most of it falls into the category national parks with around 4.5% (3 National Parks: Mavrovo, Galichica and Pelister), natural monuments with 2.74% and the multipurpose area Jasen with 1.05% of the national territory. With more than 18,000 taxa of flora, fauna and fungi – 900 endemites, Macedonia has very rich and highly valued biodiversity.

The agricultural land, which includes the cultivable land and the pastures, takes about 56.2% of the total area. The forests spread on around 43.8% of the total area of the country.

Republic of Macedonia is considered rich in water resources and it has recorded and mapped 4,414 springs in total, with overall annual capacity reaching 6.63 billion m^3 water. From hydrological point of view, the country belongs to three water basins, namely: Adriatic Sea (15% of the territory) with the main entry watercourse being the river Crn Drim; Aegean Sea (85% of the territory) with the rivers Vardar and Strumica as the major watercourses; Black Sea, the basin of which has insignificant territory.

Vardar is the largest river with around 80% of the total water outrun from Macedonia with overall length of 388km (301 km in the country).

The statistical data on the macroeconomic indicators shows that for 2013 the gross domestic product (GDP) is 7,457 million EUR (nominal) and the GDP/inhabitant is 3,581 EUR. The most important economic sectors in Macedonia, according to the statistical data, are: mineral extraction and metal processing industries, telecommunications, production of automotive parts and electronic products, trade, agriculture and food production and beverage production. The significant exports products are: automotive components (catalysts, capacitors, and electronic boards), hoses, buses, steel, textile, ferro silica, lead, zinc, ferro nickel, tobacco, lamb and wine.

The unemployment in second quarter of 2015 was 26.8%.

The strategic orientation of the Government of Republic of Macedonia is its full integration into the EU. The candidate country status for accession in the European Union and its membership in the World Trade Organization have created conditions for greater opening of the economy towards the international global market, fostering of investments, strengthening of GDP and by all these – prosperity of the national economy. The Stabilization and Association Agreement between the European Communities and their Member States and Republic of Macedonia was signed on 9 April 2001 and entered into force on 1 April 2004. Macedonia was granted candidate country status for EU membership in 2005.

In 2006 the process of decentralization started with delegation and transferred of plenty of rights and responsibilities to the Local self-Governments and currently there are 80 municipalities and the City of Skopje, which is a district unit of local self-government that consists of 10 municipalities (Aerodrom, Karpos, Cair, Gazi Baba, Gjorce Petrov, Saraj, Suto Orizari, Kisela Voda, Centar and Butel) who have jurisdiction for different obligations in order to provide sustainable and healthy life of their citizens. There are 43 urban municipalities and 37 rural municipalities. In total there are 1767 settlements and 34 cities in the Republic of Macedonia. The municipalities in Macedonia are presented on Figure 1.

Figure 1: Municipalities in the Republic of Macedonia

The main competences of the municipalities are in the following areas: a) urban planning, b) environmental protection, c) communal activities, d) education – primary and secondary schools, e) social protection and health care – primary health care and kindergartens and homes for old people, f) sport and recreation – local sport facilities, g) culture and others.

For better economic development and statistical purposes, the Republic of Macedonia is divided into eight statistical planning regions (shown on Figure 2).

These regions are listed in Table 1 and Figure 2.

Table 1 Statistical regions and population

Statistical Planning Region	Population
Skopje	615,949
Pelagonija	231,806
Polog	318,995
Eastern region	177,700
South-eastern region	173,522
North-eastern region	176,018
South-western region	220,134
Vardar	153,347
Total	**2,067,471**

*Source: State statistical office of the Republic of Macedonia, Regions of the Republic of Macedonia, 2015

Figure 2 Statistical planning regions in Macedonia

The demographic indicators at regional level show considerable differences which points to a big disproportion in the territorial distribution of the population. The Skopje Region, as most densely populated, has almost ten times higher density than the Vardar Region, which is the least densely populated.

4. BASELINE ENVIRONMENTAL DATA

The Republic of Macedonia faces similar problems in the environmental sectors to those of many other economies in the Central and Eastern Europe region.

There is a poor air and surface water quality (the air quality is an issue for bigger cities especially in the winter season) in some regions as a result of old industry technology process equipment and energy production installations, old vehicle fleet and lack of state-of-the art technology solutions, weak regulatory, monitoring and enforcement framework.

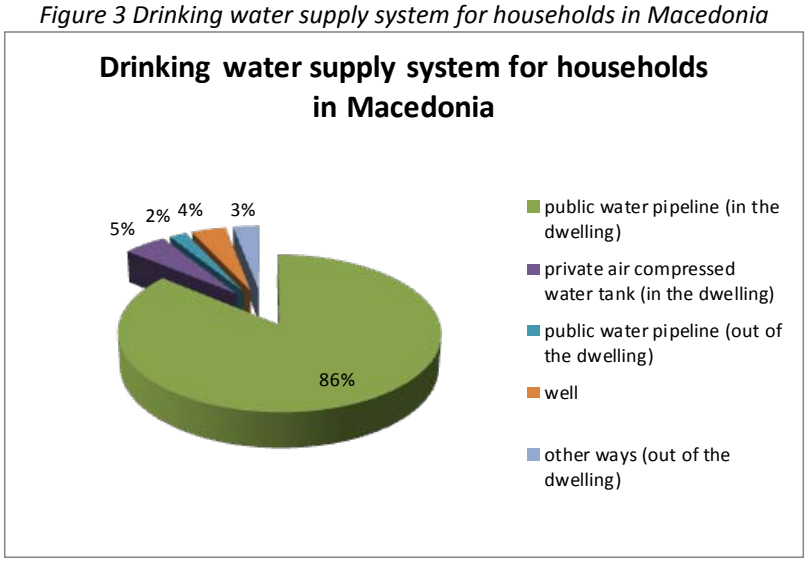
There is also so called historical pollution of soil, water and air from the disposal of industrial hazardous waste from industry and mining operations which are potential risks to the human health and impact to the biodiversity.

4.1 WATER SUPPLY

According the census of Population, Households and Dwellings from 2002, the household in RM are supplied with drinking water from: public water pipeline, other ways (outside the dwelling), private air compressed water tank, etc.

Data shows that 88.9% of the total number of individual households (564,296) and 597,014 of dwellings (or 86% from total number of dwellings 698,143) are supplied with drinking water from public water pipeline (Figure 3). Number of population connected to public water supply system is 1,200,000 inhabitants.

Figure 3 Drinking water supply system for households in Macedonia



Source: State statistical office, Environmental Statistics 2013

Data from 2014 (Project "Development of Water Tariff Study for Republic of Macedonia) shows that 91% of the total number of individual households (564,296) are supplied with drinking water from public water pipeline. In the period 2008-2012 the range of coverage with drinking water supply for the individual households is in the range of 76% for 1-10,000 size bands, 99% for 10-50,000 size band and 100% for 50-100,000 size band.

Sanitary-hygienic condition of the drinking water is within the limits of the expected quality (91.5%-95% of samples are safe), as well as physical-chemical (only 3.4% to 7.5% of

samples are unsafe) and microbiological conditions (only 0.8% to 1.6% of samples are unsafe).

Lack of safe drinking water causes potential risks to human health due to the waterborne diseases, increase of medical costs, absents of work, etc. Some of the existing drinking water supply systems are old, there are water losses and there are illegal connections. Usually small settlements have problems with lack of drinking water supply system, or there is a need of extension or reconstruction of the existing system, or there are not water meters installed in order to register the amount of water used (and the water fees paid by the residents is a lump-sum amount on annually basis and it does not depend on water consumption).

4.2 WASTE WATER TREATMENT

The Census data collected in 2002 show that 40.1% of the total number of dwellings do not have sewage installation for proper connection to the public sewage system. 59.9% of dwellings are connected to the public sewage system and approx. 21% of the dwellings have their own septic tanks performing periodic cleaning. The overview of the number of households and dwellings with the various ways of waste water disposal installations according the census data (2002) are presented on the Table 2 and Figure 4 below.

Table 2 Sewage facilities in Macedonia (2002)

Number of households/dwellings		Sewage facilities			
Total number of households	Total number of dwellings	Public sewage	Septic tanks	Free waste water	No installations
564,296	697,520	417,653	143,353	85,007	51,516

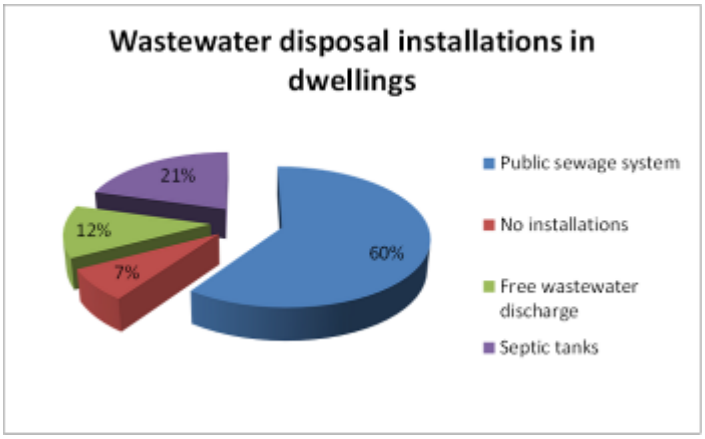


Figure 4: Waste water connection to various installations

Currently estimated rate of waste water collection (according the research within the EU funded Project "Development of National water tariff Study in Macedonia") is 73% of the population with several size band for the period 2008-2012:

a) 50-57% for the settlement up to 10,000 population;

b) 76-82% for the settlement in the range 10,000 – 50,000 population;
c) 75-90% for the settlement in the range 50,000 – 100,000 population;
d) 70% for the settlements in the range 500,000 – 1,000,000 population.

There is a lack of urban waste water treatment plants and industrial waste water treatment facilities across the country. The production installations are obliged according the IPPC permit to be in line with the Law on waters and to collect and treat the waste waters related to the type of production and quality of the recipient water body. The IPPC installations need to follow the BAT guidance for particular industry sector.

Related to the urban waste waters the construction of WWTPs started few years ago and there are approx. 20% of population covered with urban waste water treatment systems. Unfortunately, due to the lack of financial sources for operational and maintenance costs, some of the small WWTPs are not currently operational. The list with overview of the WWTPs in Macedonia for urban waste water treatment has been presented on Table 3.

Table 3 Waste water treatment plants in Macedonia

Location/City/Settlement	Population equivalent (p.e.)	Condition
Berovo	14,000	Operational
Kumanovo	90,000	Operational
Makedonski Brod	5,000	Operational
Ohrid and Struga (settlement Vranishte)	120,000	Operational
Prilep	95.000	Prepared
Sveti Nikole	17.500	Under reconstruction (to be completed during 2014)
Resen (settlement Ezerani)	12,000	Operational
Dojran (settlement Nov Dojran)	12,000	Operational
Rankovce (for the settlements Petralica – Ginovce)	1,500	Constructed in 2008. Not operational yet due to lack of households connected
Saraj	10,000	Constructed in 2011. Not operational due problems to maintenance of equipment
Cucer Sandevo (for the settlements Brazda, Gluvo and Mirkovci)	9,000	Operational
Ilinden (two WWTPs for the settlements Ilinden and Kadino)	1,250 each	Operational
Dolneni	3,200	Operational
Krivogastani	Small-village	Operational
Gevgelija	2.500	Under construction
Karbinci	Small village	
Total	**~400,000**	**~20% of population**

As a part of the overall national priority for reconstruction and modernization of the water and waste waters related infrastructure in Macedonia in accordance with EU standards, in 2014 and 2015 the studies (FS, EIA, CBA) for reconstruction of existing drinking water supply network, construction of sewage network and waste water treatment plants in the Municipalities of Strumica, Bitola and Tetovo were prepared funded by EU IPA funds.
For Strumica agglomeration the construction of Wastewater Treatment Plant projected for approx. 95,000 p.e. has been planned. The WWTP for Bitola agglomeration has been projected for 100,911 p.e. and the project for Tetovo agglomeration is under preparation (It is assumed that the WWTP will be for approx. 80,000 p.e.
In 2016 in Republic of Macedonia is planning to be prepared Studies (FS, EIA, CBA), for reconstruction and extension of drinking water supply network, waste water collection systems and construction of WWTPs for Municipalities of Gostivar, Kavadarci and Debar, also funded by EU IPA funds.

The lack of waste water treatment systems causes direct adverse impact to the surface and ground waters, affecting water status and makes influence to the water living organisms and makes water improper for other uses. The untreated waste waters make direct influence to the economy losses via decrease of fishery, tourism, agriculture, etc. The discharge of untreated waste waters causes potential risks to the human health through the pollution of agricultural land and food chain consumption.
There is a real need for extension of the storm water networks across the country because the existing lack of enough storm water systems causes frequent flooding during heavy rains with direct implication to the road, street asphalt, greenery, electricity network on the streets and parking cars near the streets.

4.3 WASTE MANAGEMENT

According the official statistical data the total amount of generated municipal waste in 2014 was 765,156 tones and the amount of collected municipal waste 569,794 tones. The annual amount of generated municipal waste per person in 2014 was 370kg, or 1.014kg per person daily. The total amount of generated municipal waste in the Republic of Macedonia in 2013 was 792,785 tones. The annual amount of generated municipal waste per person in 2014 was 370kg per person, which is 3.6% less than in 2013.

The highest amount of collected municipal waste was registered in the Skopje Region – 153,433 tones, or 26.9% of the total collected amount in the Republic of Macedonia. Of the total amount of collected municipal waste 84% were collected from households, and the remaining 16% from legal and natural persons (commercial waste).

The municipal waste collection systems covers 75% of the national population.

There are 4 companies specialized for collection of the packaging waste mainly from drinking water and beverages bottles, food products package, cosmetics and pharmaceutical package. Generally, there is no formally organized separation of any type of waste, but there are informal collectors of scrap metals, PET, paper, accumulators, etc. Scrap metals and PET bottles represent the biggest part of the collected recyclable materials. Several companies collect the recycle waste streams and export to the region for further processing.

Almost all collected municipal solid waste goes to the 47 municipal landfills across Macedonia (99.4%), the rest has been recycled. Only the Skopje landfill “Drisla –Skopje”

DOO fulfills the minimum criteria prescribed in the national and EU landfill criteria. All others do not comply with any technical and/or environmental standards; landfills represent risks for the pollution of air, soil, surface water and groundwater, as well as potential risks for biodiversity, agricultural land and human health due to deposition of mixed hazardous and non-hazardous waste. Active municipal waste landfills in Macedonia are categorized according to the assessment of their environmental risk. 16 landfills are ranked with high risk, 16 with medium risk, and the rest with low environmental risk.

According the National Waste Management Strategy (2008 - 2020) the regional approach to the municipal solid waste management was proposed and in the period 2011 till now several practical steps toward regional waste management were made. Several Regional Public Enterprises for municipal waste management (Regional Waste Management Body) were founded in few regions and the capacity building scheme was launched. Currently there is a project implementing in the Eastern and North-eastern regions on strengthening the capacity of the Regional Waste Management Body on integrated regional waste management practices and preparation of the Regional Waste Management Plans. In general the plan is when the regional landfill would be built the municipal landfills (after the remediation measures used) to be used as a transfer stations.

For the following period, Republic of Macedonia will implement projects in order to establish an Integrate Financially Self – sustainable Waste Management Systems in Pelagonija, Southwest, Vardar and Skopje Planning Regions and also for the East and Northeast Planning Regions. Also, with support of EU IPA funding projects the technical documentation for closure of illegal dumpsites in East and Northeast Planning Region will be prepared and technical specification for procurement of waste collection and transportation equipment will be defined.

Currently the main issues on local level with lack of proper municipal solid waste management are: a) significant portion of the population (rural settlements) is not covered by the communal service, b) no primary selection on the source of waste generation, c) old waste vehicle fleet (average more than 25 years old communal trucks with high fuel consumption and frequently need of service and procurement of spare parts), d) lack of specialized waste trucks or machines for efficient street, sewer cleaning and snow cleaning, vehicles for carrying construction materials, etc., e) some existing used waste trucks cannot be driven on the small streets in the settlements, f) there is no proper fencing, lighting, security guarding on the location for municipal landfill for municipal solid waste, g) some municipalities do not have separate municipal inert waste landfill dedicated only to the disposal of inert waste, h) there is a lack of public awareness of the population on potential human health risks and environmental risks during the improper disposal of the various waste streams (near rivers, roads, on agricultural land, near wells, etc.

4.4 AIR EMISSIONS AND AIR QUALITY

Ambient air quality in Macedonia is constantly burdened by all consisting factors of a modern society. This includes production of food and energy, agriculture, households (usage of fuels for cooking, heating, air conditioning, etc.), industrial capacities and transport. Sectors energy, industry and transport hold the largest share of significant sources of pollutants emissions.

Energy sector has greatest contribution to the generation of the total sulphur dioxide emissions (72% in 2001 to 99% in 2009), generates around 60% of the total annual nitrogen

oxides emissions, 21% of the total annual volatile organic compound emissions and major part of the total generated solid particulate emissions (87% in 2001 up to 92% in 2009).
Industry contributes around 28% to the total annual emissions of sulphur dioxide, around 14% to the total annual emissions of nitrogen oxides, and it has high share (38%) in the annual emissions of volatile organic compounds and contributes to the generation of around 60% of the annual emissions of solid particles.
Transport is also significant source of air pollution, and the main emitters are the internal combustion engines installed in different transportation vehicles. They contribute to share in nitrogen oxides emissions (within the range of 32-47% in the period 2001-2009) and volatile organic compounds in the range of 38-43% in the same period), and lower share in the generation of sulphur dioxide and solid particles.

The Ambient Air Quality in Macedonia varies according to the location of the measuring point with main contribution to the quality of ambient air affected by the concentration of population, the vicinity of industrial capacities, type of production and type of produced products, production of energy, transport of goods and people. There is a state air quality monitoring network consists of 20 automatic monitoring stations (measuring on line concentrations of SO_2 [µg/m^3], NO_2, NO_x, NO [µg/m^3], CO [mg/ m^3], O_3 - ozone [µg/m^3], SPM – suspended particulate matters (PM $_{10}$/opt. PM $_{2.5}$) expressed in µg/m^3. The heavy metals (arsenic, nickel, cadmium) have been monitored as well.

4.5 NOISE

The biggest sources of noise disturbance come from the transport sector (road vehicles, railway and air traffic), industrial activities and construction activities especially in the urban areas and sensitive areas.

Noise measurement and monitoring are necessary for achieving and maintaining environmental noise levels within the limits that the regulations have defined for four types of areas in accordance to their human activity uses and the degree of protection against noise deemed necessary for each of those uses. These areas are:

- *Area with a first degree of noise protection*, includes areas of tourism and recreation, areas near health institutions for hospital treatment, and areas of national parks and natural reserves;
- *Area with a second degree of noise protection*, includes areas primarily intended for residential use, residential districts, areas in the vicinity of educational institutions, educational facilities and social protection services for adults and children;
- *Area with a third degree of noise protection*, correspond to an area where some human activities with noise disturbance are accepted. These include commercial areas, areas with mixed housing/residential, craft activities and production activities (combined areas);
- *Area with fourth degree of noise protection*, correspond to an area in which actions are allowed that can cause the appearance of greater environmental noise. It includes non - residential areas exclusively intended for industrial activities.

The noise limit values for each of above mentioned areas are prescribed within the national legislation.

5. OVERVIEW OF THE ENVIRONMENTAL LEGAL FRAMEWORK IN MACEDONIA

5.1 NATIONAL ENVIRONMENTAL & SOCIAL LEGISLATION

Recognizing the damaging effects of environmental pollution on human beings and the quality of life, the Republic of Macedonia has developed constitutional provisions that guarantee the right to a healthy environment. Article 43 of the Constitution of the Republic of Macedonia (Official Gazette No. 52/91) prescribes "everyone is obliged to promote and protect the environment; the State provides conditions to apply the right of citizens to a healthy environment". Macedonia has become a Party to the main multilateral conventions and protocols explicitly recognizing the link between environmental protection and the human rights norms covering many environmental issues like EIA, Strategic Environmental Assessment (SEA) in the national and trans boundary context, climate change, biodiversity, public information, public participation in the decision-making process and access to justice, trans boundary air pollution and air monitoring, ozone layer, chemicals like persistent organic pollutants (POP), nature protection, etc.

The approximation of the EU environmental legislation into national legislation started in 2003 and till 2014 the largest part of legal acts and secondary provisions have been transposed into Law on Environment (Official Gazette No.53/05,81/05,24/07,159/08, 83/2009, 124/2010, 51/2011, 123/12, 93/13, 163/13, 42/14, 44/15 and 129/15) which is horizontal law comprising industrial pollution control (including EIA, SEA, IPPC , VOC, Seveso II Directive, LCP Directive and main requirements of EU Directives for water, waste management, air emissions, air quality, environmental management systems, etc). The other relevant sectoral laws were adopted (Law on waste, Law on waters, Law on noise protection, Law on ambient air quality, Law on chemicals, etc.) where the requirements of the EU Directives and good international practice have been transposed.

In some sectors there is still a lack of secondary legislation prescribing where and how the applicable standards will be applied (e.g. water quality, emissions to water and ground waters, new categorization of water bodies, emissions to soil and soil quality, maximum permissible concentration for POPs in environmental media and acceptable levels of concentrations of hazardous substances in soil) and some of this secondary legislation is in the process of preparation.

There is a lack of environmental legislation enforcement especially on local (municipal) level. Local self-government units (LSG) in the Republic of Macedonia quite differ from one to another in terms of number of population, which varying from 3,000 to 500,000 inhabitants. At municipal level, there is deficiency of staff and financial resources necessary to respond to the key functions of environmental management. The capacity of LSG for implementation of the laws in the field of environment is not sufficient and sometimes is fully absent. There is a need for strengthening their capacities to implement the environmental legislation in integrated way, taking into consideration all possible pollutions and mitigation measures at the same time and providing guidance in accordance to local and national environmental planning document. The current EU IPA funded project " Strengthening capacities for implementation of environmental legislation on local level" will improve the local capacities in daily implementation of environmental legislation requirements, particularly on IPPC, LEAP development, noise protection, air quality management and water management.

The Law on Environment (Official Gazette No.53/05,81/05,24/07,159/08, 83/2009, 124/2010, 51/2011, 123/12, 93/13, 163/13, 42/14, 44/15 and 129/15) contains the basic principles of

environmental protection with both precautionary and “polluter pays” principles and provides the legal basis for issuing of necessary secondary legislation.

5.1.1 Air quality

The air quality regulation is provided by Law on Ambient Air Quality (Official Gazette No. 67/04 with amendments Nos. 92/07, 35/10, 47/11, 59/12 and 163/13, 10/15, 146/15) where the main principles for limitation of air emissions, prevention measures, monitoring of air emissions of all relevant pollutants into air and air quality have been prescribed. Secondary legislation for air quality is listed in Table 4.

5.1.2 Waste management

In Macedonia, the main national legislation regarding the waste management sector is the Law on Waste Management (Official Gazette No. 68/04, 71/04, 107/07, 102/08, 134/08, 124/10 and 51/11, 123/12, 147/13, 163/13, 51/15, 146/15) and some technical rules and guidelines. The Law on Waste Management as a framework regulation act regulates general waste management issues like: main principles for waste generation, prevention and management, general rules for management of different waste streams and hazardous waste, planning requirements for effective waste management on central and municipal level, operation of landfills, requirements for the operators for collection, transport, treatment and final disposal of the waste etc.

Few separate laws have been adopted related to the special waste streams (Law on packaging waste, Law on WEEE – waste od electric and electronic equipment, Law on batteries) and together with the waste relevant secondary legislation are listed in Table 4.

5.1.3 Water management

The most important aspects of national legislation in the field of water management are already established within the horizontal environmental legislation and the Law on Waters (Official Gazette No. 87/08, 6 / 09, 161/09, 83/10, 51/11, 44/12, 163/13, 180/14, 146/15). At this point it is very important that legislation in the field of water management, which is already or will be transposed, is in compliance with the European Union water legislation. Relevant adopted laws and secondary water and waste waters related legislation is provided in Table 5.

The CSE “Vodovod I Kanalizacija Skopje” adopted Ordinance for technical and sanitary conditions for discharge of waste waters in sewage system of City of Skopje (also listed in Table 4). With this document the CSE prescribes the conditions in which the industrial and urban waste water can be discharged in the surface water recipients in the City of Skopje, as well as limit values of pollutants in the waste water discharged in the sewage system in the City of Skopje.

5.1.4 Noise

One of the essential elements for achieving a higher level of environmental protection is protection against noise disturbance due to the high noise level. The protection against environmental noise pollution is addressed in the Law of Noise Protection (Official Gazette No. 79/07, 124/10, 47/11,163/13, 146/15). A series of secondary pieces of legislation has been adopted in the period 2007-2011 transposing the EU and WHO (World Health Organization) Guideline values for community noise in specific environments.

The law establishes the need to reduce harmful effects that are consequence of exposure to noise in the media and the environment and to provide a basis for developing measures to reduce noise from all its sources. The ultimate objective is the protection of the health and wellbeing of the population.

Noise measurement and monitoring are necessary for achieving and maintaining environmental noise levels within the limits that the regulations have defined for four types of areas in accordance to their human activity uses and the degree of protection against noise deemed necessary for each of those uses.

5.1.5 Nature protection

The basic law in the area of nature protection is the Law on Nature Protection (Official Gazette of the Republic of Macedonia No. 67/04, 14/06, 84/07, 35/10, 47/11, 148/11, 59/12, 13/13, 163/13, 41/14 and 146/15). The Law on Nature Protection regulates the protection of nature through protection of biological and landscape diversity and protection of natural heritage within and outside protected areas as well as forestry and plants.

All other relevant legislation to the environmental protection, community health and safety, cultural heritage protection, labor and working conditions, OH&S regulation, land acquisition and public participation in the EIA process are listed in Table 4.

5.1.6 Management of chemicals

The Law on Chemicals (Official Gazette of the Republic of Macedonia No. 145/10, 53/11, 164/13, 116/15 and 149/15) prescribes the management of chemicals, their classification, proper storage, labeling, handling, proper usage of chemicals, safety transportation and final disposal of chemical waste.

5.1.7 Regulation on local (municipal) level

Based on the review the national legislation as well as the regulations issued by City of Skopje it is conclusion that there is no any specific relevant regulation issued on local level in order to protect waters, air quality, noise disturbance or special regulation on waste management. The Environmental Officer and all relevant inspectors (Environmental, Communal, Traffic, Civil /Construction) follow the national environmental legislation.

Only CSE “Vodovod I kanalizacija” Skopje has adopted the Ordinance for water supply and waste water management (listed in Table 4).

Other regulation related to local self-government sector is the following:

- Law on local self-government (Official Gazette of Republic of Macedonia No. 5/2002);
- Law on the territorial organization of the local self-government in the Republic of Macedonia (Official Gazette of the Republic of Macedonia No.55/16.08.2004);
- Law on equal regional development (Official Gazette of Republic of Macedonia No. 63/ 22.05.2007).

5.1.8 National Environmental Policy

Implementation of the environmental requirements is guided by number of policy documents adopted by the governmental institutions including:

- Fifth National Report to the Convention on Biological Diversity of the Republic of Macedonia, Ministry of Environment and Physical Planning, Skopje, 2014;
- National Environment and Climate Change Strategy (2014-2020);
- National implementation plan for reduction and elimination of Persistent Organic Pollutants in the Republic of Macedonia – NIP Update, adopted by Government of RM in 2014;
- National Strategy for Environmental Approximation 2008-2014, adopted 2008 by the Government of RM (updated in 2014);
- Strategy for Waste Management 2008-2020, adopted 2008 by the Government of RM;
- National Plan for Waste Management 2009 – 2015 adopted 2009 by the MoEPP;
- National Strategy for Sustainable Development in Republic of Macedonia 2010-2030, adopted in 2010 by the Government of RM;
- Second National Environmental Action Plan 2006-2012, adopted in 2006;
- National Strategy for environmental investments, 2009-2013, adopted in 2009 by the Government of RM;
- Environmental Monitoring Strategy, adopted in 2005 by the MoEPP;
- National Implementation Plan on reduction & elimination of Persistent Organic Pollutants in the Republic of Macedonia, adopted by Government of RM in 2004
- Environmental Communication Strategy, adopted in 2004 by the MoEPP;
- Program for packaging waste management, adopted in 2011 by the MoEPP;
- Program for investments in environment (on annual base), MoEPP;
- National Water Strategy, adopted by Government of RM in November 2012;
- Plan for Institutional Development of the National and Local Environmental Management Capacity 2009 – 2014 approved by GRM in February 2009.

Taking into account the fact that the national legislation could be amended in the next period, the amended version of each piece of legislation need to be considered by the Investor – Municipality during the Environmental Assessment process for the project in order to take into account the obligatory technical specifications or emission limits for pollution into water, air, soil and other limitations towards protection of environment and human health. Also, the amendments and changes into the relevant national legislation (OH&S legal requirements, labor protection requirements, land acquisition and community safety requirements) need to be followed and implement by the Contractor.

Table 4 Key relevant national environmental and social related legislation

Relevant environmental/ social issues for the project	Relevant national legislation Act, Regulation, Degree
ESIA procedure	Law on Environment (Official Gazette No.53/05, 81/05, 24/07, 159/08, 83/09, 124/10, 51/11, 123/12, 93/13, 187/13, 42/14, 44/15, 129/15); Rulebook on the content of the requirements that need to be fulfilled by the EIA Study (Official Gazette No.33/06); Rulebook on the form, content procedure and manner of developing the report on the adequacy of the study on EIA of the project and the procedure for authorization of persons from the List of Experts for EIA responsible for the preparation of the report (Official Gazette No.33/06, 44/13); Decree on determining projects for which the EIA procedure should be carry out (Official Gazette No.74 / 05, 109/09, 164/12); Rulebook on the information contained in Notification of intent to implement a project and the procedure for determining the need for EIA of a project (Official Gazette No.33/06); Rulebook on the list of projects for which the EIA Report – Elaborate should be prepared by the investor and the EIA Report need to be adopted by the Ministry of Environment and Physical Planning (Official Gazette of RM" No. 80/09, 36/12); Rulebook on the list of projects for which the EIA Report – Elaborate should be prepared by the investor and the EIA Report need to be adopted by the Mayor of the municipality or Mayor of City of Skopje (Official Gazette of RM" No. 80/09, 32/12) Rulebook on the form and contents of the EIA Report – Elaborate , the procedure for their approval, and manner of keeping the register of approved reports (Official Gazette of RM" No. 50/09, 44/13)
Access to environmental information and public participation in	Law on Environment (Chapter on EIA procedure and trans boundary context and information dissemination, public participation and access to justice requirements) - (Official Gazette No.53/05, 81/05, 24/07, 159/08, 83/09, 124/10, 51/11, 123/12, 93/13, 187/13, 42/14, 44/15, 129/15); Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental

Relevant environmental/ social issues for the project	Relevant national legislation Act, Regulation, Degree
environmental decision making process	Matters (Aarhus) ("Official Gazette of the Republic of Macedonia" no. 40/99); Convention on the assessment of trans-boundary environmental impacts (Espoo Convention, February 1991) ("Official Gazette of the Republic of Macedonia" no. 44/99); Convention on Biodiversity ("Official Gazette of the Republic of Macedonia" no.54/97); Convention on Migratory Species Conservation (Bonn) ("Official Gazette of the Republic of Macedonia" no.38/99); Convention on Conservation of European Wildlife and Natural Habitats (Bern) ("Official Gazette of the Republic of Macedonia" no. 49/97); Framework Convention of the United Nations on Climate Change (New York, May 1992). Ratified with the Law on Ratification ("Official Gazette of the Republic of Macedonia" no. 6/97). Entered into force on April 28, 1998; Kyoto Protocol on Climate Change (Kyoto, December 1997). Ratified by Macedonia on 18 November, 2004 (entry into force on 16 February, 2005); UNESCO Convention on World Heritage (November, 1972). Notification for succession from the Macedonian Government 30/04/1997; Convention on International Labor Organization: Macedonia ratified several ILO Conventions.
Water	Law on Environment (Official Gazette No.53/05, 81/05, 24/07, 159/08, 83/09, 124/10, 51/11, 123/12, 93/13, 187/13, 42/14, 44/15, 129/15, 146/15); Law on Waters (Official Gazette No. 87/08, 6 / 09, 161/09, 83/10, 51/11, 44/12, 163/13, 180/14, 146/15); Law for drinking water and disposal of urban waste water (Official. Gazette of RM no. 68/04, 28/06, 103/08, 17/11, 54/11, 163/13, 10/15 and 147/15) Law on Water Master Plan (Official Gazette No. 85/03, 95/05, 103/08); Law on Aquatic Communities (Official Gazette No. 51/03, 95/05 113/07); Decree on classification of waters (Official Gazette No. 18/99);

Relevant environmental/ social issues for the project	Relevant national legislation Act, Regulation, Degree
	Decree on categorization of water streams, lakes, accumulations and groundwater (Official Gazette No. 18/99, 71/99) ; Rulebook on the manner of establishment and maintenance of the protection zones around the springs for drinking water ("Official Gazette of the Republic of Macedonia" no. 17/83 and 15/89); Rulebook on monitoring the sediment in reservoirs (Official Gazette No. 4 / 99); Rulebook on the information of the conditions on the level and quantities of accumulated water in the accumulations, as well as the quantities of water discharged from there ("Official Gazette of the Republic of Macedonia" no. 8/99); Rulebook on the content and the manner of preparation of the River Basin Management Plans (Official Gazette No. 148/09); Rulebook on the Methodology for assessment of the river basins (Official Gazette No. 148/09); Rulebook on the content and manner of preparation of the program of measures (Official Gazette No. 148/09); Rules for special security requirements for natural mineral water (Official Gazette No. 32/06); Rulebook on the safety of water (Official Gazette No. 46/08); Rulebook for hazardous and harmful substances and their emission standards that can be discharged into the sewage or drainage system, surface or ground water bodies and the coastal lands and wetlands (Official Gazette No. 108/11); Rulebook on conditions and how the emission limit values for discharges of waste water after their purification, method of their calculation, taking into account the specific requirements for the protection of protected areas (Official Gazette No. 81/11) Ordinance for technical and sanitary conditions for discharge of waste waters in sewage system of City of Skopje (PE Vodovod i kanalizacija)
Waste Management	Law on Waste (Official Gazette No. 68/04, 71/04, 107/07, 102/08, 134/08, 124/10, 51/11, 123/12, 147/13, 163/13, 51/15, 146/15); List of Waste Types (Official Gazette No. 100/05); Law on Packaging and Packaging Waste (Official Gazette No. 161/09, 06/09, 17/11, 47/11, 136/11, 6/12, 39/12, 163/13,

Relevant environmental/ social issues for the project	Relevant national legislation Act, Regulation, Degree
	146/15); Law on Waste Electronics and Electrical Equipment (WEEE) (Official Gazette No. 06/12, 163/13, 146/15); Law on batteries and accumulators and waste batteries and accumulators (Official Gazette no. 140/10, 47/11, 148/11, 163/13 and 146/15); The Law on the Ratification of the Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal (Official Gazette No. 48/97); Decree for determining the activities of installations (landfills operation) requiring an integral environmental permit (Official Gazette No. 89/05); Rulebook on the manner and the conditions for waste storage, as well as on the conditions to be met by the sites on which waste storage is performed (Official Gazette No. 29/07); Rulebook on conditions that have to be fulfilled by the landfills (Official Gazette No. 78/09); Rulebook on the landfill operation, monitoring and controlling in the operational and closing phase as well as on the closure and after-care procedures (Official Gazette No. 156/07); Rulebook for criteria for acceptance of waste to landfill in each landfill class, preparation procedure for acceptance of waste, basic testing procedures, sampling procedure and acceptance of waste (Official Gazette No. 8/08); Rulebook on the manner and the conditions for handling PCBs, the conditions to be met by installations and facilities for PCBs disposal and decontamination, on used PCBs and on the manner of labeling the equipment that contains PCBs (Official Gazette No. 48/07, 130/09) ; Rulebook on the procedures and manner of collection, transport, processing, storage, treatment and disposal of waste oils, and the manner of keeping records and submission of data (Official Gazette No. 156/07); Rulebook on general rules for handling with communal and other non-hazardous waste (Official Gazette No. 147/07); Rulebook of detailed conditions on the handling of hazardous waste, and on the manner of packaging and labeling (Official Gazette No. 15/08); Rulebook on the handling and management of waste containing asbestos and waste from products containing asbestos

Relevant environmental/ social issues for the project	Relevant national legislation Act, Regulation, Degree
	(O.G. of RM No. 89/06); Rulebook on the form and content of the request for issuing a permit for the landfill operator as well as the form for and content of the permit (Official Gazette No. 140/07);
Protected Natural Areas and Biodiversity	Law on Nature Protection (Official Gazette No. 67/04, 14/06, 84/07, 35/10, 47/11, 148/11, 59/12, 13/13, 163/13, 41/14, 146/15) and secondary legislation on Natura 2000 and emerald network; Law on Forests (Official Gazette no. 64/09, 24/11, 54/11, 25/13, 79/13, 147/13, 43/14, 160/14 and 44/15); Law on protection of plants (Official Gazette no. 25/98 and 06/00); Lists for determining strictly protected and protected wild types (Official Gazette no. 139/11); (Emerald Network: Launched in 1998 by the Council of Europe, of which the Republic of Macedonia is a member, as part of the works under the Bern Convention on the Conservation of European Wildlife and Natural Habitats. This ecological network is based on the same principles as Natura 2000, and represents its *de facto* extension to non-EU countries. National Emerald Network in the Republic of Macedonia was implemented between 2002 and 2008.); Macedonia ratified the Rio Convention in 1997; Macedonia ratified the Bonn Convention in 1999; Macedonia ratified the Ramsar Convention in 1977; Macedonia ratified the Bern Convention in 1997; Macedonia ratified the CITES Convention in 2000; Macedonia ratified the Agreement on the Conservation of Bats in Europe (London) in 1999, amended in 2002
Noise and Vibration	Law on Noise Protection (“ Official Gazette No. 79/07, 124/10, 47/11, 163/13, 146/15) Rulebook on noise indicators and the area of application of additional noise indicators (Official Gazette No. 107/08); Rulebook on the permissible level of noise in the environment (Official Gazette No. 147/08); Rulebook for locations of measuring stations and measuring points (Official Gazette No. 120/08);

Relevant environmental/ social issues for the project	Relevant national legislation Act, Regulation, Degree
	Rulebook on details of the content of strategic noise maps and noise action plans, method of preparation and method of collecting data for preparing strategic noise maps and noise action plans, and method of collection, storage and recording (Official Gazette No.133/10); Rulebook on the method, conditions and procedure for establishing and operating networks, monitoring methodology, conditions, method and procedure for submitting noise monitoring information and data (Official Gazette No.1/09);
Air Quality	Law on Ambient Air Quality (Official Gazette No. 67/04 with amendments No. 92/07, 35/10, 47/11, 59/12, 163/13, 10/15, 146/15); Decree on limit values of levels and types of pollutants in ambient air and alert thresholds, deadline for achieving limit values, margins of tolerance of the limit value, target values and long term goals (Official Gazette No. 19/05); Macedonia ratified the Convention on Climate Change on 28 January 1998, entrance into force on 28 Apr 1998; Macedonia ratified the Kyoto Protocol on 18 November 2004, entrance into force on 16 February 2005; Decree on limit and target values for levels and type of pollutants in the ambient air, alert and information thresholds; deadlines for achieving limit and target values for specific substances; margins of tolerance for limit value and target value and long term objectives for specific pollutants (Official Gazette No. 50/05); Rulebook on criteria, methods and procedures for evaluation of the ambient air quality (Official Gazette No.82/06); Lists of zones and agglomerations for ambient air quality (Official Gazette No.23/2009); Rulebook for methodology for inventory and determination of the levels of emissions of pollutants in the ambient air in tons per year for all types of activities, as well as other data required to be submitted under the Program for air monitoring in Europe (EMEP) (Official Gazette No.142/07); Rulebook on establishing the emission upper limits on national level (Official Gazette No. 10/90); Rulebook for air emission limit values from stationary sources (Official Gazette No. 141/10); The diesel fuel specification are prescribed by Rulebook on liquid fuel quality (Official Gazette No. 88/2007, 91/2007, 97/2007, 105/2007, 157/2007, 15/2008, 78/2008, 156/2008, 81/2009);
Cultural Heritage	Law on Protection of Cultural Heritage(Official Gazette No. 20/04, 71/04, 115/07, 18/11, 148/11, 23/13, 137/13, 164/13,

Relevant environmental/ social issues for the project	Relevant national legislation Act, Regulation, Degree
and Archaeology	38/14, 44/14, 199/14, 154/15); Regulation for National Registry of Cultural Heritage (Official Gazette No. 25/05); (Macedonia ratified the Convention for the protection of the World Cultural and Natural Heritage in 1991);
Community Health and Safety	Law for Health Protection (Official Gazette No. 43/12, 145/12, 87/13, 164/13, 39/14, 43/14, 132/14, 188/14, 10/15, 61/15, and 154/15); Law for Transport of Hazardous Materials and amendments (Official Gazette Nos. 92/2007, 17/2011, 54/2011, 13/13, 163/13, 38/14, 166/14 and 116/15); Law for preventing the spreading of the infectious diseases (Official Gazette No. 66/2004, 139/08, 99/09 и 149/14 and 150/15); Law for Wages (Official Gazette No. 70/94, 62/95, 33/97, 50/2001, 26/2002, 46/2002, 37/2005, 121/2007, 161/2008, 92/2009, 97/ 2010, 11/12, 145/12, 170/13, 139/14 and 147/15); Law on Equal Opportunities for Men and Women, and the National Action Plan for Gender Equality (Official Gazette No. 06/12, 166/14 and 150/15); Law for Social Protection (Official Gazette No. 79/09, 36/11, 51/11, 166/12, 15/13, 79/13, 164/13, 187/13, 38/14 and 44/14, 116/14, 180/14, 33/15, 72/15, 104/15 and 150/15); Law for Children Protection (Official Gazette No. 170/10, 23/13, 12/14, 44/14, 144/14, 10/15, 25/15 and 150/15); Crisis Preparedness Planning, June 2009 (for abnormal working conditions like high temperatures, floods and similar);
Occupational Health and Safety	Law on Occupational Health and Safety (Official Gazette No. 92/07, 98/10, 93/11, 136/11, 60/12, 23/13, 25/13, 137/13, 164/13, 158/14, 15/15 and 129/15); Law on Health Protection (Official Gazette No. 43/12, 145/12, 87/13, 164/13, 39/14, 43/14, 132/14, 188/14, 10/15, 61/15) Law on public health (Official Gazette No. 22/10, 136/11, 144/14, 149/15) Rulebook on minimal requirements for occupational health and safety on working place (Official Gazette No. 154/2008);

Relevant environmental/ social issues for the project	Relevant national legislation Act, Regulation, Degree
	Rulebook for personal protective equipment that uses employees at work (Official Gazette No.92/07); Rulebook for occupational health and safety at work for workers exposed on risk of noise (Official Gazette No. 21/2008);
Labor & Working Conditions	Labor Relations Act (Official Gazette No. 62/05, 106/08, 161/08, 114/09,130/09, 50/10, 52/10, 124/10, 47/11, 11/12, 39/12, 13/13, 25/13, 170/13, 187/13, 113/14, 20/15, 33/15, 72/15 and 129/15); Law on Occupational Health and Safety (Official Gazette No. 92/07, 136/11, 23/13, 25/13, 137/13, 164/13, 158/14, 15/15 and 129/15); Law for Civil Organizations (Official Gazette No. 52/10, 135/11); Law for Wages (Official Gazette No. 70/94, 62/95, 33/97, 50/2001, 26/2002, 46/2002, 37/2005, 121/2007, 161/2008, 92/2009, 97/ 2010, 11/12, 145/12, 170/13 и 139/14 and 147/15) and secondary legislation; Law on Equal Opportunities for Men and Women, and the National Action Plan for Gender Equality (Official Gazette No. 06/12, 166/14 and 150/15); Law for Social Protection (Official Gazette No. 79/09, 36/11, 51/11, 166/12, 15/13, 79/13, 164/13, 187/13, 38/14, 44/14, 116/14, 180/14, 33/15, 72/15, 104/15 and 150/15); Law for Child Protection (Official Gazette Nos. 23/13, 12/14, 44/14, 144/14, 10/15, 25/15 and 150/15); Law on Employment & Work of Foreigners (Official Gazette No. 5/2009, 35/10, 148/11, 84/12, 148/13, 38/14 and 150/15); Law on inspection for implementation of laws for labor and working conditions (Official Gazette No. 35/97, 29/2002, 36/11, 164/13, 44/14, 33/15 and 147/15); Collective agreement for construction industry; In 1991 Macedonia ratified a number of International Labor Organization (ILO) conventions;
Land Acquisition	Law on expropriation (“Official Gazette of the Republic of Macedonia” no. 95/12, 131/12, 24/13, 27/14, 104/15); Law on real estate cadaster (“Official Gazette of the Republic of Macedonia” no. 55/13, 41/14, 115/14,116/15 and 153/15); Law on property and other real estate rights (“Official Gazette of the Republic of Macedonia” no. 18/01, 92/08, 139/09,

Relevant environmental/ social issues for the project	Relevant national legislation Act, Regulation, Degree
	35/10); Law on agricultural land ("Official Gazette of the Republic of Macedonia" no. 135/07, 18/11, 42/11, 148/11, 95/12, 79/13, 87/13, 106/13, 164/13, 39/14, 130/14, 166/14, 72/15, 98/15 and 154/15).
Chemicals	Law on Chemicals (Official Gazette of RM " No 145/10, 53/11, 164/13, 116/15, 149/15) Rulebook on transportation of dangerous substances (Official Gazette of RM 113/07) List of Prohibited chemicals (Official Gazette of RM 57/11) Rulebook for the manner of classification and labeling of dangerous substances (Official Gazette of RM " No 145/10, 53/11)

6. RELEVANT ENVIRONMENTAL INSTITUTIONAL SET UP

The environmental chapter (covering all sectors and horizontal issues like EIA/SEA, IPPC) is very complex in respect to environmental functions and requires involvement of plenty of governmental institutions with their constituent bodies, academic institutions, Local Self-Government Units (municipalities), professional associations and non-governmental organizations, the business sector (industry and consultant companies) in fulfilling the environmental related obligations.

The main role for the general environmental protection, regulation and enforcement lays on the Ministry of Environment and Physical Planning (MoEPP) and its constituent bodies:
a) Administration for Environment,
b) State Environmental Inspectorate,
c) Office of Spatial Information System.

Other relevant governmental institutions which cooperate, coordinate with the Ministry of Environment and Physical Planning are: the Ministry of Agriculture, Forestry and Water Economy (MAFWE), Ministry of Economy (MoE), Ministry of Transport and Communication (MTC), Ministry of Health (MoH), Ministry of Finance (MoF) and Ministry of Internal Affairs (MoIA). Several governmental institutions are directly responsible for monitoring of state of the environment and impact of environment pollution to the human health: Directorate for Hydrometrological Works, Public Health Institute, Hydrobiological Institute in Ohrid.

6.1 LOCAL SELF-GOVERNMENT

The Law on Local Self-Governments of 2002 delegated a variety of tasks to municipal level, including competence to perform urban and rural planning, environmental planning on local level and protection of environment, nature and spatial regulation, municipal services such as water supply, waste water treatment, collection, transport and disposal of municipal waste and supervision of the performance of activities carried out under municipal competency. Thus, implementation and inspection responsibilities of municipal importance have been delegated to the local self-government units. The law also introduces the possibility of inter-municipal cooperation in performing the functions under municipal competences. This requires a mutual agreement among the municipalities involved.

Few selected competences related to the environment issues include:
• **EIA -** LSG units are competent (based on Article 24 of the Law on Environment) for assessment of the Environmental Impact Assessment Report (Elaborate) prepared by the investor/proponent for certain smaller activities and projects (compared to those determined by the secondary legislation as ones in competence of the central authorities). Decision of the LSG unit on the approval of the EIA Report (Elaborate) is condition for launching development projects (construction or operating permits).
• **Air -** LSG units have competences in planning of the air quality protection in particular in development of short-term Action Plan for Ambient Air Quality. At the level of zones and agglomeration, municipalities should join together and should develop Plan for Improvement of Air Quality at Local Level in zones and agglomeration when air quality is above the emission limit values. Municipality may establish local monitoring network for air quality and thus have obligations to collect data for air quality and disseminate to MoEPP and the public.
• **IPPC** - One of the most important obligations that LSG units have is related to issuing IPPC B permits for production installations.
• **Waste** - LSG units are competent for development and adoption of Waste Management Plans and programmes at their respective area. LSG unites are required to keep records on waste generators and total waste quantity generated and managed at their respective area. LSG units are also competent to supervise the legal entity – Communal Service Enterprises (CSEs) for collection and transport of communal waste, including inspection and enforcement.

• **Water -** LSG units are responsible for pollution prevention and protection of waters, drinking and non - domestic water supply, drainage, collection and treatment of wastewaters and storm waters. LSG units carry out activities operating their own local infrastructure as well as using infrastructure of the Communal Service Enterprises established by the municipality. LSG units expected to have leading role proposing projects for construction of waste water treatment plants and water purification plants. LSG units are competent for development, operation, maintenance of the local monitoring network within their respective areas.
• **Noise -** The LSG units have dominant jurisdiction regarding protection from and control noise generated by IPPC B installations and operators of business activities which are under responsibility of municipalities.
• **Environmental inspection and enforcement** – Beside the state environmental inspectors, there are local environmental inspectors assigned by the LSG units. They perform regular inspection on the implementation of the environmental legislation and mitigation measures at IPPC B installations and the companies obliged to prepare the Environmental Impact Assessment Report (Elaborate).

6.2 REVIEW OF SERVICES PROVIDED BY COMMUNAL SERVICE ENTERPRISES (PROVIDERS)

The waste management, water supply and sewerage of urban wastewater at local level are under responsibility of local government and these services are provided by the Communal Service Enterprises (CSEs) that are obliged to deliver safe water to households, commercial and industrial facilities, to carry out collection and treatment of waste waters (urban and industrial) and to conduct maintenance of the water supply and sewers system, and of the WWTP, collect, transport of municipal solid waste and its final disposal to the municipal landfill. The CSE is also responsible for the maintenance and operation of municipal landfill.
Very often the CSEs provide additional communal services: greenery and park, green bazaar and cemetery maintenance.
In reference to the drinking water supply and urban waste water collection and treatment the CSEs could be divided into 3 groups of utilities based on the type of service provided:

- Water supply and waste water service providers;
- Water supply service providers;
- Waste water service providers.

Out of a total of 69 CSEs across the country, 50 CSEs are delivering both water supply and collection and treatment of waste water. There are 16 CSEs delivering only water supply services and there are 3 providers providing only waste water services.

The number of municipalities, number of CSEs per statistical region and the services they provide are presented in Table 5.**Error! Reference source not found.***Table 5 Number of municipalities and Communal Service Enterprises (Providers) for water supply and waste water collection and treatment in Republic of Macedonia*

Regions in RM	Number of municipalities	Number of CSPs providing		
		Water supply and waste water service providers	Water supply service providers	Waste water service providers
East region	11	12	1	
North east region	6	4	1	
Pelagonija region	9	5	3	1
Polog region	9	4	4	
Skopje region	17	2	5	1

Regions in RM	Number of municipalities	Number of CSPs providing		
		Water supply and waste water service providers	Water supply service providers	Waste water service providers
South east region	10	9	1	
South west region	9	7	1	1
Vardar region	9	7		
TOTAL	80	50	16	3

The representatives of the CSEs are directly involved in the municipal service improvement projects.

7. NATIONAL ENVIRONMENTAL IMPACT ASSESSMENT PROCEDURE FOR THE PROJECT DEVELOPMENT

The Environmental Impact Assessment procedure has been prescribed into the Law on Environment Off. Gazette No. 53/05, 81/05 24/07, 159/08 и 83/09; 124/10, 51/11, 123/12, 93/13, 163/13, 42/14, 129/15 (Chapter XI/Articles 76-94) where the requirements of the EU Directives on EIA (Directive 85/337/EEC as amended by Directives 97/11/EC, 2003/35/EC and 2009/31/EC) have been transposed.

The national EIA procedure is presented in Figure 5.

The procedure starts when the **Investor** (Project Proponent) who intends to implement a project submits a **Notification Letter**, in written and electronic form to the Ministry of Environment and Physical Planning (MoEPP) (Administration for Environment), which is the responsible authority for the entire procedure. The Administration for Environment is obligated to publish the Notification in at least one daily newspaper available throughout the territory of the Republic of Macedonia, and on the website of the MoEPP.

7.1 SCREENING:

The Screening procedure is a stage of the EIA procedure during which the MoEPP determines whether an EIA should be carried out or not for a certain project. For the development of projects that do not belong to the list of the projects for which the EIA procedure has to be carried out **(small scale projects)**, there is a requirement for the preparation of an "Environmental Impact Report-Elaborate" **(relevant for the Category B projects under the WB OP 4.0.1 Environmental Assessment procedure)**.The detailed procedure about the preparation of Environmental Report – Elaborate is presented in Figure 5.

If the full EIA procedure should be taken (EIA Study should be prepared) the decision from the screening stage has to be published in at least one daily newspaper available throughout the territory of the Republic of Macedonia, and on the website, as well as on the notice board of the MoEPP. The Investor, the legal entities or natural persons concerned, as well as the environmental Non-Government Organizations may appeal against the decision to the 'Second Instance Commission of the Government of the Republic of Macedonia' responsible for resolution of administrative matters in the area of environment. After the screening procedure, the MoEPP informs the Investor of the decision on whether or not an EIA shall be carried out. Based on such information, the Investor applies for a scoping opinion for the EIA.

7.2 SCOPING:

The Scoping phase is the process during which the MoEPP determines the content and extent of the matters which should be covered by the environmental impact assessment study. While drafting the opinion on the scope of the study, the MoEPP shall take into account the opinions of the Investor and the opinions obtained after publication of the decision for screening. Once scoping is completed, the EIA Study can be undertaken. The Investor prepares the EIA Study according to the requirements prescribed into the secondary legislation and submits it to the MoEPP in both written and electronic format.

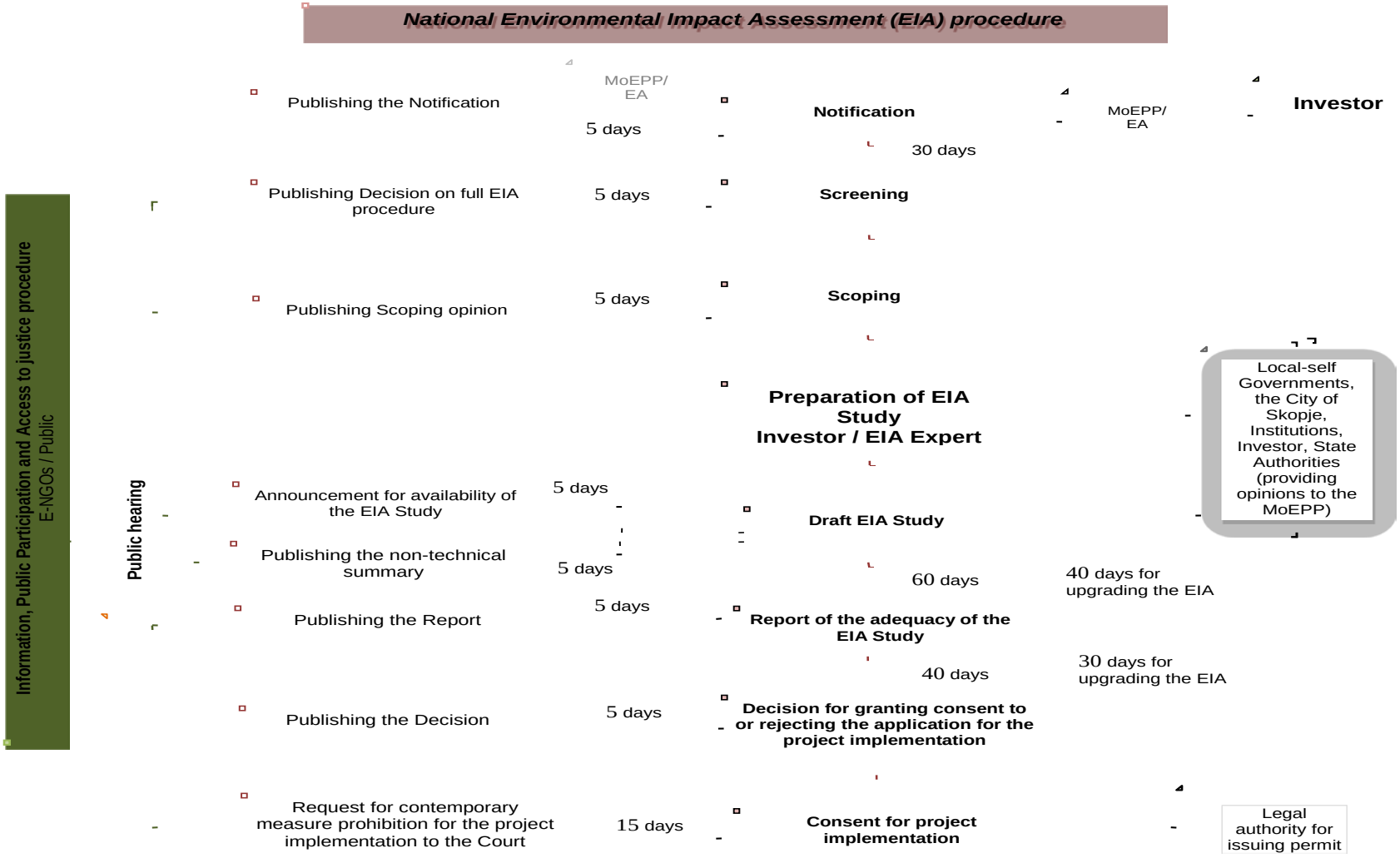


Figure 5 EIA procedure in the Republic of Macedonia

7.3 PREPARATION OF EIA STUDY:

The Investor **preparing the EIA Study** is obliged to engage at least one person from the List of EIA Experts, who shall sign the EIA Study as a responsible person with regard to its quality.

7.3.1 Public Disclosure:

The public disclosure starts when the MoEPP announces that the draft version of the EIA Study on a certain development project has been prepared and is available to the public in at least one daily newspaper, available throughout the territory of the Republic of Macedonia and local radio/TV station, while the Non-Technical Study is published on the website of the MOEPP. This EIA Study is submitted for consultation to the municipalities where the project will be implemented in order to collect their remarks and opinions. During this phase, the MoEPP is obliged to organize a **Public hearing on the draft EIA Study** and to ensure availability of information needed to the public and public participation in the public hearing event. The MoEPP submits the EIA Study to the bodies of the state administration responsible for the performance of the activities of the development project.

7.3.2 EIA Review & Decisions:

The Review is the process of checking the adequacy of the EIA Study. The Report of the adequacy of the EIA Study is prepared by the MoEPP or by persons appointed thereby from the List of Experts for EIA. On the basis of the study, the Report on the adequacy of the EIA Study, the public debate and the opinions obtained, the MoEPP issues a Decision on whether or not to grant consent for the application of the project implementation. The Decision contains an assessment of whether the EIA Study fulfills the requirements, and the permit conditions for the project implementation as well as measures for prevention and reduction of the harmful effects. The MoEPP submits the Decision to the Investor, to the body of the state administration responsible for issuance of the permit or decision on the project implementation and to the municipalities where the project will be implemented. The Decision has to be published in at least one daily newspaper available throughout the territory of the Republic of Macedonia, on the website as well as on the notice board of the MOEPP.

Based on the **Decision for granting consent** for the project implementation, the Authority responsible to issue the permit for project implementation, issues the Consent for project implementation to the Investor.

7.3.3 Public involvement into the EIA procedure:

Public involvement in national EIA procedure is regulated in the Law on Environment, secondary legislation on public information (provided on Figure 6), public participation and access to justice and in accordance with International Conventions signed and ratified by Macedonia (e.g. Aarhus Convention and Espoo Convention).

Practical public involvement is performed through:

- Disclosing of the information about the project and EIA process to the public;
- Public participation where public can actively be involved in public discussions and submit their written opinion within the different EIA phases of the procedures; and
- through the mechanism of access to justice, when the public can influence the decision making by submitting appeals to the Court or Second Instance Commission of the Government.

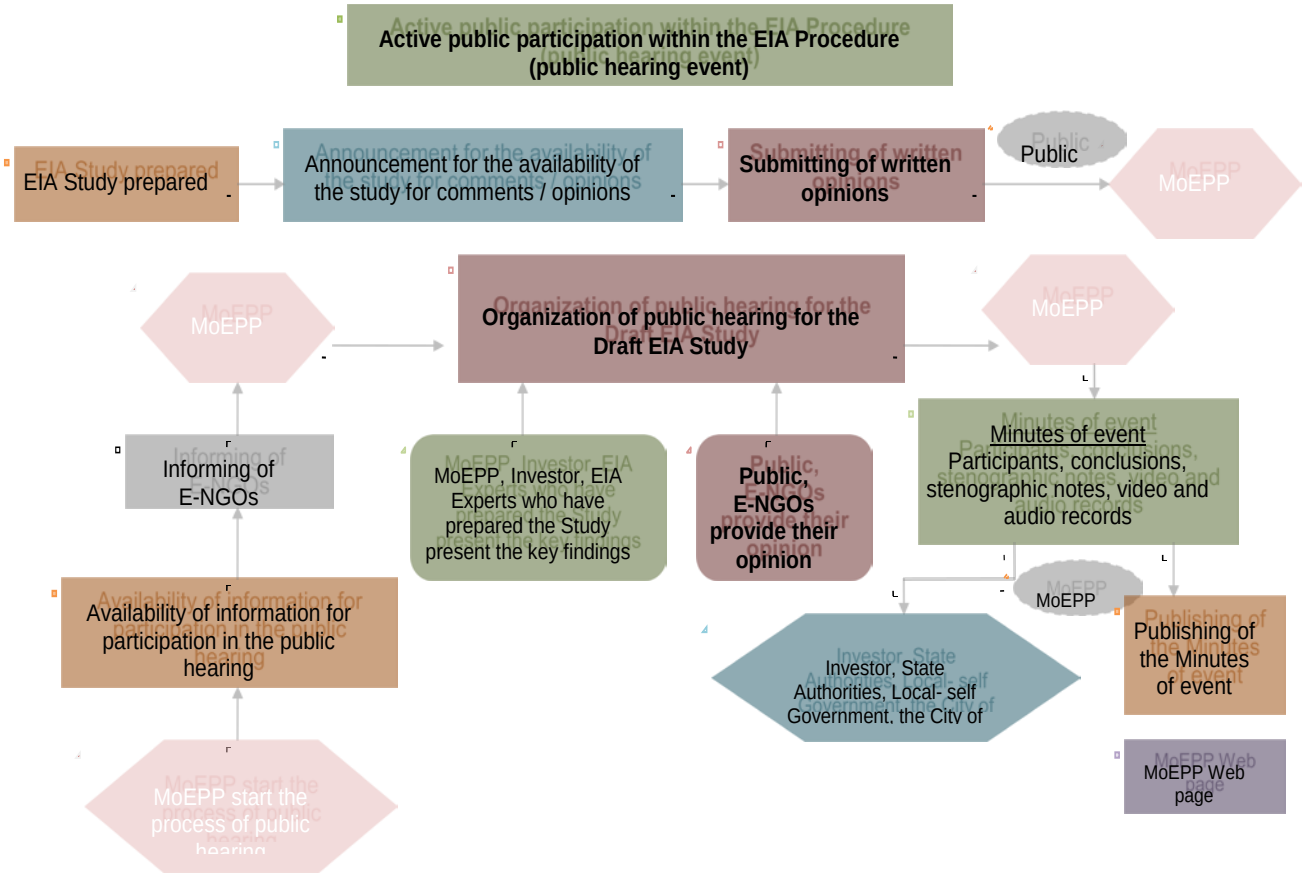


Figure 6 Public hearing during the EIA Study preparation according national legislation

7.3.4 Institutional setup within the EIA procedure

The specific role and responsibility of each stakeholder within the EIA procedure was analyzed separately and it is presented in the following Table. The variety of actions, administrative procedures and participation of various stakeholders within the procedure with their own needs and priorities, shows the complexity of the EIA procedure.

Table 6 Roles and Responsibilities of the stakeholders in the EIA procedure

Authority/ institution	Roles and Responsibilities
Investor/Proponent	- submit the Notification on the intention for project implementation to the MoEPP - submit request for Scoping to the MoEPP - preparation of the EIA Study - submit the EIA Study to the MoEPP - receive the Decision for the project implementation
Ministry of environment and physical planning	- publish the Notification (in minimum one national daily newspaper and on the web page of the MoEPP) - conduct of the Screening procedure - publish the Screening Decision (in minimum one national daily newspaper, on the

Authority/ institution	Roles and Responsibilities
(Administration for environment, Public communication office	web page and on the notice board of the MoEPP) - scope definition for the EIA Study for the project - issuing Opinion of the Scope of the Study and publish the summary of the Opinion (in minimum one national daily newspaper, on the web page and on the notice board of the MoEPP) - announce that EIA Study has been prepared and is available for public comments - publish the Non-technical Summary of the EIA Study on its web page - organize public hearing - prepare the Meetings from the public hearing and publish it on its web page - prepare the Report on the adequacy of the EIA Study - publish the Report of the adequacy of the study in minimum one national daily newspaper and on its web - issuing the Decision for granting consent to or rejecting the application for the project implementation - publish the Decision in minimum one national daily newspaper, on the web page and on the notice board of the MoEPP - establish the List of EIA experts
Other Ministries and State Institutions and Local Self Government units	- provide relevant information during the definition of scope of the EIA Study preparation of the EIA Study; - provide consultation during the Scoping and preparation of the EIA Study - give its opinion during the public consultation process
Ministry of Foreign Affairs	- involve in the trans boundary EIA process in Macedonia and in other country during the Official Notification on the intention for project implementation
Experts from the List of experts	- scope definition for the EIA Study for the project (optional) - preparation of the EIA Study - preparation of the Report on the adequacy of the EIA Study (optional)
NGOs	- submit an opinion on the Notification - submit a complaint on the Screening decision to the Governmental commission and an opinion to Scoping - submit written opinions/ comments on the EIA Study and take part during the public hearing - submit a complaint on the Decision for granting consent to or rejecting the application for the project implementation to the Governmental commission - submit request for temporary measure ban for implementation of the project to the Court
State Environmental Inspectorate	- inspect whether EIA Study for the project is prepared and whether it is submitted to the MoEPP - inspect whether for the implementing project the Decision on granting consent is issued - monitor whether the mitigation measures proposed in the EIA Study are implemented - limit or prohibit implementation of the project without the Decision to grant consent for the application of the project implementation

7.3.5 National procedure for environmental assessment of small scale projects

During the EIA Procedure within the screening phase, if the decision has been that there is no need for EIA procedure to be carried out the investor should start with procedure for development of **Environmental Impact Assessment Report – Elaborate.** This procedure is obliged for small scale projects (e.g., reconstruction or construction of local streets, roads, construction of local drinking water supply systems, sewage systems and small scale WWTPs - less than 10 000 p.e., etc.), causing short-term, minor negative impacts to the environment.

There are two Rulebooks refer to the projects for which the EIA Report-Elaborate should be prepared:

A) Rulebook on the list of projects for which the EIA Report – Elaborate should be prepared by the investor and the EIA Report need to be adopted by the Ministry of Environment and Physical Planning (Official Gazette of RM" No. 36/12);

B) Rulebook on the list of projects for which the EIA Report – Elaborate should be prepared by the investor and the EIA Report need to be adopted by the Mayor of the municipality (Official Gazette of RM" No. 32/12) or Mayor of City of Skopje.

The content of EIA Report – Elaborate should be prepared in line with the Rulebook on EIA Report form and content and procedure for EIA Report adoption (Official Gazette of RM No. 44/13).

The EIA Report – Elaborate contains the main characteristics of the project activities, the main positive and negative environmental impacts identified taking into account the site-specific baseline environmental data. Very simplified Environmental Protection Program comprises various measures that will prevent, mitigate and compensate the adverse impact on all environmental elements need to be developed based on the national environmental legislation and good international practice. No public hearing is proposed during the preparation and adoption of the EIA Report-Elaborate. On Figure 7 the simplified scheme of the EIA Report-Elaborate procedure is presented. The Table 7 shows the roles and responsibilities of the stakeholders in the EIA procedure (EIA Report - Elaborate).

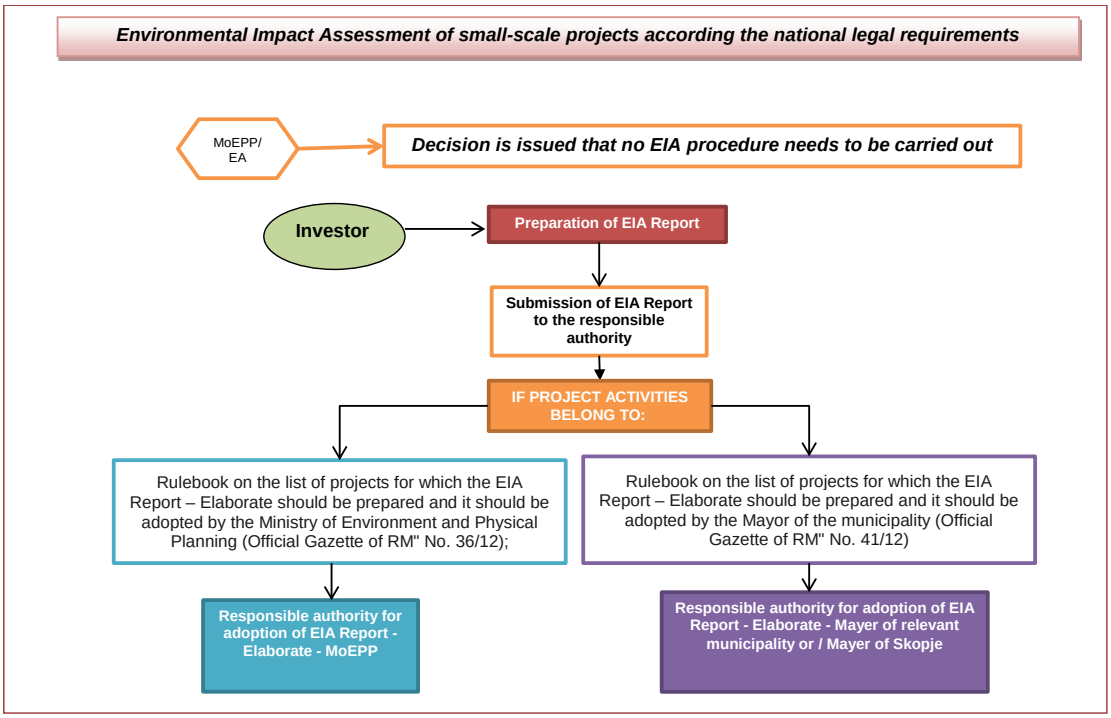


Figure 7 EIA small-scale projects national requirements

Table 7 Roles and Responsibilities of the stakeholders in the EIA procedure (EIA Report - Elaborate)

Authority/ institution	Roles and Responsibilities
Investor/Proponent	- submit the Notification on the intention for project implementation to the MoEPP - preparation of the EIA Report – Elaborate
Ministry of environment and physical planning/ (Administration for Environment)	- prepare the Decision that no EIA procedure is need to be carried out (MoEPP) - issue the Decision for adoption the EIA Report – Elaborate
Local Self-Government (Mayor)	- issue the Decision for adoption the EIA Report – Elaborate
Experts from the List of experts	- preparation of the Notification on the intention for project implementation to the MoEPP - preparation of the EIA Report – Elaborate
State Environmental Inspectorate Municipal Environmental Inspectors	- inspect whether EIA Report – Elaborate for the project is prepared and whether it is submitted to the MoEPP/Municipalities - monitor whether the mitigation measures proposed in the EIA Report – Elaborate are implemented

8. WORLD BANK SAFEGUARDS PROCEDURES

The World Bank has developed and implemented across the world the Safeguard Policies with main aim to ensure prevention, mitigation and compensation of adverse impacts of project development to the community where the project is implementing, to the environment, nature, human health and cultural sites ad objects. The short summary of several relevant Banks' Safeguards Policies are presented below.

8.1 OP/BP 4.01 ENVIRONMENTAL ASSESSMENT

The Bank requires Environmental Assessment (EA) of projects proposed for Bank support to ensure that they do not have, or mitigate potential negative environmental impacts. The EA is a process whose breadth, depth, and type of analysis depend on the nature, scale, and potential environmental impact of the proposed project. The EA evaluates a project's potential environmental risks and impacts in its area of influence; examines project alternatives; identifies ways of improving project selection, siting, planning, design, and implementation by preventing, minimizing, mitigating, or compensating for adverse environmental impacts and enhancing positive impacts; and includes the process of mitigating and managing adverse environmental impacts throughout project implementation. The EA takes into account the natural environment (air, water and land); human health and safety; social aspects; and trans boundary and global environmental aspects. The Borrower is responsible for carrying out the EA and the Bank advises the Borrower on the Bank's EA requirements.

The Bank classifies the proposed projects into three major categories, depending on the type, location, sensitivity, scale of the project and the nature and magnitude of its potential environmental impacts.

- **Category A**: The proposed project is likely to have significant adverse environmental impacts that are sensitive, diverse, or unprecedented. These impacts may affect an area broader than the sites or facilities subject to physical works.

- **Category B:** The proposed project's potential adverse environmental impacts on human population or environmentally important areas-including wetlands, forests, grasslands, or other natural habitats- are less adverse than those of Category A projects. These impacts are site specific; few if any of them are irreversible; and in most cases migratory measures can be designed more readily than Category A projects.

- **Category C:** The proposed project is likely to have minimal or no adverse environmental impacts.

8.2 OP/BP 4.04 NATURAL HABITATS

The conservation of natural habitats, like other measures that protect and enhance the environment, is essential for long-term sustainable development. The Bank therefore supports the protection, maintenance, and rehabilitation of natural habitats and their functions in its economic and sector work, project financing, and policy dialogue. The Bank supports, and expects borrowers to apply, a precautionary approach to natural resource management to ensure opportunities for environmentally sustainable development. The Bank promotes and supports natural habitat conservation and improved land use by financing projects designed to integrate into national and regional development the conservation of natural habitats and the maintenance of ecological functions. Furthermore, the Bank promotes the rehabilitation of degraded natural habitats. The Bank does not support projects that involve the significant conversion or degradation of critical natural habitats.

8.3 OP/BP 7.50 INTERNATIONAL WATERS

The WB International Waterways policy applies to hydroelectric, irrigation, flood control, navigation, drainage, water and sewerage, industrial, and similar projects that involve the use of international watercourses or there is a potential risk for pollution of international waterways. The policy obliges the borrower / borrowing country to notify the other relevant country about the trans boundary effects on the waterways potentially affected by the project activities. The neighboring countries should have opportunity to question/comment on projects affecting shared water bodies on time.

8.4 OP/BP 4.11 PHYSICAL CULTURAL RESOURCES

Physical cultural resources are defined as movable or immovable objects, sites, structures, groups of structures, and natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance. Their cultural interest may be at the local, provincial or national level, or within the international community. Physical cultural resources are important as sources of valuable scientific and historical information, as assets for economic and social development, and as integral parts of a people's cultural identity and practices. The Bank assists countries to avoid or mitigate adverse impacts on physical cultural resources from development projects that it finances. The borrower addresses impacts on physical cultural resources in projects proposed for Bank financing, as an integral part of the environmental assessment (EA) process. When the project is likely to have adverse impacts on physical cultural resources, the borrower identifies appropriate measures for avoiding or mitigating these impacts as part of the EIA process. These measures may range from full site protection to selective mitigation, including salvage and documentation, in cases where a portion or all of the physical cultural resources may be lost.

8.5 OP/BP 4.36 FORESTRY

The Policy envisages the protection of forests through consideration of forest-related impact of all investment operations, ensuring restrictions for operations affecting critical forest conservation areas, and improving commercial forest practice through the use of modern certification systems. In the process of forest conservation interventions, especially the local people, the private sector and other pertinent stakeholders should be consulted. In general, the Policy aims at reducing deforestation and enhancing the environmental and social contribution of forested areas.

8.6 OP/BP 4.12 INVOLUNTARY RESETTLEMENT

This Policy is based on assisting the displaced persons in their efforts to improve or at least restore their standards of living.

The main purpose the Policy is that development undertakings should not cause the impoverishment of the people who are within the area of influence of the undertakings. In cases where resettlement of people is inevitable, or in cases where loss of assets and impacts on the livelihood of the PAPs is experienced, a proper action plan should be undertaken to at least restore, as stated above, their standard of life prior to the undertakings. Concerning public consultation, resettles as well as the host communities should be consulted for the successful implementation of the resettlement process. The views of the consulted resettles and the host communities should be incorporated into the Resettlement Action Plan including the list of their choices.

8.7 IFC ENVIRONMENTAL, HEALTH AND SAFETY GUIDELINES

The Environmental, Health and Safety (EHS) Guidelines of the International Finance Corporation (IFC), 2008 are the safeguard guidelines for environment, health and safety for the development of the industrial and other projects. They contain performance levels and measures that are considered to be achievable in new facilities at reasonable costs using existing technologies.

9. MUNICIPAL SERVICE IMPROVEMENT PROJECT 2 (MSIP 2) DESCRIPTION

9.1 PROJECT OBJECTIVE

The Project Development Objective of MSIP 2 is to improve transparency, financial sustainability and inclusive delivery of targeted municipal services in the participating municipalities in Republic of Macedonia. The project aims to achieve this objective through a focus on infrastructure and services under the responsibility of participating municipalities and their communal service enterprises, such as water supply, sanitation, and solid waste management, but may also include support for other functions such as energy efficiency, urban transport, and other services under municipal provision

Through facilitating improvements in transparency, financial sustainability and delivery of targeted municipal services, MSIP 2 will contribute to both of the interrelated themes: (a) Growth and Competitiveness, and (b) Skills Development and Inclusion. The MSIP 2 will also benefit from the successful experience and lessons learned under on-going MSIP 1 activities where 43 projects are completed and there are 23 ongoing projects.

9.2 PROJECT COMPONENTS

The MSIP 2 presents the second phase of the successfully on-going Municipal Services Improvement Project (MSIP 1) in response to the continuing strong demand and growing interest by the municipalities for the local infrastructure financing, since the MSIP 1 funds are already fully committed and cannot support new applications from the municipalities. Given a persisting needs for improving municipal infrastructure and based on the positive experience of MSIP implementation, the Government of Macedonia requested the World Bank for a new project or additional financing to MSIP 1 in the amount of EUR25 million. Since MSIP 1 already has two additional financings, including the recently approved IPA window, it was decided to proceed with preparation of a new operation. The new project (MSIP 2) was also considered as a good opportunity to take stock of implementation expertizes under MSIP 1 and bring in the needed adjustments if any. As such, MSIP 2 will be built upon the experience of MSIP and its lessons learned to enhance the impact of a well-performing operation.

The MSIP 2 will continue to focus on improving the transparency, financial performance, and delivery of targeted services under the responsibility of participating municipalities and their CSEs, such as water supply, sewerage, solid waste management, energy efficiency, improvements of municipal buildings, local roads, and other services delivered by municipalities. As is the case with MSIP, MSIP2 will continue employing the scheme of sub-loans provided to the municipalities for revenue-generating/cost-saving municipal infrastructure investments and other projects of high priority. In addition, MSIP2 will also aim to target service delivery to poorer and marginalized communities through the specific newly introduced social inclusion grant component. MSIP2 will have a composition of components, as follows:

Component A - Municipal Investments (EUR18.5 million): will provide sub-loans to municipalities for investments in municipal infrastructure, including revenue-generating/cost saving municipal infrastructure investments and other projects of high priority for the municipalities.

Component B - Poverty/Social Inclusion Investment Grants (EUR5 million): will provide investment grants to municipalities as an incentive for them to invest in infrastructure improvements in poorer and marginalized communities within their jurisdictions.

Component C - Project Management, Monitoring and Evaluation, and Capacity Building Technical Assistance (TA) (EUR1.5 million): supports operational costs of the PMU and assists with project implementation and monitoring, as well as finance consultancy services and technical assistance for

(i) sub-project preparation/implementation and local capacity building for municipalities and CSEs to improve service delivery, and (ii) national level institutional strengthening.

9.3 STATUS OF MSIP 1 IMPLEMENTATION

The Municipal Services Improvement Project (MSIP 1) for Macedonia started in 2009 with main goal to improve transparency, financial sustainability, and delivery of targeted municipal services in the participating municipalities in the country. The Republic of Macedonia has requested the World Bank's assistance in addressing these challenges and the loan of 75M USD has been signed to support municipal investments, capacity building and institutional strengthening activities, to deliver performance grants after successful implementation of the investments by the municipalities and to provide proper project management and communication with municipalities.

The Ministry of Finance has established the Project Implementation Unit for smoothly implementation of the project and assistance to the municipality to prepare all necessary project documentation according WB and national legislation. The already completed and ongoing projects are focused on infrastructure and services under the responsibility of participating municipalities and their communal service enterprises, such as: water supply, sanitation, rehabilitation of sewer system, procurement of vehicles for solid waste management, rehabilitation and reconstruction of local roads and streets, reconstruction of municipality buildings, schools, support for other functions such as energy efficiency – street lighting and replacement of mercury containing bulbs with sodium efficient one, installation of thermal heating pumps, urban transport and other services under municipal provision.

By September 2015, in total 43 projects were completed. High share of them (25) referred to reconstruction of local roads and streets, 17 projects are water supply and sewage systems related projects, 16 projects were focused on procurements of waste collection and transportation vehicles and equipment and others were focused to improve the conditions of elementary schools and kindergartens and other public buildings. The remaining referred to energy efficiency, replacement of street lighting and installation of geothermal pumps.

The overview of different types of project activities financed until September 2015 is presented on Table 8.

Table 8 Project category and type of project activities within the MSIP1 (status September 2015)

Project category	Type of project activity
Infrastructure	• Construction and reconstruction or rehabilitation of local streets (various length) • Construction and reconstruction or rehabilitation of various local roads • Construction of the bridge on the channel on the local road
Water and sanitation services	• Construction of the water supply network • Implementation of a storm water management system • Reconstruction of part of the water supply system, complete water supply system or extend the water supply system • Construction of the drinking water reservoir • Procurement and installation of water meters
Solid waste management	• Providing basic equipment for the maintenance of public hygiene (vehicles for snow cleaning, street cleaning, construction vehicle, etc) • Procurement of special vehicles for collection and transportation of municipal solid waste
Other revenue-generating or cost-saving investments	• Reconstruction of the street lighting (replacement of mercury containing lamps with more energy efficient lamps) • Installation of the geothermal pumps • Construction of the primary school including demolition of the old school building

Project category	Type of project activity
	• Reconstruction of the primary schools • Insulation of primary school and kindergartens for better energy efficiency • Reconstruction and adaptation of municipality buildings • Rehabilitation of the river banks and construction of parking lots • Rehabilitation of the main squares in the towns

Within the MSIP 2 besides the above mentioned type of projects, the type of project activities will be extended to additional very important municipality service oriented projects with main aim to ensure the sustainable development of local community. The possible additional project activities (the prioritization process needs to be realized in order to identify the particular projects to be supported financially by the WB loan) are listed in Table 9.

Table 9 Additional possible type of projects activities for the next period within the MSIP 2

Project category	Type of project activity
Infrastructure	• Arrangement of the river area (sidewalks, river bed, lighting)
Water and sanitation services	• Construction of the water purification plant • Construction of small scale WWTP (less than 10.000 p.e) and sewage system • Replacement of drinking water supply asbestos containing pipes
Solid waste management	• Fencing of the municipal landfill • Procurement of equipment and surveillance system for municipal landfill
Other revenue-generating or cost-saving investments	• Gas supply to the agricultural land and greenhouses • Landscaping of the city park • Electricity supply of settlement

It is expected that maybe other small scale municipal activities (e.g., construction of: park, parking space and paving of sidewalks, construction of multifunctional sport facility, construction of green market, construction of touristic tracks across mountain, arranging of picnic areas, regulation of a dry ravine) which lead to the improvement of the everyday living of the citizens and already discussed and prioritized among the local community could occur as a request for financing.

9.4 ENVIRONMENTAL ASSESSMENT WITHIN THE MSIP 2

According the World Bank Environmental Safeguard – Operational Procedure 4.0.1, the Bank requires Environmental Assessment of projects proposed to be financed with Bank loan in order to ensure that the projects are environmentally sound and sustainable improving decision-making process.

Refer to WB Environmental Assessment policy at the beginning of the Municipal Service Improvement Project (MSIP 1) in Macedonia in 2008, the Environmental Assessment and Management Framework Document (EMFD) was prepared and disclosure procedure was performed in order to identify the adverse environmental impacts of next coming small-scale (Category B) projects with site-specific impacts that could be overcome with proposed mitigation measures. In the EMFD several types of projects were analyzed and the mitigation measures and monitoring plan was developed:

a. ***Water and sanitation services***: finance civil works, equipment and consulting services for rehabilitation of water and sanitation services, including for source and consumption metering, leak detection and repair, network rehabilitation and optimization, pressure zoning and equipment for operations; and urgent rehabilitation and repair of selected sewers, sewer maintenance equipment and pipe replacement.

b. ***Solid waste management***: finance collection infrastructure, support equipment, such as collection bins, support vehicles, and other related equipment and consulting services.

c. ***Other revenue-generating or cost-saving investments***: finance civil works, equipment and related consulting services for upgrading and/or expanding of other services or facilities under the responsibility of municipalities, such as storm water drainage systems, public buildings such as schools, urban transport systems, etc. to lower energy consumption or otherwise enhance efficiency.

All WB financed municipality projects so far within the Municipal Services Improvement Project (MSIP 1) belong to the above mentioned type of projects (Category B) already included in the Environmental Management Framework Document prepared in 2008 and amended in September 2014.

It is expected that also all submitted projects by the municipalities within the MSIP 2 will be classified as small-scale projects (Category B according the WB safeguard procedures).

According the WB procedure, for these projects in the phase of preparation the Project Appraisal Document, the Environmental Chapter has been developed covering main site-specific characteristics, expected sensitive receptors, assessment of the possible adverse impacts with their significance, reversibility, importance. The measures have been identified in order to avoid, prevent, mitigate or compensate adverse environmental impacts and Environmental Mitigation Plan has been prepared defining the main responsibility roles for Sub Contractor and Supervisor. The Monitoring Plan has been prepared as well for each project prescribing the parameters that should be monitored, frequency of monitoring, how it is made and responsible institution/company for monitoring.

According the national legislation, as these are small-scale projects, for some of them the Environmental Impact Assessment Report (Elaborate) need to be prepared and the documents were adopted by the Mayor of the Municipality or Ministry of Environment and Physical Planning (More info at the National EIA legislation Chapter and EIA procedure Chapter).

During the implementation of MSIP 1, several new project activities that were not proposed and listed within the EMFD prepared in 2008, arose (e.g., reconstruction of schools in Municipality of Gazi Baba, Petrovec and Butel). The type of activity “construction of primary school” is not listed in any of the national lists with projects for which the Summary EIA Report (Elaborate) should be prepared. As these activities belong to Category B projects refer to the World Bank Environmental Assessment Operational Procedure 4.0.1, the Summary Environmental Impact Assessment Study was developed following the OP 4.01 for each project. The Summary EIA Study was developed upon the World Bank procedures and the document identified the current environmental conditions around the school (usually it is very urban residential area), the project activities included in the proposed project and the identification of the possible sensitive environmental issues was performed in order to develop the Environmental Mitigation Plan and Monitoring Plan. According the WB safeguard procedures the public disclosure was provided posting the developed Summary EIA Study including the Environmental Mitigation Plan and Monitoring Plan on the web site of the municipalities and web site of the Ministry of Finance. The comments and remarks submitted by the public have been taken into account before the works started.

The existing procedure for environmental assessment, screening, preparation, public disclosure and implementation of sub-project specific EIAs and EMPs, as used under MSIP, will continue to be applied under the MSIP 2 Project, including on any new types of sub-project that may be developed. ***The sub-projects determined to belong to Category A according to WB OP 4.01 will not be legible for financing under the Project.***

The categorization of project activities within MSIP 2 according the national environmental regulation is presented in the Table 10.

Table 10 Categorization of project activities within MSIP2 according the national legislation)

Project category	Type of project activity	Necessity of preparation the EIA Report
Infrastructure	• Construction and reconstruction or rehabilitation of local streets (various length)	• Rulebook on the list of projects for which the EIA Report – Elaborate should be prepared by the investor and the EIA Report need to be adopted by the Mayor of the municipality (Official Gazette of RM" No. 32/12)
	• Construction and reconstruction or rehabilitation of various local roads	
	• Construction of the bridge on the channel on the local road	
	• Arrangement of the river area (sidewalks, river bed, lighting)	• (Rulebook on the list of projects for which the EIA Report – Elaborate should be prepared by the investor and the EIA Report need to be adopted by the Ministry of Environment and Physical Planning Official Gazette of RM" No. 36/12) Chapter 11 projects for the construction of waterways, ports and harbors for fishing
Water and sanitation services	• Construction of the water purification plant	• Rulebook on the list of projects for which the EIA Report – Elaborate should be prepared by the investor and the EIA Report need to be adopted by the Mayor of the municipality (Official Gazette of RM" No. 32/12) Chapter 1 Agriculture, forestry and water management – 6. collection, treatment and supply of water from local importance
	• Construction of small scale WWTP (less than 10.000 p.e) and sewage system	• Rulebook on the list of projects for which the EIA Report – Elaborate should be prepared by the investor and the EIA Report need to be adopted by the Ministry of Environment and Physical Planning (Official Gazette of RM" No. 36/12) Chapter 10 Waste management and activities for remediation – Waste water treatment plant with a capacity less than 10,000 inhabitants
	• Replacement of drinking water supply asbestos containing pipes	• No obligation for preparation of EIA Report
	• Construction of the water supply network	• Rulebook on the list of projects for which the EIA Report – Elaborate should be prepared by the investor and the EIA Report need to be adopted by the Mayor of the municipality (Official Gazette of RM" No. 32/12) Chapter 1 Agriculture, forestry and water management – 3. Local water supply and sewerage system with waste water treatment plant
	• Implementation of a storm water management system	
	• Reconstruction of part of the water supply system, complete water supply system or extend the water supply system	
	• Construction of the drinking water reservoir	
	• Procurement and installation of water meters	• No obligation for preparation of EIA Report

Project category	Type of project activity	Necessity of preparation the EIA Report
Solid waste management	• Providing basic equipment for the maintenance of public hygiene (vehicles for snow cleaning, street cleaning, construction vehicle, etc)	• No obligation for preparation of EIA Report
	• Procurement of special vehicles for collection and transportation of municipal solid waste	• No obligation for preparation of EIA Report
	• Fencing of the municipal landfill	• No obligation for preparation of EIA Report
	• Procurement of equipment and surveillance system for municipal landfill	• No obligation for preparation of EIA Report
Other revenue-generating or cost-saving investments	• Reconstruction of the street lighting (replacement of mercury containing lamps with more energy efficient lamps)	• No obligation for preparation of EIA Report
	•Installation of the geothermal pumps	• Rulebook on the list of projects for which the EIA Report – Elaborate should be prepared by the investor and the EIA Report need to be adopted by the Ministry of Environment and Physical Planning (Official Gazette of RM" No. 36/12) Chapter 11-12.Projects for abstraction and return of groundwater
	• Construction of the primary school including demolition of the old school building	• No obligation for preparation of EIA Report
	• Reconstruction of the primary schools	• No obligation for preparation of EIA Report
	• Insulation of primary school and kindergartens for better energy efficiency	• No obligation for preparation of EIA Report
	• Reconstruction and adaptation of municipality buildings	• No obligation for preparation of EIA Report
	• Rehabilitation of the river banks and construction of parking lots	• Rulebook on the list of projects for which the EIA Report – Elaborate should be prepared by the investor and the EIA Report need to be adopted by the Ministry of Environment and Physical Planning (Official Gazette of RM" No. 36/12) Chapter XII-3. parking lots and public garages
	• Rehabilitation of the main squares in the towns	• Rulebook on the list of projects for which the EIA Report – Elaborate should be prepared by the investor and the EIA Report need to be adopted by the Mayor of the municipality (Official Gazette of RM" No. 32/12) Chapter 10 Infrastructure projects – 2.Reconstruction of local roads

Project category	Type of project activity	Necessity of preparation the EIA Report
	• Gas supply to the agricultural land and greenhouses	• Rulebook on the list of projects for which the EIA Report – Elaborate should be prepared by the investor and the EIA Report need to be adopted by the Ministry of Environment and Physical Planning (Official Gazette of RM" No. 36/12) Chapter 12.Transport and storage – 1. Transportation pipeline (transportation of gas, liquids, water, gas, diluted cement, mortar and other goods through pipelines)
	• Landscaping of the city park	• No obligation for preparation of EIA Report
	• Electricity supply of settlement	• Rulebook on the list of projects for which the EIA Report – Elaborate should be prepared by the investor and the EIA Report need to be adopted by the Ministry of Environment and Physical Planning (Official Gazette of RM" No. 36/12) Chapter 11Infrastructure projects – 20. Transmission lines with voltage levels from 1 kV to 110 kV

The following WB safeguard polices triggered by the existing and additional project activities within the MSIP 2 project are presented in Table 11.

Table 11 Safeguard policies triggered by the MSIP project existing and additional)

Environmental Assessment OP/BP 4.01	Yes	
Natural Habitats OP/BP 4.04		No
Forests OP/BP 4.36		No
Pest Management OP 4.09		No
Physical Cultural Resources OP/BP 4.11		No
Indigenous Peoples OP/BP 4.10		No
Involuntary Resettlement OP/BP 4.12	Yes	
Safety of Dams OP/BP 4.37		No
Projects on International Waterways OP/BP 7.50	Yes	
Projects in Disputed Areas OP/BP 7.60		No

10. ENVIRONMENTAL IMPACTS

The impact identification and assessment process should be carried out based on the baseline conditions identified during the project concept and feasibility study development in order to identify any environmental sensitive areas, the value/sensitivity of resources and receptors, and the project actions and activities that may significantly affect the baseline environmental or socio economic conditions during any of the project phase. The importance of the impact assessment through the whole Project Life Cycle is shown on Figure 8. The environmental assessment should cover the all project activities that will be taken during the any decommissioning phase (e.g., very important phase from environmental point of view during the construction of new school and dismantling the old one as there are very often asbestos containing materials), reconstruction, rehabilitation or construction phase and operational phase of the project.

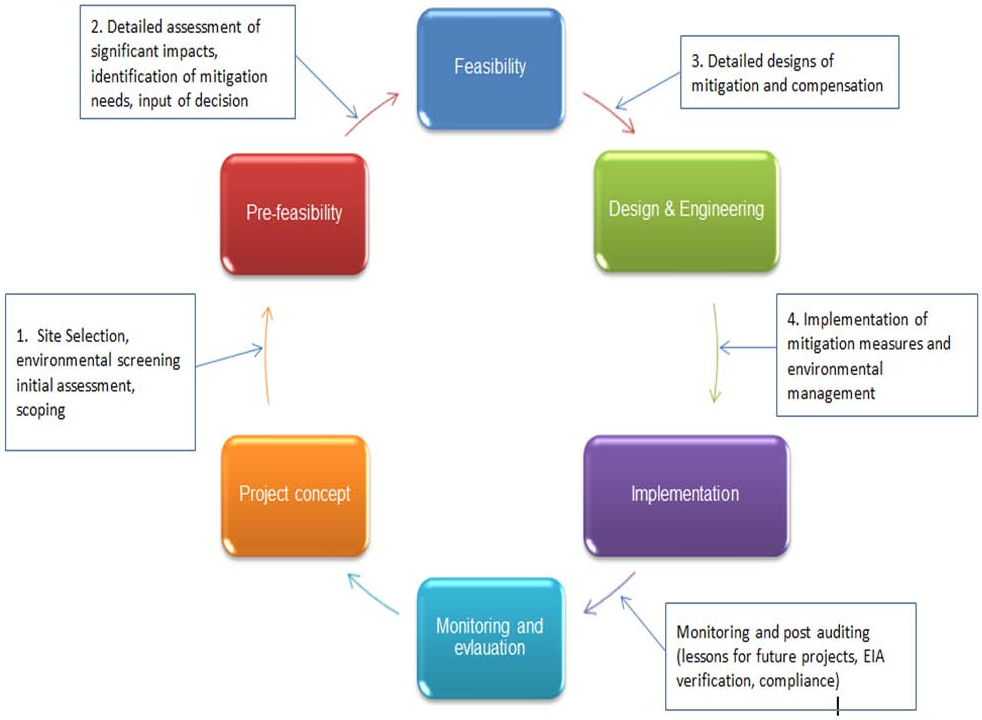


Figure 8 Environmental Management System in Project Life Cycle

In order to assess the impact the following assessment criteria could be used: a) type of impact, b) reversibility, c) geographical extent, d) magnitude, e) duration of the impact, f) likelihood of appearance, g) extent /location where impact occurs and h) timing of occurrence.

In assessing the level of impact that the project activity could cause, two key criteria are mainly considered:

- **Consequence/Significance**: the resultant impact (positive or negative) of an activity's interaction with the legal, natural and/or socio-economic environments; the categorization for consequence is presented in Table 12.
- **Likelihood:** the likelihood that an activity will occur. The categorization for likelihood is presented in Table 13.

Table 12 Impact assessment - Consequence

Consequence Category	Addressed
Significant	Most severe, alternative will be proposed through environmental hazard risk management
Major	Severe, alternative/avoidance will be proposed through environmental hazard risk management
Moderate	Less severe, measures will be proposed to minimize impact
Minor	Less severe, mitigation measures will be proposed
Negligible	Less severe. Mitigation and enhancement measures will be prepared if possible
None	No impact, enhancement measures will be prepared if possible
Positive	Positive impact

Table 13 Impact assessment - Likelihood

Likelihood Category	Definition
Certain	The activity will occur under normal operating conditions
Very likely	The activity is very likely to occur under normal operating condition
Likely	The activity is likely to occur at some time under normal operating conditions
Unlikely	The activity in unlikely to but may occur at some time under normal operating conditions
Very unlikely	The activity is very unlikely to occur under normal operating conditions but may occur in exceptional circumstances

The above mentioned criteria should be used during the environmental and social impact assessment of the projects with the MSIP 2. The example of the Environmental Screening Check List is presented in ANNEX 1. The site – specific Environmental Screening Check List will be developed based on the local conditions, type of project activities and sensitive receptors.

The examples of Environmental Mitigation Plans and Monitoring Plans are presented in Chapters 10 and 11. The site-specific EMPs will be developed for each project financed by MSIP 2 taking into account the location of the project site, vicinity of natural resources, protected areas, sensitive receptors, vulnerable groups of people, family houses, etc.

During the project implementation the regular monitoring need to be performed in order to check the implementation of OH&S and environmental mitigation measures proposed within the EMPs. The template of the Site visit monitoring Report is presented in ANNEX 2.

11. ENVIRONMENTAL MITIGATION AND MONITORING PLANS

11.1 ENVIRONMENTAL MITIGATION PLAN FOR THE PROJECT - EXTENSION, RECONSTRUCTION/CONSTRUCTION OF WATER SUPPLY NETWORK, STORM WATER NETWORK, SEWERAGE NETWORK OR CONSTRUCTION OF DRINKING WATER RESERVOIR

Potential impact	Impact scale	Proposed mitigation measures	Responsibility
Project activity: Marking out the location for water supply network, storm water network, sewerage network or drinking water reservoir			
Possible adverse social and health impacts to the citizens and traffic as well as for the workers due to: • Unsafely start of construction works • Injury due to passing near by the open trench and manholes • Not compliance with health and safety at work procedure • Inappropriate public access	Local Short term/minor	Application of good practice for marking out the construction site including: • Ensure the marking out the construction site; • Forbidden of entrance of unemployed persons within the fence; • Adequate warning tapes and signage need to be provided; • Health and Safety measures should be applied: a) Security measures like: perimeter fence, life jackets, use of proper protective clothing and equipment by employees, warning signs for the public around the construction site; b) Maintain a good level of personal hygiene-have on site installations for washing, cleaning; c) Health protection-fist aid kits and medical service on sites d) Apply the emergency and normal first aid procedure for any injury if such occur through construction work; • The roads should be kept clean	• Contractor –Bidder • Supervisor
Project activity: Extension, Reconstruction/Construction of water supply network, storm water network, sewerage network or drinking water reservoir			

Potential impact	Impact scale	Proposed mitigation measures	Responsibility
Possible impacts on landscape and visual aspects	Local Short term/minor	• Good construction practices have to be implemented – including fencing and protection of construction site according to national legislation; • Minimization of the construction area as much as possible (carefully planning and design of the project activity according the Traffic Management Plan for a certain period of time); • Fully clean-up of the construction site immediately after accomplishment of reconstruction activities section by section; • Collection of the generated waste on daily basis, selection of waste, transportation and final disposal on appropriate places (according the type of waste – more details under Waste management issue).	• Contractor – Bidder • Supervisor
Possible emissions by transportation vehicles and impact on air quality due to: - gases emissions of dust-suspended particulates - emissions from the mobile sources (vehicles and construction machinery) of CO_2, NO_x, PAH, SO_2	Local Short term/minor	• Reconstruction site, transportation routes and materials handling sites should be water-sprayed on dry and windy days; • Construction materials should be stored in appropriate places covered to minimize dust; • Vehicles and construction machinery will be required to be properly maintained and to comply with relevant emission standards; • Conduction of regular maintenance of the vehicles and construction machinery in order to reduce the leakages of motor oils, emissions and dispersion of pollution; • Vehicle loads likely to emit dust need to be covered; • Usage of protective masks for the workers if the dust seems to be appeared; • Restriction of the vehicle speed within the construction location; • Burning of debris from ground clearance not permitted	• Contractor – Bidder • Supervisor
Possible noise disturbance as a result of outdoor equipment usage and transportation vehicles driving around the sites	Local Short term /major	• The level of noise should be not exceed more that national limited level (according to national legislation and EU requirement); • The construction work should be not permitted during the nights, the operations on site shall be restricted to the hours 7.00 -19.00; • The workers should be provided with ear protective devices (ear muffs and/or ear plugs)	• Contractor – Bidder • Supervisor
Possible adverse environmental impact and	Local	• Identification of the different waste types at the reconstruction site (soil, sand, asphalt, pieces of asphalt, road surfacing, bottles, food, parts of	• Contractor – Bidder

Potential impact	Impact scale	Proposed mitigation measures	Responsibility
health effects could be occurred as a result of generation of the different waste streams The inappropriate waste management and not in time collection and transportation of waste streams	Short term/major	pipes, paper, broken concrete etc…); • Classification of waste according the national List of Waste (Official Gazette no.100/05) • The main waste would be classified under the Waste Chapter 17 "Construction and demolition wastes (including excavated soil)" with the waste code 17 01 – Waste from concrete, bricks, 17 05 04 – Excavated soil, 17 09 04 – Mixed waste from construction site, 17 03 - bituminous mixtures; • Small amount of solid municipal waste could be found (food, beverages), as well as packaging waste (paper, bottles, glass, etc.)	• Supervisor
		• Transportation and final disposal of the inert and communal waste by the Public Utility Enterprise; • The contract with the company for waste collection and transportation should be signed for collection and transport of waste to the Landfill; • The construction waste should be promptly removed from the site, should be re-used if it is possible; • The materials should be covered during the transportation to avoid waste dispersion; • Burning of construction waste should be prohibited; • Fulfillment of the Annual Report for non-hazardous waste management by the Mayor of Municipality and reporting to the Ministry of Environment and Physical Planning; • Possible hazardous waste (motor oils, vehicle fuels) should be collected separately and authorized collector and transporter should be sub-contracted to transport and finally dispose the hazardous waste	• Municipality staff (Communal Inspector/ Environmental Inspector)
Soil pollution The negligible impacts on soil arising from construction activities are expected. The compaction of soil can be expected due to vehicle movement, ground contamination from the spillage of materials such as vehicle fuel, motor oils, asphalt, inert waste,	Local Short term /minor	The possible mitigation measures for minimization of the soil pollution could be: • Transportation vehicles should be enclosed to avoid potential leakage; • Promptly clean-up spills of transported material on public roads and construction sites; • Proper positioning of the water drainage system on the construction site • All roads and asphalt surfaces should be maintained clean in order to prevent runoffs from them into the ground water and other water flows; • Not to keep fuel, oil or lubricants along the alignment, especially not in the vicinity of draining structures	• Contractor –Bidder • Supervisor

Potential impact	Impact scale	Proposed mitigation measures	Responsibility
construction waste. Possible impact on soil and water and cause the erosion of the land as a result of loss of upper soil layer due to erosion as a result of construction activities			

11.2 ENVIRONMENTAL MITIGATION PLAN FOR THE PROJECT – CONSTRUCTION OF SMALL SCALE WASTE WATER TREATMENT PLANT

Potential impact	Impact scale	Proposed mitigation measures	Responsibility
Project activity: Marking out the location for construction of Waste Water Treatment Plant			
Possible adverse social and health impacts for all stakeholders in the construction and operational phase of WWTP due to: • Unsafe start of construction works • Not compliance with health and safety at work procedure • Inappropriate public access or traffic disturbance • Not compliance with working conditions prescribed in obtained construction/ operational permits - refer to the technology used	Local/Regional Long term term/major	Issues to be considered in plant and process design: • All feasible alternative project designs should be explored to avoid or at least minimise physical and/or economic displacement; • All conditions issued by national permitting bodies need to be taken into consideration; • The environmental, OH&S and community safety measures proposed need to be incorporated in the project design; • The design of infrastructure objects (WWTP, pumping station, etc…) should be made in most environment friendly way and by implementing BAT for this types of structures; • Design of the technological process should provide as much use of gravity flow as possible; • Equipment & machines and technology selection should also include 'energy efficiency 'as selection criterion; • Selection of mechanical and electrical equipment with low noise level characteristics. The equipment and machinery installed at the proposed WWTP should meet all national noise regulation for max. allowed noise levels at day and night time; • The sufficiency of dimensioning the plant (main and auxiliary equipment); • Examination of the sub-processes in term of necessity for their duplication and spare parts. There must be at least one spare pump available for incoming water; • Primary treatment must be located indoors for easy maintenance and control of the odour nuisance; • Possibility to by-pass the different units during the maintenance; • Application of BAT for sludge treatment, transport and deposition at landfill. Spare equipment and double lines, enough storage place and backup plan for transporting the sludge are needed; • The efficient mixing of chemicals must be ensured and optimization of energy and chemicals consumption need to be considered;	• Investor and Project Main Design Developer • Main Design Supervisor

Potential impact	Impact scale	Proposed mitigation measures	Responsibility
		• Planning & organization of construction works should ensure minimization of leakages of polluted wastewater to groundwater.	
Project activity: Construction of Waste Water Treatment Plant			
Possible impacts on landscape and visual aspects	Local Long term/minor	• Site Management Plan need to be developed before star up activities; • Good construction practices have to be implemented – including fencing and protection of construction site according to national legislation; • Minimization of the construction area as much as possible ; • Fully clean-up of the construction site immediately after accomplishment of activities phase by phase; • Collection of the generated waste on daily basis, selection of waste, transportation and final disposal on appropriate places (according the type of waste – more details under Waste management issue).	• Contractor –Bidder • Supervisor
Possible adverse social and health impacts to the community, drivers and workers due to: • Lack of ensured safety measures at the start of construction works ; • Injury due to passing near by the construction WWTP site; • Non-compliance with strict OH& S standards and work procedure; • Inappropriate public access	Local Short term /major	Application of good practice for marking out the construction site including: • Preparation of the Traffic Management Plan together with the municipal staff; • Preparation of the Site Management Plan and OH&S Plan; • Provide the information via local radio/TV station/local newspaper about the construction activities - duration of work and possible traffic access; • Notice boards about the construction activities need to be posted; • Light over the evenings and nights on the construction site need to be provided; • Safeguard service (24 hours) need to be organized; • Ensure the appropriate marking out the construction site; • Forbidden of entrance of unemployed persons within the warning tapes; • Community and Worker's OH&S measures should be applied (first aid, protective personal equipment and tools for the workers, appropriate ergonomic machines and tools); • The portable toilet should be placed on the construction site	• Contractor –Bidder • Supervisor • Municipality staff (Communal Inspector/Environmental Inspector/Traffic Engineer/OH&S Inspector)

Potential impact	Impact scale	Proposed mitigation measures	Responsibility
Possible emissions by transportation vehicles and impact on air quality due to: - gases emissions of dust-suspended particulates - emissions from the mobile sources (vehicles and construction machinery) of CO_2, NO_x, PAH, SO_2 ;	Local Short term/minor	• Construction site, transportation routes and materials handling sites should be water-sprayed on dry and windy days, especially near residential areas; • Vehicles and construction machinery will be required to be properly maintained and to comply with relevant emission standards; • Construction materials should be stored in appropriate places covered to minimize dust; • Regular maintenance of the vehicles and construction machinery is needed and keep records on site; • Vehicle loads likely to emit dust need to be covered; • Restriction of the vehicle speed within the construction location; • Burning of debris from ground clearance not permitted; • The measures for avoidance and minimization of impact from the corrosive and toxic gases need to be applied (inspection of potential sources, implementation of the emergency response plans if the accident occurs, the hydrogen sulphide could be reduced by local ventilation system, etc.);	• Contractor –Bidder • Supervisor • Municipality staff (Communal Inspector/Environmental Inspector/Traffic Engineer/
Possible noise disturbance as a result of outdoor equipment usage and transportation vehicles driving around the sites	Local Short term /major	• The level of noise at the site should be not exceed more that national limited level (according to national legislation and EU requirement); • The construction work should be not permitted during the nights, the operations on site shall be restricted to the hours 7.00 -19.00; • The workers should be provided with ear protective devices (ear muffs and/or ear plugs); • If necessary, the modification of the design specifications need to be performed - low noise ventilation fans, pumps and electromotor drives; • Installation of noise enclosures or buffers; • The Traffic Management Plan need to be developed and submitted prior start - up of construction activities.	• Contractor –Bidder • Supervisor

Potential impact	Impact scale	Proposed mitigation measures	Responsibility
Possible adverse environmental impact and health effects could be occurred as a result of generation of the different waste streams The inappropriate waste management and not in time collection and transportation of waste streams	Local Short term/major	• Identification of the different waste types at the construction WWTP site (soil, sand, inert waste, bottles, food, parts of pipes, paper, concrete etc…) and waste stream classification according the national List of Waste (Official Gazette no.100/05); • The main waste would be classified under the Waste Chapter 17 "Construction and demolition wastes (including excavated soil)" with the waste code 17 01 – Waste from concrete, bricks, 17 05 04 – Excavated soil, 17 09 04 – Mixed waste from construction site, 17 03 - bituminous mixtures; • Other possible hazardous waste (motor oils, vehicle fuels) should be collected separately as well and authorized collector and transporter should be sub-contracted to transport and finally dispose the hazardous waste; • Transportation and final disposal of the inert and communal waste by the Public Utility Enterprise within the municipality; • The contract with the company for waste collection and transportation should be signed for collection and transport of waste to the Landfill; • The construction waste should be promptly removed from the site, should be re-used if it is possible; • The materials should be covered during the transportation to avoid waste dispersion; • Burning of construction waste should be prohibited; • Fulfilment of the Annual Report for non-hazardous waste management by the Mayor of Municipality and reporting to the Ministry of Environment and Physical Planning.	• Contractor –Bidder • Supervisor • Municipality staff (Communal Inspector/ Environmental Inspector)
The negligible impacts on soil arising from construction activities are expected as a result of: - Vehicle movement, ground contamination from the spillage of materials such as vehicle fuel, motor oils, asphalt, construction	Local Short term /minor	The possible mitigation measures for minimization of the soil pollution could be: • Transportation vehicles should be enclosed to avoid potential leakage; • Promptly clean-up spills of transported material on public roads and construction sites; • Proper positioning of the water drainage system on the construction site • All roads and asphalt surfaces should be maintained clean in order to prevent runoffs from them into the ground water and other water flows; • Not to keep fuel, oil or lubricants along the alignment, especially not in	• Contractor –Bidder • Supervisor

Potential impact	Impact scale	Proposed mitigation measures	Responsibility
waste.		the vicinity of draining structures	
Project activity: Operation of Waste Water Treatment Plant			
Possible accidents and injuries to the workers and community due to: - handling and disposal of grit particles, handling and disposal of sludge and other everyday activities - Failures into the process	Local Long term/major	• Operations Manual for commissioning of the WWTP must set out essential operating and maintenance procedures to ensure optimum environmental management of the activity that will be performed, • Preparation of Emergency Plan that will address, but not be limited to the following potential events: treatment plant failures, effluent quality noncompliance, operator errors, natural event emergencies and spills or overflow; • Comprehensive Training (Operation, maintenance and Environmental Management of WWTP) need to be organized for operators. Special attention has to be paid to occupational health and training of workers, to avoid direct contact with wastewater and sludge; • The WWTP site must be fenced, notice boards need to be posted informing that entrance for unemployed persons is forbidden; Safeguard service must be ensured (24/7); • Protection personal clothes and equipment need to be provided for all operators and they need to wear them; • Adequate worker's facilities must be built to promote appropriate occupational health and safety (OH&S) – toilets, rooms for changing the clothes, resting room for lunch breaks, etc. • Fresh water must be supplied for sanitary purposes; • The WWTP need to be maintained by qualified staff or sub-contracted authorised company; • Monitoring of process performances to be installed & used for adjustments and improvements; • Preventive and Maintenance Plans for the proper handling and working of the equipment and process units need to be developed and duly implemented; • Enough spare parts need to be ordered in advance to avoid failures and long out of orders; • Modern instrumentation and automation need to be utilized to increase the reliability and to decrease risks;	• Operator of the WWTP • Municipality staff (Communal Inspector/Environmental Inspector)

Potential impact	Impact scale	Proposed mitigation measures	Responsibility
		• The measuring devices' calibration must be ensured and records for calibration need to be kept; • Energy consumption should be monitored separately in each part of the process.	
Pollution of river if incoming waste water is not efficiently treated	Regional Long term/major	• The quality of the treated water, prior discharging to the recipient, shall comply with the quality prescribed in the obtained permission for discharging into the surface watercourses, issued by the Ministry of the environment and physical planning, regarding the Law on Waters ("Official Gazette of the Republic of Macedonia" No. 87/08, 6 / 09, 161/09, 83/10, 51/11, 44/12, 163/13, 180/14, 146/15), Decree on Water Classification ("Official Gazette of RM" no. 18/99), Decree on categorization of the watercourses, lakes, reservoirs and groundwater ("Official Gazette of RM" no. 18/99), Rulebook on detailed conditions for collection and treatment, the manner and terms of design, construction and exploitation systems and purification stations urban wastewater, as well as technical standards, parameters and emission standards and quality norms pre-treatment, wastewater removal and treatment	• Operator of the WWTP • Municipality staff (Communal Inspector/Environmental Inspector)
Improper sludge (generated during the treatment of waste water) and waste management could cause odour nuisance and also pollution of the water, soil etc.)	Regional Long term/major	• Preparing the Sludge Disposal Management Plan for removal of the sludge and grit particles (monitoring sludge quality, heavy-metals concentrations in sludge; identifying land for disposal taking care on the concentrations of heavy metals in soil where the sludge is planned to be used; restrictions on amounts of metals which may be added annually to the land). • The frequency for sludge analysis with sampling and analysis methods (soil sampling, sludge sampling and methods for analysis) should also be defined into the Sludge Disposal Management Plan. • Handling of the sludge has to be in compliance with the national standards, stipulated in the Law on Waters ("Official Gazette of the Republic of Macedonia" No. 87/08, 6 / 09, 161/09, 83/10, 51/11, 44/12, 163/13, 180/14, 146/15) and Rulebook on the manner and procedure for use of the sludge, the maximum values of the concentrations of heavy metals in the soil that is used sludge, values of concentrations of heavy metals in sludge, in accordance with its purpose and the maximum annual quantities of heavy metals that may be entered in the soil ("Official Gazette of RM" No. 73/11)	• Operator of the WWTP • Municipality staff (Communal Inspector/Environmental Inspector)

Potential impact	Impact scale	Proposed mitigation measures	Responsibility
Odour may create some level of nuisance, during operation from ponds and the sludge removal (if WWTP does not function well, the sludge can emit strong odour). Odour from a WWTP is caused by the presence of one or more compounds in sewage (sulphides, mercaptans, disulphate and volatile fatty acids are responsible for the odour).		• Transportation of the sludge has to be done in closed tankers for avoiding of the odor nuisance. Spillages have to be avoided during loading, transportation and unloading of the sludge; • The control the odour sources and to avoid storing dewatering sludge in the plant; • To plant greenbelt around the plant; • Possible hazardous waste from the WWTP laboratory should be collected separately and packaging, labeling and transportation should be organized as for "hazardous waste" by authorized company; • The measures for avoidance and minimization of impact from the corrosive and toxic gases need to be applied (inspection of potential sources, implementation of the emergency response plans if the accident occurs, the hydrogen sulphide could be reduced by local ventilation system, etc.);	• Operator of the WWTP • Municipality staff (Communal Inspector/Environmental Inspector)

11.3 ENVIRONMENTAL MITIGATION PLAN FOR THE PROJECT - REHABILITATION/RECONSTRUCTION OR CONSTRUCTION OF VARIOUS LOCAL STREET/ LOCAL ROAD

Potential impact	Impact scale	Proposed mitigation measures	Responsibility
Project activity : Marking out the route for Rehabilitation/Reconstruction or Construction of various street/ local road			
Possible adverse social and health impacts to the community, drivers and workers due to: • Lack of ensured safety measures at the start of reconstruction works • Injury passing near by the reconstruction/construction sites • Non-compliance with strict OH& S standards and work procedure • Inappropriate public access	Local Short term /mayor	Application of good practice for marking out the construction site including: • Preparation of the Traffic Management Plan together with the municipal staff; • Provide the information via local radio/TV station/local newspaper about the reconstruction activities – start and finish of work for each day and location of activities, duration of work and traffic access on other streets; • Ensure the appropriate marking out the construction site /section by section; • Forbidden of entrance of unemployed persons within the warning tapes; • Community and Worker's OH&S measures should be applied (first aid, protective clothes for the workers, appropriate machines and tools); • The street and around sidewalks/small roads should be kept clean; • The portable toilet should be placed on the construction site	• Contractor –Bidder • Supervisor • Municipality staff (Communal Inspector/Environmental Inspector/Traffic Engineer) • Ministry of internal affairs
Project activity : Rehabilitation/Reconstruction or Construction of the street/local road			

Potential impact	Impact scale	Proposed mitigation measures	Responsibility
Possible impact on landscape and visual environment	Local Short term /mayor	• Minimization of the construction area as much as possible (carefully planning and design of the project activity according the Traffic Management Plan for a certain period of time); • Fully clean-up of the construction site immediately after accomplishment of each section of the reconstructed street; • Collection of the generated waste on daily basis, selection of waste, transportation and final disposal on appropriate places (according the type of waste – more details under waste management issue);	• Contractor –Bidder • Supervisor • Municipality staff (Communal Inspector/Environmental Inspector/Traffic Engineer)
Possible emissions by transportation vehicles and impact on air quality due to: - gases emissions of dust-suspended particulates - emissions from the mobile sources (vehicles and construction machinery) of CO_2, NOx, PAH, SO_2	Local Short term during the reconstruction/mayor	• Reconstruction site, transportation routes and materials handling sites should be water-sprayed on dry and windy days; • Construction materials should be stored in appropriate places covered to minimize dust; • Vehicle loads likely to emit dust need to be covered; • Usage of protective masks for the workers if the dust seems to be appeared • Restriction of the vehicle speed within the construction location; • Information to the citizens about the construction work should be announced through the local radio/TV station for re-route on other streets and carefully low speed driving near the reconstruction site	• Contractor –Bidder • Supervisor • Municipality staff (Communal Inspector/Environmental Inspector/Traffic Engineer)
Possible Noise disturbance as a result of outdoor equipment usage and transportation vehicles driving around the sites	Local Short term /mayor	• The level of noise should be not exceed more that national limited level (according to national legislation and EU requirement); • The construction work should be not permitted during the nights, the operations on site shall be restricted to the hours 7.00 -19.00 particularly for pilling	• Contractor –Bidder • Supervisor • Municipality staff (Communal Inspector/Environmental Inspector/Traffic Engineer)

Potential impact	Impact scale	Proposed mitigation measures	Responsibility
Possible adverse environmental impact and health effects could be occurred as a result of generation of the different waste streams The inappropriate waste management and not in time collection and transportation of waste streams	Local Short term during the reconstruction/mayor	• Identification of the different waste types at the reconstruction site (soil, sand, asphalt, pieces of asphalt, road surfacing, bottles, food, etc.; • Classification of waste according the national List of Waste (Official Gazette no.100/05) ; • The main waste would be classified under the Waste Chapter 17 "Construction and demolition wastes (including excavated soil from contaminated sites)" with the waste code 17 01 – Waste from concrete, bricks, 17 05 04 – Excavated soil, 17 09 04 – Mixed waste from construction site; • Small amount of solid municipal waste could be found (food, beverages), as well as packaging waste (paper, bottles, glass, etc.; • Transportation and final disposal of the inert and communal waste by the Communal Utility Enterprise; • Fulfillment of the Annual Report for non-hazardous waste management by the Mayor and reporting to the Ministry of Environment and Physical Planning; • The construction waste should be promptly removed from the site, should be re-used if it is possible; • Possible hazardous waste (motor oils, vehicle fuels) should be collected separately and authorized collector and transporter should be sub-contracted to transport and finally dispose the hazardous waste	• Contractor –Bidder • Supervisor • Municipality staff (Communal Inspector/Environmental Inspector)

11.4 ENVIRONMENTAL MITIGATION PLAN FOR THE PROJECT – PROVIDING BASIC EQUIPMENT FOR THE MAINTENANCE OF PUBLIC HYGIENE (VEHICLES FOR COLLECTION OF COMMUNAL WASTE AND PROCUREMENT OF WASTE CONTAINERS)

Potential impact	Impact scale	Proposed mitigation measures	Responsibility
Project activity: Delivery of basic equipment (vehicles for collection of communal waste and waste containers)			
Positive environmental, social and health impact to the improved collection and transportation of solid waste in the settlements which are not covered with communal service	Local/ Long term/major	The preventive measures could be implemented when the new vehicle is delivered including: • Check all technical specifications of the delivered vehicle in compare with the technical requirements (EURO 4 engine specification and noise specifications as min. env. requirements) established prior the tender procedure • Check the fuel quantity, lubrication oil quantity, breaking and steering system at the spot and lighting system as well • The review of the producer manual and driving manual recommendations for smoothly running of the vehicle (nomination of the responsible person within the CSE) • Delivery of short running training to driver/drivers of the vehicle for the most economically running of the truck and training for communal workers operating with vehicle collection mechanism • Delivery of training for regular maintenance of the vehicle as well	• Contractor – Bidder • Director of the CSE and technical staff within the CSE
Project activity: Putting the vehicle into operation			
Environmental and health impacts Improper put into operation (running), or not prior check of the fuel quantity, lubrication oil quantity and breaking and steering system at the spot could cause adverse environmental and health impacts. The non-compliance of the EURO 4 engine standards on emissions limit values could cause more pressure to the air	Local Long term/major	• Perform the procedure of homologation of the vehicle at the Faculty of Mechanical Science • The technical specifications provided by the vehicle supplier should be checked according the EURO 4 emission standards, general and specific safety requirements and all fitted devices like: rear protection devices, warning light, speed limitation device, braking and anti-blocking system, electrical and hydraulic system for waste compression, etc. • The noise specification should be checked as well • The level of noise should be not exceed more that national limited level (according to national legislation and EU requirement); • Perform the annual approval test at the authorised compliance body issuing the registration card for the vehicle	• Contractor – Bidder • Director of the CSE and technical staff within the CSE

Potential impact	Impact scale	Proposed mitigation measures	Responsibility
quality: • High emission of GHGs and other pollutants (CO, HC, PM and NOx) • More environmental pressure on the human life and plant life through formation of tropospheric ozone and climate change • More indirectly health problems with human respiratory system The non-compliance with noise requirements will cause noise disturbance		• For traffic control and safety, the information about the project – new waste collection vehicles should be announced through the local radio/TV informing about the planned vehicle routes and frequency of waste collection (especially important for new settlements which will be covered with communal service) • The traffic flow through the Municipality need to be coordinated with the responsible technical staff within the CSE	
Project activity: Regular operation of the waste collection vehicle			
Improper or lack of regular maintenance could increase the environmental and occupational safety risks and health risks to all citizens due to the following: • low fuel efficiency, • higher emissions of GHGs and other pollutants (CO, HC, PM and NOx) • increase of noise level • leakages of liquid waste from the truck • not good fitting of the all vehicle components (compression system for	Local/Regional Long term/major	• Regular maintenance and repair of the new vehicle and delivery of the spare parts on time by the professional service company • Signing a contract with the service company for regular maintenance, replacement of spare parts, preventive lubricant oil changes, checks on electronic and hydraulic compression waste system, proper tire maintenance as one of the most important safety function, etc. • Regular washing of the vehicle and keep the parking site clean • Forbidden replacement of motor and hydraulic oil at the parking site to avoid the oil and pollution of waters and soil • Perform regular annual approval test during the annual registration of the vehicle • During the approval test the environmental and safety checks should be performed according the vehicle protocol (related to noise, exhaust emissions and fitted devices) • The CSE should prepare the Fuel consumption and CO_2 emissions data Report on annual base	• Director of the CSE and technical staff within CSE

Potential impact	Impact scale	Proposed mitigation measures	Responsibility
example) and spoil of waste on the streets • impropriate odour due to lack of truck washing practice • water and soil pollution as a result of possible oil leakages		• The Report should contain at least the amount of diesel fuel consumption, type of diesel fuel used and the CO_2 emissions derived from the consumption, total length of the routes passed, the distance routes among the local settlements and all settlements covered with waste collection and distances to the municipal landfill • The CSE should prepare the Waste Collection Plan on monthly/annual base including all local settlements with frequency of collection and the most efficient traffic routes • The CSE should perform regular measurements of the ground waters quality nearby the landfill according the legal regulation during operation phase • Primary selection of used paper and PET bottles as a recyclable waste in order to decrease the quantity and volume of waste collected (Placement of several collection bins for disposal of paper and PET bottles) • Announcement of the possibility for primary selection of these two waste types to all citizens through already established communication channels (during the distribution of communal bills) • Signing the Contract with authorized collectors for recyclable waste to collect, transport and recycle primary selected paper and PET bottles.	

11.5 ENVIRONMENTAL MITIGATION PLAN FOR THE PROJECT – REPLACEMENT OF THE STREET LIGHTING

Project activity	Potential impact	Impact scale	Proposed mitigation measures	Responsibilities
Removal the used mercury vapor lamps **Removal the Lamp carriers-arches/ the Lantern lamps** **Placement of new sodium light bulbs and new Lamp carriers-arches and Lantern lamps-arches**				
•	• Adverse environmental impacts to soil, ground waters and air quality as well as posing a health threat due to the following: - inappropriate handling during the operation of removing the bulbs - incidentally bulb breaking - no adequate identification as hazardous waste according the National List of waste - collection, transportation of the waste mercury vapor lamps by non-authorized company - not appropriate selection, packaging and labeling of used mercury lamps as hazardous waste stream - mix of the waste mercury lamps with non-hazardous waste or with municipal waste - final disposal of the waste mercury lamps to the municipality landfill	Local/ Regional	➢ Application of good practice for handling the mercury vapor bulbs • Power disconnection during the removing to avoid risk of fatal electric shock • Wearing disposable rubber or plastic protection gloves • Upon removal from the fixture the bulb must immediately be placed in strong box or other container to prevent bulb breakage since the hazardous vapor is contained inside bulb • Appropriate package box must be sufficiently strong to prevent damage to the bulbs during the normal storage or while being transported to the storage facility • If the bulb breaks, the operators must wear the gloves to pick up the glass shards using the two pieces of stiff paper or cardboard as shards are sharp • The operator must wipe the area with a damp paper towel or a disposable wet wipe to pick up any small shards and the powder residue • The broken glass and end pieces should be placed in a plastic bag as well as the used gloves and all debris. The bag should be sealed and placed the plastic bag in a paper bag or box to prevent the glass from puncturing the plastic bag. The box should be labeled as hazardous waste • Place the temporary protection fence around the light in order to protect street walkers of evaporation if mercury bulb breaks • Usage of Material Safety Data Sheet for mercury vapor lamps for occupational and safety precautionary measures for operators (appropriate hand and eye protection should be worn when disposing of lamps or handling broken glass) • Apply the emergency and normal first aid procedure for glass cuts if such occur through lamp breakage	• Contractor – Bidder • Supervisor • Municipality staff (Communal Inspector/Environmental Inspector/Traffic Engineer)Inspector

Project activity	Potential impact	Impact scale	Proposed mitigation measures	Responsibilities
Removal the used mercury vapor lamps **Removal the Lamp carriers-arches/ the Lantern lamps** **Placement of new sodium light bulbs and new Lamp carriers-arches and Lantern lamps-arches**				
			➢ Identification of the used mercury vapor lamps as a hazardous waste stream • Classification of the used vapor lamps as a hazardous according the national List of Waste (Official Gazette no.100/05) • The waste has been classified under the Waste Chapter 20 "Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions" with the waste code 20 01 21* - "fluorescent tubes and other mercury containing waste" (an asterisk * means that waste has at least one hazardous characteristic) ➢ Separation of the hazardous from non-hazardous waste streams at the light location site ➢ Municipality must sign a Contract with authorized company/person to collect and transport the hazardous waste in accordance with national legislation with emphasis on the transportation of hazardous (toxic) goods: • Issuing the license to company/person for collection and transportation of hazardous waste (Law on Waste – Official Gazette no. 68/2004, 71/2004. 107/2007), • Obligations for packaging and labeling of hazardous waste (Rulebook on conditions for hazardous waste handling, packaging and labeling – Official Gazette no. 15/08), • Transportation of the hazardous waste (Law on Transport of Dangerous Substances (Official Gazette of RM No. 92/07) ➢ Apply appropriate packaging and labeling of the boxes with waste mercury vapor bulbs • The packaging should follow the requirements of national legislation • The label should present the hazardous classification code, attention note "HAZARDOUS WASTE", general data for the waste holder, R-risk phrase, S – safety phrase, quantity of	

Project activity	Potential impact	Impact scale	Proposed mitigation measures	Responsibilities
Removal the used mercury vapor lamps **Removal the Lamp carriers-arches/ the Lantern lamps** **Placement of new sodium light bulbs and new Lamp carriers-arches and Lantern lamps-arches**				
			waste, physical conditions of hazardous waste and graphical symbol ➢ The transport of hazardous waste is forbidden if it is not packaged and labeled according the national legislation requirements ➢ Avoid to dispose the hazardous mercury vapor bulbs waste into the municipal waste bins/containers – mixture of hazardous with non-hazardous wastes is forbidden ➢ The hazardous waste packaged and labeled should be temporary stored on safety storage facility equipped with adequate ventilation, fire resistant conditions especially if there are broken mercury lamps ➢ The Municipality will temporary dispose the boxes with unbroken lamps into the separate room in the basement of the municipality building, well ventilated, locked with key and no heavy materials above the boxes placed ➢ The separate box for broken lamps should be placed on safety, very well ventilated place out of urban surrounding, locked with key and restricted entrance (The Municipality will ensure the adequate place) ➢ For final disposal the hazardous waste should be placed into the hazardous waste landfill ➢ Fulfillment of the Annual Report for collection and transport of hazardous waste management by the transporter and reporting to the Ministry of Environment and Physical Planning ➢ Identification of the generated waste streams during the dismantling the lamp carriers – arches and lantern lamps – aches • Classification of the removed parts according the national List of Waste (Official Gazette no.100/05) • The steel pipes, tracks from used arches, zinced screws and rivets have been classified under the Waste Chapter 17 “Construction and demolition wastes (including excavated soil from contaminated sites)” with the waste code 17 04 – Metals,	

Project activity	Potential impact	Impact scale	Proposed mitigation measures	Responsibilities
Removal the used mercury vapor lamps **Removal the Lamp carriers-arches/ the Lantern lamps** **Placement of new sodium light bulbs and new Lamp carriers-arches and Lantern lamps-arches**				
			17 04 04 “zinc” and 17 04 05 “iron and steel” and 17 04 11 “cables without dangerous substances” • The waste has been identified as a non-hazardous waste that could be recycled ➢ Separation of the steel pipes, steel tracks, pieces of cables, zinced screws and rivets from the old lamp carriers-arches from the hazardous waste at the light location site	
Regular operation and maintenance of the lights				
•	Possible adverse environmental and health risk due to the following: - broken lamp - vibrations of the vehicles could cause the screws, steel tracks or rivets to get loosened	Local Short-term	➢ Perform the periodically checkups and necessary steps need to be taken for safety usage of streetlights	• Municipality staff

11.6 ENVIRONMENTAL MITIGATION PLAN FOR THE PROJECT – CONSTRUCTION/RECONSTRUCTION OF SCHOOL BUILDING

Potential impact	Impact scale	Proposed mitigation measures	Responsibility
Project activity: Demolition of the old school and construction of the new school building			
a) OH&S issues Possible adverse health impacts to the workers, facility users and general population in the community due to: - Location of school in the urban area - Possible injury to people and school users due to ongoing works - Non - compliance with national health and safety at work procedures - Non - compliance with local community safety regulations	Local/ short term/certain to happen/ high significance	• Adequate warning tapes and information signs around the old school during the demolition activities and around the new construction need to be provided and maintained during the civil works; • For the workers - the legally prescribed health and safety measures should be applied, like: a) use of proper protective clothing and equipment by employees, especially masks against dust and small wooden parts and fibres, and safety harnesses for work at heights; b) Maintain a good level of personal hygiene; c) Health protection-fist aid kits and medical service on sites need to be provided during the works; • Protection of pedestrians, general population and students - fence the area and prevent access of non-authorized personnel to construction site; • Organize 24-hour guard watch of the site; • The surrounding area (school yard) should be kept clean, without waste disposed there. The waste need to be collected and immediately removed from the yard as it could be a cause of injury; • The old windows and doors should be temporary put on safe place which is designed to prevent access of unauthorized persons; • The demolition related activities should be conducted outside of normal school hours to the extent most feasible; • Separation of the work areas from demolition and occupied areas of the buildings as much as possible using physical barriers; • Limit the foot traffic between work areas and occupied areas of the buildings; • The project site should be lighted during the nights; • Following safety guidelines for the storage, transport, and distribution of hazardous materials to minimize the potential for misuse, spills, and accidental human exposure; • The eventually broken windows glass (in the class, corridors or outside) should be clean immediately;	• Contractor –Bidder • Supervisor

Potential impact	Impact scale	Proposed mitigation measures	Responsibility
Project activity: Demolition of the old school and construction of the new school building			
		• Regular maintenance of vehicles to minimize potentially serious accidents caused by equipment malfunction or premature failure; • Using labeling and placarding (external signs on transport vehicles).	
		• The cleaning schedule of the buildings should be increased to address the extra dust and dirt created by the demolition work; • Information that the demolition is ongoing should be posted on the entrance doors of the other prefabricated sheds; • The work during the breaks between class lessons should be prohibited; • The Dynamic Plan for re-schedule of the occupied school rooms should be done in accordance of demolition/construction work progress; • If possible begin and end demolition activities during the summer months or while staff and kids are not in school.	• Municipal staff (Communal Inspector/Environmental Inspector) • School officials
*b**) Waste management*** Possible adverse environmental impact and health effects could occur due to inappropriate waste management with various waste streams	Local/ short term/certain to happen with high significance	• Preparation of the Waste Management Plan for the expected waste streams during the decommissioning and construction phases of the project and its approval, within 15 days of starting the activities on site. The Plan must be reviewed and approved by the site supervisor. • Identify the hazardous and non-hazardous waste and separate them at the demolition/construction site; • The majority of waste would be classified under the Waste Chapter 17 “Construction and demolition wastes” with the waste code 17 01 – Waste from concrete, bricks, 17 09 04 – Mixed waste from construction site including glass from old windows and manage in accordance with national waste legislation for inert waste (separation at the spot, collection and temporary storage, re-use if it is possible, transport to the final deposition site); • Small quantities of glue, paint, packaging waste from paints and glue, aluminum profiles, screws and other construction material could be found after the finalization of the project and manage in accordance with national HW legislation (collection of hazardous materials, label as hazardous waste and give to the authorized company); • The contract with the company for waste collection and transportation	• Contractor –Bidder • Supervisor

Potential impact	Impact scale	Proposed mitigation measures	Responsibility
Project activity: Demolition of the old school and construction of the new school building			
		should be signed for collection and transport of waste including old windows and doors; • The materials should be covered during the transportation to avoid waste dispersion; • Burning of construction waste is prohibited;	
		• The old windows and doors should be stored temporary in separate room in the school or if it is not possible outside in the yard covered and labeled "not to open/uncover" until final disposal happened.	• School officials
c) Water quality Possible environmental impact on the underground water could occur due to ground contamination from the spillage of materials such as vehicle fuel, motor oils, lubricants and improper dismantling of the boilers and fuel reservoirs	Local/Short term/ Medium significance/ Low propability	• Possible hazardous waste (motor oils, vehicle fuels, lubricants) should be collected separately and authorized company should be sub-contracted to transport and finally dispose the hazardous waste; • Dismantling of the equipment (fuel reservoirs, boiler) should be done by trained persons in order to avoid the potential effects of oil spills on soil, which would contaminate the underground water.	• Contractor –Bidder • Supervisor
d) Noise The construction activities and traffic will cause noise and vibration due to the machinery and vehicles used for transport of construction materials, transport of workers, and transport of waste produce in decommissioning and constructive phase	Local/Short term/ Medium significance/ Certain to happen	• The equipment should be fitted with appropriate noise devices that will reduce sound level; • The level of noise should not exceed more than national limited values for noise level (depends on the area of protection where the works take place); • The construction work should be not permitted during the nights, the operations on site shall be restricted to the hours 7.00 -19.00; • The vehicles that are excessively noisy shall not be operated until corrective measures have been taken.	• Contractor –Bidder • Supervisor • Communal Inspector/Environmental Inspector
e) Air quality The decommissioning and construction activities will	Local/Short term/Low significance/	• Usage of protective masks for the workers; • Vehicles and construction machinery will be required to be properly maintained and to comply with relevant emission standards;	• Contractor –Bidder • Supervisor

Potential impact	Impact scale	Proposed mitigation measures	Responsibility
Project activity: Demolition of the old school and construction of the new school building			
initiate emissions from the mobile sources (vehicles and construction machinery) of CO_2, NOx, PAH, SO_2 and suspended particulates (PM_{10}, $PM_{2.5}$). The airborne dust will be caused by dismantling of the equipment, excavation, vehicle movement and handling with materials, particularly around the construction site	Certain to happen	• Conduction of regular maintenance of the vehicles and construction machinery in order to reduce the leakages of motor oils, emissions and dispersion of pollution; • Vehicle loads have to be covered to prevent emission of dust; • Construction site, transportation routes and materials handling sites should be water-sprayed on dry and windy days, especially due to students and residential areas neighborhood; • Construction materials should be stored in appropriate covered places to minimize dust; • Open burning of debris will not be permitted • Restriction of the vehicle speed within the construction location	• Communal Inspector/ Environmental Inspector
Project activity: Removal of the asbestos containing wall panels - ACM (removal of the existing asbestos sheets, temporary disposal until final transportation and disposal of the asbestos sheets)			
a) OH&S issues Possible adverse health impacts to the workers, facility users, students and general public as a result of emissions of asbestos fibers and dust during the removal of asbestos sheets, their transport and final disposal	Local/ short term/major at the location of school building	• Post signs indicating" ASBESTOS REMOVAL – NO ADMITTANCE" on the workplace in the school yard; • Restrict access to the removal area to those people directly involved in the asbestos removal and site supervisor and municipal inspectors; • The roof should be demolish during nonworking days to decrease the health risks to students; • Install barriers tape and warning signs in proximity to the school; • For the workers - the personal protective equipment must be provided to all workers (full body covering including the head, water proof foot and hand protection and eye protection, dust mask with special HEPA filter ; • Maintain a good level of personal hygiene (facility for washing hands and face should be made available and need to be used by each employee when leaving the work area, all protective clothing and equipment shall work in the work area, footwear is to retain in the work area until work is completed, • Health protection-fist aid kits and medical service on sites need to be provided during the works;	• Contractor –Bidder • Supervisor

Potential impact	Impact scale	Proposed mitigation measures	Responsibility
Project activity: Demolition of the old school and construction of the new school building			
		• No smoking, drinking, eating or chewing is allowed inside the working area; • The surrounding area (school yard, halls and corridors) should be kept clean, without ACM waste disposed there. The ACM waste (roof sheets or side wall panels) need to be collected, packaged and immediately removed from the school yard.	
		• If possible begin and end demolition activities during the summer months or while staff and students are not in school.	• School officials
b)***ACM Waste management*** Possible adverse environmental impact and health effects could occur due to inappropriate handling with waste containing asbestos	Local/ short term/major impact	• The personal in charge for removal of ACM roof sheets or side wall panels should be trained on proper safety dismantling of the roof sheets minimizing the health risks; • The identification of the asbestos containing material – waste as a hazardous waste should be done ; • The ACM waste need to be classified as a hazardous waste under the Waste Chapter 17 “Construction and demolition wastes” with the waste code 17 06 05* – Construction material containing asbestos in accordance with List of waste (Official Gazette of RM NO. 89/06); • The demolition and remove of the ACM roof sheets and side wall panels should be done very quickly by trained personal; • The ACM waste should be placed in polyethylene bags or other containers of at least 0.15 mm thickness. • Printed asbestos warning labels must appear on the outer surface of the container/bag warning that it is an ” Asbestos waste”; • The break of the ACM roof sheets into smaller pieces to fit into container/bag is forbidden ; • The roof sheets and/or sidewall panels should be handled very carefully and to be remove sheet by sheet in one piece , not to be broken because during the break the asbestos fibers and dust appear and pose a health	• Contractor –Bidder • Supervisor

Potential impact	Impact scale	Proposed mitigation measures	Responsibility
Project activity: Demolition of the old school and construction of the new school building			
		risks; • It is better to avoid the temporary storage of roof sheets and/or side wall panels within the school yard, but if is necessary to be done for one/two days, the precautionary measures should applied – the ACM waste should be stored in a designated area with posted signage and/or caution tape to eliminate any damage; • The contract with the company for Asbestos containing waste collection and transportation should be signed for collection and transport of asbestos waste/roof sheets; • After the removal of the asbestos waste all surfaces in the school yard need to be dusted with a damp cloth or vacuumed with a HEPA filter; • The workers who perform clean up should wear protective clothes as those who perform dismantling of the roof sheets and /or side wall panels; • The contract with the Public Communal Enterprise Utility "Landfill Drisla" should be signed for final disposal of asbestos containing roof sheets and/or side wall panels; • On the landfill the asbestos containing waste should be disposed on the special area for disposal of that type of waste (responsibility duly to Landfill "Drisla").	
Operational phase of the Project			
No environmental risks are expected. Positive impact (more space for students, new sport facilities, energy efficiency and energy savings, reduction of GHGs emissions) is expected with construction of the new school replacing the old one.	Local/ short term/major at the location of school building	• The Fire prevention Plan should be prepared addressing the identification of fire risks and ignition sources, as well as measures needed to limit fast fire and smoke development. • The Prevention Maintenance Plan for regular and preventive maintenance should be prepared to ensure proper operation of all infrastructure components of the school (sewer system, storm-water system, water supply system, heating devices, etc); • The keep records procedure should be established in order to ensure proper files storage on all technical documentation for the new school. • A short training to the Housekeeper /Secretary of the School for records and files keeping should be organized by the municipality staff.	• School officials

Potential impact	Impact scale	Proposed mitigation measures	Responsibility
Project activity: Demolition of the old school and construction of the new school building			

12. MONITORING PLANS

12.1 ENVIRONMENTAL MONITORING PLAN FOR THE PROJECT - EXTENSION, RECONSTRUCTION/CONSTRUCTION OF WATER SUPPLY NETWORK, STORM WATER NETWORK, SEWERAGE NETWORK OR CONSTRUCTION OF DRINKING WATER RESERVOIR

What *parameter is to be monitored?*	**Where** *is the parameter to be monitored?*	**How** *is the parameter to be monitored?*	**When** *is the parameter to be monitored (frequency of measurement)?*	**Why** *is the parameter to be monitored?*	**Cost**		**Responsibility**	
					Construction	Operations	Construction of drinking water supply system	Operations of the drinking water supply system
Project activity: Marking out the location for water supply network, storm water network, sewerage network or drinking water reservoir								
The safety protection measures applied for the local residents where the water supply system, storm water network or sewerage network would be passed or made reservoir	On the construction site along the route	Visual checks	At the beginning of the construction work (first day) focused on the preliminary measures At the beginning of each working day during the project activities	To prevent health and safety risks – mechanical injuries			Contractor - Bidder Supervisor Environmental Inspector /Inspector for communal work at the Municipality	
Project activity: Extension/Reconstruction/Construction of water supply network, storm water network, sewerage network or drinking water reservoir								
Exposure of loud noise	On the construction site	Review the noise level	Before the beginning of the work (first day)	To protect the workers against			Contractor - Bidder	

What *parameter is to be monitored?*	**Where** *is the parameter to be monitored?*	**How** *is the parameter to be monitored?*	**When** *is the parameter to be monitored (frequency of measurement)?*	**Why** *is the parameter to be monitored?*	**Cost**		**Responsibility**	
					Construction	Operations	Construction of drinking water supply system	Operations of the drinking water supply system
from vehicle machine and electric tools	and on the transportation route	technical specifications of the used vehicle mechanization and equipment for their use outside	for all vehicles and equipment	exposure to loud noise taking into account the technical specifications of the equipment and time duration of the work outside			Supervisor Environmental Inspector /Inspector for communal work at the Municipality	
Noise level	On the site	Monitoring of the noise levels dB (A) with appropriate monitoring devices	On regularly basis during the work, through site visits, in accordance with the national legislation	To monitor if the noise level is above/or below the acceptance noise level for specific type of area			Contractor – Bidder Company authorized to performed noise levels measurements sub-contracted by the Contractor – Bidder Supervisor Environmental Inspector to	

What *parameter is to be monitored?*	**Where** *is the parameter to be monitored?*	**How** *is the parameter to be monitored?*	**When** *is the parameter to be monitored (frequency of measurement)?*	**Why** *is the parameter to be monitored?*	**Cost**		**Responsibility**	
					Construction	Operations	Construction of drinking water supply system	Operations of the drinking water supply system
							collect the noise level measurements	
Safety traffic flow through the district (redirection of the traffic on streets around the construction site)	On the site	Visual monitoring	During the traffic jam period (8 - 9.00/16.30-17.30 h)	To ensure the coordinated traffic flow through the district			Environmental Officer at Municipality together with the Traffic Engineer at the Municipality	
Primary selection of the waste streams as they are generated at the spot	On the site	Review the documentation – identification of the waste type according the List of waste	At the beginning of work with new material/s	To separate hazardous from the non-hazardous waste as well as inert from biodegradable waste			Contractor – Bidder Supervisor	
Collection and transport as well storage of hazardous waste (if any occur). Really it is not expected in high	On safety temporary storage	Review the transportation list and conditions at the storage facility	Before the transportation of the hazardous waste (if there is any)	To improve the waste management practice on municipality and national level/In order to be in line with the environmental requirements for			Authorized Contractor for collection and transportation of hazardous waste (if any occurs) subcontracted by the Contractor-	

What *parameter is to be monitored?*	**Where** *is the parameter to be monitored?*	**How** *is the parameter to be monitored?*	**When** *is the parameter to be monitored (frequency of measurement)?*	**Why** *is the parameter to be monitored?*	**Cost**		**Responsibility**	
					Construction	Operations	Construction of drinking water supply system	Operations of the drinking water supply system
quantities (maybe some batteries, waste from motor oils, etc.)				the hazardous waste management . Not to dispose the hazardous waste on the municipal landfill.			Bidder Environmental inspector from Municipality	
Collection transportation and final disposal of the solid waste	On the site and around the site	Visual monitoring and reviewing the transportation and disposal lists from the sub-contractor	After the collection and transportation of the solid waste on regular base each day	Not to leave the waste on the spot to avoid the environmental and health impacts to the residents To have the real data for generated waste streams and to improve the waste management			Contractor – Bidder who need to sign the contract with licensed company for collection, transportation and disposal of the solid waste	
Fulfilled Annual Report for collection, transportation and disposal of waste	Local self-government administration	Review of documentation – Identification waste List	After the accomplishment the task of collection, transportation, temporary disposal and final disposal of waste	To improve the waste management on local and national level To be in compliance with national legal			Mayor of Municipality of Ministry of Environment and Physical Planning	

What *parameter is to be monitored?*	**Where** *is the parameter to be monitored?*	**How** *is the parameter to be monitored?*	**When** *is the parameter to be monitored (frequency of measurement)?*	**Why** *is the parameter to be monitored?*	**Cost**		**Responsibility**	
					Construction	Operations	Construction of drinking water supply system	Operations of the drinking water supply system
				requirements				
Level of dust – fine particulate matters	At the spot	Visual monitoring and measurement devices	On the sunny, dry days only	To avoid and minimize the dust concentration into the air and to minimize the health risks for the workers and residents of the district			Contractor – Bidder and authorized company for dust measurements	
Drinking water quality	Before the distribution through the pipelines network The water sample should be analyzed by the Authorized laboratories – Public Health institute Accredited laboratories	Laboratory equipment for physical-chemical and microbiological water quality analysis	Continuously according the Plan for drinking water quality analysis (short-medium and long water quality analysis)	To ensure the distribution of high quality drinking water to the population minimizing the health risks of waterborne diseases				Public Utility for communal work

12.2 ENVIRONMENTAL MONITORING PLAN FOR THE PROJECT – CONSTRUCTION OF WASTE WATER TREATMENT PLANT

What *parameter is to be monitored?*	Where *is the parameter to be monitored?*	How *is the parameter to be monitored/ type of monitoring equipment?*	When *is the parameter to be monitored - frequency of measurement or continuous?*	Why *is the parameter to be monitored (optional)?*	Cost		Responsibility	
					install	operate	install	operate
Project Phase: Design of the WWTP								
The Main Design of the Project for Construction of WWTP including the implementation of environmental, OH&S and community measures proposed	Through the documentation	During the revision phase	Before issuing all necessary permitting documents for construction of WWTP	To minimize the negative environmental (pollution of surface waters, high adverse impacts to human health, high energy consumption, high noise level, etc.) OH&S and community safety			Municipality and Project Developers	
Project Phase: Construction of the WWTP								
Air pollution - dust - pollutant substances due to the combustion of fuel from construction machinery and vehicles	At construction/ site/around site	Visual monitoring Monitoring by adequate monitoring devices	Regularly during work activities(for preparation on site and construction phase) through site visits, once per month, in accordance with established time schedule	To avoid and minimize the dust concentration into the air and to minimize the health risks for the workers and surrounding community		Covered by construction budget		Contractor Supervisor Local municipal environmental authorities

What *parameter is to be monitored?*	Where *is the parameter to be monitored?*	How *is the parameter to be monitored/ type of monitoring equipment?*	When *is the parameter to be monitored - frequency of measurement or continuous?*	Why *is the parameter to be monitored (optional)?*	Cost		Responsibility	
					install	operate	install	operate
Collection and disposal of solid wastes	At construction/ site/around site	Visual monitoring and reviewing the transportation and disposal lists from the sub-contractor Review the documentation-identification of the waste type according to the List of Waste Types (Official Gazette No. 100/05)	Regularly during work activities through site visits, in accordance with established time schedule	In order to identify if the environment requirements are relevantly maintained Protection of soil, surface and ground water, visual aspect		Covered by construction budget		Contractor Supervisor Authorized Contractor for collection and transportation of waste Local municipal environmental authorities
Leaks/spills/of fuel, lubricant	At construction/ site/around site and through documentation	Visual monitoring, analysis of documentation	Regularly during work activities, in accordance with established time schedule within the relevant Law Regulation	In order to identify if the environment requirements are relevantly maintained		Covered by construction budget		Contractor Supervisor Local municipal environmental authorities

What *parameter is to be monitored?*	Where *is the parameter to be monitored?*	How *is the parameter to be monitored/ type of monitoring equipment?*	When *is the parameter to be monitored - frequency of measurement or continuous?*	Why *is the parameter to be monitored (optional)*?	Cost		Responsibility	
					install	operate	install	operate
The safety protection measures applied on site	On the construction site, around site	Visual monitoring Review the documentation	Regularly during work activities through site visits, in accordance with established time schedule within the relevant regulation	To prevent health and safety risks Protection of the environment, worker, passengers and employee of the terminal, and material wealth		Covered by construction budget		Contractor Supervisor Local municipal environmental authorities
Project Phase: Operation / Maintenance								
Occupational Health and Safety and Community safety	On site, around site	Visual monitoring Review the documentation and permits issued by the relevant body	Continuously during operational phase	To prevent health and safety risks. Protection of the environment, workers and employee as well as to the surrounding community		Covered by operational costs		Operator Ministry of labor and social aspects State Labor Inspectorate Local municipal environmental authorities

What *parameter is to be monitored?*	Where *is the parameter to be monitored?*	How *is the parameter to be monitored/ type of monitoring equipment?*	When *is the parameter to be monitored - frequency of measurement or continuous?*	Why *is the parameter to be monitored (optional)*?	Cost		Responsibility	
					install	operate	install	operate
Quality of waste water and treated wastewater (BOD_5, COD, TSS, nitrogen, phosphorus, and other parameters prescribed in the permits for discharging issued by the MOEPP)	Before inlet in the WWWP and before discharging in the channel for collection of the atmospheric water	Usual sampling and Laboratory for physical-chemical analysis in accordance monitoring manuals and introduced methodologies.	Twice a year (spring, winter)	To assess the operation of the device		Covered by operational costs		Operator Ministry of Environment and Physical Planning Municipal Environmental Inspection.

What *parameter is to be monitored?*	Where *is the parameter to be monitored?*	How *is the parameter to be monitored/ type of monitoring equipment?*	When *is the parameter to be monitored - frequency of measurement or continuous?*	Why *is the parameter to be monitored (optional)*?	Cost		Responsibility	
					install	operate	install	operate
Water quality – recipient surface waters (BOD5, COD, TSS, nitrogen, phosphorus, and other parameters proposed in the permits for discharging issued by the MOEPP)	River - recipient, before the place of discharging the treated waste water, on the place of discharging, after the place of discharging (3 sampling points).	Laboratory equipment for physical-chemical analysis in accordance monitoring manuals and introduced methodologies in the permits issued by the MOEPP.	12 samples taken at regular intervals during the first year, 4 samples in the coming years, if it is shown that the water complies with the provisions of the Rulebook on the methodology, reference methods of measurement, method and waste water monitoring parameters, including the sludge from the treatment of urban waste water ("Official Gazette of RM" no.108/11)	Protection of water quality in the river, protection of the downstream sensitive areas and health of people				Operator/ Administration Ministry of Environment and Physical Planning, Hydro-meteorological Administration Municipal Environmental Inspection Local municipal environmental authorities

What *parameter is to be monitored?*	Where *is the parameter to be monitored?*	How *is the parameter to be monitored/ type of monitoring equipment?*	When *is the parameter to be monitored - frequency of measurement or continuous?*	Why *is the parameter to be monitored (optional)*?	Cost		Responsibility	
					install	operate	install	operate
Sludge For the usage of the sludge for agricultural land the following parameters should be analyzed (according the national legislation and EU Directive on the protection of the environment, and in particular of the soil, when sewage sludge is used in agriculture 86/278/EEC): Heavy metals: Pb, Cd, Cr, CU, Ni,Zn,Hg Dry matter, organic matter, pH value; nitrogen and phosphorus	On site	Visual inspection Review the documentation for sludge management (according the Sludge Disposal Management Plan) Laboratory testing of the sludge quality	Sludge Disposal Management Plan need to be developed prior to the commissioning of the WWTP plant to detail for removal of the sludge. The monitoring of the sludge should be in compliance with the national regulation	Protection of soil, surface and ground water and health of people		Covered by operational costs		Operator Ministry of Environment and Physical Planning Municipal Environmental Inspection Accredited Laboratories

What *parameter is to be monitored?*	Where *is the parameter to be monitored?*	How *is the parameter to be monitored/ type of monitoring equipment?*	When *is the parameter to be monitored - frequency of measurement or continuous?*	Why *is the parameter to be monitored (optional)*?	Cost		Responsibility	
					install	operate	install	operate
Odor	On site, around site	Sense of smell,	At the beginning of work, everyday	Minimization of nuisance of the local people				Operator/ Ministry of Environment and Physical Planning Municipal Environmental Inspection

12.3 ENVIRONMENTAL MONITORING PLAN FOR THE PROJECT – REHABILITATION/RECONSTRUCTION/CONSTRUCTION OF LOCAL STREET OR LOCAL ROAD

What	Where	How	When	Why	Cost		Responsibility	
Parameter is to be monitored?	*is the parameter to be monitored?*	*is the parameter to be monitored?*	*is the parameter to be monitored (frequency of measurement)?*	*is the parameter to be monitored?*	Construction	Operations	Rehabilitation/ Reconstruction/ Construction of street or road	Operations of street or road
Project activity: Making out the route for Rehabilitation/Reconstruction/Construction of street or local road								
Safety traffic flow around streets or local roads	At the spot	Visual monitoring	During the project implementation	To ensure the coordinated traffic flow			Municipal staff/ Communal inspector at municipality/Traffic Engineer	
The safety protection measures applied	On the construction site	Visual checks	At the beginning of the construction work (first day) Every working day during the project activities	To prevent community health and safety risks – mechanical injuries due to the very urban area			Contractor - Bidder /Supervisor Communal inspector at the municipality/	
The occupational health and safety measures applied for the workers	On the construction site	Visual check	Before start of the project activities and each of working day	To avoid occupational and safety risks (injuries)			Contractor - Bidder /Supervisor/ Communal Environmental Inspector at municipality	
Project activity: Rehabilitation/Reconstruction/Construction of street or local road								
Separated hazardous and non-hazardous	On the construction site	Visual monitoring and reporting	During the project activities	To avoid disposal of hazardous waste on municipal			Contractor - Bidder /Supervisor Municipal staff (Communal	

What *Parameter is to be monitored?*	Where *is the parameter to be monitored?*	How *is the parameter to be monitored?*	When *is the parameter to be monitored (frequency of measurement)?*	Why *is the parameter to be monitored?*	Cost		Responsibility	
					Construction	Operations	Rehabilitation/ Reconstruction/ Construction of street or road	Operations of street or road
waste				landfill			inspector)	
Fulfilled Annual Report for transportation and disposal of waste	Local self-government administration	Review of documentation – Identification waste List	After accomplishment the task of collection, transportation of waste on daily/monthly basis	To improve the waste management on local and national level To be in compliance with national legal requirements			Mayor / Director of PE	
Exposure the citizens to noise disturbance from vehicle machine and electric tools	On the site	Review the noise level technical specifications of the used vehicle mechanization and equipment for their use outside	Before the beginning of the work (first day)	To protect the citizens against exposure to loud noise taking into account the technical specifications of the equipment and time duration of the work outside			Contractor - Bidder / Supervisor Communal inspector/ Municipality	

12.4 ENVIRONMENTAL MONITORING PLAN FOR THE PROJECT – PROVIDING BASIC EQUIPMENT FOR THE MAINTENANCE OF PUBLIC HYGIENE (VEHICLES FOR COLLECTION OF COMMUNAL WASTE AND PROCUREMENT OF WASTE CONTAINERS)

What *parameter is to be monitored?*	**Where** *is the parameter to be monitored?*	**How** *is the parameter to be monitored?*	**When** *is the parameter to be monitored (frequency of measurement)?*	**Why** *is the parameter to be monitored?*	**Cost**		**Responsibility**	
					Construction	Operations	Delivery and put into operation of the waste collection vehicles	Operation of the waste collection vehicles
Project activity: Delivery and running of basic equipment for the maintenance of public hygiene (vehicles for collection of communal waste and waste containers)								
The environmental and safety protection measures applied before put the vehicle into operation	On the parking site of the CSE	Check the fuel quantity, lubrication oil quantity and breaking and steering system at the spot Test running successfully done	Immediately after arriving of the vehicles in the CSE	To prevent health and safety risks – mechanical broken and injuries			Contractor - Bidder Director of the CSE Municipality Inspector	
EURO 4 technical specifications Noise level specification of the vehicle Lights, electronic and hydraulic compression system, braking	At the homologation site – Faculty of Mechanical Science, Skopje (Homologation attest) The approval test site at the authorized body for annual registration (Registration card for the vehicles)	Review the technical specifications of the vehicles Mechanical and electronic checks	At the beginning of the running phase Before put into operation (running)	To minimize the adverse environmental and health impacts			Contractor – Bidder Director of the CSE with technical team	

What *parameter is to be monitored?*	**Where** *is the parameter to be monitored?*	**How** *is the parameter to be monitored?*	**When** *is the parameter to be monitored (frequency of measurement)?*	**Why** *is the parameter to be monitored?*	**Cost**		**Responsibility**	
					Construction	Operations	Delivery and put into operation of the waste collection vehicles	Operation of the waste collection vehicles
and anti-blocking system and tires								
Standard technical operational parameters of this kind of vehicle (protective steering, brakes, fuel consumption)	Pre-registration inspection at the authorized body for annual registration	Monitoring of the technical specifications Approval test Report showing that the vehicle is in compliance with safety requirements, environmental requirements related to noise, exhaust emissions and fitted devices	On annual basis	To ensure safety running of the vehicles and minimization of the environmental and health impacts				Director of the CSE with technical team
Announcement of the frequency and start-up of vehicles running and collection	Through the public announcement via local radio/newspaper/announcement table in the municipality building	Visual/audio check	Before start-up of running the vehicles	To increase the public awareness about the new waste management practice and waste collection				Director of the CSE with technical team Municipal inspector

What *parameter is to be monitored?*	**Where** *is the parameter to be monitored?*	**How** *is the parameter to be monitored?*	**When** *is the parameter to be monitored (frequency of measurement)?*	**Why** *is the parameter to be monitored?*	**Cost**		**Responsibility**	
					Construction	Operations	Delivery and put into operation of the waste collection vehicles	Operation of the waste collection vehicles
				frequency				
Project activity: Running of the waste collection vehicles								
Skill of driver/s on modern driving techniques and some improved performances of the new vehicle	At the CSE site	Training records kept Review of the training records	Before official startup of running	To improve the driving techniques and to be familiar with vehicle characteristics and compression system				Director of the CSE with technical team
Good maintenance practice and repair performed by professional staff	At the service company	Review of reports from the service company	Periodically (six months min.)	To ensure minimization of the environmental and occupational safety risks through high fuel efficiency and decrease of emissions of GHGs and other pollutants				Director of the CSE with technical team

What *parameter is to be monitored?*	**Where** *is the parameter to be monitored?*	**How** *is the parameter to be monitored?*	**When** *is the parameter to be monitored (frequency of measurement)?*	**Why** *is the parameter to be monitored?*	**Cost**		**Responsibility**	
					Construction	Operations	Delivery and put into operation of the waste collection vehicles	Operation of the waste collection vehicles
				(CO, HC, PM and NOx)				
Fuel consumption trend, annual quantity of waste collected and disposed at municipal landfill	At CSE site	Annual Report of the CSE	On annual basis reporting in front of the Management board and Municipality Council	To monitor the regular maintenance and to calculate the carbon footprint of the communal enterprise				Director of the CSE with technical team
Quantity of primary selected paper and PET bottles by the other solid waste	On several waste collection sites in the settlements across the Municipality	Review the documentation – collection of recyclable waste by the authorized collector/s	On regular basis (monthly/annually)	To decrease the quantity of mixed solid waste transported and disposed on the municipal landfill and to use the recyclable waste as raw material				Director of the CSE with technical team
Fulfilled Annual Report for collection, transportation	Local self-government administration	Review of documentation – Identification	After the accomplishment the task of collection,	To improve the waste management on local and				Mayor of Municipality/ Ministry of Environment

What *parameter is to be monitored?*	**Where** *is the parameter to be monitored?*	**How** *is the parameter to be monitored?*	**When** *is the parameter to be monitored (frequency of measurement)?*	**Why** *is the parameter to be monitored?*	**Cost**		**Responsibility**	
					Construction	Operations	Delivery and put into operation of the waste collection vehicles	Operation of the waste collection vehicles
and disposal of waste		waste List	transportation, temporary disposal and final disposal of waste	national level To be in compliance with national legal requirements				and Physical Planning
Quality of ground waters near the municipal landfill(ammonia, chloride, pH, SO_4, metals, Hg, nitrates, phosphorus, coliform bact and other defined in the Rulebook on landfill operation – Official Gazette of RM No. 156/07)	On the vicinity of the landfill (1 point at entrance zone and 2 points from exit zones of the ground waters near landfill	Taking samples of the ground waters and analysis according the ISO 5667-Part 11,1993)	Once per year	To minimize the risk of water pollution by the landfill especially the ground waters near by the municipality landfill To avoid the health problems caused by the polluted waters				Director of the CSE with technical team

12.5 ENVIRONMENTAL MONITORING PLAN FOR THE PROJECT - REPLACEMENT OF THE STREET LIGHTING

What *parameter is to be monitored?*	**Where** *is the parameter to be monitored?*	**How** *is the parameter to be monitored?*	**When** *is the parameter to be monitored (frequency of measurement)?*	**Why** *is the parameter to be monitored?*	**Cost**		**Responsibility**	
					Removal of old lamps/ Placement of new lights	Operations of the new lights	Removal of old lamps/ Placement of new lights	Operations of the new lights
Project activity: Removal the used mercury vapor lamps								
Power disconnection	On the sites according the drawings for position of street lights	Electrical tool	Before the removal steps	To avoid /prevent the risk of fatal electric shock			Contractor-Bidder	
The safety protection measures applied for the operators	On the sites	Visual checks	At the beginning of each working day and during the removal operation	To prevent health risks – inhaling mercury in vapor or powder, glass pieces			Contractor - Bidder / Environmental Officer at the Municipality	
Presence of mercury spills and glass parts due to broken bulbs	On the streets/around land/public greenery	Visual monitoring	Every day at the end of the working hours	To avoid health impact of the mercury to the local citizens and workers			Contractor-Bidder/ Environmental Officer at the Municipality	
Removed mercury vapor lamps	On the sites	Visual monitoring/ comparison with planned	According the frequency of removal for each site/at the end of each working day	In order to determine the compliance with the signed Contract To avoid health impacts due to possible break			Authorized Contractor for collection and transportation of hazardous waste subcontracted by the Municipality / Environmental Officer at the Municipality	
Collection, package, labeling of	On the sites	Visual check on packaging boxes, check	When the packaging box with hazardous	To prevent the environmental pollution and			Authorized Contractor for collection and	

What *parameter is to be monitored?*	**Where** *is the parameter to be monitored?*	**How** *is the parameter to be monitored?*	**When** *is the parameter to be monitored (frequency of measurement)?*	**Why** *is the parameter to be monitored?*	**Cost**		**Responsibility**	
					Removal of old lamps/ Placement of new lights	Operations of the new lights	Removal of old lamps/ Placement of new lights	Operations of the new lights
hazardous mercury lamps		the information on label and all necessary data and information to identify the hazardous waste	waste is full and before the temporary storage/on weekly basis	health risks. To provide safety hazardous waste management according the national environmental and heath requirements			transportation of hazardous waste subcontracted by the Municipality of /Environmental Officer/State Environmental inspector	
Separated hazardous and non-hazardous waste	On the sites	Visual monitoring and reporting	During the dismantling activities	To avoid disposal of hazardous waste on municipal landfill –			Contractor - Bidder / Environmental Officer	
Separated recycled waste of metal parts (steel pipes, tracks, zinced screws, rivets..) collected and transported on Collection Center for recycling materials	On the sites	Visual monitoring and reporting	During the dismantling activities/on daily basis	To collect the recycled materials			Contractor –Bidder together with Authorized Company Commerce for collection and transport of recycling materials/ Environmental Officer	
Transport and temporary storage of hazardous	On safety temporary storage dry, very well ventilated	Review the transportation list and conditions at the storage	Before the transportation of the hazardous waste	In order to be in line with the environmental conditions required for the			Authorized Contractor for collection and transportation of hazardous waste	

What *parameter is to be monitored?*	**Where** *is the parameter to be monitored?*	**How** *is the parameter to be monitored?*	**When** *is the parameter to be monitored (frequency of measurement)?*	**Why** *is the parameter to be monitored?*	**Cost**		**Responsibility**	
					Removal of old lamps/ Placement of new lights	Operations of the new lights	Removal of old lamps/ Placement of new lights	Operations of the new lights
waste	place (Separate room into the basement of Municipality building for boxes with unbroken lamps) The adequate place will be ensured by the Municipality for box/es with broken lamps The Municipality has already signed the Contract with the Municipality to take the used mercury lamps for further usage on their sites	facility (dry place, ventilation, labels for restriction for entrance…		hazardous waste management according national legislation and best practices			subcontracted by the Municipality /Environmental Officer/ Environmental inspector from	
Fulfilled Annual Report for collection, transportation	At Authorized Contractor's headquarter building	Review of documentation – Identification waste List	After the accomplishment the task of collection, transportation	To improve the waste management and hazardous waste management on			Environmental inspector / Ministry of Environment and Physical Planning	

What *parameter is to be monitored?*	**Where** *is the parameter to be monitored?*	**How** *is the parameter to be monitored?*	**When** *is the parameter to be monitored (frequency of measurement)?*	**Why** *is the parameter to be monitored?*	**Cost**		**Responsibility**	
					Removal of old lamps/ Placement of new lights	Operations of the new lights	Removal of old lamps/ Placement of new lights	Operations of the new lights
and disposal of hazardous waste			and temporary disposal of used lamps	local and national level To be in compliance with national legal requirements				
Fulfilled Annual Report for transportation and disposal of waste	Local self-government administration	Review of documentation – Identification waste List	After the accomplishment the task of collection, transportation, temporary disposal and give the used lamps to Municipality	To improve the waste management and hazardous waste management on local and national level To be in compliance with national legal requirements			Mayor of Municipality/ Ministry of Environment and Physical Planning	
Exposure of loud noise from hand and electric tools	On the site	Review the noise level technical specifications of the used tools – electric drill and grinder for their use outside	Before the beginning of the work (first day)	To protect the workers against exposure to loud noise taking into account the technical specifications of tools and time duration of the work outside			Environmental inspector / Environmental Officer/	
Noise level	On the site	Monitoring of the noise levels dB (A) with appropriate monitoring	On regularly basis during the work, through site visits, in accordance with the national	To monitor if the noise level is above/or below the acceptance noise level			Company authorized to performed noise levels measurements sub-contracted by the Contractor - Bidder/Environmental	Noise level

What *parameter is to be monitored?*	**Where** *is the parameter to be monitored?*	**How** *is the parameter to be monitored?*	**When** *is the parameter to be monitored (frequency of measurement)?*	**Why** *is the parameter to be monitored?*	**Cost**		**Responsibility**	
					Removal of old lamps/ Placement of new lights	Operations of the new lights	Removal of old lamps/ Placement of new lights	Operations of the new lights
		devices	legislation				Officer at Municipality	
Safety traffic flow through the site where street lighting is positioned	At the spot	Visual monitoring	During the traffic jam period (8 - 8.30/16.30-17 h)	To ensure the coordinated traffic flow through city of and other settlements			Contractor – Bidder/ Environmental Officer at Municipality / Traffic Engineer at Municipality	
Project stage: Placement of new sodium lamps								
Separated recycled waste of packaging waste from new sodium lamps (paper, cardboard,) collected and transported on recycling facility	On the sites	Visual monitoring and reporting	During the un packaging of new sodium lamps/on daily basis	To collect the recycled materials - paper and cardboard			Contractor-Bidder/ Municipality of Environmental Officer	
Content of mercury or other hazardous substances in sodium lamps	In the documentation about the product specification	Review the product specification list	Before the operation of placement start	To identify the content of hazardous substances in order to take a mitigation measures against adverse environmental and health impacts from broken lamps				Environmental inspector from / Environmental Officer at the Municipality

What *parameter is to be monitored?*	**Where** *is the parameter to be monitored?*	**How** *is the parameter to be monitored?*	**When** *is the parameter to be monitored (frequency of measurement)?*	**Why** *is the parameter to be monitored?*	**Cost**		**Responsibility**	
					Removal of old lamps/ Placement of new lights	Operations of the new lights	Removal of old lamps/ Placement of new lights	Operations of the new lights
Project stage: Regular operation and maintenance								
Loosened of all parts of the light Clearness of the lanterns	At the sites	Visual monitoring and checkup Clean the lanterns for better lighting of the lamp	On every six months (winter/summer period)	To mitigate the adverse environmental and health impacts and to obtain better lighting of the lamps				Contractor-Bidder / Environmental Officer at the Municipality

12.6 ENVIRONMENTAL MONITORING PLAN FOR THE PROJECT – CONSTRUCTION/RECONSTRUCTION OF THE SCHOOL/KINDERGARTEN BUILDING

What	Where	How	When	Why	Cost		Responsibility	
parameter is to be monitored?	*is the parameter to be monitored?*	*is the parameter to be monitored?*	*is the parameter to be monitored (frequency of measurement)?*	*is the parameter to be monitored?*	Construction	Operations	Demolition of old school and construction the new one	Operations of the new school
Project activity: Demolition of old School/Kindergarten and startup with reconstruction/construction activities at school/kindergarten buildings								
The community safety regulation and protection measures applied	Around the project sites (school/kindergarten buildings)	Visual checks	At the beginning of the reconstruction/ construction work (first day) Every working day during the project activities	To ensure minimization of health and safety risks – mechanical injuries to the members of the local community – especially from broken glass, wooden windows and doors and spikes. Special attention should be put during the removal of the asbestos containing roof sheets			Contractor - Bidder /Supervisor/ Municipal staff (Communal and Environmental Inspector)/ School/ Kindergarten officials	
The OH& S protection measures applied for the workers at the sites	On the project sites	Visual checks	Every working day during the project activities	To minimize the risks on occupational health and safety of the workers especially protective equipment and clothes for workers who will remove asbestos containing wall panels			Contractor - Bidder /Supervisor/ Municipal staff (Communal and Environmental Inspector)/ School/Kindergarten officials	
Avoid and minimize safety and health risks	In the building and in	Visual checks	At the beginning the demolition	To avoid injuries of the students/kids or school/kindergarten staff from			Contractor - Bidder /Supervisor/	

What *parameter is to be monitored?*	Where *is the parameter to be monitored?*	How *is the parameter to be monitored?*	When *is the parameter to be monitored (frequency of measurement)?*	Why *is the parameter to be monitored?*	Cost		Responsibility	
					Construction	Operations	Demolition of old school and construction the new one	Operations of the new school
for the students/kids and school/kindergarten employees	school/kindergarten yard		work and continuously every working day	falling pieces of windows, doors, broken glass and inhalation of the asbestos fibers or dust			Municipal staff (Communal and Environmental Inspector)/ School/Kindergarten officials	
Time for beginning and end of reconstruction/ construction work and especially time for removal of existing wall panels and sewer pipes containing asbestos	On the project site	Visual checks and documents (time schedule) review	Every day	To avoid the environmental, health and safety risks			Contractor - Bidder /Supervisor/ Municipal staff (Communal and Environmental Inspector)/ School/Kindergarten officials	
Waste Management Plan for waste management with all generated waste streams	On the project site	Review the document – Waste Management Plan	Before the demolition activities start	To ensure proper waste management with all waste streams minimizing the potential risks on environmental pollution (pollution of air, waters and soil) and risks on human health			Contractor - Bidder /Supervisor/	
Existence of the broken glass, dust generated during the	In the school/kindergarten yard	Visual checks	For broken glass immediately/For dust	To avoid and minimize injuries and dust inhalation			Contractor - Bidder /Supervisor/ Municipal staff	

What *parameter is to be monitored?*	**Where** *is the parameter to be monitored?*	**How** *is the parameter to be monitored?*	**When** *is the parameter to be monitored (frequency of measurement)?*	**Why** *is the parameter to be monitored?*	**Cost**		**Responsibility**	
					Construction	Operations	Demolition of old school and construction the new one	Operations of the new school
demolition Generation of different types of waste			generation every day after completion of work For inert waste on 2-3 days				(Communal and Environmental Inspector)/ School/Kindergarten officials	
Level of dust – fine particulate matters	At the construction site	Visual monitoring and measurement devices	On the sunny, dry days only (once a week at the peak working hour)	To avoid and minimize the dust concentration into the air and to minimize the health risks for the students/kids workers and residents in the neighborhood.			Contractor – Bidder and authorized company for dust measurements	
Collection and transport as well storage of hazardous waste (if any occurs).	On safety temporary storage	Review the transportation list and conditions at the storage facility	Before the transportation of the hazardous waste (if there is any)	To improve the waste management practice on municipality and national level.			Authorized Contractor for collection and transportation of hazardous waste (if there is any occur) subcontracted by the Contractor-Bidder Environmental inspector	
Noise level	On the site	Monitoring of the noise levels	On regularly basis during the work, in accordance with the	To monitor if the noise level is above/or below the acceptance noise level for that type of area			Contractor – Bidder Authorized Company for performing	

What *parameter is to be monitored?*	Where *is the parameter to be monitored?*	How *is the parameter to be monitored?*	When *is the parameter to be monitored (frequency of measurement)?*	Why *is the parameter to be monitored?*	Cost		Responsibility	
					Construction	Operations	Demolition of old school and construction the new one	Operations of the new school
		dB (A) with appropriate monitoring devices	national legislation				noise levels measurements sub-contracted by the Contractor – Bidder Environmental Inspector to collect the noise level measurements	
Exposure of loud noise from vehicle machine, mechanization and equipment	On the construction site	Review the noise level technical specifications of the used vehicle, mechanization and equipment for their usage outside	Before the beginning of the work (first day) for all vehicles and equipment	To protect the workers against exposure to loud noise taking into account the technical specifications of the equipment and time duration of the work outside			Contractor - Bidder Supervisor Environmental Inspector /Inspector for communal work	
Project activity: Demolition of roof sheets containing asbestos								
Primary selection of the	On the project sites	Review the	At the beginning of	To separate hazardous (packaging waste from glue,			Contractor – Bidder	

What *parameter is to be monitored?*	Where *is the parameter to be monitored?*	How *is the parameter to be monitored?*	When *is the parameter to be monitored (frequency of measurement)?*	Why *is the parameter to be monitored?*	Cost		Responsibility	
					Construction	Operations	Demolition of old school and construction the new one	Operations of the new school
waste streams at the project sites		documentation – identification of the waste type according the List of waste	work	paints, insulation material) from the non-hazardous waste as well as inert from biodegradable waste			Supervisor/ Municipal staff (Communal and Environmental Inspector)	
Identification of the asbestos containing waste, proper packaging, labeling as a hazardous waste	On the project sites	Review the documentation – identification of the asbestos containing waste according the List of waste	At the beginning of work	The asbestos containing (ACM) waste is a hazardous waste with adverse environmental and health impacts			Contractor – Bidder Supervisor/ Municipal staff (Communal and Environmental Inspector)	
Temporary storage of the old windows and doors with proper label and	At separate room/basement of the buildings or	Visual checks	On daily basis	To minimize injuries			Contractor – Bidder School/Kindergarten officials	

What *parameter is to be monitored?*	Where *is the parameter to be monitored?*	How *is the parameter to be monitored?*	When *is the parameter to be monitored (frequency of measurement)?*	Why *is the parameter to be monitored?*	Cost		Responsibility	
					Construction	Operations	Demolition of old school and construction the new one	Operations of the new school
coverage Temporary storage of the removed asbestos containing roof sheets proper packaged and labeled	in the yard							
Collection transportation and final disposal of the wooden windows and doors	On the sites and around the sites	Visual monitoring and reviewing the transportation	After the collection and transportation of the waste from old wooden windows and doors by the public communal enterprise	Not to leave the waste on the spot to avoid the environmental and health impacts to the children			Contractor – Bidder who need to sign the contract with licensed company for collection, transportation and disposal of the waste from replacement	
The contract with the authorized transporter of the asbestos containing waste should be signed The contract with the Landfill should be	Before the removal/dismantle works start	Review the contracts	During the collection and transportation of the removed roof sheets Before the final disposal of removed sheets	To be sure that the asbestos containing waste will be treated according the national legislation, international conventions, good practice			Contractor – Bidder who needs to sign the contract with licensed company for acceptance and final disposal of the asbestos containing waste. The	

What *parameter is to be monitored?*	Where *is the parameter to be monitored?*	How *is the parameter to be monitored?*	When *is the parameter to be monitored (frequency of measurement)?*	Why *is the parameter to be monitored?*	Cost		Responsibility	
					Construction	Operations	Demolition of old school and construction the new one	Operations of the new school
signed as well for acceptance and final disposal of the waste							Landfill must have a License for acceptance and final disposal of asbestos waste issued by the Ministry of Environment and Physical Planning	
Fulfilled Annual Report for transportation and disposal of waste	Local self-government administration	Review of documentation – Identification waste List	After the accomplishment the task of collection, transportation, temporary disposal and final disposal of different type of waste including asbestos containing waste	To improve the waste management and hazardous waste management on local and national level			Mayor of Municipality	
Project activity: Operational phase of the School/Kindergarten								
Drinking water quality	Before the distribution through the new water supply system, the water sample	Laboratory equipment for physical - chemica	Before the start with school/kindergarten operation	To ensure the distribution of high quality drinking water to the students/kids minimizing the health risks of waterborne diseases				Municipal staff School/Kindergarten officials Public Enterprise

What *parameter is to be monitored?*	**Where** *is the parameter to be monitored?*	**How** *is the parameter to be monitored?*	**When** *is the parameter to be monitored (frequency of measurement)?*	**Why** *is the parameter to be monitored?*	**Cost**		**Responsibility**	
					Construction	Operations	Demolition of old school and construction the new one	Operations of the new school
	should be analyzed by the Authorized laboratories – Public Health institute /Accredited laboratories	l and microbiological water quality analysis						
Fire Protection Plan	Before the start of school/kindergarten operation	Review of the Plan	At the beginning of school/kindergarten work	To ensure that all fire protection measures are implemented				Municipal staff (Communal and Environmental Inspector) School/Kindergarten staff
Plan for regular and preventive maintenance of the school/kindergarten	Before the start of school/kindergarten operation	Review of the Plan	At the beginning of school/kindergarten work	To ensure proper implementation of actions refer to just on time preventive and regular maintenance, procurement of spare parts, replacements of worn parts reducing unplanned failures, extend equipment lifetime and to ensure proper and safety school/kindergarten operation				Municipal staff (Communal and Environmental Inspector) School/Kindergarten staff

ANNEX 1 ENVIRONMENTAL SCREENING CHECK LIST

MSIP
MUNICIPAL SERVICES IMPROVEMENT PROJECT

ENVIRONMENTAL SCREENING CHECKLIST

Name of Sub-project	
Name of municipality	
Proposed date of start of work	
Technical drawing/ Specifications Seen (describe status of project, existing studies, …)	
Brief Description of Sub-project	

A) Environmental Impacts related to Proposed Sub-project – existing situation				
Environmental issues/concerns	Predicted Effect/Impact (to be described in words in suggested column)			
	No Impact	Minor	Moderate	Major
Will the sub-project affect declared protected areas				
Will the sub-project be located in or near Environmentally sensitive or protected area (in accordance with MK legislation)				
Will the sub-project affect critical habitats such as forest ecosystem, wetlands, marshlands, aquatic ecosystems?				
Will the sub-project affect endangered plant and animal species?				
Will the sub-project involve the introduction of exotic or alien species?				
Will the sub-project affect archaeological sites, historic monuments and settlements?				

1

Other physical and environmental issues and concerns – its nature and impact				

B) Environmental Impacts related to Sub-project Construction and Operation				
Environmental issues/concerns	Predicted Effects/Impacts (describe in words in suggested column)			
	No Impact	Minor	Moderate	Major
Will the sub-project involve the use of forest trees or other natural as building materials?				
Will the sub-project emit greenhouse gases (CO_2, NOx, O_3,) or ozone-depleting substances (CFC, methyl bromide etc.)?				
Will the project contribute to pollution of international waters?				
Will the sub-project involve the use of synthetic fertilizers and pesticides?				
Will the sub-project use, produce or discharge hazardous and toxic materials (eg. Hospital waste, industrial waste or other?)				
Will the sub-project produce or cause occupational and industrial hazards?				
Will the sub-project cause dust and noise pollution after its completion?				
Will the sub-project cause water pollution after its completion?				
Other environmental impact (describe nature and severity of its impact)				

OFFICIAL ASSESMENT OF THE MF/SCREENING OFFICER ON THE IMPACTS OF SUB-PROJECT

	Minor	Moderate	Major	Remarks
What is the overall assessment of the MF on the environment and social impacts of the project?				
Does the Project belongs to area as determined in EAFD, and to which one (refer to table and page of EAFD)				
Other comments and information				

Name of Environmental Specialist: _____

Date of Screening _____

Cleared for approval by: _____ Yes _____ No _____

Name of Project Director: _____

Signature _____ Date _____

Notes:

Approval from WB will be required

ANNEX 2 ENVIRONMENTAL MONITORING REPORT

MSIP
MUNICIPAL SERVICES IMPROVEMENT PROJECT

MONITORING REPORT

MUNICIPALLITY	
PROJECT	

Date of visit	
No. of visit	
Location	
MSIP representatives	
Activities performed	
Mitigation measures/Monitoring activities applied	
Next steps	
ANNEXES	

Date
_____

Environmental Consultant:

_____

1

Summary of the public consultations meeting

Location	The Public consultations were held on October 8, 2015 at the premises of the Ministry of Finance, from 12am to 13.30pm
Objective	The public hearing and consultation meeting was aimed to present the main aims of MSIP2 project, WB environmental and resettlement policies and requirements prior loan decision-making and main aspects within the draft versions of **Environmental Assessments and Management Framework Document (EAMF) and Resettlement Policy Framework (RPF) for the MSIP2** in front of relevant interested stakeholders. The open, transparent and active public participation was ensured with main aim to enable the stakeholders to provide their concerns, comments and remarks on the draft documents.
Invitees	The following interested stakeholders have been invited: WB Office in Skopje, Ministry of finance (MoF), Ministry of Environment and Physical Planning (MoEPP), Environmental Administration AE (MoEPP), Ministry of Transport and Communication (MoTC), ADKOM, ZELS, City of Skopje, several environmental NGOs, Ministry of local self-government units, City of Skopje, consulting companies and other concerned institutions. The public announcement was launched in daily national newspaper (copy attached in **Annex 1**), and it was posted on the website of MoF () – **Annex 2.**
Participants	15 participants (and 2 PIU representatives) attended the Public hearing and consultation event, The copy of the List of Participants is enclosed in **Annex 3**. Several photos were taken during the event and are shown in **Annex 4**.
Summary conclusions and comments	**DISTRIBUTED MATERIALS** The draft versions of the EAMF Report and RPF Report (in English) and presentations (in Macedonian). Both draft documents were sent by email to the all invited participants and hard copies of PP presentation (handouts) were distributed to all participants. The hard copies of both Reports were also available at the project office. **CONCLUSIONS AND COMMENTS** The meeting was carried out according to the planned agenda. The Director of the MSIP project unit Mrs. Malgorzata Markiewicz-Bogov (**MMB**) welcomed the participants and she briefly introduced participants with main objectives of the project and the main aim of the event. The social expert Mrs. Gordana Pecelj (GP) presented RPF for MSIP2. Then, the Environmental expert Mrs. Slavjanka Pejcinovska-Andonova (**SPA**) presented EAMF document, the main aim of the document and WB environmental safeguard requirements related to the preparation of the EAMF and its presentation on the public hearing and consultation event.

The Environmental expert **SPA** presented the main aim of MSPI1 project, the status of implementation the MSIP1 projects, necessity of development the MSIP2 Project Document and main type of projects expected to be submitted by the municipality.

She gave an overview of the national environmental legislation with emphases on the EIA procedure for small projects (Category B projects refer to WB Environmental Safeguard Policy), sectorial legal acts related to waters and waste waters, air quality, waste management, noise and vibrations, OH&S and other aspects. SPA presented the relevant WB safeguard policies that should be followed during the developing the PAD for each sub-project within the MSIP2.

During the presentation **SPA** noted the importance of environmental impact assessment of the project activities, identification of the potential environmental and human health risks, impacts and necessity to propose the preventive, mitigation and compensation measures to be implement by the Contractor. Several positive examples were presented from MSIP1 already finished projects dealing with hazardous waste (waste from asbestos containing materials and mercury bulbs).

SPA explained that additionally to the national EIA requirements, the WB requires development of general Environmental Mitigation Plan and Monitoring Plan (EMPs) to be presented in the EAMF, and when the MSIP2 starts, for each sub-project, the site-specific Environmental Mitigation Plan and Monitoring Plan should be developed and EMPs will be a part of the Contract with Sub-Contractor and he/she need to implement them and the Supervisor needs to monitor their implementation.

The template for Site Visit Monitoring Report for site visits within the MSIP2 when the sub-projects will be carrying out was presented as well. At the end she opened the discussion.

Discussion

The discussion after the presentation of the document RPF document took place around the following points: (i) gap analysis between the World Bank and national regulation regarding the resettlement and expropriation process, (ii) compensation price during the expropriation prices.

First, representative of the Ministry of Transportation and Communications asked to get the matrix of compliance i.e. gap analysis between national regulations and WB policy in field of expropriation.

Namely, the consultant organization involved in preparation of RPF presented that according to the Operation Policy 4.12 and requirements of the WB so called Grievance Redress Committee should be established as an informal body to address complaints and grievances pertaining to resettlement and to pre-empt all disagreements being referred to the court.

In opinion of the speaker there are many such bodies in various institutions and the question is whether it is necessary to establish new bodies. The representative of the World Bank explained the necessity to establish such a body so that project affected persons to have another chance for agreement.

Second, representatives of the City of Skopje were interested how to reach higher compensation price during the expropriation process from the one gives from the authorized assessor. As was presented by the consultant affected persons who are more affected with the project, i.e. big proportion of their agricultural or construction land will be expropriated could be compensated with the higher unit price. This is due

to different magnitude of social impact caused by expropriation process.

Employees in municipalities as a part of the team working on expropriation bound to follow the prices set by the assessor, so they have no legal base to offer higher price. Therefore, this issue should be considered further because it causes a bigger problem than the expropriation process.

The remaining issues are addressed most of those who should be members of Grievance Redress Committee - GRC. Representative from city of Skopje asked if mediator can facilitate relation between municipalities and project affected persons (according to the national legislation Mediation is any arbitration to resolve dispute between parties by negotiation in a peaceful way through one or more licensed mediator). It was clarified that member of GRS will be representatives from the municipalities, PIU and project affected people.

The public debate finished after 40 minutes fruitful discussions and suitable explanations given by WB representative Mr. Bekim Ymeri based on Bank's and his own experience.

As concerns environmental issues, the first comment was provided by Mr. Ljubomir Jovanovski – **LjJ** (Councilor at the MoTC) who agreed with the presented environmental aspects pointing out that also the Law on Construction is very important as the law incorporates OH&S aspects and the Construction permit has been issued after receiving the Decision on approval the EIA Report-Elaborate issued by the relevant authority.

LjJ encouraged the municipalities saying that all these environmental related procedures have been implemented by the municipalities already for each project when the municipality is the project investor. He pointed out that the municipalities need to know the difference between the WB environmental and resettlement polices and national requirements and what additionally the municipality need to follow before applying for the WB loan. He expressed interest in seeing the matrix with correlation between national and WB environmental and resettlement polices.

The representative from the City of Skopje Mrs. Emilija Cvetkovska (**EC**) asked few questions about the resettlement policy documents that need to be developed and the legal basis for establishing the Resettlement Committee. Also, she commented that for all questions refering to environmental and resettlement issues they could contact the MSIP and relevant experts to support them during application process. SPA explained her role in the MSIP project supporting the municipalities to follow the national environmental legislation as well as the WB safeguard policies. SPA explained that the municipality should prepare the EIA Report – Elaborate and to submit it to the relevant authority. The EIA Report-Elaborate and the Decision for approval of the EIA Report-Elaborate should be submitted to the MSIP2 unit and additionally, the site-specific Environmental Mitigation Plan and Monitoring Plan will be developed by SPA as a part of Project Appraisal Document.

No specific comments or remarks on the draft EAMFD was provided by any participant and no need for any amendments is foreseen till now.

CLOSING REMARKS

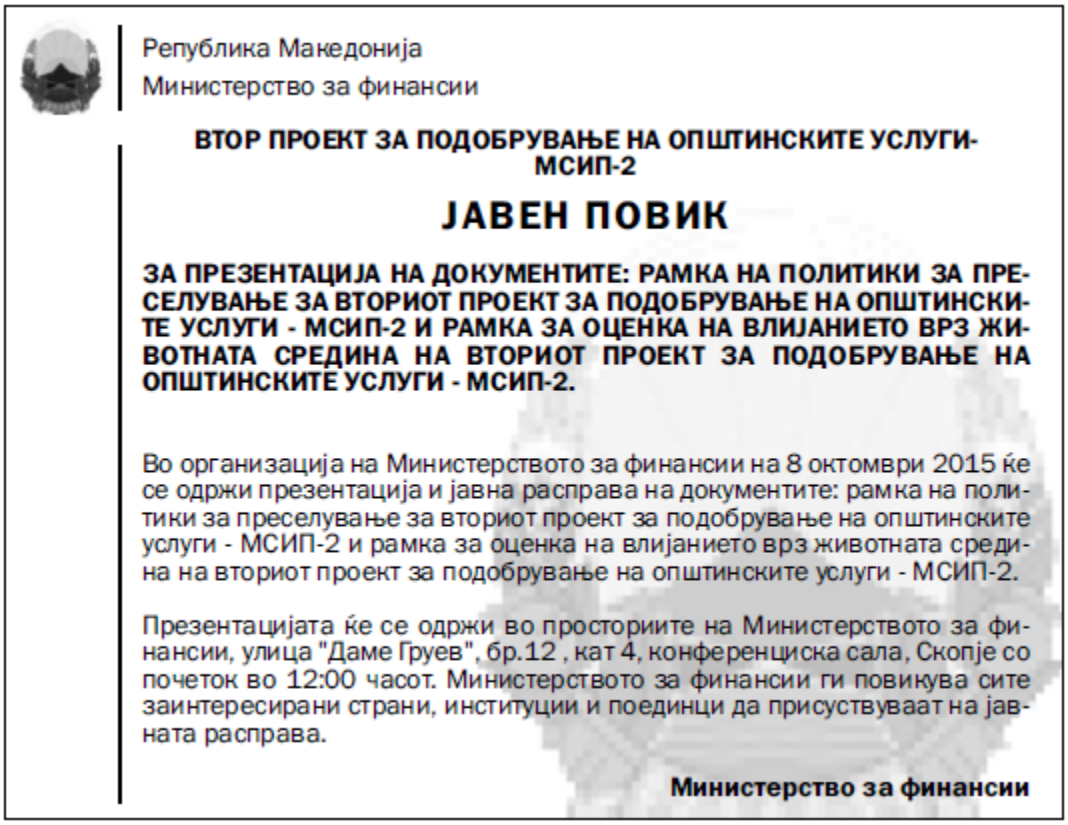
The meeting was closed and closing remarks were given by MMB, expressing gratitude to all participants about their attendance the event, their active participation

and interest concerning the MSIP2 project.

Responsibility Environmental expert **(SPA)** will prepare the final version of **Environmental Assessments and Management Framework Document** and also she will prepare Summary of the public consultation and discussion related to the draft EAMF and she will incorporate them within the final version of the EAMF. Social expert (GP) will prepare the final version of RPF document.

The final versions of EAMF and RPF documents will be delivered to MSIP project unit and to the Ministry of Finance and passed to the World Bank for final review and no-objection.

Annex 1: Public announcement concerning public consultation in the daily newspaper "Dnevnik" on October 3, 2015



Република Македонија
Министерство за финансии

ВТОР ПРОЕКТ ЗА ПОДОБРУВАЊЕ НА ОПШТИНСКИТЕ УСЛУГИ-МСИП-2

ЈАВЕН ПОВИК

ЗА ПРЕЗЕНТАЦИЈА НА ДОКУМЕНТИТЕ: РАМКА НА ПОЛИТИКИ ЗА ПРЕСЕЛУВАЊЕ ЗА ВТОРИОТ ПРОЕКТ ЗА ПОДОБРУВАЊЕ НА ОПШТИНСКИТЕ УСЛУГИ - МСИП-2 И РАМКА ЗА ОЦЕНКА НА ВЛИЈАНИЕТО ВРЗ ЖИВОТНАТА СРЕДИНА НА ВТОРИОТ ПРОЕКТ ЗА ПОДОБРУВАЊЕ НА ОПШТИНСКИТЕ УСЛУГИ - МСИП-2.

Во организација на Министерството за финансии на 8 октомври 2015 ќе се одржи презентација и јавна расправа на документите: рамка на политики за преселување за вториот проект за подобрување на општинските услуги - МСИП-2 и рамка за оценка на влијанието врз животната средина на вториот проект за подобрување на општинските услуги - МСИП-2.

Презентацијата ќе се одржи во просториите на Министерството за финансии, улица "Даме Груев", бр.12 , кат 4, конференциска сала, Скопје со почеток во 12:00 часот. Министерството за финансии ги повикува сите заинтересирани страни, институции и поединци да присуствуваат на јавната расправа.

Министерство за финансии

Annex 2: Public announcement launched on the Ministry of Finance web site

Република Македонија
Министерство за финансии

ВТОР ПРОЕКТ ЗА ПОДОБРУВАЊЕ НА ОПШТИНСКИТЕ УСЛУГИ-МСИП-2

ЈАВЕН ПОВИК

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