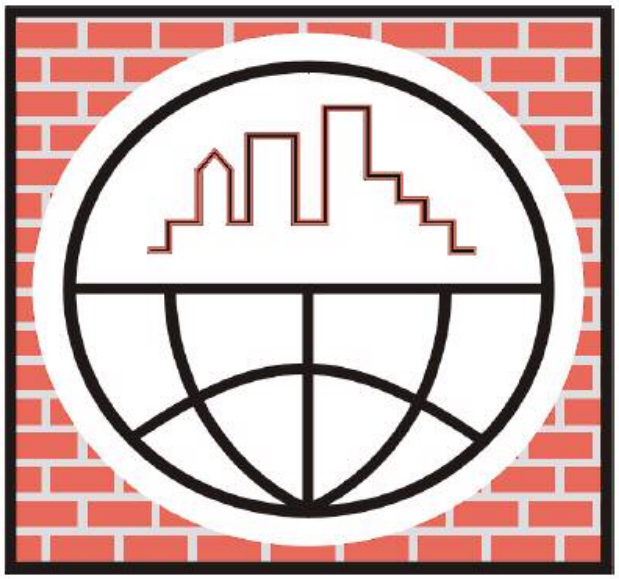
E1977

Regional and Municipal Infrastructure Development Project
RMIDP

Environmental Assessment Guidelines



Georgian Municipal Development Fund

September, 2008

Environmental Assessment Guidelines

0. Introduction

This Annex presents the procedures and implementation arrangements for ensuring full consideration of environmental safeguards, in accordance with the World Bank's environmental assessment guidelines and Georgian environmental regulations in the implementation by MDF investment sub-projects financed under RMID Project. It describes existing environmental regulations and standards relevant to the Project and makes reference to institutions at the local and national levels responsible for issuing permits, licenses, and enforcing compliance of environmental standards. The Annex also provides detailed guidelines for the MDF staff and the sub-project proponents on environmental screening, appraisal, and monitoring. Each sub-project will be individually screened and reviewed by MDF. Environmental review checklists will be completed and environmental categories attached to sub-projects. Sub-project appraisal documents will include specific analysis of environmental issues, prescribed mitigation measures, and associated costs.

1. World Bank Environmental Guidelines

1.1 Main Principles

All projects funded by the World Bank must comply with the Bank's environmental guidelines. The purpose of these guidelines is to establish an environmental review process to ensure that the projects undertaken as part of programs funded under the World Bank loans are environmentally sound, are designed to operate in compliance with applicable regulatory requirements, and, as required by the regulations of the Bank, are not likely to cause a significant environmental, health, or safety hazards.

The World Bank is committed to program design that reflects results of public participation in host countries during all phases of the program, integrating governmental interests with those of private businesses and civil society. In this spirit, MDF will ensure that the preparation of Environmental Impact Assessments (EIAs) will include consultation with affected parties and public disclosure of the associated documents.

With regard to public consultation and disclosure, MDF will be entitled to incorporate timely, participatory, and meaningful public consultation for the development of EIAs. MDF will also be expected to make EIAs and Environmental Management Plans (EMPs) publicly available and easily accessible.

Finally, the World Bank is committed to the principles of host-country ownership of a compact, including host-country responsibility for measures to mitigate adverse environmental and social impacts. The Bank-funded projects shall, therefore, comply with host-country laws, regulations and standards, as well as with requirements by which the host country is bound under international agreements.

1.2 Environmental Screening under WB Guidelines

Category A: A project classified as Category A if it is likely to have significant adverse environmental impacts. These impacts may affect an area broader than the sites or facilities subject to physical works. Category A, in principle, includes projects in sensitive sectors or located in or near sensitive areas. For Category A projects a full EIA, including an EMP is required.

Category B: A project classified as Category B if its potential environmental impacts are less adverse than those of Category A projects. Typically, these impacts are site-specific, mostly not irreversible, and mitigation measures are easier to apply. For Category B projects certain type of environmental assesment may be needed depending on the nature of a project, and an EMP is required.

Category C: A project classified as Category C if it is likely to have minimal or no adverse environmental impacts. For Category C projects, MDF reserves the right to require specific environmental studies, reporting, or training where relevant or where positive environmental impacts may be enhanced.

1.3. Environmental Impact Assessment (EIA)

EIA evaluates the potential environmental risks and impacts of a specific project in its area of influence, examines alternatives to the project, 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. EIA includes the process of mitigating and managing adverse environmental impacts during the implementation of a project.

EIA should:

- be initiated as early as possible in the project cycle development and be integrated closely with the economic, financial, institutional, social, and technical analyses of a proposed project;
- take into account the natural environment (air, water, land and ecosystems), social aspects (human health and safety, access to natural resources and to public services, vulnerability, etc.) and cultural values, as well as trans-boundary and global environmental aspects;
- also take into account specific host-country conditions: the findings of environmental studies, National Environmental Action Plans, national legislation, the capabilities of the entity implementing a project as they relate to managing environmental and social impacts, and obligations of the country under relevant international environmental treaties and agreements.

EIA report should include:

- Executive summary – significant findings and recommended actions;
- Policy, legal and administrative framework within which the EIA is carried out;
- Project description;

- Baseline data;
- Environmental impacts;
- Analysis of alternatives (including no-project scenario);
- EMP (including costs of mitigation and monitoring plans);
- Record of consultation process (minutes of consultation meetings and lists of their participants).

1.4. Public Consultation

Consistent with the World Bank's principles of a host-country ownership of the projects implemented under its Compact, MDF will ensure meaningful public consultation in the process of EIA. For Category A projects it will imply at least two public discussions - one at an early stage of EIA to agree on the main approach and scope of environmental work required, and second - at the stage of draft EIA report. For Category B projects at least one public consultation meeting will be held. Information on the stakeholder meetings will be announced in advance and draft documents to be discussed will be placed in a public domain. MDF will receive feedback from public consultations and ensure incorporation of relevant comments in the EIA reports

1.5. Monitoring

Environmental monitoring will be an integral part of MDF's monitoring work during the supervision of its projects under implementation. Works contractors will be obligated to report on their compliance with the provided EMPs. MDF will conduct on-site monitoring of civil works to verify contractors' reports and to identify any outstanding environmental issues or risks which may escape the attention of contractors or not get adequately reflected in their reports. In case of recorded incompliance with EMPs, MDF will instruct contractors on the corrective measures and closely monitor their further progress.

2. Environmental Legislation of Georgia Relevant to Environmental Permitting Procedures and Managing of MDF-Financed Sub-Projects

2.1. Environmental Permitting

At present, the environmental permitting procedure in Georgia is set out in three laws: (i) The Law on Licenses and Permits (2005); (ii) The Law on Environmental Impact Permits (EIP), and (iii) The Law on Ecological Examination (EE) 2008.

The Law on Licenses and Permits was adopted by Parliament of Georgia, on June 24, 2005. The new Law regulates legally organized activities posing certain threats to human life and health, and addresses specific state or public interests, including usage of state resources. It also regulates activities requiring licenses or permits, determines types of licenses and permits, and defines the procedures for issuing, revising and canceling of licenses and permits (Article 1, Paragraph 1).

The Laws on Environmental Impact Permit and on Ecological Examination have been adopted on 14.12.2007 and entered in force on 01.01.2008. These new laws integrate all the amendments introduced in legislation of Georgia during recent years.

The Law of Georgia on Environmental Impact Permit provides a complete list of activities and projects subject to the ecological examination (clause 4 p.1) and the legal basis for public participation in the process of environmental assessment, ecological examination and decision making on issuance of an EIP.

According to the law, activities subject to the ecological examination include construction of new or upgrading of the existing facilities imposing change of technology and operational conditions for the projects and activities included in the list. The routine maintenance works in relation with the same facilities do not require ecological examination and permitting.

If an activity included in the list given in clause 4 p.1 at the same time requires Construction Permit, an administrative body responsible for issuance of the Construction Permit ensures involvement of the Ministry of Environment Protection and Natural Resources (MoE), in the administrative procedures initiated for the purpose of issuing a Construction Permit, as provided by the Law on Licenses and Permits. In such cases the MoE is issuing a Conclusion of the Ecological Examination of a project based on the documentation provided to the MoE by an administrative body issuing the Permit. The Conclusion on the Ecological Examination is adopted by the administrative (executive) legal act of the MoE and compliance with the conditions of the Conclusion is obligatory for a project proponent. The conditions of the Conclusion on Ecological Examination is a part of conditions of the Construction Permit.

If an activity included in the list given in clause 4 p.1 does not require Construction Permit, based on the Conclusion on the Ecological Examination the MoE will issue an Environmental Impact Permit through an administrative (executive) legal act issued by the minister. The ecological examination is carried out in accordance with the law of Georgia on Ecological Examination and the conditions set forth by the Conclusion are incorporated into the Permit.

The aforementioned laws do not provide details of screening procedure and do not define responsibilities of parties. According to the practice, the screening of project proposals and the preliminary assessment of their environmental impact and proposed mitigation measures (scoping) are being carried out by the project proponent in consultation with the MoE.

2.2. Public Consultation Procedures

The 6th clause of the law of Georgia on the Environmental Impact Permit provides detailed requirements and procedures for conducting public consultations and establishes timeframes for information disclosure and discussion. Namely: according to article 6, a developer is obliged to carry out public discussion of the EIA before its submission to an administrative body responsible for issuing a permit. Developer is obliged to disclose (publish) information before conducting public discussion on the planned activity. Information about planned public disclosure meeting is subject to publication in the central periodical as well as in the local one circulated within the administrative territory of the same rayon (if such exists) where an activity is planned. Information must include:

- name, objectives and location of the planned activity;
- address where the documents (including EIA report) are available for community;
- deadline for the provision of feedback;

- place and time of the public disclosure meeting.

A project proponent is obligated to:

a) provide the MoE (and in case if Construction Permit is required, also - the relevant administrative body) with the hard copies and electronic versions of the EIA within one week following the announcement of the planned consultation meeting;

b) collect and review comments obtained from public and stakeholders within 45 days following the publication of the announcement;

c) conduct public consultation meeting and public disclosure of the EIA related to the planned activities no earlier than 50 days after the publication and not later than 60 days;

d) send written invitation for participation in the public meeting to the local authorities, representative of MoE, MoED and other interested administrative bodies.

Public disclosure of an EIA should take place in the administrative rayon, where the project is to be implemented.

According to the article 7 of the law, during 5 days after conducting of a public disclosure meeting, the minutes of the meeting should be prepared to reflect all questions and comments raised and explanations provided by the project proponents in response. Appropriate corrections should be incorporated into the main text of the EIA, if required. If the comments and proposals of stakeholders are not accepted, the letter of explanation should be sent to the authors. The minutes of the meeting, as well as response letters, explanations and corrections should be submitted to the MoE or the administrative body responsible for issuing the Permit as supplementary materials to the EIA. The mentioned documents should be considered as an integral part of the EIA.

The article 9 of the law describes the procedures of issuing the Environmental Impact Permit:

1. According to the law on Licenses and Permits, the MoE takes decision on issuing Permit within the 20 days after submission of the request for a permit by a project proponent;
2. MoE, in accordance with the law on Ecological Examination, ensures expertise of the submitted documentation and issuance of a Conclusion on Ecological Examination;
3. The Permit (Environmental Permit, or Construction Permit when the latter is required) is issued only in case of a positive conclusion of the Ecological Examination.

3. Environmental Procedures Applied by MDF During the Sub-Project Cycle

MDF will carry out environmental review and monitoring of its projects in compliance with the national legislation and the World Bank guidelines. In case the requirements of these two regulatory mechanisms differ in stringency of requirements, MDF shall apply higher environmental standards offered by either of the two.

The screening of sub-project proposals and the assessment of their environmental impact and proposed mitigation measures will be carried out by MDF staff. A simple screening of sub-project proposals will determine what type of environmental assessment is required, based on a

sub-project typology. Most sub-projects are likely to require no environmental assessment or only a simple environmental review based on a checklist that identifies the environmental impacts and proposes mitigation measures. The checklist will be completed by MDF (Attachment 1 to this Annex 2).

Even those sub-projects, which are designed in an environmentally satisfactory manner, may cause damage or have adverse effects if civil works are carried neglecting possible environmental and social impacts. This could imply generation of dust, noise and construction waste at the sub-project sites, traffic congestion due to movement of heavy construction machinery, degradation of land and its vegetal cover, etc. To avoid the above, the detailed EMPs developed on the basis of attached environmental management guidelines (Attachments 2 and 3 to this Annex 2) shall be provided to contractors engaged in civil works under MDF financed sub-projects. For enforcing these guidelines, they should be integrated into works contracts. The client local government and MDF (and, if applicable, MoE staff) must monitor construction sites for ensuring that contractors comply with their contractual obligations, including those relating environmental safety. In case of non-compliance, the penalties and sanctions stipulated in a contract must be applied to contractors including - as an extreme measure - suspension of a contract until solutions are found and contractor becomes environmentally compliant.

3.1. Environmental Assessment at Various Stages of the Sub-Project Cycle

There are three stages of the sub-project cycle at which MDF will apply environmental due diligence:

- Identification Stage
- Appraisal Stage
- Implementation Stage

Environmental Screening at the Identification Stage

The main objective of the preliminary environmental screening of sub-projects is to ensure that proposals with potentially severe adverse impact on the environment, which can not be substantially mitigated, are excluded from funding and the sub-projects selected for further review are given a relevant environmental Category. The following steps are carried out at this stage:

- carry out desk environmental assessment using available documentation on a sub-project;
- visit the sub-project site and carry out preliminary environmental assessment;
- collect evidence that the proposed sub-project does not violate the existing national environmental regulations or the World Bank's environmental safeguards, as amended from time to time;
- evaluate possible adverse environmental impacts, explore possible design alternatives and mitigation measures and - if such alternatives are unavailable or deemed unfeasible at a reasonable cost within the limits set by the local government's borrowing capacity - declare the sub-project ineligible for funding from the proceeds of the World Bank loan. In such case an applying local government may be referred to other concessional funding sources if such exist.

- Attach environmental Category A, B, or C to the sub-project and stipulate a relevant type of further environmental work required for processing of this sub-project.

As part of its preliminary review of a proposed sub-project, MDF is expected to:

- assess the physical environment at the proposed sub-project site;
- investigate land use and resource use restrictions in the sub-project area;
- check compliance of the sub-project proposal with other environmental laws and regulations;
- estimate range and scale of potentially harmful environmental impacts;
- assess the need for specific prevention and/or mitigation measures;
- make recommendations on the type of environmental assessment required for the sub-project feasibility studies and appraisal, including possible involvement of environmental specialist/consultants.

The results of Environmental Screening should be summarized as per Attachment 1 to this Annex 2. Possible types of a sub-project impact on the environment are as follows:

- positive environmental impacts anticipated;
- no significant environmental impact anticipated;
- adverse environmental impacts possible;
- proposal is incompliant with the existing environmental regulations.

Evaluation is complemented with written comments and recommendations, including: brief description of the expected types of environmental impact. Recommendations are provided on: (i) involving environmental consultant(s), (ii) desirability of considering alternative technical, siting, and other solutions, (iii) the need of specific prevention and/or mitigation measures, and (iv) the desired level of environmental assessment and public involvement at further stages.

For sub-projects which are classified under environmental Category A through the screening of proposals the first public discussion should be held at the identification stage, so that any significant concerns or comments from stakeholders could be adequately handled by the time of appraisal.

Final Environmental Assessment at the Appraisal Stage

Objectives of the environmental assessment at the Appraisal are to:

- ascertain that a sub-project has obtained and/or will be able obtain prior to commencement of works all the necessary permits and approvals and does not violate existing environmental regulations;

- check that appropriate prevention and mitigation measures have been planned and necessary budgetary and/or technical resources have been allocated to implement them;
- make recommendations on the scope and mechanism of environmental monitoring in the sub-project implementation phase.

As part of the appraisal MDF environmental specialists/consultants must:

- visit the sub-project site, verify findings of the final environmental assessment, participate in public disclosure meeting(s);
- compare the final sub-project documentation with the results and recommendations of the Preliminary Environmental Assessment; ascertain that necessary environmental permits (including those for land use, resource use, waste disposal, and sanitary inspection) and approvals are in place or can be obtained;
- summarize conclusions on the results of environmental assessment (see sample in the text box below);
- examine the sub-project documentation to check that: (i) environmental assessment was performed in accordance with regulations and that it followed the recommendations of the preliminary environmental assessment; (ii) all the necessary permits and approvals required at appraisal stage are included; (iii) appropriate prevention and mitigation measures are planned and necessary resources are allocated, or an alternative decision is made (and supported with necessary documents) which makes such measures unnecessary;
- make recommendations on the level and mechanism of environmental monitoring during construction and subsequent use/operation of investments.

Sub-project documentation and findings of the environmental assessment for all Category A and B sub-projects should be disclosed to public at the appraisal stage and stakeholders be consulted to ensure that their valid comments are duly incorporated and sub-project implementation would not conflict with local community interests.

Findings of the final environmental assessment are summarized in the Conclusions on the Results of Environmental Assessment, to be compiled as per sample below.

Main conclusion of Environmental Assessment

- positive environmental impacts anticipated.
- no significant environmental impact anticipated.
- adverse environmental impacts possible. Adequate mitigation measures in place and confirmed by environmental authorities.
- adverse environmental impacts possible. Project might be made compliant with regulations, but currently provided mitigations measures are insufficient, unrealistic and/or overly costly.
- proposal is incompliant with the existing environmental regulations and is rejected by a competent environmental authority.

Brief description of potential adverse environmental impacts, as appropriate

- Conclusion on the incorporation of necessary prevention and mitigation measures.
- Conclusion on the presence of all necessary approvals and permits.
- Conclusion on the necessity/desirability of environmental monitoring by MDF at construction/operational stages.
- Conclusion on implementation of the project, or recommendation to consider other

3.2 Quick Environmental Assessment of Emergency Construction / Rehabilitation

Sub-project proposals for emergency construction of durable housing for IDPs, rehabilitation / reconstruction of infrastructure and public buildings damaged in result of the August 2008 conflict in Georgia will be eligible for a simplified rapid process of environmental review and approval by MDF. A qualified consultant to MDF will carry out screening of such sub-projects, implying a visit to the proposed sub-project site, filling out of the Environmental Checklist, filtering out high risk sub-projects, and recommending MDF to finance emergency works which are not likely to cause major public health or environmental hazards. The consultant will compile simple EMPs for emergency construction or reconstruction sub-projects recommended for financing. Contracted construction companies will be obligated to comply with these EMPs and to follow Environmental management Guidelines for Contractors (Attachment 2 to this Annex 2). MDF and its environmental consultant should ensure that stakeholders of emergency construction / reconstruction sub-projects are consulted on the upcoming works prior to their commencement to avoid resistance / conflicts at the construction stage.

Sub-project proposals which may not be passed through the above simplified environmental review due to their high risk may be subjected to regular procedures of processing and approval by MDF as described in Section 3.1 to this Annex 2, or be dropped from the list of activities supported under the RMID Project.

3.3 Environmental Monitoring at the Implementation Stage

During the construction phase the main responsibilities of environmental consultants to MDF is to monitor proper implementation of environmental protection and mitigation measures prescribed by the sub-project design documents and EMPs, as well as to identify any unexpected adverse environmental impacts which may emerge during sub-project implementation and manage them through appropriate responsive measures.

Amplified efforts will be invested into supervision of emergency construction or rehabilitation sub- projects to ensure that an increased environmental risk associated with simplified review and approval procedures is mitigated though a close monitoring of civil works, any possible unforeseen issues are timely diagnosed, and proper corrective measures are applied immediately.

Attachment 1

ENVIRONMENT SCREENING FORM

PROJECT TITLE:	……
REGION:	……
CITY:	……
PROJECT SITE:	……
FINANCING:	……
BENEFICIARY:	……
PROJECT DESCRIPTION:	…… …… …… …… …… …… …… …… …… ……

(A) ENVIRONMENTAL CHECKLIST

Sub-Project_____
Municipality_____

Environnemental Component	Project Phase	Present Impacts	Description of impacts	Necessary mitigation measures	Does the project contain the necessary mitigation measures?
Soil	Implementation	Yes___ No ___			Yes___ No ___
	Exploitation	Yes___ No ___			Yes___ No ___
Water	Implementation	Yes___ No ___			Yes___ No ___
	Exploitation	Yes___ No ___			Yes___ No ___
Air	Implementation	Yes___ No ___			Yes___ No ___
	Exploitation	Yes___ No ___			Yes___ No ___
Flora and Fauna	Implementation	Yes___ No ___			Yes___ No ___
	Exploitation	Yes___ No ___			Yes___ No ___
Esthetics and landscape	Implementation	Yes___ No ___			Yes___ No ___
	Exploitation	Yes___ No ___			Yes___ No ___
Human health	Implementation	Yes___ No ___			Yes___ No ___
	Exploitation	Yes___ No ___			Yes___ No ___
Human settlements	Implementation	Yes___ No ___			Yes___ No ___
	Exploitation	Yes___ No ___			Yes___ No ___

(B) IMPACT IDENTIFICATION

Has the project a tangible impact on the environment?	
What are the significant beneficial and adverse environmental effects of the project?	
Does the project have any significant potential impact on the local or affected communities?	
What impact has the project on the human health?	

(C) MITIGATION MEASURES

What alternatives to the project design have been considered and what mitigation measures are proposed?	
What lessons from the previous similar projects have been incorporated into the project design?	
Have concerned communities been involved and have their interests and knowledge been adequately taken into consideration in project preparation?	

(D) RANKING

Based on the assessment of the environmental impacts of the project, it is ranked as:

b) Beneficial. (environmentally approved)

c) Neutral. (environmentally approved)

d) Possibly negative, but adequate measures of impact management and mitigation are incorporated. (environmentally approved)

e) Possibly negative. (Project to be re-considered upon redesign)

f) Detrimental. (Project to be rejected)

CONCLUSIONS OF THE APPRAISAL ENGINEER with regards to:

1. Scale of the expected impact on the environment from the proposed project;
2. Need for incorporation of obligatory mitigation measures, which are not included in the proposal yet;
3. Realistic possibility of mitigating the negative impacts;
4. Need for and scope of the relevant Environmental Assessment of the project;
5. Transfer of project to the second phase of appraisal.

Appraisal engineer _____

Date _____ Signature_____

Attachment 2

ENVIRONMENTAL MANAGEMENT GUIDELINES FOR CONTRACTORS

PURPOSE

The purpose of these environmental management guidelines for contractors is to define minimum standards of construction practice acceptable to the Municipal Development Fund (MDF).

ROADS AND FOOTPATHS

In order to carry out the rehabilitation works, it may be necessary to close or divert certain specified highways and footpaths, either permanently or temporarily during the construction period. The contractor should arrange diversions for providing alternative route for transport and/or pedestrians.

After breaking up, closing or otherwise interfering with any street or footpath to which the public has access, the Contractor shall make such arrangements as may be reasonably necessary so as to cause as little interference with the traffic in that street or footpath during construction of the rehabilitation works as shall be reasonably practicable.

Wherever the rehabilitation works interfere with existing public or private roads or other ways over which there is a public or private right of way for any traffic, the Contractor shall construct diversion ways wherever possible. The standard of construction and lighting shall be suitable in all respects for any class of traffic using the existing ways, and the widths of the diversions shall not be less than that of the existing way wherever possible. Diversion ways shall be constructed in advance of any interference with the existing ways and shall be maintained to provide adequately for the traffic flows.

The Contractor shall be responsible for supplying, erecting and maintaining for the requisite periods all statutory and public information notices.

MOVEMENT OF TRUCKS AND CONSTRUCTION MACHINERY

The Contractor moving solid or liquid construction materials and waist shall take strict measures to minimize littering of roads by ensuring that vehicles are loaded in such a manner as to prevent falling off or spilling of construction materials and by sheeting the sides and tops of all vehicles carrying mud, sand, other materials and debris.

The Contractor shall also take all reasonable measures to avoid to the extent possible that delivery vehicles park on the highways prior to entering the construction site.

TRAFFIC SAFETY MEASURES

The Contractor shall provide, erect and maintain such traffic signs, road markings, lamps, barriers and traffic control signals and such other measures as may be necessary for ensuring traffic safety around the rehabilitation site. The Contractor shall not commence any work that affects the public motor roads and highways until all traffic safety measures necessitated by the work are fully operational.

ACCESS ACROSS THE CONTRUCTION SITE AND TO FRONTAGES

In carrying out the rehabilitation works, the Contractor shall take all reasonable precautions to prevent or reduce any disturbance or inconvenience to the owners, tenants or occupiers of the adjacent properties, and to the public generally. The Contractor shall maintain any existing right of way across the whole or part of the rehabilitation site and public and private access to adjoining frontages in a safe condition and to a standard not less than that pertaining at the commencement of the contract. If required, the Contractor shall provide acceptable alternative means of passage or access to the satisfaction of the persons affected.

PROTECTION OF THE EXISTING INSTALLATIONS

The Contractor shall properly safeguard all buildings, structures, works, services or installations from harm, disturbance or deterioration during the concession period. The Contractor shall take all necessary measures required for the support and protection of all buildings, structures, pipes, cables, sewers, railways and other apparatus during the concession period.

USE OF THE EXISTING STRUCTURES

The Contractor shall not locate stockpiles for materials, stores, plant or temporary works upon or adjacent to or under existing structures such as bridges, viaducts, towpaths, walls and embankments in such a way as to endanger these structures.

NOISE AND DUST CONTROL

The Contractor shall take all practicable measures to minimise nuisance from dust and noise from the rehabilitation sites. This includes:
Respecting normal working hours in or close to residential areas;
Maintaining equipment in a good working order to minimize extraneous noise from mechanical vibration, creaking and squeaking, as well as emissions or fumes from the machinery;
Shutting down equipment when it is not directly in use.

WATER SUPPLY CONFLICTS

The Contractor must ensure that the workforce have adequate access to a safe water supply, which is not provided to the detriment of services to the local population. If there is a risk of competition for limited water resources, then the Contractor must ensure that the local supply is not affected, and that workforce is provided with an alternative source if necessary (e.g. tankered and stored water).

WASTE DISPOSAL

The Contractor must agree with the Client municipality about arrangements for construction waste disposal. The municipality shall designate a dumping site or landfill for the disposal of solid waste. Should any hazardous waste be involved and unexpectedly encountered, the

Contractor must inform the Client municipality on the above and strictly follow the Client's guidance for disposal of such waste.

SOIL PROTECTION

The Contractor must take all practicable measures to avoid degradation and erosion of soil. The use of heavy machinery must be limited to the extent possible for avoiding land compaction. Soil erosion and slope instability should be addressed through hillside terracing, tree planting and construction of check dams.

PROTECTION OF TREES AND OTHER VEGETATION

The Contractor shall avoid loss of trees and damage to other vegetation wherever possible. Adverse effects on green cover within or in the vicinity of the rehabilitation site shall be minimized by adequate selection of access routs, piling and storage locations for construction materials and parking lots for heavy machinery.

EMERGENCY CONTACTS AND PROCEDURES

The Contractor shall prepare and maintain an emergency contact information for each rehabilitation site which shall be displayed prominently and accessible for all personnel. Emergency contact information shall contain phone numbers and the method of notifying local authorities/services for action in case of fire, health emergencies, disorder in communications, emergency release of hazardous materials, etc.

CLEARANCE OF REHABILITATION SITE ON COMPLETION

The Contractor shall clear up all working areas both within and outside the rehabilitation site and accesses as work proceeds and when no longer required for the carrying out of the Rehabilitation works. All surplus soil and materials, temporary roads, plant, sheds, offices and temporary fencing shall be removed, post holes filled and the surface of the ground restored as near as practicable to its original condition.

Attachment 3

Sample Environmental Management and Monitoring Plan
(Rehabilitation of Water Supply System)

Activity	Potential Negative Impact or Concern	Mitigation Opportunities	Responsible Party for Implementing Mitigation	Monitoring Requirements	Responsible Agency for Monitoring and Enforcement (in order of involvement)
A. Construction					
Rehabilitation of water production facilities and distribution network	Soil and water contamination by water treatment sludge	Use only approved, appropriate disposal sites; follow construction standards.	Utility operator, works contractors	Periodic inspection of plant rehabilitation activities	MDF; Municipal Dept. Regional Environmental Department of MoE; MoE
	Surface water and to some extent groundwater pollution by construction run-offs	Provide adequate runoff and drainage control; replace all vegetation destroyed and restore all trench surfaces; follow active construction norms and regulations	Utility operator; works contractors	Periodic inspection of construction activities	MDF; Department of Geology of MoE
	Soil and water contamination by improper disposal of demolition debris and waste	Use only approved, appropriate disposal sites; remove debris directly and promptly; properly store and protect salvaged material; collect, separate and properly dispose waste; follow construction standards.	Utility operator; works contractors	Periodic inspection of construction activities	MDF; Municipal Dept. Regional Environmental Department of MoE; MoE
	Spillage of fuel and oil	Store tanks and drums on 110% capacity bases; forbid pouring into soils or drains; enforce adequate equipment maintenance procedures; follow local regulations.	Utility operator; works contractors	Periodic inspection of construction activities	MDF; Municipal Dept. Regional Environmental Department of MoE; MoE
	Damage to trees and vegetative cover	Replace all vegetation destroyed; use authorized wood sources only.	Utility operator; works contractors	Periodic inspection of construction activities; monitoring of wood sources	MDF; Municipal Dept. Regional Environmental Department of MoE; MoE

Rehabilitation of water production facilities and distribution network	Noise and vibration disturbances to residents and businesses	Establish schedule and other specific restrictions; limit work to daylight hours as possible; equipment to have noise suppression devices and proper maintenance; limit excessive vibration in built-up areas; follow local standards.	Utility operator; works contractors	Periodic inspection of construction activities	MDF; Municipal Dept. for the Environment; municipal agency for construction supervision; Regional Environmental Department of MoE; MoE
	Dust generation	Dust suppression measures: water sprinkling, removal of excess materials, cleaning of sites upon completion of activities.	Utility operator; works contractors	Periodic inspection of construction activities	MDF; Municipal Dept. for the Environment; municipal agency for construction supervision; Regional Environmental Department of MoE; MOEPNR
	Reduced pedestrian and vehicle access to residences and businesses	Establish work sequence and methods (trench-to-truck, steel plates) to minimize access disruption; provide alternative safe access as possible; implement detours and walkways.	Utility operator; works contractors, Traffic police	Periodic inspection of construction activities	MDF; municipal agency for construction supervision
	Temporary water supply interruptions	Establish coordination procedures for cut-offs; minimize time for replacement operations; use nighttime scheduling as necessary.	Utility operator	Monitor coordination of cut-offs	MDF; State Sanitary Inspection
	Increased traffic inconvenience (emissions, congestions, longer travel times)	Use traffic routing; ensure coordination with local authorities; routine control and maintenance of equipment.	Utility operator; Traffic Police; works contractors	Periodic inspection; monitor coordination of traffic routing	MDF; Municipal Dept. for the Environment; traffic police
B. Operation					
Operation of rehabilitated water production facilities	Soil and water contamination by water treatment sludge	Use only approved, appropriate disposal sites; authorisation by MOE, follow Georgian standards.	Utility operator	Periodic inspection	MDF; Municipal Dept. Regional Environmental Department of MoE; MoE
Operation of rehabilitated water production facilities	Safety hazards from chlorination process	Specify vacuum-operated corrosion-resistant systems; install chlorine leak detectors; require protection and emergency response equipment for operators.	Utility operator	Periodic inspection	MDF; Municipal Dept. Regional Environmental Department of MoE; MoE; State Sanitary Inspection

09/17/2008 1:28:00 PM