Initial Environmental Examination Report

Project Number: 53118-001
August 2021

GEO: Livable Cities Investment Program for Balanced Development

Package LCIP-CW-012a Construction of Kindergarten in city Senaki, Senaki Municipality

Prepared by the Municipal Development Fund (MDF), Ministry of Regional Development & Infrastructure (MRDI), Government of Georgia for the Asian Development Bank (ADB)

CURRENCY EQUIVALENTS

(as of 11 June 2021)

Currency units	–	United states Dollars (USD)
USD 1.00	=	GEL 3.1559

WEIGHTS AND MEASURES

ha	–	hectares
km	–	kilometers
km^2	–	square kilometers
m	–	meters
m^3	–	cubic meters
mm	–	millimeters

NOTE

In this report, “$” refers to US dollars

ABBREVIATIONS

ADB	-	Asian Development Bank
AASHTO	-	American Association of State Highway and Transportation Officials
CSC	-	Construction Supervisory Consultant
DIN	-	Deutsches Institut für Normung
EA	-	Executing Agency
EARF	-	Environmental Assessment and Review Framework
EHS	-	Environmental, Health and Safety
EAC	-	Environmental Assessment Code
EIA	-	Environmental Impact Assessment
EMoP		Environmental Monitoring Plan
EMP	-	Environmental Management Plan
ERP	-	Emergency Response Plan
EU	-	European Union
IEE	-	Initial Environmental Examination
IA	-	Implementing Agency
IFC	-	International Finance Corporation
IUAP	-	Integrated Urban Action Plans
GEO	-	Georgia
GRC	-	Grievance Redress Commission
GIS	-	Geographic Information System
GoG	-	Government of Georgia
GRM	-	Grievance Redress Mechanism
HSP	-	Health and Safety Plans
LARF	-	Land Acquisition and Resettlement Policy Framework
LARP	-	Land Acquisition and Resettlement Plan
LCIP	-	Livable Cities Investment Program
MDF	-	Municipal Development Fund
MPC	-	Maximum Permissible Concentrations
MRDI	-	Ministry of Regional Development and Infrastructure
MEPA	-	Ministry of Environmental Protection and Agriculture
MESD	-	Ministry of Economy and Sustainable Development
MPC	-	Maximum Permissible Concentration
NACHP	-	National Agency for Cultural Heritage Preservation
NEA	-	National Environmental Agency
PCRs	-	Physical Cultural Resources
PIU	-	Project Implementation Unit
PWD	-	People with Disabilities
REA	-	Rapid Environmental Assessment
SanN&R	-	Sanitarian Norms and Rules

SPS	-	Safeguard Policy Statement
SSEMP	-	Site-Specific Environmental Management Plan
SWMCG	-	Solid Waste Management Company of Georgia
TRTA	-	Transaction Technical Assistance
WMP	-	Waste Management Plan
WWTP	-	Wastewater Treatment Plant

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1. Since November 2016, Asian Development Bank (ADB) has supported the Government of Georgia (GoG) to mainstream an integrated and participatory approach to urban development by improving strategic planning of selected urban area clusters to achieve a more balanced regional development by preparing Integrated Urban Action Plans (IUAPs). Building on this, the government has prioritized crucial urban investments for ADB to take forward through feasibility studies and safeguards due diligence. These include integrated solutions that bring co-benefits to the citizens in the development of the urban clusters including water supply, sewerage and sanitation (including off-network solutions), urban transport and mobility (including non-motorized and public transport), solid waste management, economic corridors, cultural and historical heritage conservation, flood control and drainage, urban safety and resilience, among others.

2. To expedite balanced regional development, support for basic urban services and transport have been prioritized, particularly in small towns and regional cities that are potential hubs for tourism, agribusiness, and regional trade as key drivers of economic growth. Governance and capacity building will need to be integrated into the ensuing projects to achieve more robust results and ensure operational and financial sustainability of infrastructure projects.

3. The government has proposed to process the Livable Cities Investment Program (LCIP) to improve urban and tourism infrastructure and services across Georgia. LCIP will help improve the livability of the urban area clusters through interlinked outputs: (i) improved adequacy and efficiency of urban infrastructure and services, (ii) improved accessibility, connectivity and attractiveness of regional tourism clusters, and (iii) enhanced institutional capacity for implementing and managing urban infrastructure and services, (iv) improved access to quality pre-school infrastructure, improved environment: new playgrounds increasing gross motor skills of children, safe building - considering fire alarm and safety systems, clean and updated sanitary infrastructure including water closet and kitchen; (v) improved planning of the kindergarten building; increased space per child and per teacher; energy efficient kindergarten buildings; (vi) improvement of educational and working conditions for children and teachers in kindergarten; (vii) Improved access to inclusive child-friendly quality education; (viii) Social impact – increased income of population during the implementation (employment of workers), and after the construction;

4. Construction of Kindergarten in city Senaki (Samegrelo-Zemo Svanei Region) is one of the (sub-) projects implemented under the Livable Cities Investment Program. The project aims to increase access to high quality preschool education for the children living in Senaki Municipality.

5. The project envisages construction of new kindergarten for 4 groups of children in Senaki. The new kindergarten will be built on a plot of land owned by the municipality (cadastral code 44.01.35.441, area is 4304 m2). The kindergarten building will have two-storeid, with a total area of 1344,6 m2 and on ground area – 980.4 m2. The rest of the land plot will be used for arrangement of kindergarten yard, including playgrounds and green areas.

6. Modern style façade will be arranged.). The kindergarten building will include setting up of bedrooms, playing rooms, cloakrooms, canteen, storing rooms, hall and administration rooms, washing rooms, kitchen, an elevator, an evacuation ladder and a boiler room. The project envisages the improvement of the yard of the kindergarten, the arrangement of entertainment attractions, playgrounds, swings, yard chairs, skating rinks, garbage bins and drinking water fountains (so-called mushrooms).The project also includes the arrangement of engineering networks of the building: water supply and sewerage, electricity, weak system,

heating-cooling-ventilation, etc. Installation of the biological treatment unit/device with the capacity 8 m3/per day is envisaged by the project. Water will be provided from the existing local network.

7. All works envisaged by the project will be implemented within the land plot registered as municipal property. None of the works within the project will be implemented through or close to protected areas, Emerald sites and forest areas.

8. According to the legislative provisions, rules, and regulations in Georgia, project activities that are not included in Annex 1 and 2 of Environmental Assessment Code of Georgia do not require environmental screening, an Environment Impact Assessment (EIA) or seek environmental clearance from the government.

A. Project Rationale, Impact, Outcome and Outputs

9. The project envisages construction of new kindergarten for 4 groups of children in Senaki. The new kindergarten will be built on a plot of land owned by the municipality (cadastral code 44.01.35.441, area is 4304 m2). The kindergarten building will have two-storeid, with a total area of 1344,6 m2 and on ground area – 980.4 m2. The rest of the land plot will be used for arrangement of kindergarten yard, including playgrounds and green areas.

10. The construction of a kindergarten is planned, and the location is confirmed. The location is convenient taking into consideration the existing infrastructure of the district, transport links, etc. The proposed site is located in a residential area and suitable because on the existing plot there is enough space to build new infrastructure The area allocated for the construction is 4304 m2.

11. The land plot allocated for the construction isan old, ruined building on the area selected for the project. Local government is responsible to demolish existing building and removal of the construction waste from the site, before commencement of the construction works.

B. Environmental Categorization and Environmental Due Diligence

12. All projects funded by the ADB must comply with ADB's Safeguard Policy Statement (SPS), 2009. ADB SPS aims to help developing member countries address environmental and social risks in development projects and minimize and mitigate, if not avoid, adverse project impacts on people and the environment. The SPS applies to all ADB-supported projects. The ADB works with borrowers to put policy principles and requirements into practice through project review and supervision, and capacity development support. The SPS also provides a platform for participation by affected people and other stakeholders in project design and implementation.

13. LCIP has been classified as Category B as per ADB SPS; thus, an initial environmental examination (IEE) is required for activities to be considered under the project. This IEE for construction of a new kindergarten in Senaki, was prepared based on site visits, desk review of project design and available materials describing the baseline environment and based on site visits and consultation with specialists and stakeholders from the project area.

14. As part of the preparation of this IEE, consultations with stakeholders were undertaken to solicit views and feedback on the project on the 17th of August, 2020 at 14:00. Minutes of the meeting are attached to the final IEE report. The consultations focused on informing the stakeholders on the scope of the project activities, potential environmental impacts because of the proposed activities, along with the required measures that will be implemented to ensure

any potential impacts are limited to the site and do not impact the communities. The consultation process will be continued and expanded during project implementation to ensure that stakeholders are fully engaged in the project and can participate in its development, finalization, and implementation. Any comments and/or concerns raised by these stakeholders were reflected in the minutes.

15. The executing agency (EA) for this project is the Ministry of Regional Development and Infrastructure of Georgia (MRDI), while the implementing agency (IA) is the Municipal Development Fund (MDF) (LEPL under the Ministry of Regional Development and Infrastructure of Georgia). The IA will ensure environmental safeguard requirements are considered in the bid and contract documents, project budget, and overall implementation of the project. During the construction phase, the IA will have overall responsibility for safeguard compliance at project sites, addressing community-level complaints (if any), and ensuring contractors perform mitigation measures as outlined in the approved Site-Specific Environmental Management Plan (SSEMP). The IA will ensure non-conformances with safeguards requirements are corrected in a timely manner.

16. The IA will be supported by a supervision consultant. In addition, the Contractor will be required to engage a full time Environment, Health and Safety (EHS) Staff member that will remain engaged until the completion of all works and will ensure implementation of the SSEMP(s) in true letter and spirit. The construction company will be responsible for envisaging the implementation cost of the Environmental Management Plan (EMP), including the proposed mitigation measures and additional activities (if any), and surveys (if required by the IA and IEE), in their project budget. Implementation of the IEE/EMP is obligatory for the contractor. Contractors shall be made aware that the IEE will be updated.

17. Mitigation of construction impacts will be assured by an environmental monitoring program to ensure all measures in the EMP are implemented and to determine whether the environment and communities around the project sites (if any) are protected as intended. This will include observations on and off-site, document checks, instrumental monitoring of environmental parameters such as noise levels, air quality etc. Any requirements for remedial action will be reported in environmental monitoring reports.

C. Conclusions and recommendations

18. Based on assessment of project design, field studies, desk reviews of the available data describing baseline environment and consultations, the construction a new kindergarten in Senaki is unlikely to cause significant adverse impacts. The potential impacts that are associated mainly with construction and can be mitigated to standard levels without difficulty through incorporation or application of recommended mitigation measures and procedures in the EMP. Possible environmental effects during operational phase arise from maintenance of arranged infrastructure and will be related to generation of solid wastes and wastewater. The potential impacts must be re-assessed, design adjusted, and the mitigation measures updated, if necessary, to ensure the subproject will not (i) cause significant adverse environmental impacts that are irreversible, diverse, or unprecedented; and (ii) affect an area larger than the sites or facilities subject to physical works.

19. Mitigation of construction impacts will be assured by an environmental monitoring program to ensure all measures in the EMP are implemented and to determine whether the environment and communities around the project sites (if any) are protected as intended. This will include observations on and off-site, document checks, instrumental monitoring of environmental parameters such as noise levels, air quality etc. Any requirements for remedial

action will be reported in environmental monitoring reports.

20. The following are recommendations applicable to the project to ensure no significant impacts:

- Include this IEE with the EMP in bid and contract documents;
- Update/revise the IEE based on site-specific conditions, applicable environmental standards, conditions of permits/clearances from the regulatory agencies, contractors' working methodology, and/or if there are unanticipated impacts, change in scope, alignment, or location;
- Require contractors to submit SSEMPs prior to start of works, and do not allow works to commence until the SSEMP has been cleared by IA (or PIU).
- Ensure that the existing materials to be demolished/dismantled are tested for hazardous contents. Also ensure that an and action plan for handling, storage, transport, and disposal of the wastes is prepared, informed to the contractors, and strictly monitored during project implementation.
- Ensure that wastes (solid and liquid) should be stored and disposed at the appropriately designated site/facility (dumping on vacant lot is not allowed);
- Conduct the safeguards induction to the contractor upon award of contract;
- Strictly supervise EMP implementation;
- Ensure contractors have appointed qualified EHS officers prior to the start of works;
- Documentation and reporting take place on a regular basis as indicated in the IEE;
- Ensure continuous consultations with stakeholders;
- Timely disclosure of information in a timely manner, and establishment of the GRM;
- Involvement of contractors, including subcontractors, in the first level GRM; and
- Ensure commitment from MPD, PIU, supervision consultants, and contractors, to protect the environment and the people from any impact during project implementation.

21. IEE, including EMP will be included in the bidding documents and will form an integral part of contractors' contract document.

II. INTRODUCTION

A. Background

22. The Asian Development Bank (ADB) and the Government of Georgia (GoG) reoriented urban sector operations to provide integrated and programmatic solutions for developing

Livable cities in Georgia that are economically competitive, socially inclusive, and environmentally resilient[1]. Since November 2016, ADB has supported the government to mainstream an integrated and participatory approach to urban development by improving strategic planning of selected urban area clusters to achieve a more balanced regional development by preparing Integrated Urban Action Plans (IUAPs). Building on this, the government has prioritized crucial urban investments for ADB to take forward through feasibility studies and safeguards due diligence. These include integrated solutions that bring co-benefits to the citizens in the development of the urban clusters including water supply, sewerage and sanitation (including off-network solutions), urban transport and mobility (including non-motorized and public transport), solid waste management, economic corridors, cultural and historical heritage conservation, flood control and drainage, kindergartens, sport complexes, urban safety and resilience, among others. Additionally, Government of Georgia announced educational sector development as of vital importance. Moreover, the strategic document prepared by Ministry of Education, Science, Culture and Sport of Georgia -Preschool Strategy 2019 – 2021 aims to increase access to high quality preschool education, which could not be achieved without relevant pre-school infrastructure and environment. Based on above mentioned Government of Georgia vigorously began investing in educational infrastructure, mostly in kindergarten and school buildings. Ultimate goal of the project is to improve and create quality pre-school/kindergarten infrastructure.

23. To expedite balanced regional development, support for basic urban services and transport have been prioritized, particularly in small towns and regional cities that are potential hubs for tourism, agribusiness, and regional trade as key drivers of economic growth. Governance and capacity building will need to be integrated into the ensuing projects to achieve more robust results and ensure operational and financial sustainability of infrastructure projects.

24. The government has proposed to process the Livable Cities Investment Program (LCIP) to improve urban and tourism infrastructure and services across Georgia. LCIP will help improve the livability of the urban area clusters interlinked outputs: (i) improved adequacy and efficiency of urban infrastructure and services, (ii) improved accessibility, connectivity and attractiveness of regional tourism clusters, and (iii) enhanced institutional capacity for implementing and managing urban infrastructure and services, (iv) improved access to quality pre-school infrastructure, improved environment: new playgrounds increasing gross motor skills of children, safe building - considering fire alarm and safety systems, clean and updated sanitary infrastructure including water closet and kitchen; (v) improved planning of the kindergarten building; increased space per child and per teacher; energy efficient kindergarten buildings; (vi) improvement of educational and working conditions for children and teachers in kindergarten; (vii) Improved access to inclusive child-friendly quality education; (viii) social impact – increased income of population during the implementation (employment of workers), and after the construction; (ix) implemented a healthy lifestyle for the population, which will also reduce youth drug addiction and alcoholism. (x) new sports complexes will lead to the success of the athletes, which will be especially important for the young people living in regions, as the representatives of the communities often have significant success in the international arena in a various types of sport, including water polo, synchronized swimming, and more.

25. Education facilities in poor condition usually are less competitive in attracting education professionals. Most of the rural kindergarten buildings are operation expired, in poor structural condition without access for children with special needs and with old planning standards that

[1]ADB's Urban Operational Plan 2012-2020 fosters the growth of Competitive, Inclusive, and Green Cities to improve the performance of cities on the Economic, Equity, and Environment (3Es) fronts. It focuses on 3 innovative approaches to guide the development of livable cities, which is a long-term process, achieved best through integrated planning and implementation of investment.

are far away from modern design. The poor condition of the buildings creates high risk in terms of health and safety, especially for the children. The early years of children's life are very important for their health and development. Therefore, the modern infrastructure and comfortable environment will positively effect on children's growth, education process and increase motivation. Based on the above mentioned, Government of Georgia actively started to invest in pre-school and school infrastructure, mostly through Municipal Development Fund of Georgia. From 2018, Government of Georgia announced educational sector as of national importance and decided to conduct a number of reforms by investing 6% of the GDP – quarter of the budget. Besides the reforms, respective infrastructure and environment is of vital importance.

26. According to the Preschool Strategy 2019 – 2021, government should increase access to high quality preschool education up to 95% by 2023. Additionally, based on the research conducted by UNICEF in the regions of Georgia, there are quite low preschool enrolment rates, especially concerning children with special needs. However, by joining to UN Sustainable Development Goals, Government of Georgia took responsibility to ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education.

27. Construction of the new kindergarten building in city Senaki, is one of the project, implemented under the Livable Cities Investment Program.

B. Purpose of the Initial Environmental Report

28. The Initial Environmental Examination (IEE) for the construction of the new kindergarten in city Senaki (Samegrelo-Zemo Svaneti region) was conducted as part of preparation of the proposed the Livable Cities Investment Program (LCIP). It was conducted to meet the requirements of the ADB's Guidelines and Safeguard Policy Statement (SPS 2009), as well as to comply with environmental legislation within Georgia. The IEE covers all proposed physical activities under the project.

29. According to the Environmental Assessment Code of Georgia, the civil works envisaged by the project do not require an environmental screening or an Environmental Impact Assessment (EIA).

30. A Rapid Environmental Assessment (REA) as well as review of the location vicinities were used to assign the category of the project. Based on the existing ADB Environmental Safeguards Policy (2009), this Project falls under ADB's project **Category B** and an Initial Environmental Examination (IEE) is required.

31. This IEE has been prepared under a TRTA (Transaction Technical Assistance) for the borrower, in this case the Government of Georgia, in accordance with the ADB requirements for the LCIP. The methodology included a combination of methods and data collection tools. In particular, the IEE was prepared based on the results of: (a) review of background documents and information available in the public domain; (b) in person and online meetings with representatives from Senaki Municipality, consultants, the design institute and other stakeholders; (c) review of technical standards and norms; (d) analysis of baseline information and planned construction activities in order to identify potential impact, measure their significance and identify mitigation measures.

III. POLICY,LEGAL AND ADMINISTRATIVE FRAMEWORK

A. Country Environmental Safeguard Policies

32. Implementation of LCIP will be governed by applicable Government of Georgia environmental acts, rules, policies, and regulations as shown in Table 1. The applicable environmental standards for air, surface water, groundwater, emissions, noise, vehicular exhaust and disposal to land/agricultural use of sludge and bio-solids are shown in Table 2 to Table 12. In general, Georgian standards for environmental quality correspond to international IFC/WB standards, however in case of differences more stringent standards are applicable.

Table 1 *Applicable GoG Environmental Legislation and Specific Requirements for LCIP*

Law	Description	Requirement for LCIP
The Constitution of Georgia [adopted in 1995]	While the Constitution of Georgia does not directly address environmental matters, it does lay down the legal framework that guarantees environmental protection and public access to information with regard to environmental conditions. Article 37, Part 3 states that "any person has the right to live in a healthy environment, use the natural and cultural environment. Any person is obliged to take care of the natural and cultural environment." Article 37, Part 5 states that: "an individual has the right to obtain full, unbiased and timely information regarding his working and living environment." Article 41, Part 1 states that "a citizen of Georgia is entitled to access information on such citizen as well as official documents available in State Institutions provided it does not contain confidential information of state, professional or commercial importance, in accordance with the applicable legal rules.	This means that conditions of the legal agreement between Georgia and the ADB for the Project prevail over the national legislation in case of contradiction. It also means that in case requirements of the national environmental and social legislation differ from any statement made in the present EARF and IEEs included in it, the latter shall prevail, because legal agreement between Georgia and the ADB makes implementation of IEE is mandatory.
Environmental Assessment Code (EAC) [adopted in June 2017]	The new Code replaced the law on Environmental Impact Permit and Ecological Expertise. The Environmental Assessment Code sets up regulations and procedures for Environmental Impact Assessment, Strategic Environmental Assessment, Trans-boundary Environmental Assessment, Public Participation and Expertise in the Decision-Making Process. The EIA shall be subject to the activities envisaged by the Annex I of this Code and the activities envisaged by the Annex II of the same Code, which will be subject to EIA on the basis of screening procedure set out in Article 7 of this Code	The law will help the Municipal Development Fund determine what additional permits or licenses will be required under the subprojects.

Law	Description	Requirement for LCIP
	(Article 5 of Chapter 2).	
The Law of Georgia on Licenses and Permits [adopted in 2005]	The law defines the list of activities needing licenses or permits, including so called "Environmental Decision". It also defines the requirements for the license or permit issue. The Law, together with the normative by-laws, regulates such organized activity or action, which relates to an indefinite circle of entities, is characterized by increased hazard to the human life or health, affects particularly important state or public interests or is related to the use of a state resource. it gives a thorough list of licenses and permits and establishes the rules to issue the licenses and permits, makes amendments to them or abolish them. Under the Law, a state regulation of the activity or action through a license or permit is undertaken only when the given activity or action is directly associated with the increased hazard to the human life or health or fields of state or public interests. The state regulation is undertaken only when the issuance of a license or permit is a real means to reduce the hazard in question or consider state or public interests.	The law will help the IAs to determine what additional permits or licenses will be required under the subprojects.
The Law of Georgia on Water [adopted in 1997]	All residents of Georgia are liable to ensure the rational and sustainable use and protection of water. They have to prevent its contamination, pollution and depletion. The dumping of industrial, household and other garbage and wastes in water bodies is prohibited according to this act. The disposal of industrial, household and other effluents into water bodies is permitted on the basis of a license by the Ministry. The use of a surface water body for discharging industrial, communal-household, drainage and other wastewater is allowed only under a water use license issued on the basis of the Ministry-approved multipurpose water utilization plans and water management balance-sheet. Under the law, purification of the wastewater discharged in a water body is required up to the fixed standard. In order to protect the quality of water resources, the law requests creation of sanitary protection zone that consists of three belts, each having a special regime. The procedure fixing the water quality standards, the maximum permissible rates	The law regulates the water intake and water discharge processes. In order to meet the requirements of the said Law the actions which will help avoid, reduce or manage the pollution or strong negative impact on the rivers in the project zones under LCIP must be identified.

Law	Description	Requirement for LCIP
	of emission of harmful substances (including microorganisms) into ambience, the water abstraction quotas, and the temporary rates (limits) of emission of harmful substances (including microorganisms) into water is also defined under the Law. Article 20 (River water protection zone) defines protection zone of a river shall be its adjacent territory, where a special regime is established to protect water resources from pollution, littering, fouling, and depletion. This zone may include its dry bed, adjacent terraces, natural elevated and steep riversides, as well as gullies directly adjacent to riversides. The width of a river water protection zone shall be measured in meters from the edge of a riverbed to both sides under the following procedure: • 10 meters - in the case of a river up to 25 km long, • 20 meters - in the case of a river up to 50 km long, • 30 meters - in the case of a river up to 75 km long, • 50 meters - in the case of a river over 75 km long.	
Waste Management Code [adopted in January 2015]	Law provides the legal conditions for implementation of measures aiming at prevention of generation of waste and increased re-use, environmentally-sound treatment of waste (including recycling and extraction of secondary raw materials, energy recovery from waste, as well as safe disposal). The objective of this Law is to protect the environment and human health: by preventing and reducing the adverse impacts of the generation of waste; by introducing effective mechanisms of management of waste; by reducing damage caused by resource use and improving the efficiency of such use. In accordance with the new Waste Management Code in Georgia, natural persons who annually produce more than 1 000 tons of inert waste, or legal persons who annually produce more than 400 tons of inert waste, or more than 120 kg hazardous waste shall prepare a company waste management plan that must be submitted to Ministry of Environmental Protection and Agriculture of	In line with the requirements of the said law, the Construction Contractor(s) must hire a duly qualified environmental manager(s) who will be obliged to develop Waste Management Plan and submit it to MEPA for approval. In line with the requirements of the Waste Code, the Construction Company is obliged to control the process of managing the originated waste through the final disposal of the waste.

Law	Description	Requirement for LCIP
	Georgia for approval. It is also necessary to identify an environmental manager and provide information to MEPA. The rule for collecting and processing municipal waste is determined by the Code, as well as the prohibitions related to the management of hazardous waste. The Code obliges to develop a system of segmentation and collection of hazardous waste in the case of the production of more than 2 tons of hazardous waste during the year. Article 17 provides general obligations for hazardous waste management, and Article 18 provides special obligations for hazardous waste management.	
The Law of Georgia on Cultural Heritage [adopted in 2007]	Article 14 of the Law specifies the requirements for 'large-scale' construction works. According to this Article, a decision on career treatment and or extraction on the whole territory of Georgia, as well as on construction of an object of a special importance as it may be defined under the legislation of Georgia, is made by a body designated by the legislation of Georgia based on the positive decision of the Ministry of Culture and Monument Protection of Georgia. The basis for the conclusion is the archaeological research of the proper territory to be carried out by the entity wishing to accomplish the ground works. The entity wishing to do the ground works is obliged to submit to the Ministry the documentation about the archaeological research of the territory in question. The preliminary research should include field-research and laboratory works. In case of identifying an archaeological object on the territory to study, the conclusion of the archaeological research should contain the following information: (a) a thorough field study of the archaeological layers and objects identified on the study territory by using modern methodologies, (b) recommendations about the problem of conservation of the identified objects and planning of the building activity on the design territory, on the basis of the archaeological research.	This law obliges the design consultant to study the project area and in case the project will have an impact on the cultural heritage sites during the construction or operation phase to develop additional mitigation measures. Also, the law defines what procedure the construction contractor must go through if during the construction works such archaeological objects have been found that may belong to the cultural heritage.
Law on atmospheric air protection [adopted in 1999]	The Law regulates the protection of atmospheric air from the harmful anthropogenic influence on the entire territory of Georgia. The objective of the law is to ensure the safe environment for	At the stage of construction and rehabilitation under LCIP, the requirements of the said law will regulate the level of noise,

Law	Description	Requirement for LCIP
	the atmospheric air of human health and the natural environment. Four types of pollution are considered (Part II, Chapter IV, Article II.2): (i) Pollution of environment with hazardous matter; (ii) Radiation pollution of atmospheric air; (iii) Pollution with microorganisms and biologically active matter of microbial origin; and (iv) Noise, vibration, electromagnetic fields, and other physical impact. Maximum permitted limits for concentration of hazardous substances into the atmospheric air are defined for each contaminant and represent maximum concentration of hazardous pollutants, in averaged time span, recurring action of which has not have negative impact on human health and environment. In compliance with the law (Clause 28), in order to restrict pollution from the stationary sources of hazardous emissions the limits of emissions are to be set. The limit of pollution from the stationary source of emission is permitted quantity (mass) of emitted hazardous matters (Clause 29). Maximum annual emission level means the maximum permitted limit of discharge. This is annual permitted quantity of emission predetermined by technology in conditions of standard permitted capacity of discharge. Annual maximum capacity is defined for each hazardous substance and is calculated so that for each stationary source of emission cumulative emission from all registered sources of discharge does not exceed relevant maximum permitted value. Discharge of hazardous emissions from the stationary sources of emission without approved limits of discharge is forbidden. Emission which has not been recorded in self-monitoring record is considered illegal. As mentioned in the Clause 51 results of the monitoring and information on pollution of the air with hazardous substances is transparent and accessible for the public.	vibration and emissions on the territory of project zones.
Law of Georgia on Public Health [adopted in 2007]	The Law regulates promotion of the introduction of a good health and healthy lifestyle of the population; Creation of the environment, which is safe for a human health; Promotion of the protection of the reproductive health of a family; Prevention of infectious and non-infectious diseases. The Law defines the rights and obligations of the population and legal entities in the	The law regulates all actions that may affect the local population during the construction and operation of subprojects under LCIP.

Law	Description	Requirement for LCIP
	field of public health. Aiming at establishing the environment safe to the public health, the Ministry sets the qualitative standards for the environment safe for a human health (atmospheric air, water, soil, noise, vibration, electromagnetic radiation), including maximum permissible concentrations and rates of harmful impact. The standards are mandatory. Every person on the territory of Georgia is obliged not to carry out the activity, which causes a hazard of the infectious and non-infectious diseases to spread and helps the origination of the risks to human health; protect the sanitary and epidemiological standards; to supply the information to the public health department about all emergencies caused by the violation of the sanitary norms in the production or technological process, etc. The observance of the standards is controlled by appropriate state structures. The responsibility for the internal and external audits rests with a certified, independent laboratory.	
Law on Soil Protection [adopted in 1994]	The law provides the policy requirements and principles of the protection and preservation of fertility soil resources against negative impacts. Soil protection is the state problem since correct and rational use of all types of soil, including barren soil, saline soils, swamped soil, alkali soil, and aqueous soil are the main reserve of dynamic development of agriculture and of the national economy as a whole. The purpose of the present Law is to establish the rights and the duties of landholders, landowners, and the state in the field of soil protect. The law defines soil protection measures and methods and prohibits certain activities, e.g. use of fertile soil for non-agricultural purposes; implementation of non-agricultural activity without topsoil removal and conservation; any activity, which results in deterioration of soil properties, etc. In addition to this law soil protection issues are regulated by order #2-277 (25.11.2005) of the Minister of Agriculture on approving Recommendations for Complex Measures for Soil Protection from the Erosion.	Within the scope of the LCIP project, the requirements of the said law regulate the rules of topsoil removal, storage and further management in the process of construction or rehabilitation.
Labor Code	The code regulates employment relations, unless such relations are otherwise	The rights of all employees engaged in the construction of

Law	Description	Requirement for LCIP
	regulated by international treaties that have been implemented in Georgia. Employers are obliged to comply with requirements and clauses of the document for the purpose of ensuring that the rights of employees are protected.	LCIP will be protected in line with the requirements of these law.
Law of Georgia on Labor Safety	The Law defines basic requirements and preventive measures in terms of workplace safety for the employers. The Law applies to jobs considered to be of increased danger, hard, harmful, and hazardous. The employer's compliance with the labor safety regulations in Georgia are overseen by the Ministry of Health, Labor and Social Affairs of Georgia through its respective departments.	The rights of all employees engaged in the construction of LCIP will be protected in line with the requirements of these law.

Table 2 *Ambient Air Quality Standards*

Parameter	Averaging Period	Limit (µg/m^3)			Applicable to LCIP
		Maximum Permissible Concentration (MPC) for Air Quality	IFC Guideline Value	EU Ambient Air Quality Guidelines	
Nitrogen Dioxide (NO_2)	30 minutes	200	-	-	200 **µg/m^3**
	1 Hour	200 µg /m^3	200	200	200 **µg/m^3**
	24 Hours	40	-	-	
	1 Year	40 µg /m^3	40	40	
Sulphur Dioxide (SO_2)	10 minutes	-	500	-	
	30 minutes	500	-	-	500
	1 Hour	-350 µg /m^3	-	350	-350 µg /m^3
	24 Hours	125 µg /m^3	20	125	
Carbon Monoxide (CO)	30 minutes	5,000	-	-	5,000
	24 Hours	3,000	-	-	
	8 hours	10 mg/m^3	-	-	10 mg/m^3
Total Suspended Particulates (TSP) / Dust	24 Hours	150	-	-	
	30 minutes	500	-	-	500
PM10	1 year	40 µg /m^3	20	40	20
	24 hours	50 µg /m^3	50	50	50
PM2.5	1 year	25 µg /m^3	10	25	10
	24 hours		25	-	25

Parameter	Averaging Period	Limit (µg/m^3)			Applicable to LCIP
		Maximum Permissible Concentration (MPC) for Air Quality	IFC Guideline Value	EU Ambient Air Quality Guidelines	
Ozone	8-hour daily maximum	120 µg /m^3	100	120	

Note: World Health Organization (WHO) Air Quality Guidelines Global Update, 2005. PM 24-hour value is the 99th percentile. Interim targets are provided in recognition of the need for a staged approach to achieving the recommended guidelines.

Table 3 *Georgian Standards for Noise Levels*[2]

Purpose/use of area and premises	Allowable limits (A-Weighted Decibels (dBA))		
	L_{day}		23:00 – 08:00 L_{night}, Night
	08:00 – 19:00, Day	Evening 19:00-23:00	
Educational facilities and library halls	35	35	35
Medical facilities/chambers of medical institutions	40	40	40
Living quarters and dormitories	35	30	30
Hospital chambers	35	30	30
Hotel/motel rooms	40	35	35
Trading halls and reception facilities	55	55	55
Restaurant, bar, I halls	50	50	50
Theatre/concert halls and sacred premises	30	30	30
Sport halls and pools	55	55	55
Small offices (≤100m^3) – working rooms and premises without office equipment	40	40	40
Small offices (≤100m^3) – working rooms and premises without office equipment	40	40	40
Conference halls /meeting rooms	35	35	35
Areas bordering with houses residential, medical establishments, social service and children facilities (<6 story buildings)	50	45	40
Areas bordering with houses residential, medical establishments, social service, and children facilities (>6 story buildings)	55	50	45
The areas bordering with hotels, trade, service, sport, and public organizations	60	55	50

Note: 1. In case noise generated by indoor or outdoor sources is impulse or tonal, the limit must be 5dBA les than indicated in the table. 2. Acoustic noise limits given above are set for routine operation

2 Allowable Limits Indoors, Not at the Building Façade

conditions of the 'space', i.e. windows and door are closed (exception – built-in ventilation canals), ventilation, air conditioning, lighting (in case available) are on; functional (baseline) noise (such as music, speech) not considered.

Table 4 *Applicable Noise Level Guidelines Per IFC EHS Guideline*

Receptor	One-hour L_{aeq} (dBA)	
	Daytime 07.00-22.00	Night-time 22.00 – 07.00
Residential; institutional; educational	55	45
Industrial; commercial	70	70

Table 5 *Applicable Work Environment Noise Limits Per IFC EHS Guidelines*

Type of Work, workplace	IFC General EHS Guidelines
Heavy Industry (no demand for oral communication)	85 Equivalent level Laeq,8h
Light industry (decreasing demand for oral communication)	50-65 Equivalent level Laeq,8h

Table 6 *Georgian General Admissible Vibration Values*[3]

Average Geometric Frequencies of Octave Zones (Hz)	Allowable Values X0, Y0, Z0			
	Vibro-acceleration		Vibro-speed	
	m/sec^2	dB	$m/sec\ 10^{-4}$	dB
2	4.0	72	3.2	76
4	4.5	73	1.8	71
8	5.6	75	1.1	67
16	11.0	81	1.1	67
31.5	22.0	87	1.1	67
63	45.0	93	1.1	67
Corrected and equivalent corrected values and their levels	4.0	72	1.1	67

Note: It is allowable to exceed vibration normative values during daytime by 5 dB during daytime. In this table of inconstant vibrations, a correction for the allowable level values is 10dB, while the absolute values are multiplied by 0.32. The allowable levels of vibration for hospitals and rest houses must be reduced by 3dB. Note that no standards for building damage exist.

Table 7 *AASHTO Maximum Vibration Levels for Preventing Damage*

Type of Situation	Limiting Velocity (in/sec)
Historic sites or other critical locations	0.1
Residential buildings, plastered walls	0.2-0.3
Residential buildings in good repair with gypsum board walls	0.4-0.5
Engineered structures, without plaster	1.0-1.5

[3] In Residential Houses, Hospitals and Rest Houses (Sanitary Norms 2001)

Table 8 *Max. Admissible Concentrations of Various Substances and Elements in Soils*

Component	Unit	Level
Arsenic	mg/kg	2-10
Copper	mg/kg	3
Mercury	mg/kg	2.1
Nickel	mg/kg	4
Lead	mg/kg	32
Zinc	mg/kg	23
Compound Hydrocarbons	mg/kg	0.1
Phenol (Compound)	mg/kg	-
Cyanide	mg/kg	-
Sulphate	mg/kg	-
Chloride	mg/kg	-
Ammonium Nitrogen	mg/kg	-
Evaporable Organic Compounds		
Benzoyl	mg/kg	0.3
Toluene	mg/kg	0.3
Ethylbenzene	mg/kg	-
Compound Xylene (ortho, meta, para)	mg/kg	0.3
semi-Evaporable Compounds		
Benzopyrene	mg/kg	0.02
Isopropylen-benzol	mg/kg	0.5
Pesticides		
Atrazine	mg/kg	0.5
Linden	mg/kg	0.1
DDT (and its metabolite)	mg/kg	0.1

Table 9 *Potable Water Criteria*

Index	Measuring unit	Standard not more than:
Common characteristics		
Hydrogen index	PH	6-9
Permanganate oxidation	mg O2 /L	3,0
Nonorganic substance		
Barium (Ba 2+)	mg/L	0.7
Boron (B, total)	mg/L	0.5
Arsenic (As, total)	mg/L	0.01

Index	Measuring unit	Standard not more than:
Quicksilver (Hg, nonorganic),	mg/L	0.006
Cadmium (Cd, total)	mg/L	0.003
Mangan (Mn, total)	mg/L	0.4
Molybdenum (Mo, total)	mg/L	0.07
Nickel (Ni, total)	mg/L	0.07
Nitrate (short impact by NO^{-3})	mg/L	50
Nitrite (long impact by NO^{-2})	mg/L	0.2
Selenium (Se, total)	mg/L	0.01
Copper (Cu, total)	mg/L	2.0
Lead (Pb, total)	mg/L	0.01
Fluorine (F)	mg/L	0.7
Chromium (Cr6+)	mg/L	0.05
Antimony (Sb)	mg/L	0.02
Cyanide (CN-	mg/L	0.07
Organic substance		
Total content of pesticides	mg/L	0.05

Note: Georgian legislation does not regulate quality standards for groundwater. Quality of groundwater is regulated by norms set for potable water.

Table 10 *Applicable Standards for Surface Water Quality*

Parameter	MPC	Source
pH	6.5-8.5	National
Diluted Oxygen, mg/l	4-6	National
BOD5, mg/l	30	IFC
COD, mg/l	125	IFC
Total Nitrogen, N, mg/l	10	IFC
Total Phosphate, mg/l	2	IFC
Chlorides, mg/l	350	National
Oil Products, mg/l	0.3	National
Zinc (Zn^{2+})	1g/kg	National
Lead (Pb total)	23.0	National
Chrome (Cr^{6+})	32.0	National
Cadmium (Cd, total)	6.0	National
Total Suspended Solids, mg/l	50	IFC

Note: certain parameters are not specified in the national standards for these IFC Guidelines are being used

Table 11 *Water Quality Requirements by Water Use Category*

	Water use category			
	Household water use	Domestic water use	Fisheries	
			Highest and first	Second
	Increase not higher that listed below is allowed			
Suspended solids	0.25 mg/l	0.75 mg/l	0.25mg/l	0.75 mg/l
	For rivers with natural content of suspended solids 30mg/l, around 5% increase is allowed			
	If wastewater contains suspended particles with deposition rate above 0.2mm/sec discharge in water reservoirs is not allowed. Discharge of effluents containing suspended particles with deposition rate above 0.4mm/sec is prohibited.			
Floating matter	Patches and films of oil, petroleum products, fats must not be detectable			
Colour	Must not be visible in water column		Water must not have unusual colour	
	20 cm	10 cm	-	
Odour, taste	Water must not have odour and taste of higher than 1-unit intensity		Water must not result in unusual odour and taste in fish	
	After chlorination of other treatment	Without treatment	-	
Temperature	After discharge of wastewater, temperature in water reservoir must not exceed by more than 5 percent compared to the natural value		For water bodies, representing an habitat for cold water fish such as *Acipenseridae, Coregonidae*, maximum allowable temperatures in summer and winter are 20°C and 5°C respectively, while for other water bodies - 28°C (in summer), 8°C (in winter).	
pH	Must be in 6.5 - 8.5 interval			
Water mineralisation	<1000mg/l, Incl. chlorides – 350mg/l; sulphates - 500mg/l	To comply with requirement given in section related to taste (see above)	In accordance with taxation	
Dissolved oxygen	Must not be lower than			
	4 mg/l	4 mg/l	6 mg/l	6 mg/l
Biological oxygen demand	At 20°C must not exceed			
	3 mg/l	6 mg/l	3 mg/l	6 mg/l
Chemical oxygen demand	Must not exceed			
	15 mg/l	30 mg/l	-	-
Chemical substances	Must not exceed maximum permissible limits			

	Water use category			
	Household water use	Domestic water use	Fisheries	
			Highest and first	Second
	Increase not higher that listed below is allowed			
Pathogens	Must be free for pathogens, including viable helminth eggs, tenia oncosperes and viable cysts of pathogen organisms			
Toxicity	-	-	At the point of discharge and control section of the river toxic impact must not be observed.	

Table 12 *Indicative Values for Treated Sanitary Sewage Discharges*

Pollutant	Unit	Standards			Applicable to LCIP
		GEO	WB	EU	
pH	pH	6-9	6-9		6-9
Biochemical oxygen demand (BOD)	mg/l	35	30	25	30
Chemical Oxygen Demand (COD)	mg/l	125	125	125	125
Total Phosphorus	mg/l	2	2	2	2
Total Nitrogen	mg/l	15	10	15	10
Total Suspended Solids	mg/l	60	50	35	35
Coliform bacteria	[1]MPN[b]/100ml		400[a]		400[a]

33. Clearances to be obtained prior to start of construction. PMUs will ensure all necessary regulatory clearances and approvals are obtained prior to commencement of works. PMUs, with support of project consultants and contractors, are responsible for obtaining the clearances/permits and ensuring the conditions/specifications/provisions are incorporated in the subproject design, costs, and implementation. The PMUs shall report to ADB the status of compliance to clearances/permits as part of the regular project progress reporting. Table 123 shows the list of clearances or permissions required for the subprojects. This list is indicative, and the contractor shall ascertain the requirements prior to start of the construction and obtain all necessary clearances/permission prior to start of construction.

Table 13 *Clearances and Permissions Required*

Construction Activity	Clearance Required	Implementation	Supervision
Land for Project Activity	Allotment and approval for specific land use in pre-construction stage	Implementing Agency	Executing Agency
Construction in heritage areas	Relevant conclusion of the National Agency for Cultural Heritage Preservation of Georgia	Implementing Agency	Executing Agency
Construction of new or rehabilitation of STP	For construction of new STP to serve more than 50000 population, preparation of EIA and obtaining relevant permit from MoEPA is required. For rehabilitation of existing STP EIA	Implementing Agency	Executing Agency

	permit is not required.		
Tree Cutting[4]	Relevant conclusion of the National Forestry Agency under the MoEPA; Local Municipality; National Agency of State Property; Government of Georgia	Implementing Agency/Construction Company	Executing Agency
Hot mix plants, crushers, batching plants	Relevant conclusion of the MOEPA	Construction Company	Implementing Agency
Generator sets			
Storage, handling, and transport of hazardous materials	Relevant conclusion of the MOEPA	Construction Company	Implementing Agency
Sand mining, quarries and borrow areas	Relevant conclusion of the MOEPA	Construction Company	Implementing Agency
Temporary traffic diversion during construction	Relevant conclusion off the Ministry of Internal Affairs of Georgia (Patrol Police Department)	Implementing Agency/Local Municipality	Implementing Agency/Executing Agency
Establishment of construction camps	Relevant conclusion of the MOEPA[5]	Construction Company	Implementing Agency
Disposal of Construction waste and demolition debris	Relevant conclusion of the MOEPA in accordance with requirements of the legislation of Georgia	Construction Company	Implementing Agency
Pipe laying and other construction works	For sewerage pipes laying with a length of 2 km or more with development area of 5 hectares or more Or Laying of pipelines longer than 5 km for the transportation of oil, gas or carbon dioxide It is necessary to prepare screening reports for submission to MoEPA.	Implementing Agency	Executing Agency
Construction of new tube wells or any new extraction of ground water	Relevant conclusion of the MOEPA	Recipient Municipality	National Environmental Agency

[4] In accordance with the Organic Law of Self-Government of Georgia (Article 16), local self-government body is responsible for management of local natural resources, including water and forest resources, and land resources owned by the municipality. Thus, the trees to be cut down locate on a land plot registered as municipal property, the permit for tree cutting shall be obtained from local self-government body. However, in case of Red listed species, the inventory of trees needs to be submitted to the MoEPA and tree-cutting permission shall be obtained from the Government of Georgia (in accordance with the Law of Georgia on Red List and Red Data Book of Georgia, Article 24). In accordance with the resolution # 221, when the territory belongs to the Forest Fund, relevant permit shall be obtained National Forestry Agency. In case of state-owned area, the National Agency of State Property shall be applied (based on the Law of Georgia on State Property, Article 291) for obtaining of tree-cutting permit

[5] In accordance with the Georgian legislation, if activities under the project are not subject of EIA, there is no need of obtaining conclusion on establishment of construction camp from MoEPA.

B. International Environmental Agreements and Applicability to LCIP

34. Georgia is a party to various international agreements and conventions related to environment, which include the following:

Table 14 *International conventions and treaties and Applicability to LCIP*

International Agreement	Description	Applicability to LCIP and Specific Requirements
Ramsar Convention, 1971	The Ramsar Convention is an intergovernmental treaty that provides the framework for national action and international co-operation for the conservation and wise use of wetlands and their resources. Georgia is one of the signatories to the treaty. The Ramsar convention made it mandatory for the signatory countries to include wetland conservation in their national land use plans.	Not applicable as no Ramsar sites in any of the project towns. If in future any of the activities are undertaken in the proximity of Ramsar wetlands shall follow the guidelines of the convention (The Ramsar Convention Handbooks for the wise use of wetlands, 4th ed. (2010), (http://www.ramsar.org/cda/en/ramsar-pubs- handbooks/main/ramsar/1-30-33_4000_0)
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), 1973	Georgia is a signatory of this convention which aims to control international commercial trade in endangered species.	Recommendations of critical habitat to be considered if listed species are found on-site.
Basel Convention on Trans-boundary Movement of Hazardous Wastes, and their Disposal,1989	Georgia is a signatory of this convention which aims to reduce trans-boundary movement and creation of hazardous wastes.	Sludge/rejects generated from tertiary treatment process likely to have heavy metals and may fall in hazardous waste category. The sludge/rejects will be disposed within the country, and therefore will not attract this convention. Contractor to follow the provisions of Hazardous Waste Rules 2016 for storage, handling, transport and disposal of hazardous waste emerged during construction works.
Agreement on The Conservation of Populations of European Bats, 1991	Georgia is a signatory of this agreement which aims to prohibit the deliberate capture, keeping or killing of bats except for research purposes for which a special permit is required. Furthermore, the member states identify important sites for bat conservation, survey the status and trends of bat populations and study their migratory patterns.	Based on the result of the monitoring activities the contractor should develop and review recommendations and guidelines that shall be implemented on national levels.
Aarhus Convention on	Georgia is a signatory of this	EA/IA to follow GoG, ADB and Aarhus

International Agreement	Description	Applicability to LCIP and Specific Requirements
Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, 1998	agreement which aims to contribute to the protection of the right of every person of present and future generations to live in an environment adequate to his or her health and well-being, each Party shall guarantee the rights of access to information, public participation in decision-making, and access to justice in environmental matters in accordance with the provisions of this Convention.	Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters.

C. ADB Safeguard Policy Statement's Environmental Requirements

35. **ADB SPS** requires the consideration of environmental issues in all aspects of ADB's operations, and the requirements for environmental assessment are described in ADB SPS, 2009. This states that ADB requires environmental assessment of all ADB investments.

36. **Screening and Categorization.** ADB uses a classification system to reflect the significance of a project's potential environmental impacts. A project's category is determined by the category of its most environmentally sensitive component, including direct, indirect, cumulative, and induced impacts in the project's area of influence. Each proposed subproject is scrutinized as to its type, location, scale, and sensitivity and the magnitude of its potential environmental impacts. Projects are assigned to one of the following four categories:

(i) **Category A.** A proposed project is classified as category A if it is likely to have significant adverse environmental impacts that are irreversible, diverse, or unprecedented. These impacts may affect an area larger than the sites or facilities subject to physical works. An environmental impact assessment is required.

(ii) **Category B.** A proposed project is classified as category B if its potential adverse environmental impacts 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 mitigation measures can be designed more readily than for category A projects. An initial environmental examination is required.

(iii) **Category C.** A proposed project is classified as category C if it is likely to have minimal or no adverse environmental impacts. No environmental assessment is required although environmental implications need to be reviewed.

(iv) **Category FI.** A proposed project is classified as category FI (Financial Intermediary) if it involves investment of ADB funds to or through a FI.

37. Environmental screening and preliminary categorization of the project was carried out in accordance with ADB's Safeguard Policy Statement, 2009 (SPS, 2009) under the TRTA (Transaction Technical Assistance), using the ADB REA Checklist (**Error! Reference source not found.**). The project is classified as "Category B".

38. **Environmental Audit of Existing Facilities.** For subprojects involving facilities that already exist or are under construction or proposed, environmental compliance audit will be

conducted. The environmental audit will include on-site assessment to identify past or present environmental concerns, whether actions were in accordance with ADB's safeguard principles and requirements for executing and implementing agencies and identify and plan appropriate measures to address outstanding compliance issues. A corrective action plan in the IEEs will be agreed on by ADB and PMUs. The plan will define the necessary remedial actions, the budget for such actions, and the timeframe for resolution of non-compliance. The environmental audit report (including the corrective action plan, if any) will be made available to the public in accordance with the information disclosure requirements of ADB SPS. If a subproject involves an upgrade or expansion of existing facilities that has potential impacts on the environment, the requirements for environmental assessments and planning specified in the EARF will apply in addition to compliance audit.

39. **Physical Cultural Resources (PCR).** ADB SPS environmental safeguard policy principles require conservation of physical cultural resources and avoid destroying or damaging them by using field-based surveys employing qualified and experienced experts during environmental assessment. It also emphasizes the use of chance find procedures that include a pre-approved management and conservation approach for materials that may be discovered during project implementation.

40. **Environmental Management Plan (EMP).** An EMP, which addresses the potential impacts and risks identified by the environmental assessment, shall be prepared. The level of detail and complexity of the EMP and the priority of the identified measures and actions will be commensurate with the project's impact and risks. A copy of the EMP or approved site-specific EMP (SSEMP) will be always kept on-site during the construction period. Non-compliance with, or any deviation from, the conditions set out in the EMP or SSEMP constitutes a failure in compliance and will require corrective actions. The EARF and the IEEs specify responsibilities in EMP implementation during design, construction, and O&M phases.

41. **Public Disclosure.** ADB will post the safeguard documents on its website as well as disclose **relevant** information in accessible manner in local communities:

(i) For environmental category A projects, draft EIA report at least 120 days before Board consideration;
(ii) Final or updated EIA and/or IEE upon receipt; and
(iii) Environmental monitoring reports submitted by the implementing agency during project implementation upon receipt.

42. **ADB SPS's environmental principle 6** states that a draft environmental assessment (including the EMP) should be disclosed in a timely manner, before project appraisal, in an accessible place and in a form and language(s) understandable to affected people and other stakeholders. The final environmental assessment, and its updates if any should be disclosed to affected people and other stakeholders. The IEE should be publicly available at reasonable period beforehand the public consultations.

43. **Consultation and Participation**. Meaningful consultation shall be carried out with affected people and other concerned stakeholders including civil society and facilitate their informed participation. The consultation process and its results are to be documented and reflected in the environmental assessment report.

44. **Grievance Redress Mechanism**. The PMUs shall establish a mechanism to receive and facilitate resolution of affected people's concerns, complaints and grievances about the subproject's environmental performance. The grievance mechanism shall be scaled to the risks and adverse impacts of the subproject.

45. **Occupational Health and Safety**. ADB requires that the borrowers ensure that the

workers are provided with a safe and healthy environmental, considering risks inherent to the sector and specific classes of hazards in the subproject areas including physical, chemical, biological and radiological hazards.

46. **Unanticipated Environmental Impacts**. Where unanticipated environmental impacts become apparent during the implementation, The PMUs shall update the EMP to assess the potential impacts, evaluate the alternatives and outline mitigation measures and resources to address those impacts.

47. **ADB SPS International Best Practice Requirements.** Following requirements of ADB SPS, PMUs shall apply pollution prevention and control technologies and practices consistent with international good practice. When the Government of Georgia regulations differ from these levels and measures, PMU shall achieve whichever is more stringent. If less stringent levels or measures are appropriate in view of specific subproject circumstances, PMUs will provide full and detailed justification for any proposed alternatives that are consistent with the requirements presented in ADB SPS.

48. **Exclusion Criteria for Subproject Selection.** LCIP will not include and/or involve any activities listed in ADB's Prohibited Investment Activities List.[6] Subsequent subprojects shall comply with the exclusion criteria for subproject selection7 to exclude subprojects which may cause impacts that are significant, irreversible, diverse, unprecedented, or larger than the sites or facilities subject to physical works. Rehabilitation works of existing projects/facilities located in the environmentally sensitive areas (wildlife sanctuaries, national parks, core zones of biosphere reserves, critical habitats, etc.), shall be excluded if the following criteria are not met:

- Proposed rehabilitation works will be confined to the existing footprint, and within the right of way of existing infrastructure;
- Proposed rehabilitation works will not require any new clearance/permissions. A written confirmation to that effect from the local office of the respective protected area regulatory agency shall be obtained;
- The proposed rehabilitation work can proceed if it is outside areas of critical habitat. If it is in areas of critical habitats, if can proceed if (i) there are no measurable adverse impacts on the critical habitat that could impair its ability to function, (ii) there is no reduction in the population of any recognized endangered or critically endangered species, and (iii) any lesser impacts are mitigated. If a project is located within a legally protected area, implement additional programs to promote and enhance the conservation aims of the protected area. In an area of natural habitats, there must be no significant conversion or degradation, unless (i) alternatives are not available, (ii) the overall benefits from the project substantially outweigh the environmental costs, and (iii) any conversion or degradation is appropriately mitigated. (From page 16 of the SPS).

49. Projects likely to have significant adverse environmental impacts that are irreversible, diverse, or unprecedented, and may affect an area larger than the sites or facilities subject to physical works (i.e. category A projects as per ADB SPS 2009) will be excluded from LCIP.

D. Compatibility between Country's and ADB Safeguard Policy

50. While the ADB SPS is in line with the multilateral development financing institutions, Government's policies are also comparable to international environmental framework including

[6] ADB SPS Appendix 5.
[7] EARF for the Livable Cities Investment Project for Balanced Developmnet

that of ADB. Table 15 provides the comparison per ADB SPS policy principles, gaps, and measures to be implemented by the project to address the gaps.

Table 15 *Comparative Analysis of Government and ADB Safeguard Requirements*

ADB SPS Requirement	ADB SPS Policy Principle	Government of Georgia Regulation	Gap	Measures to Address Gap
Commensurate environmental screening of impacts and risks	1. Use a screening process for each proposed project, as early as possible, to determine the appropriate extent and type of environmental assessment so that appropriate studies are undertaken commensurate with the significance of potential impacts and risks.	Project screening is done at early stage of the project. Environmental Assessment Code provides list of I and II category activities. For category II project need of EIA is defined based on the scoping procedure by MoEPA.	EIA notification is applicable only to the projects listed in EIA act, and components of water supply and sewerage projects are exempted for EIA act.	Implement the ADB SPS requirements and tools on screening and categorization, identification of risks and mitigation measures Requirements of the National Environmental Standards are compared with international standards and adapt the more stringent requirements.
Asses potential impacts and risks to physical, biological, socio-economic and physical cultural resources of the project affected area	2. Conduct an environmental assessment for each proposed project to identify potential direct, indirect, cumulative, and induced impacts and risks to physical, biological, socioeconomic (including impacts on livelihood through environmental media, health and safety, vulnerable groups, and gender issues), and physical cultural resources in the context of the project's area of influence. Assess potential transboundary and global impacts, including climate change. Use strategic environmental	According to GOG requirements there are the same requirements for assessing potential impacts and risks risks to physical, biological, socio-economic and physical cultural resources of the project affected area.	There is no gap between ADB and GoG legislation.	Subproject selection criteria and environmental assessment process and categorization be implemented with alignment with the SPS.

ADB SPS Requirement	ADB SPS Policy Principle	Government of Georgia Regulation	Gap	Measures to Address Gap
	assessment where appropriate.			
Examine alternatives for project's location, design, technology and potential environmental impacts	3. Examine alternatives to the project's location, design, technology, and components and their potential environmental and social impacts and document the rationale for selecting the particular alternative proposed. Also consider the no project alternative.	Alternative assessments are to be carried out for the project location and design and among them zero alternative/no project alternative.	There is no gap between ADB and GoG legislation.	N/A
Preparation of Environmental Management Plan	4. Avoid, and where avoidance is not possible, minimize, mitigate, and/or offset adverse impacts and enhance positive impacts by means of environmental planning and management. Prepare an environmental management plan (EMP) that includes the proposed mitigation measures, environmental monitoring and reporting requirements, related institutional or organizational arrangements, capacity development and training measures, implementation schedule, cost estimates, and performance indicators. Key considerations for EMP preparation include mitigation of potential adverse impacts to the level of no significant harm to third parties, and the polluter pays principle.	EIA report is required for Annex 1 listed projects. For Annex 2 project need of EIA is decided based on the screening procedure. The content of the EIA report is structured so to cover requirements indicated in the Environmental Assessment Code. The EMP is a part of the EIA document.	There is no gap between ADB and GoG requirements.	In line with the general guidance, conduct the preparation of the environmental management plan using ADB tools (e.g. REA checklist). The level of detail and complexity of the EMP and the priority of the identified measures and actions will be commensurate with the project's impact and risks.

ADB SPS Requirement	ADB SPS Policy Principle	Government of Georgia Regulation	Gap	Measures to Address Gap
Carrying out Public Consultations and concerns	5. Carry out meaningful consultation with affected people and facilitate their informed participation. Ensure women's participation in consultation. Involve stakeholders, including affected people and concerned nongovernment organizations, early in the project preparation process and ensure that their views and concerns are made known to and understood by decision makers and taken into account. Continue consultations with stakeholders throughout project implementation as necessary to address issues related to environmental assessment.	Publication of information in national and regional mass-media. Arrange two public meetings – one at the scoping stage, another not later that at 55th date from submission of the draft EIA report to MoEPA. All stakeholders are invited for the meetings. One two one meetings and consultations with stakeholders during EIA process. Consultation not later than 60 days from the date of publication.	According to GoG requirements conducting of public consultations with stakeholders are not required throughout project implementatio n.	Adapt the ADB requirements on meaningful consultation and documentation carried out with affected people and other concerned stakeholders including civil society and facilitate their informed participation.
Grievance redress mechanism	Establish a grievance redress mechanism to receive and facilitate resolution of the affected people's concerns and grievances regarding the project's environmental performance.	Implementing Agency to facilitate resolution of affected people's concerns.	No specific government regulation on addressing grievances.	Component of Environment Assessment report on Grievance Redress Mechanism should be addressed in accordance with the ADB requirement.
Disclose a draft and final IEE report	6. Disclose a draft environmental assessment (including the EMP) in a timely manner, before project appraisal, in an accessible place and in a form and language(s) understandable to affected people and	The scoping document is available for public review for 45 days before public consultations. The EIA Report is available for public review for 50-55	According to GoG requirements MoEPA is responsible to send electronic version of EIA report to local municipalities	Conduct public disclosure in accordance to ADB requirements such as posting the safeguard documents on its website as well as disclose

ADB SPS Requirement	ADB SPS Policy Principle	Government of Georgia Regulation	Gap	Measures to Address Gap
	other stakeholders. Disclose the final environmental assessment, and its updates if any, to affected people and other stakeholders. Draft EIA will be published in ADB website for 120 days before Project approval by the Board.	days before public consultations.	for disclosure in GEO language only.	relevant information in accessible manner in local communities.
Implementation of monitoring effectiveness	7. Implement the EMP and monitor its effectiveness. Document monitoring results, including the development and implementation of corrective actions, and disclose monitoring reports.	Implementation of monitoring plan is the responsibility of Construction Contractor and PIU.	According to GoG legislative base there is no requirement to prepare and submit to PMU/PIU monitoring reports and also there is no requirement to disclose the mentioned reports.	ADB's monitoring and reporting requirements shall be implemented.
Protection of critical habitats and protected flora and fauna	8. Do not implement project activities in areas of critical habitats, unless (i) there are no measurable adverse impacts on the critical habitat that could impair its ability to function, (ii) there is no reduction in the population of any recognized endangered or critically endangered species, and (iii) any lesser impacts are mitigated. If a project is located within a legally protected area, implement additional programs to promote and enhance the			Adapt the SPS requirements for natural, modified and critical habitat

ADB SPS Requirement	ADB SPS Policy Principle	Government of Georgia Regulation	Gap	Measures to Address Gap
	conservation aims of the protected area. In an area of natural habitats, there must be no significant conversion or degradation, unless (i) alternatives are not available, (ii) the overall benefits from the project substantially outweigh the environmental costs, and (iii) any conversion or degradation is appropriately mitigated. Use a precautionary approach to the use, development, and management of renewable natural resources.			
Application of pollution prevention and control technologies	9. Apply pollution prevention and control technologies and practices consistent with international good practices as reflected in internationally recognized standards such as the World Bank Group's Environmental, Health and Safety Guidelines. Adopt cleaner production processes and good energy efficiency practices. Avoid pollution, or, when avoidance is not possible, minimize or control the intensity or load of pollutant emissions and discharges, including direct and indirect greenhouse gases emissions, waste generation, and release of hazardous materials from their production,	According to GoG legislative base there are the same requirements for application of pollution prevention and control technologies	There is no gap between ADB and GoG requirements.	ADB requires the adaptation of the more stringent requirements between the international standard and government regulations.

ADB SPS Requirement	ADB SPS Policy Principle	Government of Georgia Regulation	Gap	Measures to Address Gap
	transportation, handling, and storage. Avoid the use of hazardous materials subject to international bans or phaseouts. Purchase, use, and manage pesticides based on integrated pest management approaches and reduce reliance on synthetic chemical pesticides.			
	10. Provide workers with safe and healthy working conditions and prevent accidents, injuries, and disease. Establish preventive and emergency preparedness and response measures to avoid, and where avoidance is not possible, to minimize, adverse impacts and risks to the health and safety of local communities.			ADB requires the consideration of site-specific hazards such as the presence of asbestos materials.
Conserve physical cultural resources and avoid destroying or damaging them	11. Conserve physical cultural resources and avoid destroying or damaging them by using field-based surveys that employ qualified and experienced experts during environmental assessment. Provide for the use of “chance find” procedures that include a pre-approved management and conservation approach for materials that may be discovered during project implementation.	According to GoG legislative base during EIA preparation stage it is required to prepare archaeological survey report and submit to the National Agency for Cultural Heritage Preservation of Georgia for obtaining permission.	There is no gap between ADB and GoG requirements.	ADB SPS environmental safeguard policy principles require conservation of physical cultural resources and avoid destroying or damaging them by using field-based surveys employing qualified and experienced experts during environmental assessment.

E. Administrative Framework

51. **Municipal Development Fund of Georgia (MDF)** – The municipal Development Fund of Georgia is responsible for elaboration of policy and strategic plans related to construction, rehabilitation, reconstruction of the project. Thus, the MDF is responsible for works on construction and rehabilitation of envisaged under the project and is responsible for ensuring compliance with the Georgian legislation and environmental and social requirements of the relevant donor organizations. Control of implementation of the Environmental Management Plan (EMP) is direct responsibility of the MDF. Within the MDF there is Environmental and Resettlement Division dealing with the environmental issues. This division is supposed to review the IEEs and EMPs related to the MDF projects and perform monitoring of compliance of the contractor's performance with the approved EMPs, IEEs, environmental standards and other environmental commitments of the contractor.

52. **Ministry of Environment Protection and Agriculture (MEPA) -** According to the Environmental Assessment Code of Georgia (Article 4) MEPA is responsible for all environmental protection issues and agriculture in Georgia. The responsibilities of MEPA as the competent authority are: a) to intermit, limit, or stop any activity having or likely to have adverse impact on the environment, b) to carry our screening of planned development, c) to implement scoping, d) to issue environmental decision for project subject to EIA procedure, c) to control the execution of mitigation measures by the developer, d) to organize public meetings and discussion of an estimation of influence on environment and prepares the documentation (the project of the order of the minister) to let out the permission to influence to environment. MEPA is responsible to supervise the adherence by the construction company to relevant environmental standards during project implementation process. The MEPA is responsible for implementation of Bern Convention on the Conservation of European Wildlife and Natural Habitats at national level and development of Emerald Network in Georgia.

53. **Ministry of Culture, Sport and Youth of Georgia** - is responsible for issuing permit for execution of restoration works at the monuments of cultural heritage and supervise ongoing works. The ministry is responsible also on issuing permit for archeological works if required and supervision of the construction activities in order to protect cultural and archaeological heritage, as established by the Law on Cultural Heritage (Article 5).

54. **Local Government of Senaki** – Local government of Senaki municipality is responsible authorizing certain construction works within the city, as well as issuing acceptance acts for the new buildings. For project implementation, construction permit from local authority is required. Relevant permission for tree cutting (not included in Red List species), if required, should be issued also by Senaki Municipality city hall.

IV. DESCRIPTION OF THE PROJECT

55. The project envisages construction of new kindergarten for 4 groups children (100 children) in city Senaki (Samegrelo-Zemo Svaneti region). The area of the land plot allocated for construction is 4304 m2, Cadastral code: 44.01.35.441. It is the property of Senaki Municipal Government.

56. According to the project design the construction area of the new two-story kindergarten building is 980.4 m2 and the total area is 1344,6 m2. The project includes arranging of kindergarten for 4 groups (100 children). The kindergarten building will include setting up of bedrooms, playing rooms, cloakrooms, canteen, storing rooms, hall and administration rooms, washing rooms, kitchen, an elevator, an evacuation ladder and a boiler room. The project envisages the improvement of the yard of the kindergarten, the arrangement of entertainment attractions, playgrounds, swings, yard chairs, skating rinks, garbage bins and drinking water fountains (so-called mushrooms).The project also includes the arrangement of engineering networks of the building: water supply and sewerage, electricity, weak system, heating-cooling-ventilation, etc.

57. The building will be frame-type enclosed by reinforced concrete and monolith. The building will be constructed with a building block. For thermal insulation the outer façade will be packed with stone wool which will be plastered with cement mortar and cladded with alukobond tiles. Flat type roof will be arranged with reinforced concrete slabs. On the first floor of the building the common corridor, elevator, staircase, sanitary room for the disabled, a waiting room, a doctor's room, a guard and meeting room, as well as rooms for children will be placed. Staff room, dressing room and toilets, as well as kitchen will be arranged on the first floor also. On the second floor there will be arranged rooms for 2 groups of children, a hall, administration rooms.

58. Whole territory of the kindergarten will be fenced and video surveillance system installed.

59. The project envisages thermal insulation of the building, low emission glass package will be used, which will further reduce energy consumption and save budget.

60. Fire safety, water supply, sewage, air ventilation and heating systems will be arranged as well.

61. Water supply will be provided from the existing local network.

62. Hot water and heating will provided from the boiler installed at the site.

63. The project envisages installation of the biological treatment unit/device for sewage waters with the capacity 8 m3/per day.

Figure 1. *Location of project site and Access Road*

Figure 2*. Current state of the project site*

Figure 3. *Master Plan*

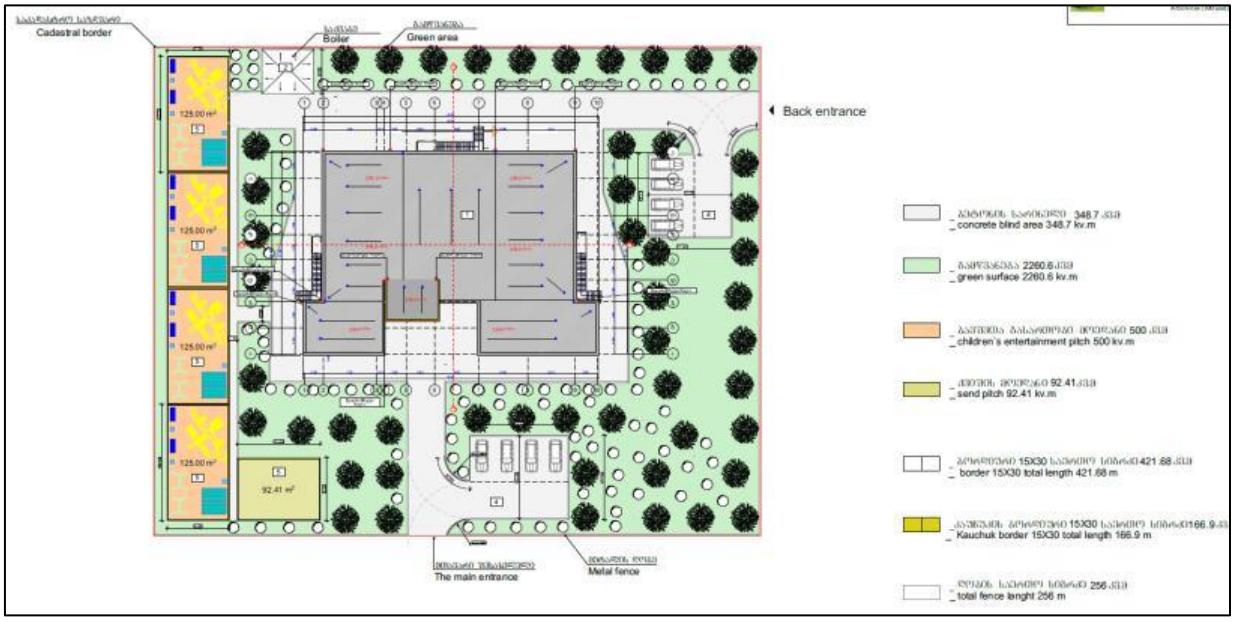


Figure 4. *Render of the kindergarten building*


Indicative Implementation Schedule

64. Prior to the onset of the core works, the organization and technical issues will be solved to provide a field of construction operations. Preparatory works envisage temporary fencing of the construction area and arrangement of temporary buildings (construction camp). Temporary power and water supply are to be provided to site from local networks. Relevant construction machines/mechanisms will be mobilized, including motor crane, concrete mixer trick, concrete pump, excavator, bulldozer, drop site dump truck, drop-side vehicle, pervibrator, vibrating compressor, pudller/surface-type vibrator, electric welding machine, portable compressor, metal mobile scaffolds, elctropneumatic instrument, boring tool, cutter, screw holder, metal cutter, pulley block tackle, asphalt-spreading machine, asphalt carrier dump trucks, asphalt rammer, road sprinkler, autograder. Camp and storage areas will be arranged on the project site.

65. The civil works duration is defined as 12 months.

66. An important stage of the project implementation is the management of different types of waste originated in the course of the construction. After the construction works are complete, the construction camps and other temporary facilities will be demobilized, the cultivation works will be done and the landscape will be harmonized.

Dumpsites

67. Dumpsites and quarries are not selected yet. Nearest municipal solid waste landfill is located in Zugdidi and is managed by the Ltd `Solid Waste Management Company of Georgia``.

Access Roads

68. The land plot has an access from Eliava street, which borders the territory from the south-west. The road is paved and in good condition. As already mentioned, the project area is located in urban area: Detailed traffic management plan shall be developed by contractor in accordance with his proposed working methodology and submitted to the engineer for approval.

Disposal of Spoil Material

69. Approximately 4 900 tones excess ground will be generated due to the earthworks which should be transported from the site. According to the waste management code of Georgia inert waste can be used for backfilling activities according to written agreement with local authority

Camp and Storage Areas

70. Camp and storage areas will be arranged on the project site. Construction site organization scheme and camp site management plan will be prepared by the construction contractor before commencement of construction activities. Camp sites will be selected keeping

in view the availability of an adequate area for establishing campsites, including parking areas for machinery, stores and workshops, access to communication and local markets, and an appropriate distance from sensitive areas in the vicinity.

71. The Contractor will provide the following basic facilities in the construction camp:

- Safe and reliable water supply.
- Hygienic sanitary facilities and sewerage system.
- Facilities for sewerage of toilet and domestic wastes.
- Storm water drainage facilities.
- Sickbay and first aid facilities.
- Recreational areas.

72. The Contractor is encouraged to engage local labors to the extent possible.

V. ANALYSES OF ALTERNATIVES

73. The following section provides an assessment of different alternatives including the ‘no action’ alternative.

74. Specifically, this section of the IEE Considers:

- The ‘No Action’ Alternative
- Alternative Construction Camp and Laydown Areas

75. The construction site of the kindergarten was selected taking into account the following circumstance: There are 27 Kindergartens in Senaki municipality, 10 among them are located in city Senaki. However, the city is densely populated and number of children exceeds allowed standard in the city’s kindergartens, Therefore there is increased demand on providing of this public service to local population.

76. No action or a zero alternative implies refusal to the project implementation, therefore the problem related to providing kindergarten services for local population of city Senaki will remain unresolved.

77. The site for construction of new kindergarten was selected taking into account following circumtances: enough area for arrangement of kindergarten building and yard; ownership of the land (Preferance was given to municipal owned land plot); existence of supply infrastructure (water, electricity, gas).

78. Implementation of this project will help improve the livability of the city Senaki urban area through improved access to quality pre-school infrastructure, improved environment: new playgrounds increasing gross motor skills of children, safe building - considering fire alarm and safety systems, clean and updated sanitary infrastructure including water closet and kitchen, improved planning of the kindergarten building; increased space per child and per teacher; energy efficient kindergarten buildings; improvement of educational and working conditions for children and teachers in kindergarten; Improved access to inclusive child-friendly quality education.

79. The potential beneficiaries of the project will be about 200 families from city Senaki per year that will be able to accommodate their children in kindergarten.

VI. BASELINE ENVIRONMENT

A. General description

81. City Senaki is administrative center of Senaki municipality located in Samegrelo-Zemo Svaneti Region. It is 270 km from Tbilisi to Senaki and 45 km from Zugdidi. Senaki Municipality is located in the Kolkheti lowlands of western Georgia, in Samegrelo-Zemo Svaneti region, at the average altitude 16 m above sea level. Senaki Municipality is connected to the capital Tbilisi and other municipalities through the transport network. The Transcaucasian Railway runs through the central part of the city and Station "Senaki" is located here. The Leselidze-Senaki-Tbilisi highway of international importance also runs through the Senaki municipality. Senaki municipality includes 15 administrative territorial units.

82. The site selected for the construction of kindergarten is located at the central part of city Senaki.

83. The project site is bordered with residential houses with gardens. Nearest residential house is located 12 m from the edge of the land plot allocated for kindergarten building construction. Existing kindergarten is located to the east of the project site.

84. The land plot selected for kindergarten construction is registered as municipal property.

85. There is an old, ruined building on the area selected for the project. Local government is responsible to demolish existing building and removal of the construction waste from the site, before commencement of the construction works.

86. No sensitive receptors such as water bodies, endangered species of flora and fauna or cultural heritage monuments are present on the project site. City Senaki is located approximately 10 km north of the nearest protected area – Katsoburi Managed Reserve. There are not cultural heritage sites in the vicinity of the project site.

87. Population living in the close proximity of the project site are most likely to be impacted by the project's development activities, which is related to the noise and emissions generation and traffic influx. However impact of this adverse effects can be minimized by proper implementation of mitigation measures.

88. The Project is expected to have long-term positive impact on the population of city Senaki, especially young people and working parents who will get access to well planned, high quality service.

89. The land plot selected for the kindergarten construction is registered as municipal property.

B. Geology, Geomorphology and Hazardous Geological Processes

90. The municipality of Senaki stretches on both slopes of Mount Unagira. It occupies the center of the eastern part of the Kolkheti Plain. The territory of Senaki municipality includes Kolkheti lowlands and foothills. The hilly area of the foothills is covered with forests.

91. The territory of Senaki is divided into northern and southern parts according to the peculiarities of the relief. The northern part is occupied by hills and ridges. The maximum height of the lowland exceeds 30 m. It rises to the north and ends at the southern edge of the Eki, Shkhepi and Nokalakevi hills. The average height of Mount Eki is 270 m above sea level.

92. Near the city are the mountains of Shkhepi, Kikachona, Khabazeti, Ziskhirish, Sakharbedio and Sakiri, Shushania hill. The rivers and torrential waters formed deep ravines and valleys.

93. Within the territory of Senaki Municipality, the intensity and degree of development of current dangerous geological processes are different, which is caused by two different morphological-geological conditions. The northern part of Senaki municipality is characterized by hilly terrain and erosive formations of Zana river and their tributaries. This part of the area is geologically built of tertiary molasses sediments. Senaki anticline ridge is built of Paleogene and Cretaceous age rocks. Landslide-erosion processes in the territory of Senaki municipality are developed in the northern part, in particular: In Senaki, Potskho, Sachikobao, Eki, Khorshi, Ushopat, Edzadzame, Legogia and Lesajaia.

94. The construction contractor is obliged to carry out an engineering geological survey of the land plot, an expert opinion must be issued on the engineering-geological survey in compliance with the current legislation. Following an engineering geological survey, the contractor must recalculate the existing typical design project and, if necessary, make appropriate changes to the design project and the relevant parts of the estimate.

C. Climate and Air quality

95. The climate of the municipality is humid subtropical, with warm winters and hot summers. The average annual air temperature is + 13.8. C. The average temperature in January, the coldest month of the year, is + 4.9 ° C, and the warmest month, August, is + 23 ° C. The average annual rainfall here is 1620 mm, with the maximum in September and the minimum in January.

96. In Senaki there is no automatic station for atmospheric air pollution monitoring. Automatic Station is located on central Magistral of Tbilisi-Senaki-Leseliddze. Indicative measurement of the air quality is conducted by the National Environmental Agency. Accroding to the indicative measurement air quality indexes in Senaki is good. Low indexes of NO2. SO2 and O3 is found as a result of indicative measurement.

97. Baseline monitoring for air quality will be conducted in the project area during detailed design and will be reflected in the final updated IEE and EMP.

D. Noise and Vibration

98. Noise and vibration surveys will be conducted by civil works contractors before starting of civil works to identify background level on project site. Noise and vibration levels, generated by operation of the various construction machines/mechanisms at various stages of construction will be assessed. Considering the background noise, the expected level of noise caused by construction will be assessed at the nearest residential buildings. The contractor will develop site-specific noise management plan. Site-specific noise management plan will include results of baseline survey, noise level assessment and appropriate mitigation measures (if any) to be introduced based on the results. The contractor will conduct monitoring of the noise and vibration level during the construction. Based on monitoring results site-specific noise management plan will be updated and appropriate mitigation measures defined and implemented (if needed).

E. Hydrology

99. City Senaki is located on the right bank of river Tekhuri. Length of the river is 108 km and basin area 0 1040 km2. River Tekhuri originates on the souther slope of the Egrisi Range, near the peak Tekhurishdud, at an altitude of 2400 m above sea level. The river Tekhura is right tributary of the river Rioni. It feed by gourdwatre, rain and snow water. Floods occur in the spring. The average annual flow nera Nokalakevi is 31.8 m / s.

100. Senaki municipality is rich in groundwater, of which mineral and karst freshwater sources are noteworthy. Thermal mineral springs are found in Sakharbedo, Ledzadzame, Zana, Nokalakevi, Potskho, Akhalsopeli.

101. The project site is located approximately 4 km west from the river Tekhuri. There is no water bodies around the project site.

F. Soils

102. The municipality is located in the Kolkheti lowlands, where humus-carbonate, yellow and alluvial soils are mainly distributed.

103. Monitoring of soil pollution is conducted in city Senaki by the National Environmental Agency. Results of the soil pollution monitoring near the project site (in front of Rompetrol Station) is given in table below.

***Table 16**. Results of the soil pollution monitoring in Senaki, source, NEA, 2017*

Sampling location	Cu, mg/kg	Zn, mg/kg	Pb, mg/kg	Mn, mg/kg	Fe, %	pH
In front of Rompetrol Station	82,58	129,02	61,24	1029.12	1,78	7,74

G. Biological Environment

104. The kindergarten building will be constructed in the urban modified area. Existence of the significant components of biodiversity is less expected on the project site. Additional measures (if needed) to protect flora and fauna species will be defined and included in the SSEMP.

105. The impacts on vegetation during the construction phase will be minor. There are several trees and shrubs within the project area. If trees cutting is required, the contractor will carry out the inventory of trees and submit all required documentation to Senaki Municipality City Hall or, in case of Red listed species to the MoEPA to obtain relevant permit. Contractor will required to implement compensation measures for tree cutting as defined by the permit and ADB policy requirements.

106. There are several protected areas in the Samgrelo-Zemo Svaneti region, including Kolkheti National Park, Martvili Canyon Natural Monument, Motena Cave Natural Monument, Balda Canyon Natural Monument, Toba Waterfall and Arsen Okrojanashvili Cave Natural Monuments. Katsoburi Manage Resreve is located approximately 10 km south of city Senaki. No impacts on protected areas, emerald sites or forest areas are expected due to the construction and operation of the kindergarten building

H. Socio-Economic Environment

Population

107. The population of Senaki Municipality is 39.0 thousand people. 54% of population live in city Senaki and 46% in rural areas. The population has decreased over the last 5 years by 8%.

Economics

108. The economic development of Senaki municipality depends significantly on the production and processing of agricultural products. Agriculture plays an important role in the economy of Senaki municipality. The largest part of the population is employed in this field. The priority areas of agriculture in Senaki municipality are: production of cereals, livestock, greenhouses, hazelnuts and laurel production. Agriculture is still not properly modernized and it is mainly focused not on the market but on household satisfaction. The exception is hazelnut production, which is almost entirely intended for export. The area of agricultural land in Senaki municipality is 22278 ha, there are 45 enterprises and cooperatives in the municipality (11 cooperatives, 34 enterprises).

109. There are 67 licensed quarries in the municipality, which extract limestone, sand-gravel, clay material. 42 license is issued for groundwater extraction including thermal waters.

Education

110. There are 26 secondary schools in Senaki municipality, 22 public and 4 private among them. 4 public school is located in city Senaki, others – in the villages.

111. Preschool education in the municipality is coordinated by “Senaki Municipality Union of Preschool Education”. There are 10 kindergartens in city Senaki, 17 kindergartens are located in the different villages. However, buildings and yards of existing kindergartens need improvement. Only 4 kindergartens are adapted for people with disabilities. Number of children exceeds allowed standard in the kindergartens.

112. Senaki Municipality Youth and Culture Center is founded by the municipality in order to promote and develop cultural traditions. The Center manages 17 libraries, Zhiuli Shartava, Theophane Davitaia and Arnold Chikobava Museums, House of Culture, clubს, a fine art gallery and a Folklore Center.

I. Infrastructure

113. The roads of international importance Tbilisi-Senaki-Leselidze Highway and Senaki-Poti crosses the municipality. The total length of roads of national importance is 76.1 km. Among them: Senaki-Nokalakevi-Bandza-Khoni. Zugdidi-Tsalenjikha-Chkhorotsku-Senaki, Nosiri-Gejeti-Nokalakevi, Nokalakevi-Ledzadzame-Didi Chkoni. The total length of local roads is 367 km. 25% of the local roads in rural areas and 85% in the urban areas are paved.

114. Water supply is provided from the central network and by wells. The total length of the water supply network is 140 km.

115. The city does not have a sewer system and a wastewater treatment plant. Sewage flows into closed drainage canals that are obsolete.

116. The municipality is fully electrified. 6 administrative units of the municipality, as well as city Senaki are provided by the gas.

117. As of today, the municipality does not have municipal public transport. Internal transportation service is provided by the private company.

J. Cultural heritage

118. There are 25 cultural heritage sites in the municipality, three of which are of national importance. Among them is the Shkhepi complex (Middle Ages), Nokalakevi Architectural-Archaeological Museum-Reserve, Eki village church (13th century).

119. Several cultural heritage monumnets are situated in city Senaki, including: Church of the Mother of God, Akaki Khorava Drama Theater, Sakalandarishvili Fortress. Rehabilitation of the Drama Theater building is currently underway.

K. Tourism

120. In terms of tourism development potential, the favorable geographical location of the municipality due to the proximity to Kutaisi Airport and Poti port, existence of roads of international importance, historical-cultural and natural heritage presented in the municipality, as well as local traditions are noteworthy.

121. The balneological resort of Menji, was especially popular both locally and internationally. Since 1993, the situation at the resort has deteriorated sharply due to the relocation of IDPs in the resort's buildings. Nowadays the resort is not operate.

122. There are an average of 17,000 visitors per year in Nokalakevi, while Martvili Canyon hosts 200,000 visitors annually. Integration of this two sightseeing in one touristic route and improvement of the infrastructure will have positive impact on tourism development.

VII. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

A. Methodology

123. The IEE process consisted of six main activities that are common for similar studies conducted according to the international standards: (i) Collection of baseline data describing biophysical and social environment within the study area, desk studies and field surveys to address identified gaps in the existing data and update of information on topics and areas where significant negative impacts are expected; (ii) Identification of the expected positive and negative impacts of the proposed works, assessment of the likelihood and significance of the potential negative impacts and development of mitigation measures; (iii) Analysis of alternatives in terms of location, technology, design and operation, including the "no-project" alternative.; (iv) Development of the Environmental Management Plan (EMP); (v) Drafting of the IEE report; and (vi) Information disclosure and stakeholder consultation.

124. The description of each impact will have the following features: (i) type of activities (ii) scale of activities; and (iii) project area.

125. The general methodology (criteria) used for impact assessment is include under 296. It describes the process of impact identification and definition, significance rating, and mitigation, management and good practice measures. Wherever the Project is likely to result in an unacceptable impact on the environment, mitigation measures are proposed (over and above the inherent design measures included in the Project description). In addition, good practice measures may be proposed, however these are unlikely to change the impact significance. In the case of positive impacts, management measures are suggested to optimize benefits to be gained.

126. The following mitigation hierarchy will be utilized in selecting practical mitigation measures for unacceptable impacts as follows (in order of preference): (i) Avoid the impact wherever possible by removing the cause(s); (ii) Reduce the impact as far as possible by limiting the cause(s); (iii) Ameliorate the impact by protecting the receptor from the cause(s) of the impact; and (iv) Providing compensatory measures to offset the impact, particularly where an impact is of high significance and none of the above are appropriate.

B. Summary of Activities and Anticipated Impacts

127. This project will have a positive impact on population of city Senaki through through improved access to quality pre-school infrastructure.

128. Some temporary impacts associated with construction works will occur. To deal with those impacts during pre-construction, construction and operation phases, mitigation is proposed as necessary and described in this chapter. Activities to be performed within the scope of the Project were examined in 3 phases:

Phase 1: Pre-Construction activities

129. The potential environmental effects of the pre-construction activities, such as contractor office set ups, necessary equipment stacks, sites preparation, and the adequacy of the accesses have been considered and all these activities will not deteriorate the existing conditions of the environment.

130. Number of pre-construction surveys, including noise and vibration, soil contamination, air pollution, field survey of flora and fauna species will be carried out by contractor prior to the commencement of construction works.

131. Contractor shall ensure materials and wastes to be removed are disposed in proper manner and disposal sites are authorized by the government. No dumping of materials/wastes will be allowed.

Phase 2: Construction works

132. Environmental effects likely to occur during the construction of the Project are noise, vibration, dust, solid and liquid wastes, Community health and safety will be an important issue during construction phase as residential buildings are located near the project site. Effects likely to occur during the construction phase are short term effects and they cannot deteriorate the existing conditions.

Phase 3: Operation

133. Possible environmental effects during operational phase arise from maintenance of arranged infrastructure and will be related to generation of solid wastes and wastewater.

134. This paragraph provides a brief description of anticipated site-specific impacts related to the different phases of the project (see Table 17).

Table 17*. Anticipated site-specific impacts of the project*

Site	Activity	Environmental Aspect	Impact	Probability	Risk	Notes
Pre-construction Stage						
Kindergarten Site	Pre-construction survey (Noise and vibration – baseline, assessment, Soil contamination on the site, air pollution – baseline assessment, Flora and fauna species) of project site and buildings	Disruption of construction works damage to environment due to unforeseen circumstances on project sites	Moderate	Moderate	Moderate	Survey of all new infrastructure locations including camp, construction yard. Prioritize areas within or nearest possible vacant space in the project location; If it is deemed necessary to locate elsewhere, consider sites that will not promote instability and result in destruction of property, vegetation, and drinking water supply systems;
	Development of required plans: Site Specific	Damage to environment and workers	Moderate	Moderate	Moderate	Preparation anf submission to PMU of the

Site	Activity	Environmental Aspect	Impact	Probability	Risk	Notes
	Environment Management Plan (SSEMP); Site Specific health and safety plan.; Traffic management plan; Noise and vibration management plan; Waste management plan; Asbestos containing waste management plan (if needed); Emergency response plan; Camp site management plan; Inventory of the trees to cut down (if required);Technical report of the stationary sources of harmful substances emitted into the atmospheric air (if necessary)	health due to the absence of required plans				required plans prior civil-works comencment, no works are allowed until approval of SSEMP
	Obtaining of all required permits, licenses and approvals	Damage to environment due to unauthorized use of natural resources, waste disposal, pollution	Moderate	Moderate	Moderate	Obtaining :Licenses for inert material extraction; Approval of Waste management plan by the MEPA; Approval of Technical report on inventory of atmospheric air pollution stationary source by the MEPA (if

Site	Activity	Environmental Aspect	Impact	Probability	Risk	Notes
						required); Agreement on construction waste disposal on the nearest landfill;Agreement on hazardous waste disposal; Trees inventory report and permit for tree cut issued by local authority or by the MEPA in case of Red listed species (if required)
	Designation of safeguards staff and providing of required trainings	Environmental, social and H&S non-compliances	Moderate	Moderate	Moderate	Designation of Environmental and H&S specialists; Providing of trainings as defined by IEE.
	Notification of local population on civil works commencement	Potential conflicts with local residents	Moderate	Minimal	Moderate	Arrangement of information banner regarding project and indicate contact persons; Dissemination of information regarding duration of upcoming works
	Generation of different potential environmental impacts due to changes in design, layout	Environmental, social and H&S non-compliances	Moderate	Minimal	Moderate	If any changes in the project design will take place, the IEE has to be updated accordingly
Construction stage						
Kindergarten site	Earthworks	Excessive soil	Moderate	High	Moderate	Excessiv soil will be disposed at preliminary

Site	Activity	Environmental Aspect	Impact	Probability	Risk	Notes
						selected and agreed sites
	Construction works	Dust, noise, vibration	Moderate	High	Moderate	No sensitive receptors in proximity
		Pollution of surface water	Minimal	Minimal	Minimal	No sensitive receptors in proximity
		Impacts on Archaeological and CH Sites	Minimal	Minimal	Minimal	No sensitive receptors in proximity
		Flora and Fauna	Minimal	Minimal	Minimal	No sensitive receptors in proximity
		Infrastructure and Transport	Moderate	Moderate	Moderate	No sensitive receptors in proximity
		Waste	Moderate	Moderate	Moderate	No sensitive receptors in proximity
		OHS / Community Health and afety	Moderate	Moderate	Moderate	No sensitive receptors in proximity
		Emergencies	Moderate	Moderate	Moderate	No sensitive receptors in proximity
		Landscape visual change	Moderate	Moderate	Moderate	No sensitive receptors in proximity
Construction camp	operation	Solid waste	Moderate	High	Moderate	No sensitive receptors in proximity
Operation stage						
Kindergarten site	Operation	Generated traffic	Minimal	Moderate	Minimal	No sensitive receptors in proximity
		Risk related to the waste and	Minimal	Moderate	Minimal	No sensitive receptors in proximity

Site	Activity	Environmental Aspect	Impact	Probability	Risk	Notes
		wastewater pollution				
		Emissions	Minimal	Minimal	Minimal	No sensitive receptors in proximity
		Noise and vibration	Minimal	Minimal	Minimal	No sensitive receptors in proximity

C. Required Environmental Documents

135. The Contractor, prior to the onset of construction, is obliged to conduct a number of studies and develop environmental plans, including:

1. Site-Specific Environmental Management plan (SSEMP)
2. Traffic Management Plan
3. Noise and Vibration Management Plan
4. Inventory of the trees to cut down (if relevant)8
5. Waste Management Plan (WMP:
6. Asbestos-Containing Waste Management Plan (if relevant)
7. Health and Safety Management Plan
8. Emergency Response Plan (ERP)
9. Camp Site Management Plan
10. Topsoil Management Plan (if required)
11. Report of stationary sources of harmful substances emitted into air (if relevant)[9]

136. The contractor will furthermore be required to employ full time Environment, Health and Safety (EHS) staff responsible for preparing the SSEMP, compliance with safeguard requirements, implementation of the SSEMP and other contractual provisions related to EHS, addressing site-level complaints/grievances from communities, implementation of any corrective action, coordination with the Project Implementation Unit (PIU) and corresponding information to MDF and the Construction Supervisory Consultant (CSC).

137. The contractor will also be required to document pre-works conditions of sites, establish baseline environmental conditions, address field- and/or site-level complaints/grievances, submit monthly monitoring reports to Employer/Engineer (MDF), provide engineering and administrative control to ensure safety and health of workers and communities, support Employer/Engineer in raising awareness on safeguards, health and safety and labor standards,

8 To be submitted to Senaki City Hall and in case of Red Listed species tree cutting to MEPA, who will issue relevant permit and specify the tree planting compensation fee.

9 To be submitted to the MEPA for approval.

and to follow any recommendations of the project supervision consultants

D. Air quality

Impact

138. Construction activities involves the use of heavy machinery, bulldozers, excavators, graders needed for land clearance and other earthworks, vehicles and equipment to transport construction materials, workers, remove debris from the work area. The operation of heavy machinery, vehicles and other construction equipment result in f exhaust emissions of carbon monoxide, NOx, SO2, hydrocarbons, and particulate matter.

139. Dust generation during the construction works is associated with:

- Earthworks, including topsoil stripping, excavations in cuts;
- Transportation and storage of excavated ground (topsoil and subsoil to the storage locations; spoil to the disposal sites);
- Transportation of fine materials (sand, gravel, cement etc.) from supplier sites;
- Storage of construction materials.

140. Emissions and dust generation may affect buildings located close to the construction site and residential areas along the material transportation routes. The vehicle and equipment emissions and dust are typical for any construction activities. The main receptors are representatives' offices, shops, residential houses located near the project site. A distance of 10-20m from the border of construction site. This impact is temporary and is estimated to be medium scale if not properly mitigated. In case of application of good construction practices the impacts could be minimized to minor and acceptable level.

Mitigation

141. Relatively high impact is connected with the dust emissions, which hardly can be quantified. However, it is obvious that the earth and demolition works, as well as transportation of gravel and other inert materials from borrow-pits and construction waste to landfill will impose nuisance related with dust. This is temporary impact, and should be mitigated by following measures:

- Damping down using water bowsers with spray bars or other technical means;
- Sheeting of construction materials and storage piles;
- Installation of dust screen enclosure during demolition;
- Materials transported to site will be covered/ wetted down to reduce dust;
- The construction site will be watered as appropriate;
- Protective equipment will be provided to workers as necessary.

142. If deemed necessary in dry conditions or where significant quantities of dust are being or are likely to be produced mitigation additional measures will be arranged with the Construction Manager.

143. Emissions of heavy machinery involved in the construction should be managed by proper engine maintenance practice and usage of good quality fuel. Turn off equipment/vehicles when not in use and limit engine idling to 5 minutes. Vehicle refueling will be undertaken so as to avoid fugitive emissions of volatile organic compounds through the use of fuel nozzles and

pumps and enclosed tanks (no open containers will be used to stored fuel). All vehicles will be checked and repaired in case of need to eliminate increased emission due to damaged parts; Defined haulage routs will be used, and vehicle speed will be reduced where required. Materials will be transported to site in off peak hours;

Operation Phase

144. In the operation phase, minimal impact on ambient air quality is expected. Boiler to be supplied within the project will aligned to EU specifications on emissions.

E. Noise and Vibration

Impact at construction stage

145. The operation of construction equipment and transport vehicles and the construction methods employed during construction phase will likely cause increase of noise level.

146. There could also be noise impacts along routes used by heavy vehicles bringing equipment and materials to site. Access routes to construction sites should therefore be planned with the objective of avoiding any buildings or locations that may be specially vulnerable to noise disturbance (schools, hospitals, etc).

147. Evaluation of construction related noise relies upon known information on the noise produced by various equipment and activities at individual stages of construction. For example, noise levels produced at 50 ft (15.24 m) as provided by the U.S. Department of Transportation, FHWA, CADOT, and SBAG 1993; and Country Sanitation Districts of Los Angeles County 1994 are about:

Source of noise	Equivalent noise level, dBA
Backhoes	84 – 85
Bulldozers	84 – 85
Graders	91 – 92
Compressors	80 – 88
Jackhammers	85 – 98
pile drivers	96 - 107
Compacters (rollers)	72 – 75
Front loaders	72 – 83
Tractors	78 – 95
Scrapers, graders	80 -95
Pavers	85 – 88
Trucks	83 - 93
Compressors	75 - 88
crane, movable	75 – 85
Hammer drills	82 - 98
Vibrator	82 - 98
Saw	72 - 82

148. These noise levels at the distance of 7 meters from the noise source obviously exceed the allowed standards.

149. Noise generated by mobile sources naturally attenuates at a certain distance. Attenuation follows logarithmic pattern. In case of construction related noise, point source propagation model should be applied. Point-source propagation can be defined as follows:

$$\text{Sound level 1} - \text{Sound level 2} = 20 \log r_2/r_1.$$

150. This means that for every doubling of distance, the sound level decreases by 6 dBA ("inverse square law").

Distance from the Edge of the Construction Ground, m	Predicted Noise Level Average Value - dBa	Predicted Noise Level Maximum Value - dBa	Allowable Norm [10]
5	80	90	During the day – 50 dBA. During the night time – 40 dBA
10	74	84	
20	68	78	
40	62	72	
80	56	66	
160	50	60	

151. A number of circumstances should be considered that makes it possible to conclude that the construction activities will not cause a significant negative impact on receivers, namely:

- Construction works will be implemented only during daytime;
- The main sources of noise are less likely to work simultaneously. Even then, it will not be a long-lasting process;
- Impacts caused by noise propagation during the construction phase will be of short term.

152. Noise propagation will cause negative impact on construction stuff. The noise level at the construction site may reach 95 dBA. Personnel employed on the construction (especially when working near the equipment causing significant noise), will be equipped with safety equipment (ear-flaps).

153. It is not possible to eliminate the emission of noise from a construction sites entirely; nevertheless, mitigation measures should be implemented to reduce the impact on the sensitive receptors.

154. Mitigation measures against noise propagation will be applied during construction phase, allowing to reduce expected "medium" level impact to "low".

Mitigation

155. It is recommended to implement the following mitigation measures in order to minimize noise levels during the construction phase:

10 Technical Regulation on Acoustic Noise Standards in Residential Premises and Public Buildings approved by Resolution of the Government of Georgia №398 of 15 August 2017

- Ensure proper maintenance of the machinery;
- Implement works that cause noise during the daytime only;
- Limit implementation of noisy works simultaneously;
- Identify the period for the construction works causing the noise, taking into account social (Sunday and holidays) issues;
- The working time and construction schedule must be arranged rationally, and all engineering entities shall make reasonable arrangements for working time, and engineering activities after 22:00 hours through 8:00 hours the next day shall be strictly prohibited, except as required by the proposed project.
- Prior to implementing noisy works, warn the affected population and provide additional explanation if required;
- Locate generators and other noisy equipment away from sensitive receptors;
- Arrange temporary barriers (screens) between a significant noise source and the receivers, if necessary. The screens can be arranged by using a variety of structures (e.g. shields made from wood materials). The quality of noise protection depends on on the material type and thickness of the boards. For instance:
  - Fencing by pine boards (with thickness of 30mm – 12 Dba);
  - Fencing by oak boards (with thickness of 45mm - 27 Dba);
- If necessary, equip personnel with proper protective equipment;
- Frequently switch personnel deployed at noisy works to reduce cumulative exposure;
- Instruction of the personnel prior to the beginning of construction works and then, after every six months;
- Special training can be provided by supervision company related to project-specific noise requirements, specifications, and/or equipment operations, including measurement of construction-related noise levels that may be required to meet the contract specifications.
- As for implementation of the works nearby sensitive receptors including residential, educational and medical facilities, if the noise, vibration and dust level exceeds the permissible level, the construction works must be stopped, and additional mitigation actions must be executed. The construction works will not be resumed unless the noise level reaches the norms.
- In case of complaints, record them and take appropriate action to address them.

156. Source control is, in general, the most effective form of noise mitigation and involves controlling a noise source before it is able to emit potentially offensive noise levels. Construction noise is typically generated by two source types: (i) Stationary equipment; and (ii) Mobile equipment.

157. Less noisy equipment: One of the most effective methods of diminishing the noise impacts caused by individual equipment is to use less noisy machinery. By specifying and/or using less noisy equipment, the impacts produced can be reduced or, in some cases, eliminated. Source control requirements may have the added benefits of promoting technological advances in the development of quieter equipment.

158. Mufflers: Most construction noise originates from internal combustion engines. A large part of the noise emitted is due to the air intake and exhaust cycle. Specifying the use of adequate muffler systems can control much of this engine noise.

159. Shields: Employing shields that are physically attached to the particular piece of equipment is effective, particularly for stationary equipment and where considerable noise reduction is required.

160. Aprons: Sound aprons generally take the form of sound absorptive mats hung from the equipment or on frames attached to the equipment. The aprons can be constructed of rubber, lead-filled fabric, or PVC layers with possibly sound absorptive material covering the side facing the machine. Sound aprons are useful when the shielding must be frequently removed or if only partial covering is possible.

161. Enclosures: Enclosures for stationary work may be constructed of wood or any other suitable material and typically surround the specific operation area and equipment. The walls could be lined with sound absorptive material to prevent an increase of sound levels within the structure. They should be designed for ease of erection and dismantling.

162. In some situations, such as in urban areas or on isolated sections of a project it may be beneficial and necessary to construct barriers adjacent to the work area or at the right-of-way. These can take the form of natural shielding, temporary shielding, and/or permanent shielding.

163. Temporary abatement techniques include the use of temporary and/or movable shielding for both specific and nonspecific operations. Some mobile shielding is capable of being moved intact or being repeatedly erected and dismantled to shield a moving operation. An example of such a barrier utilizes noise curtains in conjunction with trailers to create an easily movable, temporary noise barrier system.

164. Special training can be provided by Supervision Company related to project-specific noise requirements, specifications, and/or equipment operations, including measurement of construction-related noise levels that may be required to meet the contract specifications.

165. The working time and construction schedule must be arranged rationally, and all engineering entities shall make reasonable arrangements for working time, and engineering activities after 22:00 hours through 8:00 hours the next day shall be strictly prohibited, except as required by the proposed project.

166. As for implementation of the works nearby sensitive receptors including residential, educational and medical facilities, if the noise, vibration and dust level exceeds the permissible level, the construction works must be stopped, and additional mitigation actions must be executed. The construction works will not be resumed unless the noise level reaches the norms

Impact at operation phase

167. No noise and vibration propagation is expected in the operation phase.

F. Water quality

Impact at construction stage

168. During implementation of the project the risk of surface and ground water contamination is of minimum level. The surface and ground water may be contaminated due to improper placement of the excavated soil, poor management of construction camps, and improper storage of construction materials and leakage of fuel and lubricates from construction machinery.

169. There are no water bodies near the project site.

Mitigation

170. The following mitigation measures shall be implemented:

- Where works are in progress, erosion control and sedimentation facilities including sediment traps and straw bale barriers or combinations thereof will remain in place;
- Lubricants, fuels and other hydrocarbons will be stored at least 50m away from water bodies.
- Topsoil stripped material shall not be stored where natural drainage will be disrupted.
- Solid wastes will be disposed of properly (not dumped in streams).

171. During the construction phase the Contractor will be required to construct, maintain, remove and reinstate as necessary temporary drainage works and take all other precautions necessary for the avoidance of damage to properties and land by flooding and silt washed down from the works. The Contractor will responsible for ensuring that no construction materials or construction waste block existing drainage channels within the project site.

Impact at operation phase

172. No risks of surface water contamination is expected during operational phase.

173. The project envisages installation of the biological treatment unit/device with capacity 8 m3/per day.

G. Soil Quality and Topsoil Management

Impact at construction stage

174. Soil pollution may occur as a result of spills, improper waste management, oil leakages from the old outdated techniques or other actions.

175. Soil pollution may occur due to the relocation or replacement of the underground infrastructure on the project sites, as a result of an accidental damage of the pipe(s) or improper management of the polluted soil.

176. Topsoil loss may occur as result of earthworks such as land clearance works, grading, excavations.

Mitigation

177. The following practices will be adopted to minimize the risk of soil contamination and topsoil loss:

- The top soil of about 0.3 m depth shall be removed and stored separately during excavation work, and after the construction of the main trunk the same soil shall be replaced on the top, in unpaved areas; Removal of the top soil is required, both directly on the construction site and on the sections that will be used for storage of construction materials and relocation of equipment.
- In order to avoid the topsoil erosion, the height of fill must not exceed 2 m and the inclination of the fill slope must not exceed 45^{o};

- Water-diversion channels will be made along the perimeter of the topsoil fill and will be protected against the scattering by the wind blow;
- In case of storing the topsoil for long, measures must be taken to maintain its qualitative properties. Periodic loosening or grass sowing is meant;
- Subject to advance consent of the local self-governance authorities, the excess topsoil if remained will be used at other project sites or handed over to the appropriate authorities.
- Use of non-faulty construction techniques and vehicles;
- In case of spills of oil/lubricants, the spilled product will be localized/cleaned in the shortest possible time.
- The appliances creating the risk of ground water pollution when in operation will be equipped with drip pans;
- The vehicles must be preferably washed at private car washing areas;
- Using temporal water diversion channels;
- Filling the holes in a timely manner.

Impact at operation phase

178. No risks of soil contamination is expected during operational phase.

H. Biological Environment

Impact at construction stage

179. The impacts on vegetation during construction phase will be minor. No trees cutting are planned on any of the project sites according to the project design.

Mitigation

180. If trees cutting or replanting will become necessary during the project implementation, the Construction Contractor will inventor the trees to be cut down or to be replanted before starting the construction and submit to MEPA (for Red Listed tree species) and Senaki City Hall (for trees not included in Red List) for obtainment tree cutting permission. The permission document will include the compensation measures based on the presented inventory. Plantations in the ration of at least 1:3 for ordinary trees and 1:10 for red listed trees (Government of Georgia regulations). The same replacement ratio of 1:10 for near threatened or vulnerable species as defined by the IUCN Red List will also apply. Cutting of endangered or critically endangered species will not be allowed. The compensation fees will be paid within the scope of the project as well as compensation activities will be implemented by the construction contractor. The trees shall be cut under supervision of designated specialist.

181. If species of interest are present, if possible, an alternative site should be considered. If no alternate site is available, PMU shall coordinate with the MEPA for the translocation of the animals.

Impact at operation phase

182. No risk of damage of biological environment is expected.

I. Waste Management

Non-hazardous waste

183. **Non-hazardous construction waste** will generate on the construction area and will be collected by contractor's workers. Storage of such wastes in area close to settlement and untimely or improper disposal may impact on air quality, dust generation and disturbance of neighboring settlements. In addition, waste from packing materials and woods also will be generated.

184. Inert construction waste will be accumulated during the earth works. Such waste include approximately 2368 t excess ground.

185. Non-hazardous construction waste shall be managed according to the waste management plan approved by the MoEPA. Inert construction waste can be used for backfilling activities according to written agreement with local authority. All other types of non-hazardous waste must be disposed on the landfill according to the written agreement with landfill management unit.

186. Disposal of construction wastes both on the sites and at the temporary storage facilities has to meet the following requirements:

- Place of disposal of the waste must be enclosed;
- The waste must not have access to drainage water;
- Waste must be immediately removed from the working sites;
- Waste can be transferred only to a certified contractor.

187. Municipal solid wastes and waste waters will be generated at the construction and camp sites. Mainly this is rubbish, plastic or glass bottles, glasses, waste food, etc. Improper wastes management may cause the spread of infectious diseases, emergence of insects and parasites in construction camp sites. In addition, it may lead to conflict with local population.

188. Municipal waste should be collected both by the specially assigned personnel and the workshop workers on the area. The waste will place into 0.24m3 plastic containers and further a local Sanitary Service will takes it to landfill. The following should be taken into account:

- Generation of dust should be avoided;
- Plastic containers should be closed to prevent spread of the smell and also to avoid contact of rodents and insects with the waste.
- The personnel involved in the handling of hazardous and non-hazardous waste will undergo specific training in waste handling, treatment and storage;
- Burning of waste on any construction site is forbidden with the exception of stub and small branches from felled trees and bushes, which is better to be burned in order to avoid pest dissemination.

Hazardous waste

189. No large amounts of hazardous waste are expected to originate in the project construction phase. This waste must be handed over to the contractor having the relevant license. During construction phase hazardous wastes may be generated from vehicle operation and maintenance, as well as on construction camp.

190. Hazardous waste should be stored, transferred to licensed companies, transported, and

disposed in compliance with legislative requirements and by following the rules for hazardous waste management.

191. Hazardous waste must be collected and temporarily placed in the pre-selected, agreed area with consideration of requirements applicable to each waste type.The area allocated for temporary storage of hazardous waste shall have special preventive measures implemented, in particular, containers shall have secondary containment and no mixing of hazardous waste with any other waste shall be allowed. Hazardous waste containers shall be checked for tightness. The staff involved in hazardous waste management shall be trained in waste management and safety issues. The waste shall be removed every 3 days.

192. Since there are no landfills for hazardous waste available in Georgia, this category waste must be handed over to authorized contractor for utilization. For hazardous waste agreement with company authorized for treatment (deactivation, incineration) or re-use in other technological processes will be signed.

193. Soil polluted with petroleum hydrocarbons because of accidental small scale fuel/oil spills (leakages) can be remediated onsite (e.g. in situ bioremediation). Larger spills (less likely to be the case from experience with other similar projects) must be localized, contaminated soil removed by authorized contractor for remediation. New, clean soil must be introduced, followed by re-cultivation. It is recommended to involve an authorized company for this service.

194. Construction Company before start construction activities shall prepare a company waste management plan. The plan shall generally include:

- information about waste generated (in particular about its origin, and types, composition and amount of waste defined in the List of Waste);
- information on the measures to be taken for the prevention of waste generation and its recovery, especially in the case of hazardous waste;
- a description of the method for separation of waste generated, in particular of hazardous waste, from the other waste;
- methods and conditions for the temporary storage of waste;
- waste treatment methods applied and/or information on persons to whom waste is transferred for further treatment.

Asbestos-Containing Materials and waste

195. In the construction phase, at the stage of dismantling and moving the underground infrastructure, there may be asbestos-containing pipes or other parts identified in the area. These materials are hazardous materials/waste and need special management. Prior to construction, presence of ACMs will be determined thru desk review, interview with engineers, during detailed engineering design, or by site inspection The following actions are necessary to manage the asbestos waste found in the project zone:

- The amount and content of the waste shall be identified;
- The asbestos containing waste management plan shall be developed and included

in the SSEMP[11];

- The waste is to be removed from the area and safely disposed under the prepared plan.

Medical Waste

196. Medical waste may be generated in the Medical Care and Control Point and belongs to hazardous waste category. This waste is collected in special plastic boxes which shall be hermetically closed and is transferred to a certified contractor for farther incineration.

J. Traffic

Impacts and mitigations during Construction

197. A traffic control and operation plan will be prepared together with the local traffic management authority prior to any construction. The plan shall include provisions for diverting or scheduling construction traffic to avoid morning and afternoon peak traffic hours, regulating traffic at road crossings with an emphasis on ensuring public safety through clear signs, controls and planning in advance;

198. Construction sites. Clear signs will be placed at construction sites in view of the public, warning people of potential dangers such as moving vehicles, hazardous materials, excavations etc and raising awareness on safety issues. Heavy machinery will not be used after daylight and all such equipment will be returned to its overnight storage area/position before night. All sites will be made secure, discouraging access by members of the public through appropriate fencing whenever appropriate.

Impacts During Operation

199. The impact on the operation phase may be related to the increase in traffic on access road to kindergarten area, which shall be regulated by installation of clear signs.

K. Archaeological and Cultural Heritage Sites

200. Land clearance works, grading and excavations are associated with the risks of damaging underground archaeological remnants. Such kind of the impact is minimal on the project site.

201. In case of finding any artefacts of potential archaeological value, following steps are taken:

- Construction workers are obliged to stop works and immediately report to the Archaeological Supervisor.
- Archaeological supervisor reports to the Chief Engineer at site and requests to stop activities at the site of finding. Archaeological supervisor executes first checking of the finding and the site where finding was made;
- In case the finding has no potential archaeological value, the Archaeological

[11] The asbestos management plan will be included in the waste management plan of the SSEMP. It will also specify mitigation measures in the event that the ACMs will be left in-situ or stored on-site when there are no available landfills capable of accepting ACM or the contractor has not capacity to transport the ACMs from the subproject site to the disposal facility.

Supervisor reports to the Chief Engineer and the works are restarted. Appropriate record regarding the case is made in record book.

- In case if the finding is estimated as potential archaeological relic, the Archaeological Supervisor reports to Chief Engineer of the Construction Contractor and to MDF Environmental Specialist (and supervising company / Engineer) requesting to stop construction activities and to inform the Ministry of Education, Science, Culture and Sport of Georgia about the incident.
- Chief Engineer of the Construction Contractor also reports to MDF informing about the stopped operations and requesting immediate engagement of Ministry of Education, Science, Culture and Sport of Georgia.
- of Ministry of Education, Science, Culture and Sport of Georgia will assign expert or group of experts and conduct necessary archaeological works at the site to identify the problem.
- In simpler cases, after removal of the movable artefacts, fixing materials and conducting other required works, the experts of the of Ministry of Education, Science, Culture and Sport of Georgia will issue decision on recommencement of stopped construction works.
- In exclusive cases of valuable and spatially spread findings, the of Ministry of Education, Science, Culture and Sport of Georgia may issue request to relocate the project works on a safe distance from the archaeological site.

L. Health and Safety Risks for local community

202. There is invariably of safety risks when substantial construction works are conducted in an urban area, and precautions will thus be needed to ensure the safety of both workers and citizens

203. The civil works contractor will be required to develop health and safety management plan prior to construction works, The management plan also will cover occupational health and safety risks.

204. Community safety has to be maintained during construction and a program for traffic safety needs to be continued during its operations. Below are the impacts and measures concerning over all community safety.

***Table 18**. Project Potential Impacts on Community Safety*

Project Potential Impacts on Community Safety	Recommended Mitigation Measures and Monitoring Activities
Pre-Construction:	
Community awareness for Safety – Local people's safety should be upheld and maintained	For community wealth and safety, it shall be made sure that • drinking water demand will not compete with adjacent communities; • there shall be adequate protection to the general public, including safety barriers and fences and marking of hazardous areas with warning signs and information banners
Construction Phase:	

Traffic Safety	It is important that truck drivers and equipment operators understand the importance of maintaining road safety especially at road junction points. Safety traffic signs and warning lights should be installed at appropriate locations
Electrical Systems – Safety in relocating them is important	During construction the Contractor shall ensure that all power lines be kept operational, this may include the provision of temporary transmission lines while existing poles and lines are moved. The only exception to this item will be during periods of blasting when HV power lines will be switched off for safety

M. Occupational Health and Safety risks

205. Worker's safety during construction is important. Health and safety at workplace and during execution of work should be among the Contractor's work policy. The following items address overall worker's safety which is necessary to be considered by the Project (Table 19).

206. Safety measures and regulations associated with Covid 19 prevention and its spread out shall be implemented. General recommendations for the construction sector regarding the infection (COVID 19) caused by the new corona virus (SARS-CoV-2) approved the order #01-227/o of the Minister of Internally Displaced Persons From the Occupied Territories, Labour, Health and Social Affairs of Georgia shall be strictly followed.

Table 19. *Worker's Safety Aspect*

Project Potential Impacts on Worker's Safety	Recommended Mitigation Measures and Monitoring Activities
Pre-Construction:	
Provision of PPE – Workers should be adequately protected when performing work at the site	For health and safety protection of workers the following shall be provided: • Adequate health care facilities (including first aid facilities) within construction sites; • Training of all construction workers in basic sanitation and health care issues, general health and safety matters, and on the specific hazards of their work; • PPE for workers, such as safety boots, helmets, gloves, protective clothing, goggles, and ear protection in accordance with legal legislation;
Workers Safety Awareness – Workers should know the risks and hazards of the job and should be advised and reminded accordingly	Construction Contractor has to prepare Health and Safety Plan (HSP) and Emergence Response Plan (ERP) as per ADB requirements before commencement of construction activities reflecting anti COVID-19 measures. The Contractor shall hire a qualified health and safety expert who will provide safety training to the staff according to the requirements of the individual work place. Prior to the commencement of works, the work site personnel shall be instructed about safety rules for the handling and storage of hazardous substances (fuel, oil, lubricants, bitumen, paint etc.) and also the cleaning of the equipment. In preparation of this the Contractor shall establish a short list of materials to be used (by quality and quantity) and provide a rough concept explaining the training / briefing that shall be provided for the construction personnel.
Construction Phase:	
Worker Health & Safety – Risks and hazards of work are real day-	• The Contractor shall be responsible for provision of:

to-day occurrence. Hence, health and safety should be taken seriously for the general welfare of the workers.	• Safety Training Program. A Safety Training Program is required and shall consist of an Initial Safety Induction Course. All workmen shall be required to attend a safety induction course within their first week on Site and Periodic Safety Training Courses. • Safety Meetings. Regular safety meetings will be conducted on a monthly basis and shall require attendance by the safety representatives of Subcontractors unless otherwise agreed by the Engineer. • Safety Inspections. The Contractor shall regularly inspect, test and maintain all safety equipment, scaffolds, guardrails, working platforms, hoists, ladders and other means of access, lifting, lighting, signing and guarding equipment. Lights and signs shall be kept clear of obstructions and legible to read. Equipment, which is damaged, dirty, incorrectly positioned or not in working order, shall be repaired or replaced immediately. • Safety Equipment and Clothing. Safety equipment and protective clothing are required to be available on the Site at all material times and measures for the effective enforcement of proper utilization and necessary replacement of such equipment and clothing, and all construction plant and equipment used on or around the Site shall be fitted with appropriate safety devices. • The Contractor shall coordinate with local public health officials and shall reach a documented understanding with regard to the use of hospitals and other community facilities. • Contractors will undertake measures to reduce sexual exploitation, abuse and harassment (SEAH) during construction.
Sub-contractor's / Suppliers EMP Compliance – As part of the work force in the project, the sub-contractors should be instructed and contractually compelled to comply with the EMP.	All sub-contractors/ suppliers will be supplied with copies of the SSEMP. Provisions will be incorporated into all sub-contracts to ensure the compliance with the SSEMP at all tiers of the sub-contracting. All sub-contractors will be required to appoint a safety representative who shall be available on the Site throughout the operational period of the respective sub-contract unless the Engineer's approval to the contrary is given in writing. In the event of the Engineers approval being given, the Engineer, without prejudice to their other duties and responsibilities, shall ensure, as far as is practically possible, that employees of subcontractors of all tiers are conversant with appropriate parts of the SSEMP.

Construction Camps

207. The establishment of contractor's work camp may cause adverse impacts if various aspects such as liquid and solid waste management, equipment maintenance, materials' storage, and provision of safe drinking water if are not addressed properly. The site for the work yard will be selected by the contractor in agreement with the Municipality, MDF and the supervisor.

208. To ensure that potentially resulting impacts are kept at a minimum the contractor will be required to prepare the following plans or method statements:

- Camp site management plan;
- Layout plan of the work camp including a description of all precautionary measures

proposed to avoid potential adverse impacts on the receiving environment (surface and ground water, soils, ambient air, human settlement);

- Sewage management device for provision of sanitary latrines and proper sewage collection and disposal system to prevent pollution of watercourses or groundwater;
- Waste management plan covering the provision of garbage bins, regular collection and disposal in a hygienic manner, as well as proposed disposal sites for various types of wastes (e.g., domestic waste, used tires, etc.) consistent with applicable national regulations; and
- Description and layout of equipment maintenance areas and lubricant and fuel storage facilities including distance from the nearest surface water body. Storage facilities for fuels and chemicals will be located at a safe distance to the water body. Such facilities will be bounded and provided with impermeable lining to contain spillage and prevent soil and water contamination

209. These plans will be approved by the Engineer prior to beginning of construction activities.

Impact assessment due to COVID-19

210. The projects' construction/civil works will involve the work force, together with suppliers and supporting functions and services. The work force may comprise workers from national, regional, and local labor markets. They may need to live in on-site accommodation, lodge within communities close to work sites or return to their homes after work. There may be different contractors permanently present on site, carrying out different activities, each with their own dedicated workers. Supply chains may involve international, regional and national suppliers facilitating the regular flow of goods and services to the project (including supplies essential to the project such as fuel, and water). As such there will also be regular flow of parties entering and exiting the site: support services, such as catering, cleaning services, equipment, material and supply deliveries, and specialist sub-contractors, brought in to deliver specific elements of the works.

211. Given the complexity and the concentrated number of workers, the potential for the spread of infectious disease in projects involving construction is serious, as are the implications of such a spread. Projects may experience large numbers of the work force becoming ill, which will strain the project's health facilities, and have implications for local emergency and health services and may jeopardize the progress of the construction work and the schedule of the project. Such impacts will be exacerbated where a work force is large and/or the project is in remote or under-serviced areas. In such circumstances, relationships with the community can be strained or difficult and conflict can arise, particularly if people feel they are being exposed to disease by the project or are having to compete for scarce resources. The project must also exercise appropriate precautions against introducing the infection to local communities.

212. The Government of Georgia has adopted the special procedure on acting in conditions of the pandemic - the Temporary Sanitarian Norms and Rules (SanN&R) # 0372-20 "On organization of performance of state agencies and other organizations, commercial entities in limited measures condition due to pandemic COVID-19". The document was approved by the Agency on Sanitarian Epidemiological Well-Being (3rd edition), May 11, 2020. The SanN&R provides general requirements and specific requirements for different sectors: pharmacy, public transport, markets, construction sites etc.

213. According to GoG, the managers of organizations are personally responsible for compliance with the SanN&R. All works have to be organized in order to ensure: (i) preventing the introduction of infection into the organization; (ii) taking measures to prevent the spread of coronavirus infection (COVID-19) in teams and organizations;(iii) implementation of organizational and technical measures to prevent infection of workers; and (iv) other organizational measures to prevent infection of workers.

214. The rules present requirements for safe transportation of workers, organizing medical examination at the entrance points, provision with disinfection equipment and disinfectants, catering facilities, construction camps, etc. Also, the document describes requirements on organizing an isolator in medical centers (if any) in case a patient is identified with a high fever or with individual symptoms of an acute respiratory viral infection (lack of smell, dry cough, malaise, etc.) and isolating them from the work team.

215. All managers have to conduct introductory training for new workers and routine training for working staff. The rules provide an action plan for cases when workers have COVID-19 symptoms.

216. GoG provides specific norms for construction sites. The section pays special attention to dust and provides recommendations for dust generation mitigation and protection. The rules provide a list of Personal Protection Equipment for COVID-19.

217. The document also provides instruction on communication with local health care institutions for organizing regular medical examination of workers and mobilization in case of identification of infections.

Mitigation measures

218. During pandemic risk works must be organized in accordance with the pending Temporary Sanitarian Norms and Rules. Cases of infection and undertaken actions must be properly recorded and reported.

219. The main mode of transmission, which is through the air, will be considered in the DED and Contractors' SSEMPs. Disinfection and containment will follow WHO's interim guidance on water sanitation, hygiene and waste management for the COVID19 virus and to be considered in the DED to avoid and risks of diseases or illnesses to the workers and the community. Operators should be trained on the guidance on water, sanitation and hygiene risks and practice to avoid and minimize the exposure of the work area and the community to biological hazards. For example, the document provides discussions on how to protect against viruses in sewage and drinking water by understanding: (i) COVID19 transmission, (ii) persistence of the COVID19 virus on drinking water, feces, and sewage and on surfaces, (iii) keeping water supplies safe and (iv) safely managing wastewater and fecal waste. Focus should be also be given on ventilation in indoor spaces, masking, and physical distancing. Special attention should be paid to eating – if possible, workers should eat outdoors, in a well-ventilated indoor space, or at different times.

VIII. INFORMATION DISCLOSURE, CONSULTATION AND PARTICIPATION

A. Stakeholder Consultations

220. As confirmed by social due diligence findings, there are no LAR impacts identified and subsequently the current project has no AP`s. The main stakeholders are local resident(s) living near the subproject site and Senaki municipality local government. All these stakeholders have already been contacted using distant communication channels (via personal computer, mobile phone).

221. The first consultation was carried out on August 17th, 2020 by technical team. Meeting was held with the representatives of Senaki Municipality and local residents. Due to the COVID 19 outbreaks and related restrictions, public consultation meeting was conducted in the social network (via Facebook). Main purpose of the meeting was keeping stakeholders abreast of the sub-project related planned activities, the expected negative impacts on the natural and social environment and the ways and means of preventing them. The participants were provided with contacts of designated focal persons from MDF and local government in case of any additional detail information request about the project as well as about GRM: Mr. Irakli Japaridze Communication Consultants (MDF) 593 16 55 77. For more details on the consultation process see attachment 2.

222. Prior to the meeting, representatives of City Hall and local residents were informed through announcements, disseminated in SenakiMunicipality Building and at public places (e.g. bus stations, drug stores, shops) (see attachment 2). The identified Key Stakeholders (owning property and living in the adjacent to the project) have been personally contacted by phone about the planned online meeting by the Communication Consultant – Irakli Japaridze.

223. Due to circumstances formed throughout the world related to the virus outbreak (COVID 19), social distancing has been applied amongst the population and public consultations in the course of infrastructural projects implementation may become the source of virus spreading. Therefore, it is essential the alternative sources of communication with the stakeholders be found in order not to violate the recommendations issued by the World Health Organization (WHO) and the Government of Georgia (GoG). It is of high importance also that public and direct consultations with all stakeholders are held in order to have the stakeholders and other locals, residing at the Municipality to be thoroughly informed of current and planned infrastructural projects and social and environmental matters related to the referenced projects. Applying of that method will enable them to not only receive the information by means of various sources, but also to participate directly in discussions, ask the questions and be involved in ongoing processes. Due to general development of internet network and its availability in many resided areas throughout Georgia, people have access to many social networks and apply them successfully in their everyday lives. Hence, it is possible to hold the future public consultations in the remote mode by applying of available internet social networks and various communication applications. It will depend also on network and internet applications, being used by local residents. Draft IEE/EMP should be disclosed locally for at reasonable time prior to consultations in an accessible place for the stakeholders to ensure to allow the public time to read, look for information or consult experts, and form opinions.

224. Therefore draft and final IEE reports shall be posted on MDF and ADB websites and hardcopies be available at MDF office and the town calls of the respective subproject areas.

225. Draft and final IEE reports in Georgian and English Languages will be disclosed on MDF and ADB websites and will be made available to Project stakeholders upon approval.

226. Periodic Public information campaigns via different communication channels, to explain the project details to a wider population will be conducted in cooperation with local self-government bodies12. Public disclosure meetings will be conducted at key project stages to inform the public of progress and future plans. Prior to start of construction, the PIU will issue Notification on the start date of implementation in information banners placed public places (pharmacy, public transport, markets, construction sites). A board showing the details of the project will be displayed at the construction site for the information of public

B. Grievance Redress Mechanism

1. ADB's accountability and grievance redress mechanism

227. ADB's website presents the Accountability Mechanism (AM) as a forum where people adversely affected by ADB-assisted projects can voice and seek solutions to their problems and report alleged non-compliance of ADB's operational policies and procedures. ADB remains firmly committed to the principle of being accountable for complying with its operational policies and procedures and solving problems of project-affected people and ensures high standards of accountability, transparency, openness, and public participation. The AM policy of 2012 which, as presented on the website (http://www.adb.org/documents/accountabilitymechanism-policy-2012), is designed to: (i) Enhance ADB's development effectiveness and project quality; (ii) Be responsive to the concerns of project-affected people and fair to all stakeholders; (iii) Reflect the highest professional and technical standards in its staffing and operations; (iv) Be as independent and transparent as possible; and (v) Be cost-effective, efficient, and complementary to the other supervision, audit, quality control, and evaluation systems at ADB. ADB executes the tasks via the problem-solving function, which assists people who are directly, materially, and adversely affected by ADB-assisted projects to find solutions to their problems. Contractor shall inform the affected persons on the ADB as an alternative opportunity for solving of problems.

228. Public participation, consultation and information disclosure undertaken as part of the IEE process have discussed and addressed major community concerns. Continued public participation and consultation has been emphasized as a key component of successful project implementation. As a result of this public participation and safeguard assessment during the initial stages of the project, major issues of grievance are not expected. However, unforeseen issues may occur. In order to settle such issues effectively, an effective and transparent channel for lodging complaints and grievances should be established, inspired by the problem-solving function of ADB's guidelines and policies.

229. In the event of a grievance, the basic stages established for redress are (to be further refined during the detailed design stage):

Stage 1: If a concern arises during construction, the Affected Person (AP) tries to resolve the issue of concern directly with the Contractor/Operator. If successful, no further follow-up is required.

[12] Time and venue of proposed consultations will be widely advertised in the web page of IA another notices displayed in LSG offices and other public places well advanced.

Stage 2: If the AP is not satisfied with the reply in Stage 1, he/she can appeal to the government after receiving the reply in Stage 1 and the government must give a clear reply within 2 weeks.

Stage 3: If again a solution cannot be reached, each party can take the case to court according to applicable legislation. The court verdict will be final and binding for all parties.

Georgian grievance redress process

230. In projects implemented by the MDF, a grievance resolution is viewed as a two-stage process. The first stage involves locally available means, such as discussing the concern with Deputy Resident Engineer or Contractor, on site focal point from Supervision Consultant / Contractor, or/and writing to local municipality for resolution of grievances on the spot. The grievance redress mechanism shall deal with the issues such as the amount of compensation, loss of access roads, etc. as well as the losses and damages caused by construction works, e.g. temporary or permanent occupation of land by the contractor. Therefore, the grievance redress mechanism shall be in place by the time the MDFG starts negotiations with the APs and shall function until completion of construction.

231. The grievance redress procedure of Stage 1 is an informal tool of dispute resolution allowing the complainants and project implementation team to resolve any disagreement without formal procedures, procrastination and impediments. The experience of resettlement in projects implemented by MDF shows that such informal grievance redress mechanisms help solve most of the complaints without formal procedures (i.e. without using the procedures specified in the Administrative Code or litigation). This mechanism enables unimpeded implementation of the Project and timely satisfaction of complaints. At this stage, complaints shall be reviewed by the contractor company who should notify the supervision company and IA about the case. If the complaint is not resolved at the field-level stage, a committee body of Local Self-Government will discuss and address the complaints accordingly. If the complainant is not satisfied, the grievance redress mechanism should assist them in lodging an official compliant in accordance with the procedures of Stage 2 (the plaintiff should be informed of his/her rights and obligations, rules and procedures of making a complaint, format of complaint, terms of complaint submission, etc.).

232. Stage 2 – review of complainant's complaint. Within the MDF a Grievance Redress Commission (GRC) has already been established for the whole period of the project implementation. GRC shall review written complaints of complainants, which were not satisfied at Stage 1. At stage 2 the complainant's complaint will be resolved. The above mentioned GRM procedures do not deprive the plaintiff the right to sue in the court directly. The maximum time allowed for the procedure is 5 months.

233. The present procedures are developed specifically for the purposes of Stage 2 process of grievance resolution by the GRC. The purpose of these GRC Procedures is to make MDF more accessible to project-affected communities and to help ensure efficient resolution of project-related complaints.

234. Upon receipt of the complaint it will be registered at the reception of MDF. The complainant shall be given a receipt evidencing submission of his/her complaint with the MDF. The receptionist will direct the complaint to the Director of MDF, who shall screen all incoming claims and within 5 working days of receipt of such claim by the reception office, direct the appropriate claims to the Safeguards Unit. The Safeguards unit will register the complaint in its electronic database. Upon registration in the database the complaint will be assigned a number.

235. After registration of the complaint in the database of Safeguards Unit, the Safeguards unit will notify the complainant in writing (letter, and/or email) that the complaint has been

received, registered, and forwarded to the project team for action as well as the number assigned to the complaint and the contact information for further queries and clarifications.

236. Within 15 working days of registration of the complaint in the database, the Safeguards unit will: (i) Determine if additional information and/or documents necessarily need to be provided by the complainant, and if so, request the complainant in writing to submit additional information/documents; (ii) Obtain relevant and necessary information internally, from MDF's various departments or from project partners; (iii) Decide on the date when the complaint shall be presented to the GRC for hearing; (iv) Inform the complainant of such date, if necessary; and (v) Update the status of the complaint in the database.

237. GRC Hearings shall be held at least once a month. Any complaint must be heard within two months after its registration at MDF reception. The agenda of the GRC hearing, with a list of complaints to be reviewed at that hearing, shall be set in advance. Such an agenda, together with a short brief/summary on each complaint, shall be sent to each member of the GRC at least 3 working days prior to the date of the GRC hearing.

238. The staff member responsible for each complaint shall first present a short description/summary of the complaint, and then answer any questions the GRC members may have. Final decisions based on the deliberations and discussions are made by the Committee by the majority of votes. If needed, the complainant may be invited to the hearing to present evidence related to the case. Copies of the minutes from the hearing shall be provided to the relevant IFI.

239. The decision adopted by the committee shall be signed by the Executive Director within 5 working days of such hearing. The final decision shall contain a timeline of its implementation. If MDF's decision fails to satisfy the aggrieved APs, they can pursue further action by submitting their case to the appropriate court of law.

240. The complaints and grievances will be addressed through the process described below in Figure 5**Error! Reference source not found.** Figure 6 includes the Grievance Form. Complaints will also be accepted by any ADB office such as a resident mission, regional office or representative office, which will forward them unopened to the CRO.

Complaints Receiving Officer, Accountability Mechanism

Asian Development Bank Headquarters

6ADB Avenue, Mandaluyong City 1550, Philippines

E-Mail: amcro@adb.org

Figure 5. *Grievance Redress Mechanism*

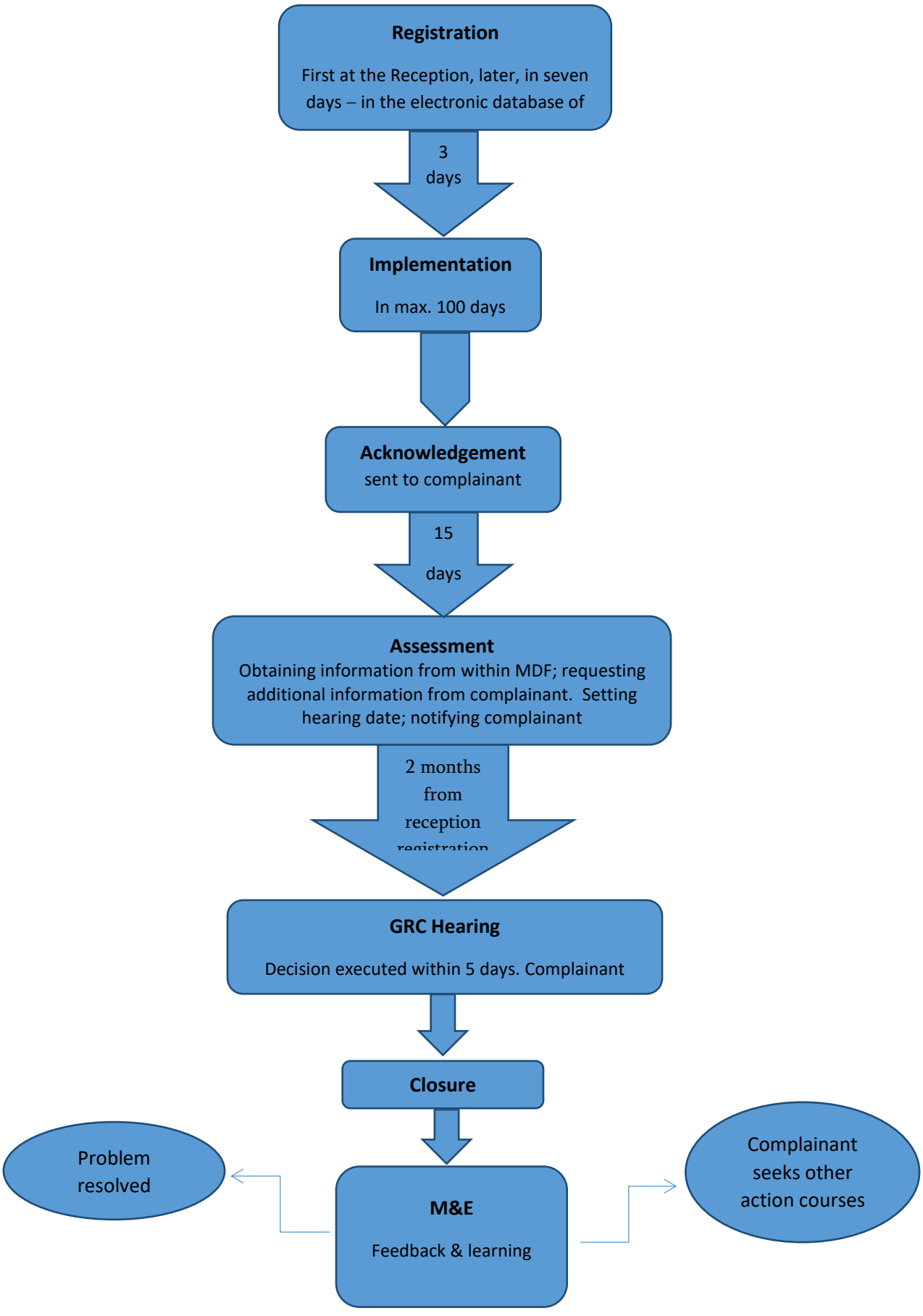


Figure 6. *Grievance Form*

#	
Full Name, Surname	
Contact Information **Please, fill in how you want to be contacted (post, telephone, e-mail)**	☐ **Post: please indicate your postal address:** _____ _____ _____ ☐ **Telephone:** _____ ☐ **E-mail:**_____
Preferred contact language	☐ **Georgian** ☐ **English** ☐ **Russian**

Description of Grievance/ Claim:	What happened? What you claim?
Negotiation Date:	Decision after the negotiation:

What is the reason of your claim?	

Signature: _____

Date: _____

IX. ENVIRONMENTAL MANAGEMENT PLAN

A. Environmental Management Plan (EMP)

241. The Environmental Management Plan (EMP) documents the impacts identified in the report, the actions required to mitigate those impacts to acceptable levels in accordance with the Georgian legal requirements and the ADB safeguard policy, and the monitoring activities that are to be undertaken as part of the project to confirm that the mitigation actions have been effective in achieving their objectives or to initiate corrective actions required.

242. The EMP also details the institutional arrangements and capacities that currently exist, or that will be put in place as part of the project implementation, to ensure that the environmental due diligence (including the EMP) has comprehensively considered both the national and ADB requirements for environmental protection, has identified all likely environmental impacts and proposed appropriate mitigation measures, and has the systems in place to ensure that effective procedures for environmental monitoring and control of the project impacts and mitigation measures are implemented throughout the life of the project.

243. The environmental impacts associated with project have been detailed above in the chapter F of this IEE. Mitigation measures required to address the impacts identified in the IEE have been summarized in each of the relevant sections covering the physical, biological and socio-economic environment affected by the project (chapter F). The impacts identified and the specific mitigation measures proposed to address them have been consolidated into the environmental mitigation plan presented in Table in a form of matrix, which includes time frames, responsibilities and where applicable, estimated costs for each measure.

244. The environmental mitigation plan specifies the need for the civil works Contractor to provide its own detailed Site Specific Environmental Management Plan (SSEMPs,) based on current EMP, but supplemented with the description of the schedule of planned activities, persons responsible for implementation of EMP and monitoring, as well as with method statements for spillage control and construction waste management.

Implementation Arrangements and Responsibilities

245. The main institutions that will be involved in implementation of the SSEMP and monitoring are the executing agency (EA), the Supervision Consultant (SC) the Contractor and to a lesser extent the Ministry of Environmental Protection and Agriculture. EA and SC are responsible for ensuring monitoring of the project implementation at the construction stage. Ministry of Environmental Protection and Agriculture has the authority for periodic audits but should not be considered as a party responsible for monitoring according to this IEE and EMPs.

246. MDF as the EA will be responsible for the day to day management of the project including monitoring implementation of the SSEMP. Management of environmental issues is carried out by the MDF through Environmental and Resettlement Unit, established in October 2014. From that time, number of Environmental and Resettlement team members has been increased from 6 to 11 and currently consists of: Head of Unit, 3 environmental safeguards specialists, one social safeguards and gender specialist, one Beneficiary Relations Specialist, one resettlement and GIS specialist, 2resettlement specialists and two ADB's individual consultants (one on resettlement issues and the other for communication matters), who also are the members of Environmental and Resettlement Unit.

247. MDF's Environmental and Social Specialists responsibilities are as follows:

i. Review REA checklists and assign categorization based on ADB SPS 2009 and EARF;

ii. Submit IEE to ADB for approval and disclosure in ADB website;

iii. Ensure IEEs are updated/revised based on detailed engineering design (DED) and recommendations of technical studies;

iv. Ensure approved IEEs are disclosed in PMU websites and relevant information posted in public areas accessible and understandable by local people;

v. Ensure the draft IEE/EMP will be disclosed locally prior to consultations in an accessible place;

vi. Ensure IEEs and EMPs are included in the bid documents and contracts;

vii. Ensure all necessary clearances, permits, consents, NOCs, etc are obtained prior to commencement of works and compliance to the provisions and conditions during implementation;

viii. Organize an induction course for the training of contractors preparing them on EMP implementation, environmental monitoring requirements related to mitigation measures; and taking immediate actions to remedy unexpected adverse impacts or ineffective mitigation measures found during the course of implementation;

ix. Assist in addressing any grievances brought about through the GRM;

x. Direct/instruct project consultants to document and develop good practice construction guidelines to assist the contractors in implementing the provisions of IEE and EMP;

xi. Direct/instruct project consultants the review of the contractors' implementation plans (including SSEMPs and Corrective Action Plan [CAP]) to ensure compliance with ADB SPS and applicable government rules and regulations;

xii. Coordinate the conduct of technical studies such as but not limited to HIAs, inventory of asbestos-containing materials (ACMs) if found in subproject sites, vibration studies, noise level studies and/or biodiversity assessment;

xiii. Conduct periodic public consultation and information dissemination campaigns;

xiv. Address any grievances in a timely manner as per the GRM; and

xv. Issue clearance for contractor's post-construction activities as specified in the EMP.

xvi. Coordinate with national and state level government agencies;

xvii. Coordinate with consultants and contractors on mitigation measures involving the community and affected persons and ensure that environmental concerns and suggestions are incorporated and implemented. Review monthly monitoring reports submitted by project consultants and contractors, and prepare and submit SAEMR to ADB; and

xviii. If necessary, prepare CAP and ensure implementation of corrective actions to ensure no environmental impacts and non-compliances to ADB SPS requirements and loan assurances.

248. **Environment Specialist in CSC**. Construction Supervision Consultant (CSC) will include an Environmental Specialist with the following main responsibilities:

(i) Prepare REA Checklists, baseline environmental surveys to support screening and categorization per EARF for submission to PMU;

(ii) Prepare IEEs and technical studies of subsequent subprojects;

(iii) Oversee day-to-day implementation of EMPs by contractors, including compliance with all government rules and regulations;

(iv) Support PMU in the review and clearance of contractor's SSEMP, including but not limited to subplans, EHS personnel, budget, constructions methodology, and implementation schedule;

(v) Conduct field-level verification of the contractor's pre- and post-work site conditions and submit confirmatory report to PMU;

(vi) Conduct inspections on contractor's implementation of SSEMP and compliance with government rules and regulations;

(vii) Ensure contractors comply with health and safety requirements per approved SSEMP's Health and Safety Management Plan;

(viii) Conduct investigations on grievances/complaints, incidents and accidents;

(ix) Assist PMU in addressing any grievances in a timely manner as per the GRM;

(x) Address field-level grievances/complaints and prepare report to PMU;

(xi) Monitor corrective actions as required in CAPs, and ensure non-compliances are resolved immediately and are not occurring repeatedly;

(xii) Prepare recommendations for contractors repeated non-compliances on safeguards and EHS requirements;

(xiii) Submit monthly environmental monitoring reports to PMU;

(xiv) Undertake tasks as mutually agreed with the PMU.

249. The CSCs will finalize the capacity building program and ensure it is designed to be participatory to the extent possible so it is more effective, with a large amount of learning by doing, role playing, group exercise, etc. rather than lectures. The program will include assessments pre- and post-training activities to measure the effectiveness of the program.

250. The construction contractor is obligated to follow the IEE/EMP and good construction practice. In order to meet this obligation, a contractor shall establish an environmental management team and procedures. The Contractor will appoint a full time Environmental Manager (EM) to be a senior member of the construction management team based on site for the duration of the contract.

251. Key responsibilities of the Contractor (through the EM) are as follows:

- Preparing the Specific Environmental Management Plan (SSEMP) for endorsement by Supervision Consultant and approval by the Employer (EA) prior to the Contractor taking possession of the construction site (see below) including pre-works recording and photo-documentation;
- Ensuring the SSEMP is implemented effectively throughout the construction period. (iii) Coordinating community relation issues through acting as the Contractor's community relations focal point (proactive community consultation, complaints investigation and grievance resolution);
- Establishing and maintaining site records of: (i) weekly site inspections using

checklists based on the SSEMP; (ii) environmental accidents/incidents including resolution activities; (iii) environmental monitoring data including instrumental environmental monitoring if needed; (iv) non-compliance notifications issued by the CSC; (v) Corrective action plans issued to the CSC in response to non-compliance notices; (vi) Community relations activities including maintaining complaints register; (vii) Monitoring reports; (viii) Monthly reporting of SSEMP compliance and community liaison activities (see below); and (ix) Ad-hoc reporting to the Employer's Engineer of environmental incidents/spillages including actions taken to resolve issues of Specific Environmental Management Plan (SSEMP);

- Impelemnt occupational Health and safety requirements, including COVID 19 prevention measures.
- Implement site clean-up measures after civil works finalization; Ensure that there is sufficient budget allocation for environmental safeguards, subcontractors are aware and follow EHS requirements and reporting.

252. The Contractors shall undertake measures will be taken to reduce sexual exploitation, abuse and harassment (SEAH) during construction and operations. The Contractors are encouraged to engage local labors to the extent possible.

253. Following the award of the contract and prior to construction commencing the Contractor will review the EMP and develop this into a detailed Specific Environmental Management Plan (SSEMP) that amplifies the conditions established in the EMP that are specific for the project, the tasks involved and schedule of construction activities. The SSEMP will identify persons who will be responsible for supervising the work within the contractor's team. The SSEMP will include a matrix of mitigation measures corresponding to specific activities. As a stand-alone document the SSEMP will be supplemented with method statements for spillage control and construction waste management. The spillage control method statement includes proper location and organization of fuel storage, filling stations and vehicle washing sites.

254. The SSEMP will also include a monitoring plan and a reporting program corresponding to the requirements of the EMP. The SSEMP will be submitted to EA for approval at least 10 days before taking possession of work site.

255. In addition to creating the SSEMP additional topic specific EMPs will be developed by the contractor (e.g. waste management plan, traffic management plan, oil spill management plan, camp management plan, etc.). In addition, at key locations a location-specific EMP may also be developed.

256. Prior to the onset of construction, the Construction Contractor must hire a consultant or a group of consultants to prepare a Traffic Management Plan. The developed plan must be agreed on with the supervising company. The construction permit will be issued only if the plan developed by the Construction Contractor is approved by the supervising company and MDF. In case of absence of such a plan, the Construction Contractor will not be allowed to start work.

257. Following approval of the SSEMP by the EA, the Contractor will be required to attend a site induction meeting with the CSC's International Environmental Specialist whereby the SSEMP is confirmed with the Contractor to ensure that all compliance conditions are clearly understood. Following confirmation of the SSEMP with the Contractor the CSC's Environmental Specialist advises the CSC Team Leader that the Contractor is now cleared to take possession of the Site and may commence moving equipment to the Site.

258. The Contractor will be responsible for ensuring that all sub-contractors abide by the conditions of the SSEMP.

Reporting

259. Semi-annual Environmental Monitoring Reports (EMRs) are to be submitted within 1 month at the end of each reporting period by the EA to the ADB. Quarterly project progress reports also should have a section on environmental safeguard compliance. Semi-annual EMRs should be a concise report with respect to compliance with EMP/SSEMP requirements that will be submitted by the EA with assistance from the CSC. The report will contain the following sections: (i) Details of any environmental incidents; (ii) Status of all non-conformances identified during audits and inspections that are identified by non-compliance notices; (iii) Complaints from the public and proactive community relations activities; (iv) Monthly Accident Report; (v) Waste volumes, types and disposal; (vi) Details of any contaminated areas that have been identified and rehabilitated; (vii) Details of any archaeological discoveries; (viii) Details of any ecological issues; (ix) Other relevant environmental issues; and (x) Action plan for corrective measures.

260. The Contractor will have a duty to immediately report to the CSC if any serious environmental breach has occurred during construction e.g. clearing of sensitive areas, serious oil spills, etc.

261. The CSC provides the EA with monthly reports including review of the environmental and social aspects of the Contractor's performance, as well as any HSE issues. In case of any serious accident or repeated violation requiring immediate reaction of the EA and authorities, the CSC will send appropriate notice to the EA immediately.

262. MDF as the Executing Agency will submit semi-annual monitoring reports to the ADB reflecting project progress and compliance with the safeguards requirements. The quarterly reports will include CSC monthly reports and short explanatory note of MDF specialists.

263. ADBs responsibilities in regard to implementation of environmental safeguards requirements for the project include: undertaking occasional auditing of the SSEMP implementation and due diligence as part of an overall project review mission; and if required, provide advice to the MDF in carrying out its responsibilities to implement the SSEMP for the project.

264. Within MDF are the environmental and social specialist and several monitoring officers included in staffing. Although day-to-day quality control of works will be outsourced to the engineering supervisor of works, the MDF should have in-house human resources staff member to oversee performance of such technical supervisors and to work out decisions to address issues which the supervisor may bring up for the MDF's attention.

Environmental documents and records

265. After identifying the Construction Contractor and issues of construction organization, the construction contractor, in line with the national legislation, is obliged to develop the following environmental documents and submit them to the MEPA for approval: (i) Technical Report of the stationary sources of harmful substances emitted into the atmospheric air (if necessary); (ii) Waste Management Plan (if necessary); and (iii) Inventory of trees (if tree cutting of Red listed tree species will be required)

266. The construction contractor is obliged to submit and agree on the following documents and records to the supervision consultant: (i) Site-specific Environmental Management Plan (SSEMP); (ii) Traffic Management Plan; (iii) Health and safety Management Plan, including COVID 19 measures; (iv) Noise and Vibration Management Plan; (v) Asbestos Management Plan (if required); (vi) Emergency Response Plan; and (vi) Camp Site Management Plan.

267. In addition, the Construction Contractor shall keep and use the following records in practice during the construction: (i) Plan and schedule of the works to accomplish; (ii) List of

machines and equipment needed for construction; (iii) Records related to the occurring environmental problems; (iv) Records about waste management issues; (v) Written marking of areas of waste disposal and waste transportation instructions issued by the local authority; (vi) Records about the supplies of necessary materials and their consumption; (vii) Complaints log books; (viii) Incident registration logs; (ix) Reports about the correction actions; (x) Logs of equipment control and technical maintenance; and (xi) Reports about the personnel training.

Costs of implementation

268. *Waste Management.* According to the "Waste Management Code" (Article 14-Waste Management Plan of the Company), the Contractor has to prepare a Waste Management Plan for the Company (describing in details hazardous waste management) and submit it to the MEPA for approval. In addition, according to the same law (article 15) – the Contractor should hire an Environmental Manager and submit contact information to the MEPA. All types of waste must be managed according to the approved waste management plan. Waste must be transported for disposal on identified landfill or transferred to licensed companies. Transportation, waste disposal on landfill, as well as transfer of hazardous waste to licensed companies is associated with certain costs.

269. *Monitoring*. The Construction Contractor must undertake permanent noise, vibration and emissions monitoring. In addition, temporary noise barriers will be necessary to install at the construction objects. Monitoring results should be included in the monthly and quarterly reports.

270. *Occupational and Community H&S*. The Contractor shall hire a qualified health and safety specialist who will provide safety training to the staff according to the requirements of the individual workplace. Prior to commencement of works, the work site personnel shall be instructed about safety rules for the handling and storage of hazardous substances (fuel, oil, lubricants, bitumen, paint etc.).

271. *Staff*. The Contractor will appoint a full time Environmental Manager (EM) to be a senior member of the construction management team based on-site for the duration of the contract. The CSC will appoint a Part time International Environmental Specialist.

272. The construction company will be responsible for envisaging the implementation cost of the EMP, including the proposed mitigation measures (and additional activities, if any), and surveys (if required by the MDF and IEE) in their project budget. Implementation of the IEE/EMP is obligatory for the contractor. The Contractor shall be aware that the IEE will require updating.

273. The PMC and CSCs will finalize the capacity building program and ensure it is designed to be participatory to the extent possible so it is more effective, with a large amount of learning by doing, role playing, group.

Table 20. *Environmental Management Cost*

Item	Unit Cost	Total Cost	Remarks
Updating the IEE for the detailed design	-	-	-
Baseline Parametric Measurements(at least 2 points)	100 USD	200USD	To be conducted by the Contractor for noise-vibration, air emissions, dust (and water, if necessary) measurements

Monthly Parametric Measurements (at least 2 points)	200 USD	Monthly for the entire construction period	Tests to be conducted by the Contractor at 2 points
Environmental Management Specialist (SC)	2,500 USD	Monthly for the entire construction period	The costs are included in the contract signed between MDF and SC and no additional costs will occur.
Environmental specialist (Contractor)	1, 500 USD	Monthly for the entire construction period	The costs will be included in the contract signed between MDF and Contractor.
Construction dust and noise barriers (if needed)	5 000 USD	5 000 USD	To be installed by Contractor at the Kindergarten construction site temporarily if needed
Anti-COVID measures (hiring of doctor and nurse for the regular check-ups and establishing designated quarantine area, purchasing of necessary PPEs, sanitizers, handwashing facilities, face masks, etc.)	$ 400	Monthly for the entire construction period (depending on COVID situation in the country and globally)	Training should be conducted for all persons involved in construction process

Table 21. *Environmental Management Matrix*

Pre-Construction phase

Type of work	Potential negative impact	Mitigation Measures	Responsibility	Supervision
Pre-construction survey of project site	Disruption of construction works and damage to environment due to unforeseen circumstances on project sites revealed at construction phase	Survey of all new infrastructure locations including camp, construction yard. Prioritize areas within or nearest possible vacant space in the project location; If it is deemed necessary to locate elsewhere, consider sites that will not promote instability and result in destruction of property, vegetation, and drinking water supply systems; Do not consider residential areas. • Take extreme care in selecting sites to avoid direct disposal to water body (river near intake) which will inconvenience the community The constriction contractor shall conduct the following surveys: 1. Noise and vibration – baseline, assessment and monitoring; 2. Soil contamination on the site; 3. Air pollution – baseline and monitoring; 4. Flora and fauna species, additional measures if need to protect flora and fauna species will be identified and included in the SSEMP,..	Contractor	Supervision Company, MDF
Development of required plans	Damage to environment and workers health due to the absence of required plans	Site Specific Environment Management Plan (SSEMP); Site Specific health and safety plan. Traffic management plan; Noise and vibration management plan; Waste management plan; Asbestos containing waste management plan (if needed). Emergency response plan Camp site management plan Inventory of the trees to cut down (if required**)**	Contractor	Supervision Company, MDF

		Technical report of the stationary sources of harmful substances emitted into the atmospheric air (if necessary)		
Obtaining of all required permits, licenses and approvals	Damage to environment due to unauthorized use of natural resources, waste disposal, pollution	Licenses for inert material extraction Approval of Waste management plan by the MoEPA Approval of Technical report on inventory of atmospheric air pollution stationary source by the MoEPA (if required) Agreement on construction waste disposal on the nearest landfill Agreement on hazardous waste disposal Trees inventory report and permit for tree cut issued by local authority or by the MoEPA in case of Red listed species (if required)	Contractor	Supervision Company, MDF
Designation of safeguards staff and providing of required trainings	Environmental, social and H&S non-compliances	Designation of Environmental and H&S specialists; Providing of trainings as defined by IEE. Undertaking measures to reduce sexual exploitation, abuse and harassment (SEAH) during construction	Contractor	Supervision Company, MDF
Notification of local population on civil works commencement	Potential conflicts with local residents	Arrangement of information banner regarding project and indicate contact persons; Dissemination of information regarding duration of upcoming works. Periodic Public information campaigns via different communication channels, Prior to start of construction, issuing notification on the start date of implementation in information banners placed public places (pharmacy, public transport, markets, and construction sites). A board showing the details of the project will be displayed at the construction site for the information of public.	Contractor	Supervision Company, MDF
Improper assessment of bidders' environmental capacity	Environmental, social and H&S non-compliances	Bids evaluation needs to be done with consideration of: capacity of bidders to meet EMPs requirements, proposing adequate budget efficient for implementation EMP, existence of good practice in environmental performance within other similar projects;	MDF	

Generation of different potential environmental impacts due to changes in design, layout	Environmental, social and H&S non-compliances	If any changes in the project design will take place, the IEE has to be updated accordingly.	MDF	

Construction phase

Type of work	Potential negative impact	Mitigation measure	Responsible entity	Supervision
Preparatory works: mobilization of the temporal infrastructure, transport and construction appliances and equipment and mechanisms needed for construction.	Emissions of harmful substances into the atmospheric air, propagation and noise propagation	1. Equipping the concrete unit with relevant air-cleaning systems. 2. Making noise-protection barriers if necessary between the noise sources and the receptors (population).	Construction Contractor	Supervision Company, MDF
	Risks of pollution of surface and ground waters and soils	1. Use of non-faulty construction techniques and vehicles. 2. The machines/equipment and potentially polluting materials will be placed far from the surface water objects, in the areas protected against the atmospheric precipitations. 3. Equipping the territory with sewage, storm-water and treatment systems at the initial construction stages. 4. Limiting the perimeter of the oil products supply reservoirs to prevent the propagation of the pollutants in case of emergency spills. 5. Discharge of any kind of untreated wastewater into the rivers is to be prohibited. 6. Making the water-proof layers over the surfaces of the storing areas.		
	Negative visual-landscape change	1. Temporal structures, materials and waste will be placed at locations far and not visible from the visual receptors. 2. The color and design of the temporal structures will be chosen to suit the environment. 3. Demobilization of the temporal infrastructure and recultivation works following the completion of the works.		

Type of work	Potential negative impact	Mitigation measure	Responsible entity	Supervision
	Risks of safety of local people and personnel	1. Use of non-faulty construction techniques and vehicles; 2. Fencing the camp territories right at the initial stage of the construction; 3. Installing the safety signs along the perimeter of the territory. 4. Protecting the perimeter of territory and controlling the movement of foreign people in the area. 5. Equipping the personnel with PPE. 6. Equipping the camps with first aid kits; 7. Ensuring electrical safety. 8. Keeping an incident registration log. 9. Personnel training at the initial stages.	Construction Contractor	Supervision Company, MDF
Cleaning the corridor off the vegetation cover and accomplishing the earth works. The removal of the topsoil	Cutting down the vegetation cover, habitat	1. Obtaining the permit as required 2. Cutting down the trees and plants under the supervision of the specialists an authorized agency; 3. Re-Planting of the trees in the ration of at least 1:3 for ordinary trees and 1:10 for the tree species included in the Red List of Georgia, The same replacement ratio of 1:10 for near threatened or vulnerable species as defined by the IUCN Red List shall be also applied. Cutting of endangered or critically endangered species will not be allowed. 4. The expected impact is partly compensated at the expense of re- cultivation and landscaping works. 5. Protecting the project perimeter to prevent excess harm to the plants. 6. If species of interest are present, if possible, an alternative site should be considered. If no alternate site is available, PMU shall coordinate with the MEPA for the translocation of the animals.	Construction Contractor	Supervision Company, MDF
	Noise propagation, emissions of dust and combustion products	1. Use of non-faulty construction techniques and vehicles; 2. Accomplishing the noisy works during the day as far as possible;	Construction Contractor	Supervision Company, MDF

Type of work	Potential negative impact	Mitigation measure	Responsible entity	Supervision
		3. Running the vehicle drives at minimal speed.		
	Vibration	1. In vibration persists for some time at a location (but below the threshold), mitigation in the surrounding properties should be done in terms of regular consultations and disseminating information leaflets consisting of construction activities schedule	Construction Contractor	Supervision Company, MDF
	Loss of topsoil and degradation of sites	1. Cutting the topsoil and piling it in isolation from the lower soil layer and other materials. 2. In order to avoid the topsoil erosion, the height of fill must not exceed 2 m and the inclination of the fill slope must not exceed 45^{o}. 3. Water-diversion channels will be made along the perimeter of the topsoil fill and will be protected against the scattering by the wind blow; 4. In case of storing the topsoil for long, measures must be taken to maintain its qualitative properties. Periodic loosening or grass sowing is meant.	Construction Contractor	Supervision Company, MDF
	Risks of pollution of surface and ground waters.	1. Use of non-faulty construction techniques and vehicles; 2. In case of spills of oil/lubricants, the spilled product will be localized/cleaned in the shortest possible time. 3. The appliances creating the risk of ground water pollution when in operation will be equipped with drip pans; 4. The vehicles must be preferably washed at private car washing areas; 5. Using temporal water diversion channels; 6. Filling the holes in a timely manner.	Construction Contractor	Supervision Company, MDF
	Accidental damage to the cultural heritage monuments and archaeological objects	1. Construction and Supervision Company HSE specialists shall permanently supervise all construction activities. 2. In case of finding any strange item, stopping the works immediately and informing the technical supervisor or the Client;	Construction Contractor	Supervision Company, MDF National Agency to protect cultural environment

Type of work	Potential negative impact	Mitigation measure	Responsible entity	Supervision
		3. Renewing the works only after the formal instruction is received from the technical supervisor or the Client.		
	And anti-COVID measures	1. Contractors including subcontractors are required to carry out COVID-19 risk assessment and update the SEMPs, health and safety plans (HSP) and emergency response plans (ERP) to be aligned with any relevant government regulations and guidelines on COVID-19 prevention and control, or in the absence of these, aligned with international good practice guidelines as issued by World Health Organization. 2. Using relevant ventilation system during digging; 3. Observing labor safety rules during the drilling; 4. Equipping the personnel with PPE; 5. Develop an emergency action plan outlining the measures to be taken to prevent the spread of the virus, as well as the measures to be taken in case of suspicion of the virus. 6. Post information about COVID-19 prevention measures in the workspace; 7. Place de-barriers at the entrance of the living room / dining room, as appropriate; 8. Ensure hand hygiene in the workplace and inform employees; 9. Periodically, several times a day, provide natural ventilation of enclosed spaces / storerooms; 10. Disinfect frequently used work equipment, inventory, work tools and workplaces at regular intervals; 11. Ensure that the workspace is arranged in such a way that employees and / or other persons in the workspace do not encounter any obstacles during the	Construction Contractor	Supervision Company, MDF

Type of work	Potential negative impact	Mitigation measure	Responsible entity	Supervision
		work (including timely cleaning of the facility and timely removal of construction waste); 12. Placement of containers for wipes or other hygienic waste used by employees and visitors; Include Construction site standard operating procedures (SOP) in health and safety plan 13. Disinfection and containment shall follow WHO's interim guidance on water sanitation, hygiene and waste management for the COVID19 virus; 14. Consider in the DED and Contractors' SSEMPs the main mode of transmission (by air) and mitigation measures to focus on ventilation in indoor spaces, masking, and physical distancing. 15. • Special attention should be paid to eating – if possible, workers should eat outdoors, in a well-ventilated indoor space, or at different times. 16. The SSEMP must discussions on how to protect against viruses in sewage and drinking water by understanding: (i) COVID19 transmission, (ii) persistence of the COVID19 virus on drinking water, feces, and sewage and on surfaces, (iii) keeping water supplies safe and (iv) safely managing wastewater and fecal waste. 17. Operators should be trained on the guidance on water, sanitation and hygiene risks and practice to avoid and minimize the exposure of the work area and the community to biological hazards. 18. The main mode of transmission, which is through the air, will be considered in the DED and Contractors' SSEMPs. . Focus should be also be given on ventilation in indoor spaces, masking, and physical distancing. 19. Special attention should be paid to eating – if possible, workers should eat outdoors, in a well-ventilated indoor space, or at different times.		

Type of work	Potential negative impact	Mitigation measure	Responsible entity	Supervision
Transportation	Noise propagation, emissions of dust and combustion products	1. Use of non-faulty construction techniques and vehicles; 2. Limiting the driving speeds; 3. Maximally limiting the use of public roads and searching for and using alternative routes. 4. Watering the working surfaces in dry weather. 5. Duly covering the vehicle body during the transportation of dusty materials. 6. Informing the population about the forthcoming intense vehicle movement.	Construction Contractor	Supervision Company, MDF
	Damage to the local road surfaces	1. Limiting the movement of heavy techniques along the public road as much as possible; 2. Restoring all damaged road sections as much as possible to make the roads available to the people;	Construction Contractor	Supervision Company, MDF
	Overloaded transport flows, limited movement	1. Selecting an optimal bypass to the working area; 2. Installing road signs and barriers at necessary locations; limiting the movement of heavy techniques along the public road as much as possible; 3. Using flagmen in case of intense traffic; 4. Making temporal bypasses; 5. Informing the population about the time and periods of intense transport operations.	Construction Contractor	Supervision Company, MDF
	Risks of safety of local people and personnel	1. Use of non-faulty construction techniques and vehicles; 2. Driving the vehicles with admissible speeds. 3. Minimizing the use of the roads crossing the settled areas; 4. Limiting the traffic on holidays	Construction Contractor	Supervision Company, MDF
Construction works	Deterioration of ambient air; Noise and vibration	1. Use water spray or install dust screen enclosures; 2. Timely removal of all debris and construction waste from the site; 3. Watering or cover temporary storage waste; 1. Development and implementation of Noise and Vibration management and monitoring plans; implementation of	Construction Contractor	Supervision Company, MDF

Type of work	Potential negative impact	Mitigation measure	Responsible entity	Supervision
		appropriate measurement in accordance with the plan; apply mitigation measures (if needed); 2. Use of non-faulty construction techniques and vehicles; 3. Accomplishing the noisy works during the day as far as possible; • 4. If vibration persists for some time at a location (but below the threshold), mitigation in the surrounding properties should be done in terms of regular consultations and disseminating information leaflets consisting of construction activities schedule • Turn off equipment/vehicles when not in use and limit engine idling to 5 minutes.		
Waste management	Irregular propagation of waste, environmental pollution	1. Delivering the construction and other necessary materials only in needed quantities. 2. Re-using the waste as much as possible, including the use of inert materials for make the roadbed. 3. Arranging the temporal waste storage areas and equipping them with relevant signs. 4. Assigning the duly qualified personnel for waste management. 5. Instructing the personnel. Identification of dump sites for inert and constriction waste disposal and ensuring proper permissions; Ensuring materials and wastes to be removed are disposed in proper manner and disposal sites are authorized by the government. No dumping of materials/wastes will be allowed. I • If ACMs are found in the subproject zone, the amount and content of the waste shall be identified; the asbestos containing waste management plan shall be developed and included in the SSEMP; the waste is to be removed from the area and safely disposed under the prepared plan.	Construction Contractor	Supervision Company, MDF

Type of work	Potential negative impact	Mitigation measure	Responsible entity	Supervision
		• A detailed “Waste Asbestos-Containing Material Management Plan” is to be implemented during construction and demolishing works. Make sure that old pipes (especially asbestos) are not excavated or touched. The new pipes will have to be laid along to the existing. Asbestos contained waste shall be handled in accordance with the technical regulations on Special Requirements for Collection and Processing of Hazardous Wastes approved by the GoG Resolution # 145, dated March 29, 2016 and GoG resolution #421, adopted August 11, 2015 ``On Approval of the Technical Regulation on Landfill Arrangement, Operation, Closure and Post-Maintenance``.		
Post-Construction Activities	Pollution Negative impact on the project visibility	• Reinstatement to pre-works condition or better • Confirmation from Employer/Engineer on satisfactory reinstatement and no pending actions to address non-compliances • Confirmation from Employer/Engineer on compensation for damage to persons or property • Post-construction Audit Report	Construction Contractor	MDF, Supervision Company

Operation phase

Type of work	Expected negative impact	Mitigation measure	Responsible entity
	Waste propagation; propagation of oil products.	1. Regular cleaning of the rehabilitated infrastructure; 2. Regular cleaning and repairing of water channels and pipes	Senaki Municipality City Hall
	Emergency risks	1. Permanent control of the technical state of the infrastructure and accomplishing the relevant rehabilitation measures immediately after any damage. 2. Equipping the access road with relevant road signs;	Senaki Municipality City Hall

Type of work	Expected negative impact	Mitigation measure	Responsible entity
Planned repairs and preventive works	Propagation of polluting substances (water, soil pollution) during the repairs and replacement	1. In order to avoid the dissipation of the materials used to reparation, the relevant works must be planned in an expedient manner.	Senaki Municipality City Hall
Water supply	Damage to environment due to the absence of requiredlicenses	1. Obtaining of license for groundwater extraction	Senaki Municipality City Hall

B. Environmental Monitoring Plan(EMoP)

274. As the previous chapters of the IEE report note, there are risks of certain impacts on some environmental receptors during the activity. One of the preconditions for reducing the negative nature and value is the correct management of the strict and well-planned activity under strict supervision (environmental monitoring).

275. An environmental monitoring plan is presented in Table 22 which outlines the activities and responsibilities associated with monitoring the effectiveness of the proposed mitigation plan and ensuring compliance with the recommendations of the IEE.

276. The monitoring methods incorporate visual observation and measurements (if needed). The monitoring program describes the monitoring parameters, time and frequency of monitoring, and collection and analysis of monitoring data. The size of monitoring depends on the value of the expected impact/risk.

277. The environmental monitoring plan must cover the issues, such as:

- Assessment of the baseline of environment;
- Identification of the reasons for changes in the environment and evaluation of the outcomes;
- Identification of the correction measures when the target values cannot be reached;
- Regular supervision over the degree and dynamics of the impact of the activity on the environment;
- Compliance with the legal requirements for impact intensity;
- Control over the set parameters associated with significant ecological aspects;
- Prevention and timely identification of the possible violations related to ecological aspects or emergencies during the activity.

278. The following are subject to the regular observation and evaluation in the course of environmental monitoring:

- Atmospheric air and noise;
- Water;
- Soil;
- Labor conditions and meeting the safety standards, etc.

***Table 22**. Environmental monitoring plan*

What? (Is the parameter to monitor)?	**Where?** (Is the parameter to monitor)?	**How?** (Must the parameter be monitored)?	**When?** (Frequency or duration of monitoring)	**Who** (Is responsible for monitoring)?
Dust propagation, exhaust fumes	1. Construction camp; 2. Construction site; 3. Transportation routes; 4. The nearest Buildings	Instrumental measurement	1. Checking dust propagation – during the intense operations and vehicle movement, particularly in dry and windy weather. 2. Checking the technical state - at the start of the working day; 3. Instrumental measurement - in case there are complaints	Contractor EHS/ environmental specialist; SC
Noise propagation	The nearest residential houses and public offices	Instrumental measurement	Once a week in case there are complaints	Contractor EHS/ environmental specialist; SC
Traffic	Along the materials and waste transportation routes	Visual observation	Permanently	Contractor EHS/ environmental specialists; SC
Engineering-geological stability	Sensitive instable sections	1. Visual observation; 2. Periodic examinations by the engineering geologist.	Particularly after the periods with precipitations;	Contractor EHS specialist; SC
Soil and ground quality	1. Areas adjacent to the construction camps; 2. Construction sites; 3. Materials and waste storage areas.	Visual observation: 1. No significant oil spills are observed; 2. Laboratory control	Visual observation - at the end of the working day; Laboratory examination - in case of large spills	Contractor EHS/ environmental specialists; SC
Temporal storage of the removed ground and topsoil	1. Construction sites; 2. Ground storage areas.	Visual observation: 1. The lower soil layer and topsoil are piled separately. 2. The height of the topsoil pile does not exceed 2 m. 3. The inclination of piles does not exceed 45^{o}.	Every day following the completion of ground works.	Contractor EHS/ environmental specialists; SC

What? (Is the parameter to monitor)?	**Where?** (Is the parameter to monitor)?	**How?** (Must the parameter be monitored)?	**When?** (Frequency or duration of monitoring)	**Who** (Is responsible for monitoring)?
		4. The soil is placed far from the surface water objects. 5. There are water diversion channels along the perimeter of the storage area; 6. The soil is stored temporarily at places preliminary agreed with the technical supervisor.		
Vegetation cover	1. Construction sites	Visual observation: 1. The works within the limits of the marked zone and no additional harm or plants or illegal cuttings take place.	Visual observation - at the end of the working day;	Contractor EHS/ environmental specialists; SC
Waste management	1. Construction camps; 2. Construction sites; 3. Temporal waste storage areas;	Visual observation: 1. The sites of temporal waste disposal are assigned in the construction area and are duly marked. 2. The storage areas for hazardous waste are protected against the penetration of strangers and against the weather impact; 3. On the territory, at due locations, there are marked containers to collect domestic waste. 4. The sanitary condition of the territory is	1. Visual observation - at the end of each working day; 2. Checking of documents on amounts of produced and disposed wastes	Contractor EHS/ environmental specialists; SC

What? (Is the parameter to monitor)?	**Where?** (Is the parameter to monitor)?	**How?** (Must the parameter be monitored)?	**When?** (Frequency or duration of monitoring)	**Who** (Is responsible for monitoring)?
		satisfactory – no dissipated waste is observed. 5. The waste is not stored on the territory for long;		
	1. Construction Contractor's office	1. Checking the waste registration log, 2. Checking the documented agreement about waste disposal	1. Document check - once a month	Contractor EHS/ environmental specialists; SC
Oils and oil products management	1. Construction camps; 2. Warehousing facilities	Visual observation: 1. The protected areas for oils, oil products and other liquid products marked in a due manner;	1. Visual observation - at the end of each working day; 2. Document check on amounts and types of oil products	Contractor EHS/ environmental specialists; SC
Technical state of the access road, possibility of free movement	1. Corridors of the transportation routes	Visual observation: 1. The vehicles move along the routes specified in advance, bypassing the settled areas as far as possible. 2. The state of the driving routes is satisfactory. 3. Free movement is not limited. 4. Driving speeds are observed.	1. During the intense transport operations	Contractor EHS/ environmental specialists; SC
Labor safety	1. Working area	Visual observation: 1. The territory is fenced and protected against the illegal penetration of strangers, 2. The personnel are equipped with PPE. 3. The technical state of the exploited equipment	1. Visual observation- before the onset of each working; 2. Documents on site trainings and daily tool box tals on health and safety	Contractor EHS specialist; SC

What? (Is the parameter to monitor)?	**Where?** (Is the parameter to monitor)?	**How?** (Must the parameter be monitored)?	**When?** (Frequency or duration of monitoring)	**Who** (Is responsible for monitoring)?
		and mechanisms is satisfactory. 4. Electrical and fire safety is ensured. 5. The safety, prohibiting and information signs are installed on the territory and along its perimeter. 6. There is a banner on the territory with the basic safety rules. 7. Smoking areas are specially assigned.		
		Unscheduled control (Inspection): 1. The personnel observe the safety rules and use the PPE.	Inspection - regularly.	Contractor EHS specialist; SC

X. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

279. Based on results of the conducted IEE the following conclusions could be done:

280. The proposed project was assessed against the laws of Georgia and ADB's safeguard. At the stage of the document preparation, possible environmental impacts were identified and relevant mitigation measures were developed.

281. Due to the circumstances occurring throughout the world related to the virus outbreak (COVID 19) and forced social distancing, no field visits were possible during the preparation stage of the IEE. Thus, in order to achieve the IEE objective, the team conducted online consultations with the representatives of Senaki Municipality for obtaining relevant information and carried out desktop survey. Representatives of city hall of Senaki municipality visited the project site, took pictures reflecting the existing situation, that were provided along the additional information. Namely, the team of consultants reviewed the project background documents, analyzed the relevant legal laws and technical standards, and undertook online meetings with people who possessed the information, additional to the received document, required for sound analyses of the situation and drafting of the document.

282. Temporary disturbance of local population is expected during the construction works, which shall be connected with the demolition and construction activities and transportation of the construction materials and equipment. In other cases, the impact on the social environment shall be positive, because temporary employment of the local population is expected;

283. During the functioning of the kindergarten the negative impact on physical environment and biological systems is not expected;

284. Only positive impact on the social system is expected during the kindergarten functioning, The Project is expected to have long-term positive impact on the population of city Senaki, especially young people and working parents who will get access to well planned, high quality service.

285. The Construction Contractor is obliged to conclude the contract only with the companies holding the license to extract inert materials. If the company decides to extract the inert materials itself and opens a quarry, it is obliged to obtain the license from the National Agency of Mines.

286. Technical characteristics and decision about dumpsites have not been made currently. Detail characteristics of these infrastructures will be provided in the site specific environmental management plans.

287. Generation of significant amount of inert waste is expected during earthworks within the project. According to the Georgian legislation, inert waste can be used for backfilling operations or constriction purposes in coordination with a state or a municipality authority. Inert waste disposal site for backfilling operation shall be defined by the Senaki City Hall. Waste Management Plan should be developed and submitted to the MEPA for adoption if amount generated waste will exceed limits defined by Georgia legislation (more than 1,000 t of inert waste, more than 200 t of non-hazardous waste and more than 120 kg of hazardous waste).

B. Recommendations

288. The EMP, its mitigation and monitoring programs, contained herewith will be included

within the Bidding documents for project works for all Project components. The Bid documents state that the Contractor will be responsible for the implementation of the requirements of the EMP through his own SSEMP which will adopt all of the conditions of the EMP and add site specific elements that are not currently known, such as the Contractors borrow pit locations. This ensures that all potential bidders are aware of the environmental requirements of the Project and its associated environmental costs.

289. The EMP and all its requirements will then be added to the Contractors Contract, thereby making implementation of the EMP a legal requirement according to the Contract. He will then prepare his SSEMP, which will be approved and monitored by the Engineer. Should the Engineer note any non-conformance with the SSEMP (and the EMP) the Contractor can be held liable for breach of the contractual obligations of the EMP. To ensure compliance with the SSEMP the Contractor should employ an Environmental Manager to monitor and report Project activities throughout the Project Construction phase.

290. Update/revise the IEE based on site-specific conditions, applicable environmental standards, conditions of permits/clearances from the regulatory agencies, contractors working methodology, and/or if there are unanticipated impacts, change in scope, alignment, or location;

291. The management of the Construction Contractor will provide periodic training and testing regarding the observance of the environmental protection and job safety rules by the personnel engaged in the project implementation activities.

292. A strict control over the observance of the safety requirements and hygienic norms by the personnel will be introduced.

293. Before starting the construction works, the contractor shall conduct the following surveys: noise and vibration soil contamination, air pollution and flora and fauna species to identify baseline situation and others (if needed);;

294. Prior to the commencement of the construction works, the Construction Contractor is obliged to prepare the following environmental plans: (i) Site-specific environmental plan. (ii) Noise and vibration management plan; (iii) Traffic management plan; (iv) Waste management plan; (iv) Health and safety management plan, (v) Emergency response plan; (vi) Camp site management plan. Inventory of trees shall conducted if required. Technical report of the stationary source of harmful substances emitted into atmospheric air shall be prepared if required.

295. The Construction Contractor must undertake all mitigation measures to minimize the noise and other air emissions. In order to reduce the impact of noise emissions on the sensitive receptors.

296. In the project operation phase, periodical monitoring of noise level and air quality is necessary. If the noise and air pollution levels increase against the admissible standards, it will be necessary to develop and implement additional mitigation measures.

APPENDIX A. IMPACT ASSESSMENT CRITERIA

Table 23*.Noise and vibration propagation – Impact Assessment Criteria*

Kind of impact	Assessment criteria		
	Significant (high) impact	***Average impact***	***Insignificant (low) impact***
Noise propagation	Noise levels at the border of the settled area exceed 55 dbA during the day and 45 dBA at night, or exceeds50 dBA during the day and 40dBA at night at sensitive receptors. Excess noise levels are intense. Population's dissatisfaction is inevitable.	Noise levels at the border of the settled area little exceed 55 dbA during the day and 45 dBA at night; however, the impact is expected only in some cases or is temporal. The noise levels at the sensitive receptors are admissible; however, additional preventive measures are recommended.	The noise background levels have deteriorated a bit near the settled areas or sensitive receptors. In any case, no levels in excess of the admissible levels are expected. It is sufficient to take standard mitigation measures.
Vibration	Due to the use of heavy technique and other methods, vibration spreads to great distances. There is a probability of damage or destruction of buildings and premises, monuments of cultural heritage or disturbance of geological stability.	Vibration does not spread to far places, or the impact is short-term. The probability of damage of buildings and premises, monuments of cultural heritage or disturbance of geological stability is very little. Minor and periodic discomfort is expected.	Vibration propagates only in the working zone. No damage of buildings and premises, monuments of cultural heritage or disturbance of geological stability is expected. No additional mitigation measures are needed.
Condition of the working area (noise and vibration)	It is impossible to work. Using ear-plugs or other protective equipment is less inefficient. It is necessary to change the service staff frequently.	Noise and vibration is a nuisance in the working area; but working is possible provided the relevant protective equipment are used or other measures are taken (e.g. cutting the working hours and the like).	The noise and vibration levels in the working zone are not high. No PPE is needed, or if needed only for short periods. An 8-hour-long working day is permitted.

Table 24. *Assessment Criteria of the expected impact on water*

Kind of impact	Assessment criteria		
	Significant (high) impact	***Average impact***	***Insignificant (low) impact***
Changed flow rate of the surface waters	Under the project impact, the natural river flow rate is strongly changed (either for the year, or temporarily); it is difficult to maintain the present state of the water eco-system. Other water-consuming unit has a limited access to water, Or due to the increased water flow, the risk of developing hazardous hydrological events has increased.	Under the project impact, the natural river flow rate reduced to 70% (either for the year, or temporarily); however, the water eco-system is mostly maintained. The access of another water-consuming unit to water has not changed, or Under the project impact, the natural river flow rate increased to 110%. The risks of developing the hazardous - hydrological events are possible to eliminate by using relevant protective measures.	Under the project impact, the natural river flow rate reduced to 70% (either for the year, or temporarily). The access of another water-consuming unit to water has not changed, or the unit is not used for other purposes. The river flow rate will not increase under the impact of the project.
Deterioration of the surface water quality, origination of the sewage	Fishing or drinking-and-industrial water object is under the impact, or Significant amount of sewage is expected. Despite building the treatment plant, there is a probability of discharging the excessively polluted waters, or the probability of emergencies is high. Due to the near location of the water body, there is a possibility for the solid remains and liquid mass to enter the water body.	An industrial-household water unit is under the impact. Sewage is originated; however, at the expense of relevant preventive measures (arranging the duly efficient treatment plant, etc.) it is possible to maintain the qualitative state of the surface water. The existing quality may be changed a bit what will have a minor impact on the water biodiversity, or the probability of emergencies to occur is not high. In such a case, the distances are so great that the risks of the polluting substances flowing into the water are minimal.	There are no surface waters near the water object. Therefore, there is only the possibility of indirect impact, which is not major. No sewage is expected to originate, or the small amounts of liquid remains can be managed by using the methods safe for the water environment (e.g. by an evaporating pond, recycling the liquid remains, etc.).
Ground water pollution	The activity implies using the methods creating the risks of excess pollution of the ground waters (e.g. burying the materials containing polluted substances, etc.); mitigation measures are less efficient,	The activity implies using the methods creating certain risks of pollution of the ground waters; however, using the mitigation measures is efficient and significantly reduce the risks,	The risks of the ground water pollution are associated with the unforeseen cases only (minor oil product leakages from technique or equipment and the like.). No large amounts of liquid polluting substances are

Kind of impact	Assessment criteria		
	Significant (high) impact	***Average impact***	***Insignificant (low) impact***
	or the probability of emergencies to occur is quite likely with the infiltration of the large amounts of oil products or other polluting substances into the ground layers.	or there is probability of emergencies to occur; however, relevant preventive measures are taken.	stored or used in the area threatening the ground waters in case of accidents.
Impact on the flow rate of the ground waters, changed infiltration properties of the grounds	The activity envisages arranging deep engineering facilities, with which it is possible to cross the underground water-bearing infrastructure. As a result, the outflows of the underground waters may decrease, or The activity envisages using large land areas/cutting down the forests what will deteriorate the ground infiltration properties. This may reduce the intensity of the underground water alimentation with the atmospheric precipitations.	The activity does not envisage arranging deep engineering facilities, and in addition, there are no particularly significant water-bearing horizons spreading on the territory. Despite this, cultivation of land areas or the used building and exploitation methods may have a certain impact on the outflows of less valuable springs.	By considering the small project area, used building and exploitation methods and existing hydro-geological conditions, the impact on the flow rate of the underground waters will be minor. No impact on either drinking, or industrial water is expected.

Table 25. *Assessment Criteria of the expected impact on the soil*

Kind of impact	Assessment criteria		
	Significant (high) impact	***Average impact***	***Insignificant (low) impact***
Damage and erosion of the fertile soil layer	The project envisages using over 12,5 ha of agricultural plots or other land areas highly valuable in respect of fertility, or the methods used during the building and exploitation promote the activation of the soil erosion processes over significant areas.	The project envisages using less than 12,5 ha of agricultural plots or other land areas valuable in respect of fertility, or the area to manage is more than 12,5 ha, but this is not an agricultural land or is not otherwise valuable, or The methods used during the building and exploitation promote the activation of the soil erosion processes in some areas, but they can be prevented by using the relevant mitigation measures.	The project envisages using less than 12,5 ha of non-agricultural plots or other land areas less valuable in respect of fertility. Provided the fertile soils layer is duly managed, the impact will be minimal. No erosion beyond the used perimeter is expected.

Kind of impact	Assessment criteria		
	Significant (high) impact	***Average impact***	***Insignificant (low) impact***
Soil/ground pollution	Due to the methods used during the building and exploitation, the risks of polluting the fertile layer of the agricultural land of any area (exceeding MAC) are quite high or virtually inevitable or the probability of developing such emergencies leading to the pollution of over 100 m2 area or over the depth of 0,3 m of soil and ground is quite high.	Due to the methods used during the building and exploitation, there are risks of polluting the less valuable surface layer of lands (exceeding MAC) or there is a probability of developing such emergencies leading to the pollution of less than 100 m2 area or less than the depth of 0,3 m of soil and ground.	Only minor local pollution of soil/ground is expected, mostly in unforeseen cases. The technology of local cleaning the polluted soil can be used.

Table 26. Assessment criteria of the expected impact on the geological environment

Kind of impact	Assessment criteria		
	Significant (high) impact	***Average impact***	***Insignificant (low) impact***
Violation of the stability of the geological environment under the project impact, activation of hazardous processes	The project is planned to implement in the relief with the III degree of complexity in engineering-geological respect. During the earthworks, the probability of activation of such hazardous geodynamic processes, as landslide, rock fall, mudflow, etc. exists, or the risks of activation of the same processes exist in the operation phase of the object (hydrotehcnical facilities, underpass, etc. can be considered as such object). It is necessary to build the protective facilities of complex structures or to make corrections to the project.	The project is planned to implement in the relief with the II degree of complexity in engineering-geological respect. During the earthworks or in the operating phase, the probability of activation of hazardous geodynamic processes. However, provided the protective measures in terms of simple-structure facilities these can be prevented.	The project is planned to implement in the favorable relief. No significant resources to build protective structures are needed. Only local, minor erosive processes may develop.
Impact of the	The engineering-geological properties of the grounds are not favorable needing building deep foundations to	The engineering-geological properties of the grounds allow founding the object, but under certain conditions. The degree	The object is not a facility of a complex structure. The engineering-geological properties of the territory-

Kind of impact	Assessment criteria		
	Significant (high) impact	***Average impact***	***Insignificant (low) impact***
existing engineering-geological conditions on the project facilities	establish the facilities on the cliffy rocks, or hazardous geodynamic processes threaten the stability of the object. It is necessary to build the protective facilities of complex structures or to make certain corrections to the project.	of the environment (ground and ground waters) aggressiveness to the reinforced concrete is satisfactory, or hazardous geo-dynamic processes pose a certain threat to the object's stability; however, the risk may be eliminated by taking protective measures of a simple structure.	constituent grounds are satisfactory. Consequently, there is no need for either deep foundations, or significant measures to protect the engineering facilities.

Table 27*. Assessment criteria of the expected impact on the biological environment*

Kind of impact	Assessment criteria		
	Significant (high) impact	***Average impact***	***Insignificant (low) impact***
Generic and quantitative changes in the vegetation cover	The project implementation will lead to the destroy of the endemic or Red-Listed species or the project implementation will lead to the use of the forested area over 1 ha or there is a risk for invasive kinds to spread	Following the project implementation, the risks of direct or indirect impacts on the endemic or Red-Listed species are minimal or the project implementation will lead to the use of the forested area less than 1 ha	Following the project implementation, there is no risk of impact on the endemic or Red-Listed species. Only the destruction of the homogenous low-value vegetation cover is expected. There is no risk for invasive species to spread.
Deterioration of the animal habitats, habitat loss or fragmentation endemic and Red-Listed animal	The project implementation will lead to the destroy, reduction or fragmentation of the area of the endemic and Red-Listed animal species or certain species may be reduced or certain population may disappear in the project implementation area or the object is a linear object creating a kind of barrier for migrating animals or	Following the project implementation, the impact on the endemic or Red-Listed species is less likely. The area of such living organisms with no ability to migrate to long distances may decrease, or quantitative changes of certain species are expected in the project implementation area, but their destroy is not likely.	The project area is under the anthropogenic impact and is not a shelter for animal species. Only the animals adapted to the human activity live in the area with high ecological valency. The object is not a barrier hampering the migrating animals.

Kind of impact	Assessment criteria		
	Significant (high) impact	***Average impact***	***Insignificant (low) impact***
	there is a risk for invasive kinds to spread.		
Immediate impact on fauna specie s	Due to the project implementation, there are some cases of animal perish (including endemic or Red-Listed species) during the year, or increased probability of poaching.	Due to the project implementation, there are few cases of animal perish (less valuable species) during the year	Perish of the animal species is less likely. The impact is short-term. The probability of increased poaching is minimal.
Direct or indirect impacts on the protected areas	Due to small distance and following the methods used at the building and exploitation stages, there are risks of long-term direct or indirect impacts on the territory.	Following the methods used at the building and exploitation stages, there is a risk of indirect impact on the protected area, but the impact is not long.	Due to a great distance, an impact on the protected area is less likely.

Table 28*. Assessment criteria of the expected impact on the visual-landscape environment*

Kind of impact	Assessment criteria		
	Significant (high) impact	***Average impact***	***Insignificant (low) impact***
Landscape impact	The project implementation is planned within the limits of the rare and high-value landscapes, or the landscape and its components are in fact intact and have high degree of naturalness.	The project implementation is planned within the limits of a regional or local landscape or the landscape and its components are partially transformed due to the human actions. They have an average degree of naturalness.	The project implementation is planned within the limits of a low-value landscape, which can be substituted, or the landscape and its components are quite devastated due to the man's economic activity.
Visual changes	The project area is easily seen from many locations. Implementation of the activity will have a significant impact on the visual effect for the local people or tourists.	The project area is seen from some observation points having no touristic value.	The project area is almost invisible. The building and exploitation will have a minimal impact on the visual effect for the local people or tourists.

***Table 29**. Assessment criteria of the expected impact on the social environment*

Kind of impact	Assessment criteria		
	Significant (high) impact	**Average impact**	***Insignificant (low) impact***
Positive impact			
Increased budgetary flows	Increased central budgetary flows	*Increased budgetary flows*	Increased central budgetary flows
Employment and growing income of the population	The possibility to hire 70% of workforce from local population or The possibility to hire 40% of workforce from local rural residents or the possibility to hire 20% of workforce from local population in the high-mountain villages.	A total of 30 to 100 people employment opportunities. or Local villagers from 10 to 30 people employment opportunities. or Highland status of rural residents few employment opportunities.	10 persons employment opportunity.
Improvement of transport infrastructure	Improvement of the technical state of the international, state and regional roads, high probability of distress of transport intensity.	Improvement of the technical state of the roads in some or high-mountainous village and easy transportation.	Simplified rehabilitation of rural roads and transportation
Other social-economic benefit	At a country, regional or municipal level, or for several high-mountainous villages: 1. Improved waste management conditions. 2. Improved water-supply and water-drainage conditions. 3. Improved power supply and gas supply conditions. 4. Improved accessibility to other kinds of resources.	For several or high-mountainous villages: 5. Improved waste management conditions. 6. Improved water-supply and water-drainage conditions. 7. Improved power supply and gas supply conditions. 8. Improved accessibility to other kinds of resources.	Only some families (homesteads) receive various social-economic benefits.
Negative impact			
Resettlement, need to use private property	One of several cases of physical resettlement, or over 10 cases of economic resettlement, or	Up to 10 cases of economic resettlement. Provided the compensation measures are taken, no population's dissatisfaction is expected	No physical or economic resettlement is expected. Temporal use of the privately owned land plots and units may be needed, with the relevant compensation measures planned.

Kind of impact	Assessment criteria		
	Significant (high) impact	**Average impact**	***Insignificant (low) impact***
	one or several cases of economic resettlement in a high-mountainous village		
Deterioration of transport infrastructure	Deterioration of the technical condition of the international, state and regional roads, significant increase of transport intensity.	Deterioration of the technical condition of the roads in some or high-mountainous villages or significant increase in vehicle movement; however, the impact is temporal.	No deterioration of local roads or significant increase of transport intensity is not expected.
Other negative social-economic effects	At a country, regional or municipal level, or for several high-mountainous villages: 9. Deteriorated waste management conditions and landfill overload. 10. Deteriorated water-supply and water-drainage conditions or overloaded relevant systems 11. Limited accessibility to other resources.	For several or high-mountainous villages: 12. Deteriorated waste management conditions and landfill overload. 13. Deteriorated water-supply and water-drainage conditions or overloaded relevant systems 14. Limited accessibility to other resources.	For several families 15. Deteriorated waste management conditions and landfill overload. 16. Deteriorated water-supply and water-drainage conditions or overloaded relevant systems 17. Limited accessibility to other resources. However, the problem can be solved by searching alternative routes.

Table 30. *Assessment criteria of the expected impact on the historical-cultural monuments*

Kind of impact	Assessment criteria		
	Significant (high) impact	***Average impact***	***Insignificant (low) impact***
Damage to the historical-cultural monuments	Due to the small distance and following the methods used in the building and exploitation phases, there is a probability of damaging the monuments of the international or local historical-cultural heritage.	Due to the small distance and following the methods used in the building and exploitation phases, there is a probability of damaging the monuments of the local historical-cultural heritage.	Due to the great distance, the probability of damaging the monuments of historical-cultural heritage is less likely.
Unforeseen damage to the archeological monuments	Following the historical designation of the project area, there is a probability of the late identification of the archeological monuments.		The area is quite anthropogenic. Therefore, identification of the recent archeological monuments is less likely.

APPENDIX B. MINUTES OF ONLINE MEETING WITH STAKEHOLDERS

Construction of Senaki Kindergarten

Minutes of Online Meeting with Stakeholders

In order to discuss environmental and social documentation Initial Environmental Examination (IEE) and Social Due Diligence Report (SDDR) prepared for the project- "Construction of Kindergarten in Senaki", on the 17th of August, 2020 At 14:00. A public consultation meeting was conducted in the social network (via Facebook), as the COVID 19 outbreaks and there are existing related restrictions. Prior to the meeting, representatives of City Hall and local residents were informed personally by phone about the planned online meeting by the Communication Consultant – Irakli Japaridze.

The meeting aimed at keeping stakeholders abreast of the sub-project related planned activities, the expected negative impacts on the natural and social environment and the ways and means of preventing them.

Those present at the meeting:

Locals: Ani Tuladze; Kristina Jishkariani; Alika Janjgava; Irakli Sajaia

Representative of Senaki Municipality: Gocha Bagaturia

Representatives of Municipal Development Fund of Georgia:

Environmental Specialist- Niniko Isakadze

ADB Communication Consultant – Irakli Japaridze

Project Manager – Zura Chinchaladze

Construction of Senaki kindergarten is one of the projects implemented under the Livable Cities Investment Program. The project area is located in Senaki City, adjacent to 167, Eliava str. (Cadastral code: 44.01.35.441).

There is an old, amortized building on the area selected for the project. The building is not functioning at the moment, because of the condition of the building. The selected area is free of private ownership. The total land plot area under construction of the new building is 1,759.00 m2 and the construction area of the new building is 980.52 m2. The project includes arranging of kindergarten for 4 groups - 100 children in Senaki City, with the total area of 4 304 m2. The kindergarten building will include setting up of bedrooms, playing rooms, cloakrooms, canteen, storing rooms, hall, administration rooms, washing rooms, kitchen, alleviator, evacuation stairs, boiler. The project also envisages arranging garden, benches, sheds, playgrounds, waste bins and water fountains on the rest of the area allocated by the Local Government (1,759.00 m2).

The project covers construction of kindergarten in the Senaki City. Senaki is situated in Western Georgia and is 288 km away from Tbilisi via motor- road. The distance to Poti Sea Port is 39 km. Cadastral code of the land plot allocated is 44.01.35.441.Total area of the territory is 1,759.00 m2. The building is to be constructed on the area of 980.52 m2. The project includes arranging of kindergarten for 4 groups - 100 children. The kindergarten building will include setting up of bedrooms, playing rooms, cloakrooms, canteen, storing rooms, hall, administration rooms, washing rooms, kitchen, alleviator, evacuation stairs, boiler (with the total area of 4 304 m2). The project also envisages arranging garden, benches, sheds,

playgrounds, waste bins and water fountains on the rest of the area allocated by the Local Government (1,759.00 m2).

The project area will have temporary fence during the construction period and permanent 2.2 meter high metal fence after the construction is completed. No utility relocation activities and/or rehabilitation od access roads are envisaged under the project and associated screening.

Implementation of this project will help improve the livability of the City of Senaki urban area through improved access to quality pre-school infrastructure, improved environment: new playgrounds increasing gross motor skills of children, safe building - considering fire alarm and safety systems, clean and updated sanitary infrastructure including water closet and kitchen, improved planning of the kindergarten building; increased space per child and per teacher; energy efficient kindergarten buildings; improvement of educational and working conditions for children and teachers in kindergarten; Improved access to inclusive child-friendly quality education.
The potential beneficiaries of the project will be about 200 families from Senaki per year that will be able to accommodate their children in kindergarten.

The project area will have temporary fence during the construction period and permanent 2.2 meter high metal fence after the construction is completed. No utility relocation activities and/or rehabilitation access roads are envisaged under the project and associated screening.

Implementation of this project will help improve the livability of V. Senaki urban area through improved access to quality pre-school infrastructure, improved environment: new playgrounds increasing gross motor skills of children, safe building - considering fire alarm and safety systems, clean and updated sanitary infrastructure including water closet and kitchen, improved planning of the kindergarten building; increased space per child and per teacher; energy efficient kindergarten buildings; improvement of educational and working conditions for children and teachers in kindergarten; Improved access to inclusive child-friendly quality education.

The potential beneficiaries of the project will be about 200 families from Senaki per year that will be able to accommodate their children in kindergarten.

Communication Consultant Irakli Japaridze opened the meeting, reported in brief the objective of the meeting and then turned it over to the next speaker - Project Manager Zurab Chinchaladze. Project Manager familiarized the meeting attendees with the project, as well as with specifics of works to be carried out and reviewed in detail the assignment of Senaki Kindergarten. Then the speech was delivered by Resettlement Consultant Mr. Japaridze provided detailed information related to measures to be taken as per Due Diligence Report. Irakli Japaridze explained that the Due Diligence report considers provision of compliance with the safety standards as much as possible. Mr. Japaridze showed also the photos to the attendees, reflecting the access roads to the construction site, as well as how the construction machinery is to move in the course of construction. Irakli Japaridze notified the attendees of the meeting that during construction there will be installed the special fence. Irakli Japaridze clarified also how and in which form the grievances can be accepted and reviewed by Senaki City Hall and MDF.

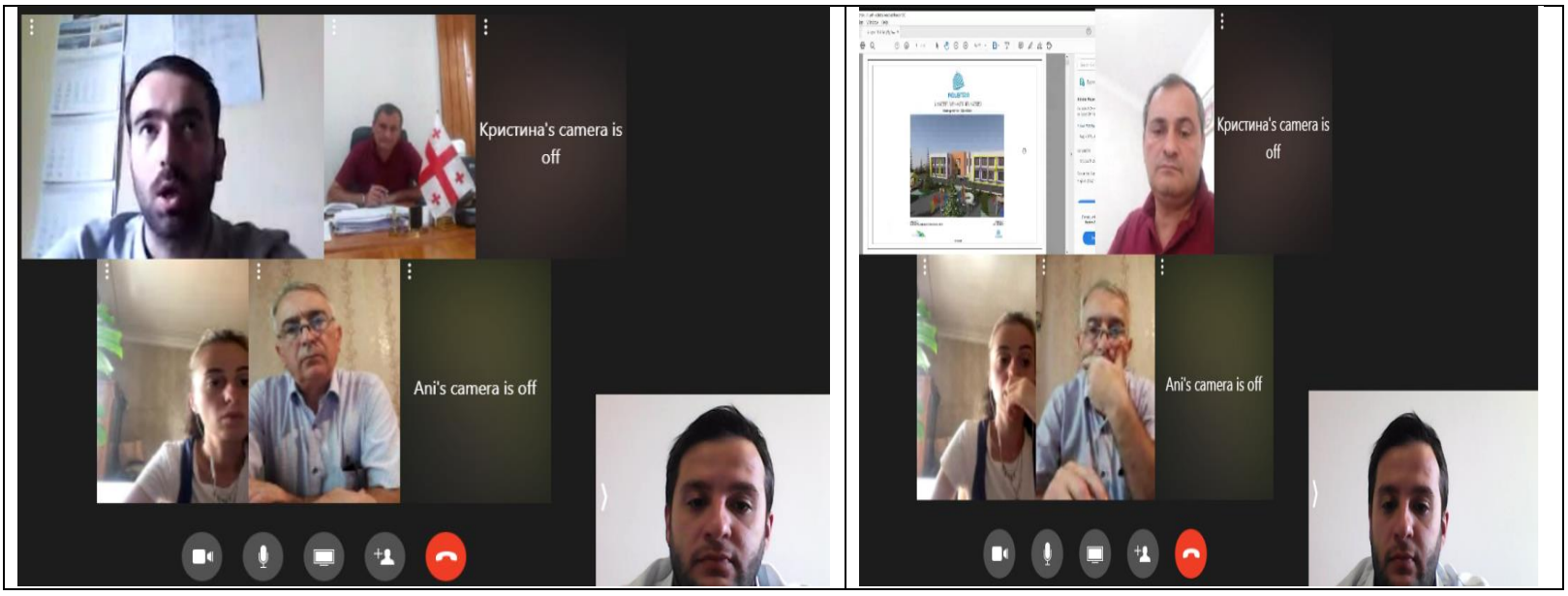
Then the speech was delivered by MDF environmental specialist Niniko Isakadze. Niniko Isakadze informed the attendees about the IEE prepared for the project. She shortly explained to the public about the social and environmental screening procedures applied for the ADB and environmental and requirements of the presented project. The mitigation measures were also discussed in order to minimize the potential negative impacts, which may arise during the project implementation process. N. Isakadze mentioned that according to the Georgian law on Environmental Impact Code the project does not require any kind of permits and agreements from the Ministry of Environmental Protection and Agriculture. N. Isakadze discussed the structure and content of IEE/EMP and briefly discussed public relationship and labor management measures. She noted that IEE/ EMP forms an integral part of the contract made with the civil works contractor. The last one is obliged thoroughly

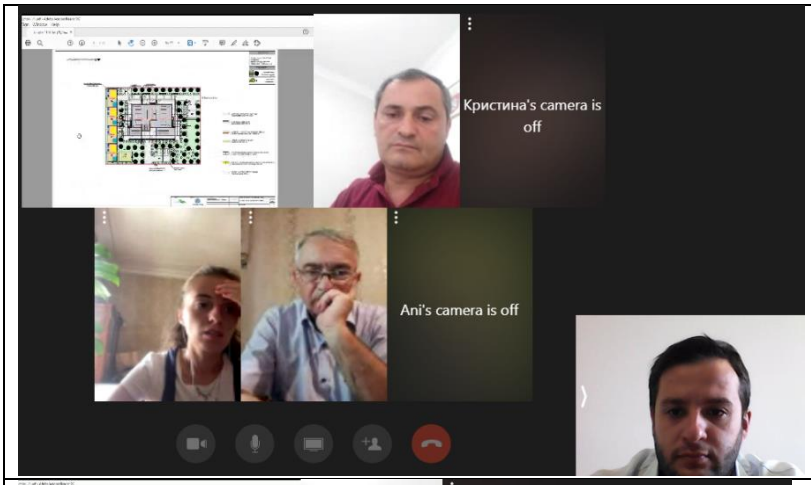
implementation of the measures specified in the IEE/EMP to protect social and natural environment.

After the presentation, the audience was given a possibility to express their opinions and/or participate in Q&A session concerning presented issues, they posed the following question. Irakli Japaridze, Zurab Chinchaladze, Irakli Japaridze and Niniko Isakadze responded to all the questioned asked.

Question	**Response**
will the kindergarten be equipped with facilities under the project?	At this stage, the discussion about the equipping the kindergarten with donor organization is underway
Does the project envisage arraignment of the Fence around the kindergarten?	Yes, under the project fence will be arranged
How are you going to manage waste water under the project?	If there is a central wastewater system, the kindergarten will be connected with it, otherwise wastewater treatment devise will be arranged

Photos of the Meeting

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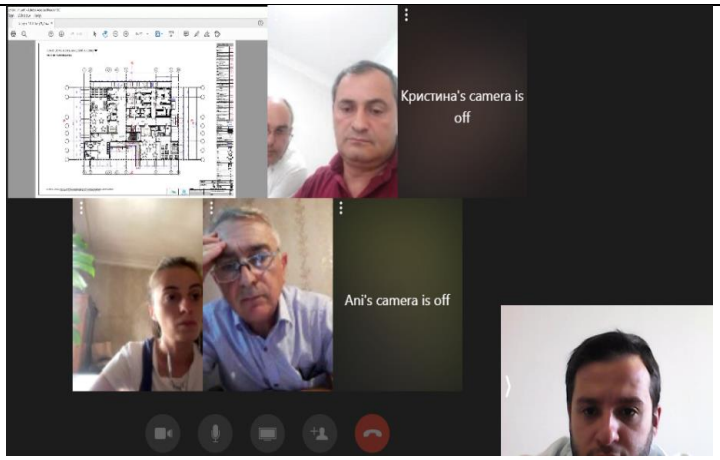
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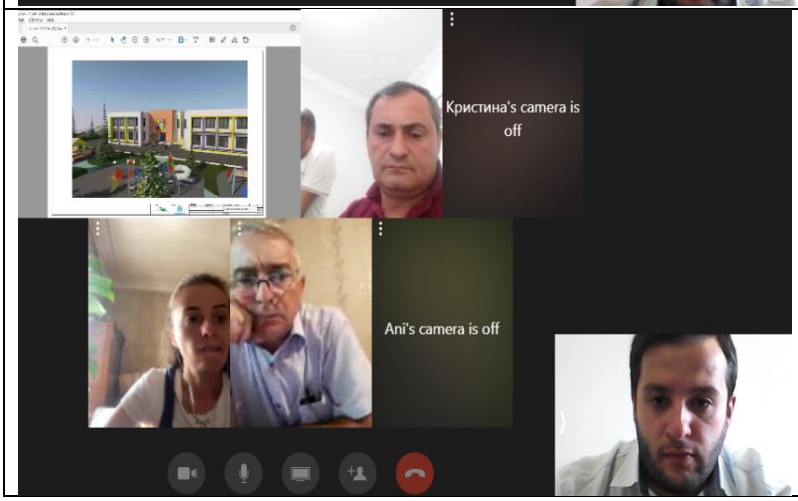
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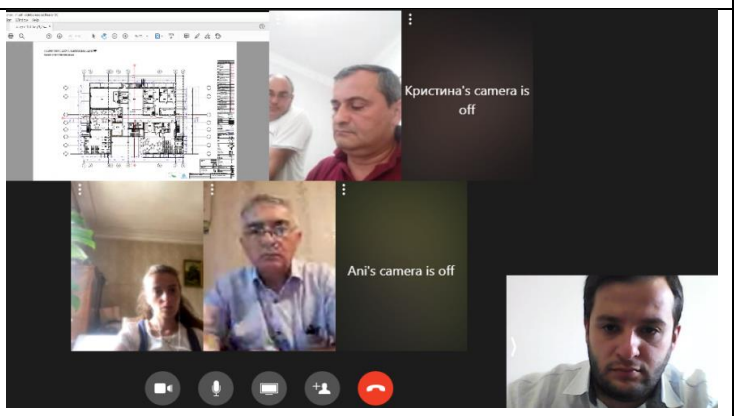
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