Updated Initial Environmental Examination

Project Number: 53118-001
October 2021

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GEO: Livable Cities Investment Program for Balanced Development

Package LCIP-CW-08-2021 Construction of Kindergarten in village Agara, Akhaltsikhe 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 1 November 2023)

Currency units	–	United states Dollars (USD)
USD 1.00	=	GEL 2.7150

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

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ABBREVIATIONS

AASHTO	-	American Association of State Highway and Transportation Officials
ADB	-	Asian Development Bank
AP	-	Affected Person
CC	-	Construction Company
CH	-	Cultural Heritage
Covid-19	-	Coronavirus Disease 2019
CSC	-	Construction Supervisory Consultant
CWUW		Urban Development and Water Division, Central and West Asia Department
dB	-	Decibels
DED	-	Detailed Engineering Design
EA	-	Executing Agency
EAC	-	Environmental Assessment Code
EARF	-	Environmental Assessment and Review Framework
EHS	-	Environmental, Health and Safety
EIA	-	Environmental Impact Assessment
EM	-	Environmental Manager
EMP		Environmental Monitoring Plan
EMP	-	Environmental Management Plan
ERP	-	Emergency Response Plan
EU	-	European Union
GEO	-	Georgia
GIS	-	Geographic Information System
GoG	-	Government of Georgia
GRC	-	Grievance Redress Commission
GRM	-	Grievance Redress Mechanism
HSP	-	Health and Safety Plans
IA	-	Implementing Agency
IBA	-	Important Birds Area
IEE	-	Initial Environmental Examination
IFC	-	International Finance Corporation
IUAP	-	Integrated Urban Action Plans
IUCN	-	International Union for Conservation of Nature
LARP	-	Land Acquisition and Resettlement Plan
LCIP	-	Livable Cities Investment Program
MDF	-	Municipal Development Fund
MoEPA	-	Ministry of Environmental Protection and Agriculture
MPC	-	Maximum Permissible Concentrations
MPC	-	Maximum Permissible Concentration

MRDI	-	Ministry of Regional Development and Infrastructure
NACHP	-	National Agency for Cultural Heritage Preservation
NEA	-	National Environmental Agency
REA	-	Rapid Environmental Assessment
SAEMR		Semi-annual Environmental Monitoring Report
SanN&R		Sanitarian Norms and Rules
SEAH	-	Sexual Exploitation, Abuse and Harassment (SEAH)
SOP	-	Standard Operating Procedures
SPS	-	Safeguard Policy Statement
SSEMP	-	Site-Specific Environmental Management Plan
STP	-	Sewage Treatment Plant
SWM	-	Solid Waste Management
SWMCG	-	Solid Waste Management Company of Georgia
TRTA	-	Transaction Technical Assistance
TSP		Total Suspended Particulates
USIIP	-	Urban Services Improvement Investment Program
WMP	-	Waste Management Plan
µg	-	Microgram

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I EXECUTIVE SUMMARY

1. Since November 2016, the 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 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 and others.

2. To expedite balanced regional development, support for basic urban services and transport has 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 to 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 and Tbilisi. LCIP will help improve the livability of urban area clusters through the following 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 implementation of the project (employment of workers), and after the construction phase; (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 type of sport, including water polo, synchronized swimming, etc.

4. Construction of a kindergarten village Agara is one of the (sub-) projects implemented under the Livable Cities Investment Program (LCIP). The project aims to increase access to high quality preschool education for the children living in Akhaltsikhe Municipality.

5. The project envisages construction of new kindergarten for 4 groups (100 children) in village Agara. The new kindergarten will be on a plot of land owned by the municipality (cadastral code 62.05.58.505, area is 6294 m^2). The kindergarten building will be two-storied, the construction area of the new two-story kindergarten building is 980, 52 m^2 and the total area is 1344, 6 m^2.

6. Typical project is designed for construction of kindergartens with a capacity of 100 children in different municipalities of Georgia.

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 (Borjomi-Kharagauli Protected Area (6 km direct distance), Emerald sites (4 km direct distance). Based on the Integrated Biodiversity Assessment Tool (IBAT) results used by ADB only one Key Biodiversity Area - Adjara-Imereti Ridge is located within 5 km of the subproject site and 48 IUCN red list of threatened species are potentially found within 50 km of the area of the site.

8. There are no cultural heritage monuments in the village.

9. 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.

10. The update of the Initial Environmental Examination (IEE) was necessary based on the additional information provided. The inclusion of baseline information about noise, vibration and air quality allows for a comprehensive understanding of the project's potential impacts on the environment. This information helps establish a benchmark against which future assessments can be made to evaluate the effectiveness of mitigation measures.

11. The specification of sensitive receptors is crucial in order to identify and address potential impacts on vulnerable areas or communities. By identifying these receptors, the project can implement measures to minimize or mitigate any adverse effects and ensure the protection of these sensitive areas.

12. The specification of the existing landfill facilities and the amount of waste involved provides important details about the project's waste management practices. This allows for an assessment of the potential environmental impacts associated with waste generation and disposal, and the development of appropriate waste management strategies to minimize any adverse effects.

13. Determining the purpose of using excess soil is essential for understanding the intended use and potential impacts associated with soil relocation or disposal. This information helps assess whether the soil is suitable for reuse, which can contribute to sustainable practices and reduce environmental impacts.

14. The inclusion of information about the pre-construction situation provides a baseline for comparison during and after the construction phase. This allows for a better assessment of any changes or impacts resulting from the project and helps determine the effectiveness of mitigation measures.

15. The addition of a construction camp layout plan, without any new observed impacts, indicates that the project has considered the accommodation needs of the limited construction workforce within the project territory. This allows for better planning and management of the construction activities, ensuring minimal disruption to the surrounding environment and communities.

A. Project Rationale, Impact, Outcome and Outputs

16. The project envisages the construction of a new kindergarten for 4 groups of children in village Agara. The new kindergarten will be on a plot of land owned by the municipality (cadastral code 62.05.58.505, area is 6294 m^2). The kindergarten building will be two-storied, the construction area of the new two-story kindergarten building is 980, 52 m^2 and the total area is 1344, 6 m^2.

17. 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 main sensitive receptors for the site can be considered residential buildings (distance from the construction area 20-80 m) in terms of noise, vibration and dust generation during construction process. The detailed information regarding the sensitive receptors are provided below. Respective mitigation measures, specified in the EMP will be implemented by the Construction Company (CC) to minimize disturbance of local population. The area allocated for the construction is 6294 m^2.

18. The land plot allocated for the construction is free of buildings and registered as municipal property. There will be no involuntary resettlement.

B. Environmental Categorization and Environmental Due Diligence

19. 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.

20. The Livable Cities Investment Program (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 updated IEE for construction of a new kindergarten in village Agara, 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. Since the detailed design for the project is being developed along with the construction process, in November the presented IEE was revised based on updated information including baseline data and project specific information.

21. As part of the preparation of this updated IEE, consultations with stakeholders were undertaken to solicit views and feedback on the project on the 10th of August at 12:00, 2021. 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.

22. 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 has overall responsibility for safeguard compliance at project sites, addressing community-level complaints (if any), and ensuring Construction Company (CC) 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.

23. The IA will be supported by a supervision consultant. In addition, the Construction Company (CC) 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 Construction Company (CC). Construction Company (CC) shall be made aware that the IEE will be updated.

24. 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 (residential buildings) 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. Alternatives

25. The construction site of the kindergarten was selected taking into account the following circumstance: enough area for arrangement of kindergarten building and yard, ownership of the land (preference was given to municipal owned land plot) and existence of supply infrastructure (water, electricity, gas). Additionally, there are 26 Kindergartens in Akhatlstikhe municipality, one of them is located in village Agara. However, the kindergarten is not adopted to the kindergarten building requirements and modern standard. Moreover, there is no enough space available for the whole contingence in villages Agara, Tkemlana, Zikilia and Sakuneti.

26. No action or a zero alternative implies refusal to the project implementation, therefore the problem related to providing enough places in the kindergarten for local population of villages- Agara, Sakuneti, Tkemlana and Zikilia will remain unresolved.

27. Implementation of this project will help improve the livability of the villages Agara, Sakuneti, Tkemlana and Zikilia 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.

D. Existing condition

28. The village of Agara is located in Akhalstsikhe municipality, Samtskhe Javakheti region, on the left bank of the river Mtkvari, at an altitude of 955 m above sea level. The site selected for the construction of kindergarten is located at the southwestern part of village Agara and it is mostly bordered by agricultural land plots. Nearest residential house is located approximately 60-80 m distance from the construction site. From the north project site bordered with Khashuri-Akhaltsikhe-Vale motor road. From the east, area intended for the project edges Tsinubnistskali River (distance from the cadastral boundaries is 9 -10 m).

29. The land plot selected for kindergarten construction is registered as municipal property and it is free of buildings.

30. According to the information of Geology Department of the National Environment Agency provided in the report -"Results of the development of natural geological processes in Georgia in 2020 and forecast for 2021" - the village of Agara, Akhaltsikhe Municipality has not been included in it.

31. Adjacent to the project area there are several sensitive receptors (please see figure 9). Along the access road there are a kindergarten and a small hospital, the nearest residential building is located at 60-80 m distance from the site and a hall for special ceremonies (municipal property) is at 15-20 m distance.

32. The project site is located approximately 150 m north from the river Mtkvari.

33. Village Agara is located approximately in 6 km distance from the Borjomi-Kharagauli Protected area, 4 km distance from the Emerald Site and there are no cultural heritage sites in the vicinity of the project site. Based on the Integrated Biodiversity Assessment Tool (IBAT) results used by ADB only one Key Biodiversity Area - Adjara-Imereti Ridge is located within 5 km of the subproject site and 48 IUCN red list of threatened species are potentially found within 50 km of the area of the site.

34. There are several trees and shrubs within the project area. However, the part of the area that is intended for the construction of a new building is free of trees and covered with grass, which will be removed along with the topsoil before the start of work.

E. Key Impact Identification

35. This project will have an important positive impact on population of villages Agara, Zikilia, Sakuneti and Tkemlana 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.

36. The potential environmental effects of the pre-construction activities, such as Construction Company (CC) office set ups, necessary equipment stacks, sites preparation, and the adequacy of the accesses have been considered and all these activities will not have deteriorated the existing conditions of the environment.

37. Environmental effects likely to occur during the construction of the Project are noise, vibration, dust, solid and liquid wastes, pollution of surface water. Effects likely to occur during the construction phase are short term effects and they cannot deteriorate the existing conditions.

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

39. Noise and vibration level will be increased due to the construction works and operation of machinery, bulldozers, excavators, graders, vehicles and equipment for transportation. Engineering machinery and vehicles are featured by their intermittent nature with mobility and high noise level (which is 80~90 dB from a distance of 5 meters).

40. 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. Main sensitive receptors are a kindergarten and a small hospital, the nearest residential building is located at 60-80 m distance from the site and a hall for special ceremonies (municipal property) is at 15-20 m distance.

41. 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.

42. The ground water may be contaminated due to improper placement of the excavated soil, poor management of construction camp, and improper storage of construction materials and leakage of fuel and lubricates from construction machinery.

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

F. Key Management and Mitigation Actions

44. The Contractor, prior to the onset of construction, is obliged to conduct a number of studies and develop environmental plans, including: Site-Specific Environmental Management plan (SSEMP),Traffic Management Plan, Noise and Vibration Management Plan, Inventory of the trees to cut down (if relevant), Waste Management Plan (WMP), Asbestos-Containing Waste Management Plan (if relevant), Health and Safety Management Plan, Emergency Response Plan (ERP), Camp Site Management Plan, Topsoil Management Plan (if relevant) and Report of stationary sources of harmful substances emitted into air (if relevant).

45. The Contractor is obliged to develop any other document/plan and conduct any other relevant survey per the employer's requirement in the process of civil works.

46. 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 (IA) and corresponding information to MDF and the Construction Supervisory Consultant (CSC).

47. 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, and to follow any recommendations of the project supervision consultants;

48. Relatively moderate impact is connected with the dust emissions. This is temporary impact, and should be mitigated by following measures: damping down using water bowsers with spray bars or other technical means; Materials transported to site will be covered/ wetted down to reduce dust; Ensure proper state of maintenance of buildings, machinery and vehicles to minimize exhaust emissions; Smoke emitting vehicles and equipment shall not be allowed and shall be repaired or removed from the project and etc.

49. In order to minimize noise levels, the following mitigation measures shall be implemented: implement works that cause noise during the daytime only; Limit implementation of noisy works simultaneously; if necessary, equip personnel with proper protective equipment;

Give notice as early as possible to sensitive receptors for periods of noisier works such as excavation and etc.

50. Considering the proximity of the project area to the river, the following measures shall be conducted: lubricants, fuels and other hydrocarbons will be stored at least 50 m away from water bodies; Topsoil stripped material shall not be stored where natural drainage will be disrupted; Ensure no waste materials are dumped in the river, including re-enforced concrete debris; Place generators more than 20 meters from the river and etc;

51. The construction contractor shall provide instrumental measurement and monitoring of noise and vibration levels during the construction and implement mitigation measures to ensure that noise and vibration levels are within the national and international standards.

52. The following practices will be adopted to minimize the risk of soil contamination and topsoil loss: site for temporary storage of the topsoil must be selected prior to commencement of works with due regard to environmental norms and conditions on the sites and approved by Engineer. The area must be flat, located away from any surface water body, protected from runoff and erosion; Topsoil and subsoil must be stored separately until reuse; 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.

53. If trees cutting will become necessary during the project implementation, plantations should be carried out in the ration of at least 1:3 for ordinary trees and 1:10 for red listed trees. 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.

G. Monitoring Actions

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

- Dust propagation, exhaust fumes (NOx, SO2, CO) in construction camp and site, transportation routes, the nearest buildings, CH monuments and other sensitive receptors during the intense operations and vehicle movement, particularly in dry and windy weather, at the start of the working day and/or in case there are complaints;
- Noise and vibration propagation at the sensitive receptors including CH monuments, public school and residential buildings;
- Traffic along the materials and waste transportation routes;
- Soil and ground quality at areas adjacent to the construction camps and sites, materials and waste storage areas, with visual observation at the end of the working day and laboratory examination - in case of large spills;
- Temporal storage of the removed ground at construction sites and ground storage areas every day following the completion of ground works;
- Waste management and oils and oil products at construction camps and sites, temporal waste storage areas at the end of each working day and checking of documents on amounts of produced and disposed wastes;

- Technical state of the access road, possibility of free movement at corridors of the transportation routes during the intense transport operations;
- Labor safety at working area with visual observation- before the onset of each working and checking documents on site trainings and daily toolbox on health and safety.

H. Conclusions

55. Based on assessment of project design, desk reviews of the available data describing baseline environment and consultations, the construction a new kindergarten in village Agara 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.

56. 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 and vibration levels and air quality etc. Any requirements for remedial action will be reported in environmental monitoring reports.

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

- Include this updated 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, Construction Company (CC) working methodology, and/or if there are unanticipated impacts, change in scope, alignment, or location;
- Require Construction Company (CC) to submit SSEMP prior to start of works, and do not allow works to commence until the SSEMP has been cleared by IA (or IA).
- Ensure that the existing materials to be demolished/dismantled are tested for hazardous contents. Also ensure that an action plan for handling, storage, transport, and disposal of the wastes is prepared, informed to the Construction Company (CC), 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 Construction Company (CC) upon award of contract;
- Strictly supervise EMP implementation;
- Ensure Construction Company (CC) have appointed qualified EHS officers prior to the start of works;

- Documentation and reporting take place on a regular basis as indicated in the updated IEE;
- Ensure continuous consultations with stakeholders;
- Disclosure of information in a timely manner, and establishment of the GRM;
- Involvement of Construction Company (CC), including sub-contractors, in the first level GRM; and
- Ensure commitment from MPD, IA, supervision consultants, and Construction Company (CC), to protect the environment and the people from any impact during project implementation.

58. IEE, including EMP will be included in the bidding documents and will form an integral part of Construction Company (CC) contract document.

II. INTRODUCTION

A. Background

59. 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, the ADB has supported the government to mainstream an integrated and participatory approach to urban development. It has done so by improving strategic planning of selected urban area clusters to achieve a more balanced regional development through preparation of Integrated Urban Action Plans (IUAPs)[2]. Building on this, the government has prioritized crucial urban investments for the ADB to take forward through feasibility studies and safeguards due diligence. These include integrated solutions that bring co-benefits to citizens in the development of the urban clusters. This can include improvements to 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, and more. 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.

60. To expedite balanced regional development, support for basic urban services and transport has 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 to ensure operational and financial sustainability of infrastructure projects3.

61. 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 urban area clusters through the following interlinked outputs: (i) improved adequacy and efficiency of urban infrastructure and services, (ii) improved accessibility, connectivity and attractiveness of regional tourism clusters, (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

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.

2 https://www.adb.org/sites/default/files/project-documents/49367/49367-001-tcr-en.pdf

3 https://www.adb.org/sites/default/files/project-documents/49367/49367-001-tcr-en.pdf

impact: increased income of population during the implementation phase (employment of workers), and after the construction phase; This will be especially important for young people living in regions, as the representatives of the communities often have significant success in the international arena in various types of sport, including water polo, synchronized swimming, and more.

62. 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 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 positively will 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.

63. 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.

64. Construction of the new kindergarten in village Agara is one of the sub-projects implemented under the Livable Cities Investment Program.

B. Purpose of the Initial Environmental Examination

65. The Initial Environmental Examination (IEE) for the construction of the new kindergarten in village Agara was conducted as part of the 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 updated IEE covers all proposed physical activities under the project.

66. 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).

67. 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.

68. 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 update of the IEE has been done by CSC in coordination with IA and CC in accordance with the approved detail design. 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 Akhaltsikhe Municipality, consultants, the design institute and other stakeholders; (c) review of technical standards and norms; (d) analysis of baseline information (wherever available) 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

70. 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 Environmental Regulations and Standards

71. Table 2 shows the threshold values of the major air pollutants as defined by the GEO, IFC and EU legislation. The most stringent standards are highlighted.

Table 3***Sanitary Wastewater***

72. Sanitary wastewater from industrial facilities may include effluents from domestic sewage, food service, and laundry facilities serving site employees. Miscellaneous wastewater from laboratories, medical infirmaries, water softening etc. may also be discharged to the sanitary wastewater treatment system. Recommended sanitary wastewater management strategies include:

(i) Segregation of wastewater streams to ensure compatibility with selected treatment option (e.g. septic system which can only accept domestic sewage);

(ii) Segregation and pre-treatment of oil and grease containing effluents (e.g. use of a grease trap) prior to discharge into sewer systems.

73. If sewage from the industrial facility is to be discharged to surface water, treatment to meet national or local standards for sanitary wastewater discharges or, in their absence, the indicative guideline values applicable to sanitary wastewater discharges shown in Table 18.

74. If sewage from the industrial facility is to be discharged to either a septic system, or where land is used as part of the treatment system, treatment to meet applicable national or local standards for sanitary wastewater discharges is required. Sludge from sanitary wastewater treatment systems should be disposed of in compliance with local regulatory requirements. In its absence, disposal has to be consistent with protection of public health and safety, and conservation and long-term sustainability of water and land resources. It should be mentioned also that the most stringent standards will apply during construction.

75. Construction-phase water quality monitoring will be assessed against national standards. Wastewater discharge from construction sites and camps shall be assessed against IFC values (for any treated sanitary sewage discharge).

76. Table 19. 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	This means that conditions of the legal agreement between Georgia and the ADB for the Project prevail over the national

Law	Description	Requirement for LCIP
	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.	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 (Article 5 of Chapter 2).	The law will help the Municipal Development Fund determine what additional permits or licenses will be required under the subprojects.
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	The law will help the IAs to determine what additional permits or licenses will be required under the subprojects.

Law	Description	Requirement for LCIP
	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 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 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,	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
	• 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 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.	In line with the requirements of the said law, the Construction Contractor(CC) 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
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(CC) 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 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	At the stage of construction and rehabilitation under LCIP, the requirements of the said law will regulate the level of noise, vibration and emissions on the territory of project zones.

Law	Description	Requirement for LCIP
	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.	
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 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	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
	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 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.	The rights of all employees engaged in the construction of 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.

B. Environmental Regulations and Standards

77. Table 2 shows the threshold values of the major air pollutants as defined by the GEO, IFC and EU legislation. The most stringent standards are highlighted.

Table 3 Ambient Air Quality Standards

Parameter	Averaging Period	Limit (µg/m^3)			Applicable to LCIP
		Maximum Permissible Concentration (MPC) in Georgia	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	-	-	
Total Suspended Particulates (TSP) / Dust	8 hours	10 mg/m^3	-	-	10 mg/m^3
	30 minutes	200	-	-	200 µg/m^3
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
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.

Noise Standards

78. Admissible noise standards of the IFC and Georgian national standards for residential areas are similar. The national standards for noise are set according to the technical regulation – Acoustic noise limits for rooms/premises in residential houses and public establishments (Document #300160070.10.003.020107, Date 15/08/2017) (see Table 4).

79. According to IFC, noise impacts should not exceed the levels presented in Table 7 and Table 5 or result in a maximum increase in background levels of 3 decibels (dB) at the nearest receptor location off site. This program will comply with both IFC Guidelines and Georgian Standards. Note that Georgian standards refer to the allowable limits indoors, not at the building façade.

80. For baseline monitoring, and construction and operational phase noise assessment, IFC guideline limits will be followed. For workplace noise, IFC guidelines shall be followed.

Table 6 Georgian Standards for Noise Levels[4]

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. 3. Acoustic noise limits given above are set for routine operation 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.

[4] Allowable Limits Indoors, Not at the Building Façade

81. Acoustic noise limits given above are set for routine operation conditions of the 'space', i.e., windows and door are closed (exception – built-in ventilation canals), ventilation, air conditioning, lighting (in case available) is on; functional (baseline) noise (such as music, speech) not considered.

Table 7 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 8 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

Vibration Standards

82. The Georgian Standards for vibration are designed for human comfort. These are shown in Table 9. Note that no standards for building damage exist.

Table 10 Georgian General Admissible Vibration Values[5]

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.

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

83. The American Association of State Highway and Transportation Officials (AASHTO) (1990) identifies maximum vibration levels for preventing damage to structures. Table 11 summarizes the maximum levels. AASHTO standard will be followed during the construction phase.

Table 11 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

Soil Quality

84. In Georgia, soil quality evaluation criteria are determined by instructions on “Level of Chemical Contamination of Soil” (MM 2.1.7. 004-02). Information on maximum admissible concentrations of various substances and elements in soils are given in Table 12.

Table 13 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

Component	Unit	Level
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

Groundwater quality standards

85. Georgian legislation does not regulate quality standards for groundwater. Quality of groundwater is regulated by norms set for potable water. Potable water quality criteria are determined by technical regulations on potable water (Government Regulation N 58 from January 15, 2014). Potable water quality criteria are given in Table 14.

Table 15 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
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

Index	Measuring unit	Standard not more than:
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.

Surface Water Quality Standards

86. The values of Maximum Admissible Concentrations of the harmful substances in surface water are provided in the Environmental Quality Norms approved by the Order #297N (16.08.2001) of the Ministry of Labor, Health and Social Protection (as amended by the Order No 38/n of the same Ministry of 24 February 2003). The admissible level of pollutants in surface water is given in Table 16. All effluent shall comply with the Georgian National Standards. However, certain parameters are not specified in the national standards; for these, IFC Guidelines are being used.

Table 16 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

87. Quality requirements depend on category of water body (ref. Technical regulations of protection of surface water from pollution, approved by decree #425 of the government of Georgia, 31 December 2013). The categories are: (a) household water use; (b) domestic water use; and (c) fisheries. The latter, in its turn, splits in highest, first and second categories.

Table 17 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.	

Sanitary Wastewater

88. Sanitary wastewater from industrial facilities may include effluents from domestic sewage, food service, and laundry facilities serving site employees. Miscellaneous wastewater from laboratories, medical infirmaries, water softening etc. may also be discharged to the sanitary wastewater treatment system. Recommended sanitary wastewater management strategies include:

(i) Segregation of wastewater streams to ensure compatibility with selected treatment option (e.g. septic system which can only accept domestic sewage);

(ii) Segregation and pre-treatment of oil and grease containing effluents (e.g. use of a grease trap) prior to discharge into sewer systems.

89. If sewage from the industrial facility is to be discharged to surface water, treatment to meet national or local standards for sanitary wastewater discharges or, in their absence, the indicative guideline values applicable to sanitary wastewater discharges shown in Table 18.

90. If sewage from the industrial facility is to be discharged to either a septic system, or where land is used as part of the treatment system, treatment to meet applicable national or local standards for sanitary wastewater discharges is required. Sludge from sanitary wastewater treatment systems should be disposed of in compliance with local regulatory requirements. In its absence, disposal has to be consistent with protection of public health and safety, and conservation and long-term sustainability of water and land resources. It should be mentioned also that the most stringent standards will apply during construction.

91. Construction-phase water quality monitoring will be assessed against national standards. Wastewater discharge from construction sites and camps shall be assessed against IFC values (for any treated sanitary sewage discharge).

Table 19 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]

92. IFC Environmental, Health, and Safety Guidelines for Water and Sanitation Water quality of potable water supply systems include information relevant to the operation and maintenance of:

(i) Potable water treatment and distribution systems, and

(ii) Collection of sewage in centralized systems (such as piped sewer collection networks) or decentralized systems (such as septic tanks subsequently serviced by pump trucks) and treatment of collected sewage at centralized facilities. The IFC guidelines recommend measures to prevent, minimize and control environmental impacts associated with all stages of drinking water supply and sewerage management, including water withdrawal and protection of water quality, drinking water treatment, water distribution, and wastewater collection and treatment.

93. Clearances to be obtained prior to start of construction under LCIP.

94. IA will ensure all necessary regulatory clearances and approvals are obtained prior to commencement of works. IA, with support of, are responsible for obtaining the clearances/permits and ensuring the conditions/specifications/provisions are incorporated in the subproject design, costs, and implementation. The IAs shall report to ADB the status of compliance to clearances/permits as part of the regular project progress reporting. Sanitary Wastewater

95. Sanitary wastewater from industrial facilities may include effluents from domestic sewage, food service, and laundry facilities serving site employees. Miscellaneous wastewater from laboratories, medical infirmaries, water softening etc. may also be discharged to the sanitary wastewater treatment system. Recommended sanitary wastewater management strategies include:

(i) Segregation of wastewater streams to ensure compatibility with selected treatment option (e.g. septic system which can only accept domestic sewage);

(ii) Segregation and pre-treatment of oil and grease containing effluents (e.g. use of a grease trap) prior to discharge into sewer systems.

96. If sewage from the industrial facility is to be discharged to surface water, treatment to meet national or local standards for sanitary wastewater discharges or, in their absence, the indicative guideline values applicable to sanitary wastewater discharges shown in Table 18.

97. If sewage from the industrial facility is to be discharged to either a septic system, or where land is used as part of the treatment system, treatment to meet applicable national or local standards for sanitary wastewater discharges is required. Sludge from sanitary wastewater treatment systems should be disposed of in compliance with local regulatory requirements. In its absence, disposal has to be consistent with protection of public health and safety, and conservation and long-term sustainability of water and land resources. It should be mentioned also that the most stringent standards will apply during construction.

98. Construction-phase water quality monitoring will be assessed against national standards. Wastewater discharge from construction sites and camps shall be assessed against IFC values (for any treated sanitary sewage discharge).

99. Table 19 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 20**. 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 MEPA is required. For rehabilitation of existing STP EIA permit is not required.	Implementing Agency	Executing Agency
Tree Cutting[6]	Relevant conclusion of the National Forestry Agency under the MEPA; 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 MEPA	Construction Company	Implementing Agency
Generator sets			
Storage, handling, and transport of hazardous materials	Relevant conclusion of the MEPA	Construction Company	Implementing Agency
Sand mining, quarries and borrow areas	Relevant conclusion of the MEPA	Construction Company	Implementing Agency
Temporary traffic	Relevant conclusion off the	Implementing	Implementing

[6] 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

diversion during construction	Ministry of Internal Affairs of Georgia (Patrol Police Department)	Agency/Local Municipality	Agency/Executing Agency
Establishment of construction camps	Relevant conclusion of the MEPA[7] if a project under LCIP is subject to EIA	Construction Company	Implementing Agency
Disposal of Construction waste and demolition debris	Relevant conclusion of the MEPA 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 MEPA.	Implementing Agency	Executing Agency
Construction of new tube wells or any new extraction of ground water	Relevant conclusion of the MEPA	Recipient Municipality	National Environmental Agency

C. International Environmental Agreements and Applicability to LCIP

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

Table 21. 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	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)

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

International Agreement	Description	Applicability to LCIP and Specific Requirements
	conservation in their national land use plans.	
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. Construction Company (CC) 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 Construction Company (CC) should develop and review recommendations and guidelines that shall be implemented on national levels.
Aarhus Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, 1998	Georgia is a signatory of this 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.	EA/IA to follow GoG, ADB and Aarhus Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters.

D. ADB Safeguard Policy Statement's Environmental Requirements

101. **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.

102. **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.

103. Environmental screening and preliminary categorization of the project was carried out in accordance with ADB's Safeguard Policy Statement, 2009 (SPS, 2009), using the ADB REA Checklist (Table 22). The project is classified as "Category B".

104. **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 IA. 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.

105. **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.

106. **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.

107. **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.

108. **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 updated IEE should be publicly available at reasonable period beforehand the public consultations.

109. **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.

110. **Grievance Redress Mechanism**. The IA 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.

111. **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.

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

113. **Biodiversity Conservation and Sustainable Natural Resource Management.** The borrower/client will assess the significance of project impacts and risks on biodiversity and natural resources as an integral part of the environmental assessment process. The assessment will focus on the major threats to biodiversity, which include destruction of habitat and introduction of invasive alien species, and on the use of natural resources in an unsustainable manner. The borrower/client will need to identify measures to avoid, minimize, or mitigate potentially adverse impacts and risks and, as a last resort, propose compensatory measures, such as biodiversity offsets, to achieve no net loss or a net gain of the affected biodiversity.

114. **ADB SPS International Best Practice Requirements.** Following requirements of ADB SPS, IA 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, IA shall achieve whichever is more stringent. If less stringent levels or measures are appropriate in view of specific subproject circumstances, IAs will provide full and detailed justification for any proposed alternatives that are consistent with the requirements presented in ADB SPS.

115. **Exclusion Criteria for Subproject Selection.** LCIP will not include and/or involve any activities listed in ADB's Prohibited Investment Activities List.[8] Subsequent subprojects shall comply with the exclusion criteria for subproject selection[9] 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).

116. 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.

E. Compatibility between Country's and ADB Safeguard Policy

117. While the ADB SPS is in line with the multilateral development financing institutions, Government's policies are also comparable to international environmental framework including that of ADB. Table 23 provides the comparison per ADB SPS policy principles, gaps, and measures to be implemented by the project to address the gaps.

[8] ADB SPS Appendix 5.

[9] EARF for the Livable Cities Investment Project for Balanced Developmnet

Table 23. 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 assessment where appropriate.	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
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.
Carrying out Public	5. Carry out meaningful consultation with affected people and facilitate their informed	Publication of information in national and regional mass-	According to GoG requirements conducting of	Adapt the ADB requirements on meaningful consultation and

ADB SPS Requirement	ADB SPS Policy Principle	Government of Georgia Regulation	Gap	Measures to Address Gap
Consultations and concerns	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.	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.	public consultations with stakeholders are not required throughout project implementation.	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 other stakeholders. Disclose the final environmental assessment, and its	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 days before public consultations.	According to GoG requirements MoEPA is responsible to send electronic version of EIA report to local municipalities for disclosure in GEO language only.	Conduct public disclosure in accordance to ADB requirements such as posting the safeguard documents on its website as well as disclose relevant information in accessible

ADB SPS Requirement	ADB SPS Policy Principle	Government of Georgia Regulation	Gap	Measures to Address Gap
	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.			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 Company (CC) and IA.	According to GoG legislative base there is no requirement to prepare and submit to IA 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 conservation aims of the protected area. In an area of natural habitats, there must be no significant conversion or degradation, unless (i)			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
	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, transportation, handling, and storage. Avoid the use of hazardous materials subject to international bans or phaseouts. Purchase, use, and manage pesticides based on	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
	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.

F. Administrative Framework

118. **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 Construction Company (CC) performance with the approved EMPs, IEEs, environmental standards and other environmental commitments of the Construction Company (CC).

119. **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.

120. **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).

121. **Local Government of city Akhaltsikhe**– Local government of Akhalatsikhe Municipality, is responsible authorizing certain construction works within the city, as well as issuing acceptance acts for the new buildings. Relevant permission for tree cutting (not included in Red List species), if required, should be issued also by Akhaltsikhe city hall (in accordance with the Organic Law of Self-Government of Georgia (Article 16).

IV. DESCRIPTION OF THE PROJECT

122. The project envisages the construction of a new kindergarten for four groups (100 children) in village Agara. The new kindergarten will be built on a plot of land owned by the municipality (cadastral code 62.05.58.505, area is 6294 m2). The distance from the kindergarten building to the nearest residential building is 60-80 m.

123. The kindergarten will be a two-story building, with a total area of 1404.5 m2, of which 675.94 m2 on the ground area. The rest of the land plot will be used for a yard, including playgrounds and green areas.

124. The kindergarten building will includes 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 (22 m^2) located adjacent to the kindergarten. 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 for sewage waters with the capacity 8 m^3/per day is envisaged by the project. The building will be connected to the central water supply system. As there is no natural gas supply system in the village, the boiler will work on diesel.

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, and administration rooms.

125. Fire safety, water supply, sewage, air ventilation and heating systems will be arranged as well. Water supply will be provided from the city's water supply network. The project envisages installation of the biological treatment unit/device for sewage waters with the capacity 8 m3/per day. Hot water will have provided from the boiler (gas operated) installed at the site.

126. The entire territory of the kindergarten will be fenced, and a video surveillance system installed.

Figure 1. Location of project site and access road

Figure 2. Current state of the project site

Figure 3. Master Plan

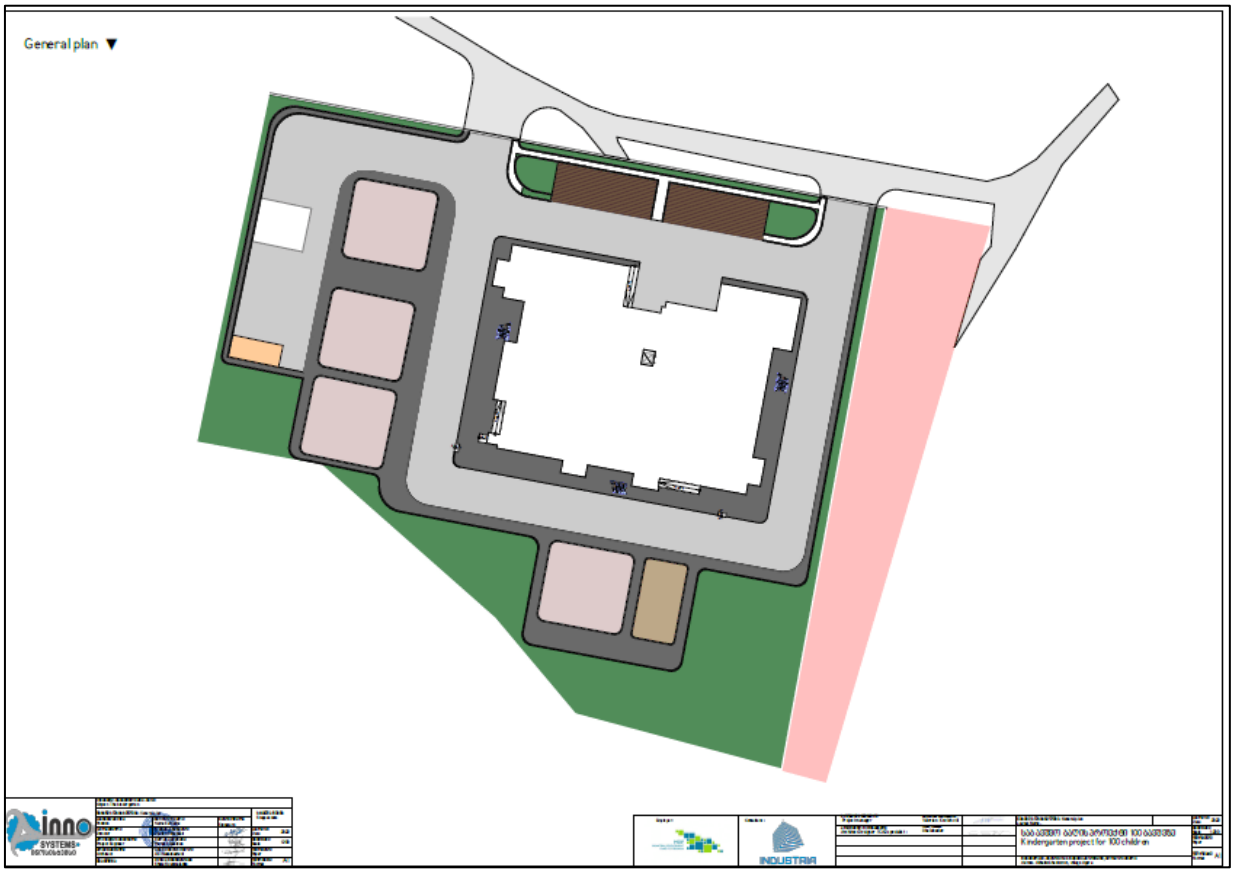


Figure 4. Render of the kindergarten building

Indicative Implementation Schedule

127. 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, concrete mixer - 1, concrete pump - 1, excavator - 1, bulldozer, dump truck - 1, welding machine – 1, elctropneumatic instrument, boring tool, cutter, screw holder, metal cutter. All above heavy machines will be rented for construction materials delivery and site constructions work, hence there is no need for special dedicated area for parking and maintenance of such machines. Mechanisms for construction works will be stored at the storage of the construction site.

128. The civil works duration is defined as 17 months. (15 July 2022 - 3 February 2023).

129. 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 camp and other temporary facilities will be demobilized, the cultivation works will be done, and the landscape will be harmonized.

Dumpsites

130. The soil removed from the area will be temporary stored on the site and will be used for backfilling purposes.

Access Roads

131. The access road to projected land plot starts from Khashuri- Akhaltsikhe- Vale road which borders the territory from the north (see figures 1 and 5). The access road represents the local importance motor way (total length -200 m and width - 4,5-7m). There are no cuvettes along the road and on the left side of it there is a kindergarten. The access road is paved with sand-gravel materials.

132. In case of damage the CC is obliged to recover/reinstate these roads and/or other local infrastructure, and agricultural lands.

Figure 5 Access Road to the Project Site

Disposal of Spoil Material

133. In accordance with the sample design prepared for the kindergarten of 4 groups, approximately 4900 tones excess ground will be generated due to the earthworks which should be transported from the site. The soil removed from the area will be temporary stored on the site and used for backfilling purposes. According to the Waste Management Code of Georgia inert waste can be used for backfilling activities according to written agreement with local authority.

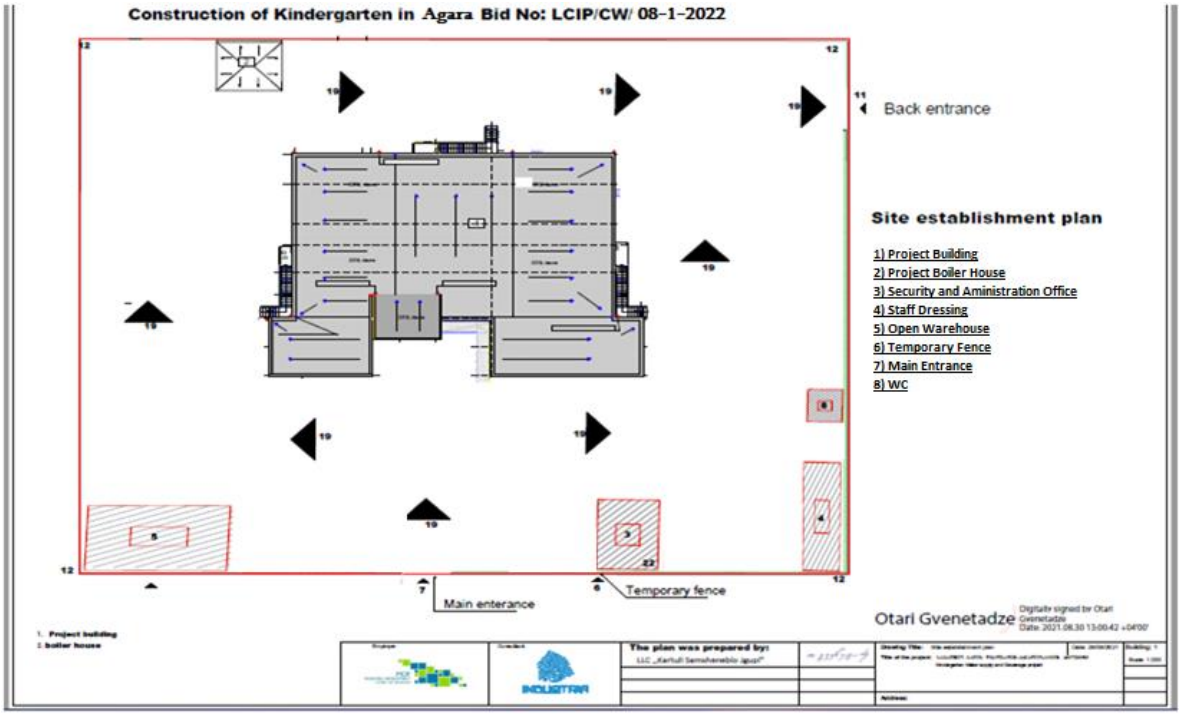
Camp and Storage Areas

134. Camp and storage areas will be arranged on the project site. Constriction site organization scheme and camp site management plan will be prepared by the Construction Company (CC) before commencement of construction activities. Camp site 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. Location of the camp site shall be agreed with supervision company.

135. The Construction Company (CC) will provide the following basic facilities in the construction camp:

- Project building
- Security booth
- Temporary dressing for workers
- Open temporary warehouse
- Temporary Fence
- Entrance Gate
- WC

Figure 6. Construction site organization scheme



136. The Construction Company (CC) is encouraged to engage local labours to the extent possible.

Construction Process

137. Prior and in the process of construction phase the following activities will be done by the CC:

(i) Designation of 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 and corresponding information to MDF and the Construction Supervisory Consultant (CSC);

(ii) Identifying sensitive receptors adjacent to the project sites and conduct instrumental measurement, particularly noise and vibration, soil contamination, air pollution;

(iii) Prior civil-works commencement, preparation and submission to IA and CSC of the required plans[10]:

a. Site Specific Environment Management Plan (SSEMP);
b. Site-Specific Health and Safety Plan including Covid-19;
c. Traffic Management Plan;
d. Noise and Vibration Management Plan;
e. Waste Management Plan;
f. Emergency Response Plan;

[10] CC is obliged to develop any other document/plan and conduct any other relevant survey per the employer's requirement in the process of civil works. No works are allowed until approval of SSEMP.

g. Camp Site Management Plan;
h. Post-construction Audit Report.

(iv) Obtaining all necessary permits, licenses and approvals: licenses for the extraction of inert material from suppliers who have a special permit with MoEPA; approval of the waste management plan by MEPA; Approval by MoEPA of the technical report of the inventory of the stationary source of ambient air pollution, which will be conducted before the start of construction; Agreement on placement of construction waste at the nearest landfill; Agreement on the disposal of hazardous waste (the company must be licensed and have an ecological expert opinion, which will be agreed with the Ministry of Environment and Natural Resources Protection of Georgia); Tree inventory report and tree cutting permit issued by the local government or MoEPA in the case of species included in the red list (If trees cutting are required, the contractor will carry out the inventory of trees and submit all required documentation to village Hall or, in case of Red listed species to the MoEPA to obtain relevant permit. Contractor will be required to implement compensation measures for tree cutting as defined by the permit and ADB policy requirements);

(v) Notification of local population on civil works commencement and arrangement of information banner regarding project and indicate contact persons; dissemination of information regarding duration of upcoming works;

(vi) Preparatory works: mobilization of the temporal infrastructure, transport and construction appliances and equipment and mechanisms needed for construction;

(vii) Addressing any grievances in a timely manner as per the GRM;

(viii) Mitigate personnel safety risks and implement anti-COVID measures;

(ix) Conduct instrumental measurement and submit monthly reports to IA/CSC during construction;

(x) 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 CSC of environmental incidents/spillages including actions taken to resolve issues of Site-Specific Environmental Management Plan (SSEMP); (x) plan and schedule of the works to accomplish; (xi) List of machines and equipment needed for construction; (xii) records related to the occurring environmental problems; (xiii) records about waste management issues; (xiv) written marking of areas of waste disposal and waste transportation instructions issued by the local authority; (xv) records about the supplies of necessary materials and their consumption; (xvi) complaints log books; (xvii) Incident registration logs; (xviii) reports about the correction actions; (xix) logs of equipment control and technical maintenance; and (xx) reports about the personnel training;

(xi) Implementing site clean-up measures after civil works finalization and reinstatement to pre-works condition or better;

(xii) Developing post-construction Audit Report.

V. ANALYSES OF ALTERNATIVES

138. The following section provides an assessment of different alternatives including the 'no action' alternative.

139. Specifically, this section of the IEE Considers:

- The 'No Action' Alternative
- Alternative Construction Camp and Laydown Areas

140. The construction site of the kindergarten was selected taking into account the following circumstance: there are 26 Kindergartens in Akhatlstikhe municipality, one of them is located in village Agara. However, the kindergarten is not adopted to the kindergarten building requirements and modern standard. Additionally, there is no enough space available for the whole contingence in Agara. Moreover, the neighboring villagers from villages Zikilia, Sakuneti and Tkemlana will be beneficiaries of the new kindergarten as well and they will be able to accommodate their children in kindergarten.

141. No action or a zero alternative implies refusal to the project implementation, therefore the problem related to providing enough places in the kindergarten for local population of villages- Agara, Sakuneti, Tkemlana and Zikilia will remain unresolved.

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

143. Implementation of this project will help improve the livability of the villages Agara, Sakuneti, Tkemlana and Zikilia 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.

144. The potential beneficiaries of the project will be about 100 families from village Agara, Zikilia, Tkemlana and Sakuneti per year that will be able to accommodate their children in kindergarten.

VI. BASELINE ENVIRONMENT

A. General Description

145. The village of Agara is located in Akhaltsikhe municipality, Samtskhe Javakheti region, on the left bank of the river Mtkvari, at an altitude of 955 m above sea level. In Agara there is a railway station. A road (Khashuri-Akhalstikhe-Vale) of international importance crosses the village.

146. Akhaltsikhe is located in southwestern part of Georgia, in Samtskhe-Javakheti Region. Akhaltsikhe is situated on the both banks of the river Potskhovi, which separates the city to the old city in the north and new in the south. Akhaltsikhe is situated 1000 m. above the sea level and covers 984 km2 area. To the north, Akhaltsikhe municipality is bordered by Kharagauli and Borjomi municipalities, and to the east by Borjomi and Aspindza municipalities. The southern border coincides with the Georgian-Turkish state border, while the western border is represented by Adigeni municipality. Akhaltsikhe is located 207 km away from the capital city Tbilisi, 168 km from Batumi, 89 km away from the border with Armenia and 12 km from the border of Turkey.

147. In 2014, Akhaltsikhe municipality signed the 'Mayors' Agreement' and joined the European campaign to voluntarily reduce CO2 emissions by 20% by 2020. To fulfil its obligations under the 'Mayors' Agreement', the municipality with the help of the international organizations and funds has implemented many projects, including the reconstruction of the municipal buildings to increase energy efficiency, and the renovation of the outdoor lights system using the LED lights.

148. The site selected for the construction of kindergarten is located at the southwestern part of village Agara. The terrain of the project site is flat.

149. The project site is mostly bordered by agricultural land plots. Nearest residential house is located approximately 60-80 m distance from the construction site. From the north project site bordered with Khashuri-Akhaltsikhe-Vale motor road. From the east, area intended for the project edges Tsinubnistskali River (distance from the cadastral boundaries is 9-10 m). It originates on the southern slope of the Meskheti Range, at an altitude of 2400 m above sea level. It joins the Mtkvari on the left side near the village of Agara. Its Length is 24 km. flows into the territory of Akhaltsikhe cave. The river Leknarisghele and Alvanisghele are connected on the left side. It feeds on snow, rain and groundwater. The average annual flow is 1.4 mW / s.

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

151. Population living in the close proximity of the project site and agricultural 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 impacts can be minimized by proper implementation of mitigation measures.

152. Based on the Rapid Environmental Assessment (REA) (see Appendix C), Village Agara is located approximately in 6, km distance from the Borjomi-Kharagauli Protected area, 4 km distance from Emerald Site and there are no cultural heritage sites in the vicinity of the project site. Based on the Integrated Biodiversity Assessment Tool (IBAT) results used by ADB only one Key Biodiversity Area - Adjara-Imereti Ridge is located within 5 km of the subproject site and 48 IUCN red list of threatened species are potentially found within 50 km of the area of the site.

153. Taking into consideration the mentioned-above, Construction Company has provided baseline measurements before civil works commencement.

154. The Project is expected to have long-term positive impact on the population of village Agara, Zikilia, Tkemlana and Sakuneti especially young people and working parents who will get access to well planned, high quality service. Before construction commencement the territory was free from any buildings/facilities and also construction excavation area was free from plantings. The kindergarten will be a two-story building. The rest of the land plot will be used for a yard, including playgrounds and green areas. Modern style façade will be arranged with cheerful colors (blue, white and orange). The colorful circle glass case will be arranged at the main entrance of the building. The building will be provided with a ramp for people with disabilities.

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

156. The sensitive receptors of the construction site are nearby residential buildings.

Residential Buildings	**Distance from the construction territory (m)**
Residential Buildings 1	60 – 80m
Residential Building 2	60m

Figure 7. Sensitive receptors

B. Geology, Geomorphology and Hazardous Geological Processes

157. From the geotectonic point of view, the object of study is located in the southern subzone of the Lesser Caucasus folded system – Adjara - Trialeti folded zone.

158. The area of the study area belongs to the central part of the Achara-Trialeti system in geotectonic manner, while geomorphologically the area is part of the II terrace of left upper ravine of the river Kvabloni, the relief of which is slightly sloping towards the south-east.

159. According to the hydrogeological zoning, the study area is located in the hydrogeological region of the water-pressure system of Adjara-Trialeti folded zone and in the region of Akhaltsikhe artesian basin of fissure waters. This basin is located within the Akhaltsikhe structural and morphological depression, which is bordered by the Meskheti, Trialeti and Arsiani ridges. The absolute elevation of Akhaltsikhe Depression reaches 900-1000 m, and of the surrounding ridges - up to 2800 m.

160. Stratigraphically, the area consists of Paleogene-Lower Eocene flysch, above which the volcanic sedimentary rocks of Middle Eocene and the sand clay complex of Upper Eocene are located. Oligocene sand clay sediments as well as Neogene volcanic formations are well represented in the central part of the area. At the tops of the ridges, in some parts, there are erosive residues of andesite-basalt lavas. In the valleys of the rivers Mtkvari, Potskhovi, Koblianis-Tskali, etc., Older Quaternary terraces are observed, and in their floodplains there are loose sand clay sediments.

161. Based on the scheme of dividing the territory of Georgia into seismic districts Akhaltsikhe is located on a magnitude 8 area.

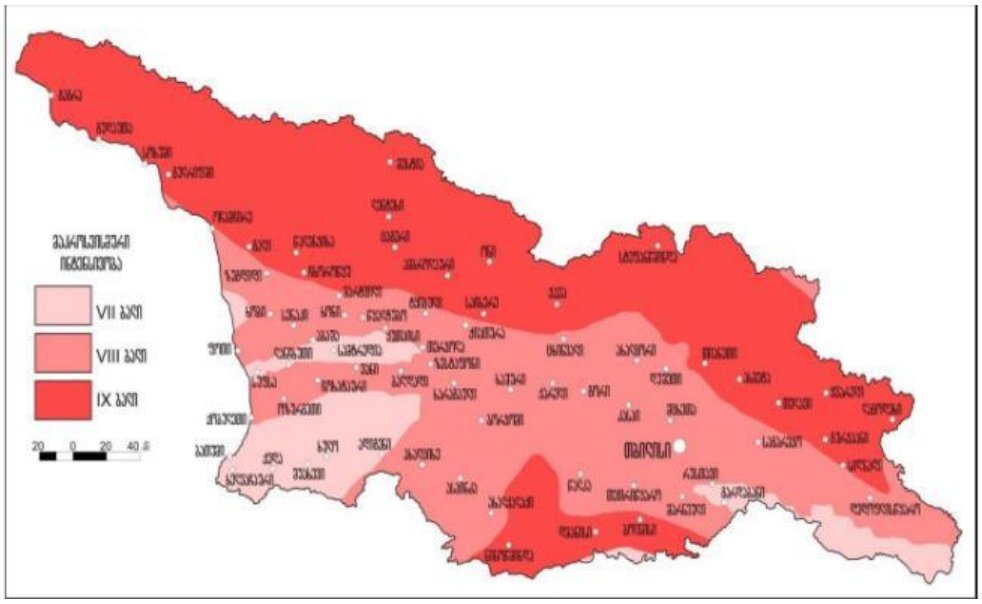
162. The construction contractor is obliged to carry out an engineering geological survey of the land plot, an expert opinion must be issued on the engineering-geological survey in compliance with the current legislation. Following an engineering geological survey, the contractor must recalculate the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

Geohazards

163. According to the normative document "Earthquake-resistant construction" (Pn01.01-09) the Akhaltsikhe Municipality belongs to eight magnitude earthquake zone.

164. Based on the information of Geology Department of the National Environment Agency provided in the report -"Results of the development of natural geological processes in Georgia in 2020 and forecast for 2021" - the village of Agara, Akhaltsikhe Municipality has not been included in Geohazard zones. However, the construction contractor is obliged to identify any hazardous geological processes that might have impact on the project area.

Figure 8 Seismic Information



C. Climate and Air quality

165. In most parts of Akhaktsikhe municipality, mountain steppes climate is represented. Winters are cold and summers are long and warm. The average temperature in January - the coldest month of the year, is 3.80C, and in the warmest month, August - 20.50C. The average annual precipitation is 520-600 mm, the maximum precipitation falls in May and June (64-86 mm), and the minimum in the winter (20-25 mm). Snowfall is rare.

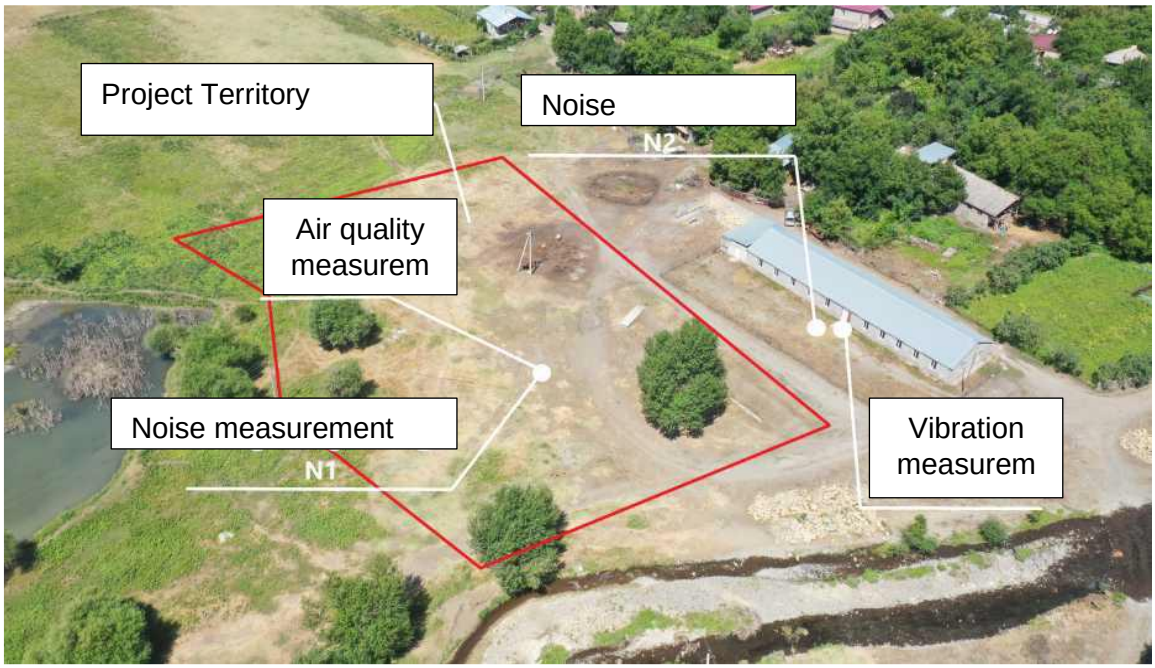
166. There is no automatic station for monitoring air quality and not conducting indicative measurements in village Agara.

167. The baseline measurement was carried out at the construction site of a kindergarten in Agara village of Akhaltsikhe municipality and at the nearest house in its vicinity. The measurement was done on 08/16/2022. In total, measurements were performed for 2 hours.

168. The measurement of noise and vibration was continue for two hours continuously, and the measurement of the concentrations of harmful substances in the ambient air for each component for 20 minutes.

169. The measurement was carried out in the area of the construction site and in the adjacent residential building, which is located about 25-30 m from the construction site

Figure 9 Measurement points



170. The New Zealand based “Aeroqual Series 500 Portable Air Quality Monitor” is used to measure air. The air quality meter allows real-time monitoring of air pollutants. The device was used to measure the concentrations of the following major pollutants in the air:

- Solid particles: 10µm and 2.5µm (PM10, PM2.5).
- Nitrogen dioxide (NO2);
- Nitrogen monoxide (NO);
- Sulfur dioxide (SO2);
- Carbon monoxide (CO).

171. Air quality results of measurement point (Construction Site):

CO (mg/m3)	NO2 (mg/m3)	SO2 (mg/m3)	PM10 (mg/m3)	PM2,5 (mg/m3)
<0.0	115	0.9	17	11

172. Air quality results of measurement point (Residential House):

CO (mg/m3)	NO2 (mg/m3)	SO2 (mg/m3)	PM10 (mg/m3)	PM2,5 (mg/m3)
<0.0	112	0.8	15	10

D. Noise and Vibration

173. Noise and vibration surveys are conducted by civil works contractor 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, are assessed. Considering the background noise, the expected level of noise caused by construction is assessed at the nearest residential buildings. The contractor has developed noise and vibration management plan. Noise and vibration management plan includes results of baseline survey, noise level assessment and appropriate mitigation measures (if any) to be introduced based on the results. The contractor conducts monitoring of the noise and vibration level during the construction. Based on monitoring results noise and vibration management plan will be updated and appropriate mitigation measures defined and implemented (if needed).

174. Two (2) noise and vibration measurement points were selected - the construction site and in the nearby residential building, which is located about 25-30 meters from the construction site.

175. Each instrument used was calibrated, cleaned and pre-tested for field work.

176. Baseline sampling is done over a one-week period, 24 hours a day, 7 days a week. Sampling is done consecutively (i.e., at different times of the day and night) over a 24-hour period to obtain a representative spread of noise data. All measurements should be made during weather conditions favorable for noise and vibration measurements (i.e., no precipitation and wind speed less than 5 m/s). All noise measurements should be performed according to the norms provided in the general EHS guidelines (IFC, 2007).

177. The consulting organization used the “REED” R8080 Sound for measuring noise and Triaxial Vibration Monitor VM40A/B for measuring vibration.

178. REED INSTRUMENTS R8080 was used to monitor the noise and vibration levels.

179. Noise measurement results point:

N1 Measurement Construction Site		
Noise (dba)		Vibration Speed mm/sec
Average	11:45 - 13:45	
	38.2	0.22

180. Noise measurement results point (Residential House):

N2 Measurement Residential House		
Noise (dba)		Vibration Speed mm/sec
Average	11:45 - 13:45	
	40.8	0.18

E. Hydrology

181. The village of Agara is located on the bank of river Mtkvari.

182. The project site is located approximately 150 m north from the river Mtvkvari. From the east, area intended for the project is edged by the Tsinubnistskali River (length 23,5 km, distance from the cadastral boundaries is 9-10 m). It originates on the southern slope of the Meskheti Range, at an altitude of 2400 m above sea level. It joins Mtkvari on the left side near the village of Agara and flows into the territory of Akhaltsikhe cave. The river Leknarisghele and Alvanisghele are connected on the left side. It feeds on snow, rain and groundwater. The average annual flow is 1.4 mW / s.

183. As the length of Tsinubnistskali River is 23, 5 km, the width of the river protection zone is 10 m.

184. Since the Project zone is located near the river, the construction contractor is obliged to provide additional information regarding Tsinubnitskali River, including data on average, maximum and minimum river flows. The construction contractor has requested information, including a detailed report from an expert covering topogeodetic and hydrological studies. This report addresses both the maximum and minimum flooding of the perimeter. Based on the analysis of this data, the corresponding levels of the maximum water flows of the Tsunubniskali River for various frequencies fall within the norms recommended by regulatory documents for a 100-year recurrence (1 percent provision). The marks for the corresponding levels of the maximum water flows are also included.

F. Soils

185. Monitoring of soil pollution is not conducted in village Agara by the National Environmental Agency.

G. Biological Environment

186. The kindergarten building is being constructed in the urban modified area. Existence of the significant components of biodiversity is less expected on the project site.

187. Akhaltsikhe is located in the west botanical region of Borjomi. In the past Akhaltsikhe environs, as well as the largest part of Javakheti Region was covered with forests. Up to the middle 19th century, when an inexorable tree felling commenced, a thick forest was growing along Tbilisi-Khashuri-Akhaltsikhe motor road. Currently the plains and hilly zones surrounding the city mainly are completely forestless and occupied by agricultural lots. However, some forest fragments still have been maintained within the city boundaries and at its approaches. From these, the major one is Forest, where the dominating tree species is an oak. The secondary forests have been occasionally developed after felling the relict forests east and north of Agara, including the forest growing at the left bank of Mtkvari and Tsinubanistskali River, near village of Agara where the major tree species comprise oak, hornbeam, black locust (Robinia pseudoacacia), etc.

188. For today, the areas of Akhaltsikhe and its environs have extensively been reclaimed and the densely populated settlements have been established thus significantly restricting the wildlife ranges and minimizing the number of wild animals. However, it should be noted that in the past these areas were deemed to provide the best hunting sites. The following wildlife species occur in the areas adjacent to Agara:

- Rodents: mouse, hare, squirrel, etc.;
- Insectivores: hedgehog, Colchis mole, etc.;

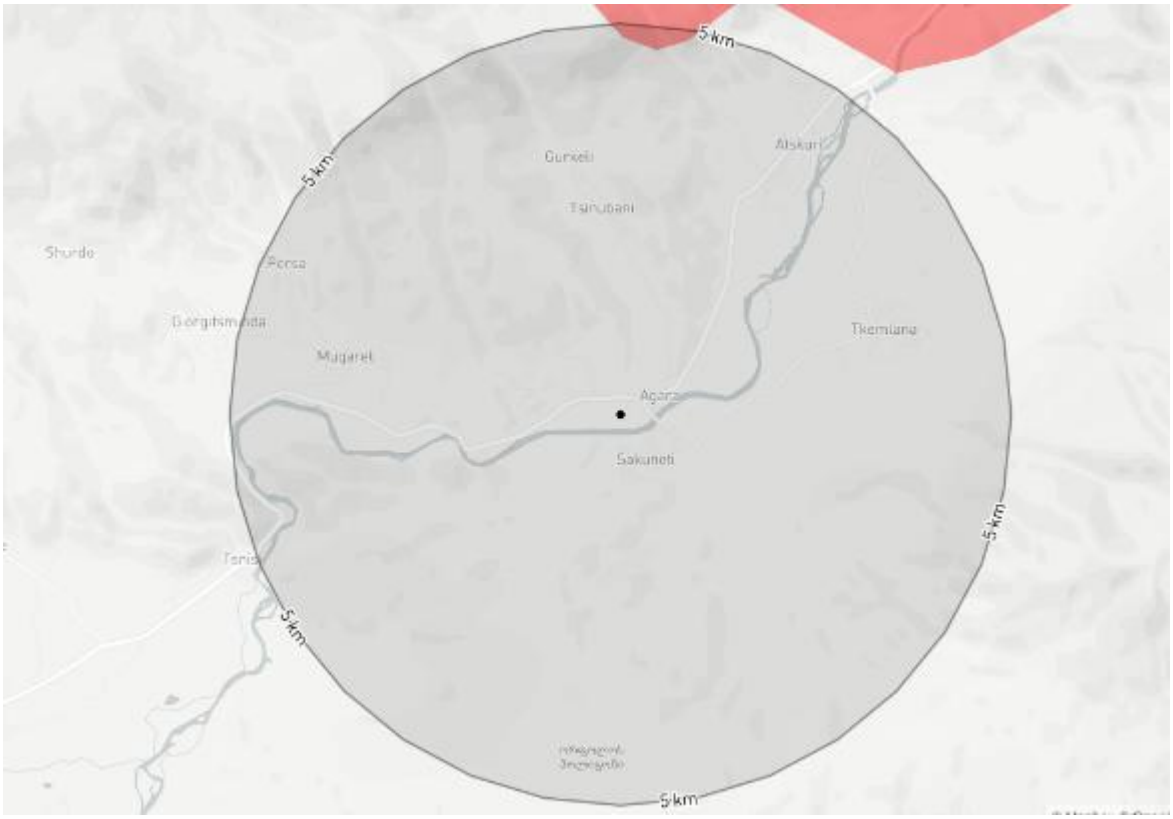
- Birds: frequently occur lark, crow, rook, owl, oystercatcher, sparrow, cuckoo, starling, and blackbird;
- Reptiles: lizard, grass snake, whip snake, rat snake and numerous tortoise species;
- Amphibians: common toad, green toad, marsh frog, tree frog, etc.;
- Invertebrates: insects, locust, flies, butterflies, beetles, etc.

189. The impacts on vegetation during the construction phase are minor. There are several trees and shrubs within the project area. Cutting existing trees during the construction of a kindergarten in the Agara is not envisaged. The kindergarten construction building excavation area is free from plantings.

Protected areas

190. Village Agara is located approximately in 6 km distance from the Borjomi-Kharagauli Protected area, 4 km distance from the Emerald Site and there are no cultural heritage sites in the vicinity of the project site. Based on the Rapid Environmental Assessment (REA), and integrated biodiversity assessment tool (IBAT) results used by ADB only one Key Biodiversity Area - Adjara-Imereti Ridge is located within 5 km of the subproject site and 48 IUCN red list of threatened species are potentially found within 50 km of the area of the site.

Figure 10. Key Biodiversity Area- Adjara-Imereti Ridge



General Flora and Fauna Description of the Region

191. There are three main zones in Akhaltsikhe district: transitional forest-steppe, mountain forest and meadow.

192. Xerophytic forest shrubs, semi-shrubs as well as xerophytic grassland dominate in the central part of Akhaltsikhe Municipality. Large area is occupied by coniferous and vascular plants, in the southern and northern part the lower zone of the mountain forest is occupied by oak-hornbeam, in the upper zone of the Meskheti ridge the forest is spruce-fir, and in the same zone of the Erusheti ridge - mountain pine forest is dominated

193. There are subalpine and alpine meadows on the ridges, which also contain elements of the valley on the Erusheti ridge.

194. In the municipality there are deer, wild boar, otter, marbled polecat, wild cat, bear, snake, fox, badger, marten, least weasel, rabbit, red squirrel, European water vole, wood mouse, common wood pigeon, European turtle dove, crow, Eurasian magpie, starling, and quail. In some places Caucasian agama can be found, there are also lizards and toads.

195. 26 species of fish are found in the Mtkvari basin. Eleven species live in rivers, while three (Salmo fario, Barbus capito and Barbus mursa) are found in major tributaries. Four species are migratory (Rutilus rutilus cas IAs, As IAs as IAs taeniatus, Chalcaburnus chalcoides da Abramis brama orientalis). Seven species are endemic to the Mtkvari River and its basin (Chondrostoma cyri, Gobio persa, Varicorhinus capoeta, Barbus lacerta cyri, Barbus mursa, Acanthalburnus microlepis, Nemachilus brandti) and two Caucasian endemics (Barbus capito and Alburnus filippi).

196. Based on the results of Integrated Biodiversity Assessment Tool (IBAT) used by ADB 48 IUCN red list of threatened species are potentially found within 50 km of the area of the site. Such species are but not limited to: Ship sturgeon, European Eel, Karsia Nonea, Meskhetian Goat's Beard, Steppe Eagle, Caucasian Salamander, Meskhetian Whitelow Grass, Maleev's Water-Chestnut and etc.

H. Socio-Economic Environment

Population

197. Based on the data of the National Statistics Office, according to 2021, 151 100 persons live in the Akhaltsikhe Municipality. The demographic situation in the region is negatively affected by internal and external migration, caused by difficult social conditions and unemployment.

198. . According to the 2014 census, the population of the village of Agara 348, majority of them area Georgians (99, 4%).

Employment

199. Unemployment, the level of which is still high, remains the village's main socio-economic problem. The unemployment rate in Samtskhe-Javakheti is 5,5%, which is lower as the national rate.

Economics

200. Judging on statistics about Samtskhe-Javakheti Region as a whole, since 2009 the GDP of this Region has grown significantly: in 2009 its GDP constituted 477.4 million GEL, while in 2019 it made up 1380.3 million GEL.

201. Industry is the leading sector of economy in the district with small enterprises of extractive and manufacturing industries. Agriculture is also developed in the municipality, with leading fields of: fruit-farming, winegrowing, market-gardening, and stockbreeding.

202. The area is rich in minerals such as: agate, diatomite, brown coal, gypsum and more.

203. Akhaltsikhe 500/400/200 kW sub-station and high-voltage transmission lines were recently built within the Black Sea Transmission Network Project (BSTN) frames.

204. The region also has coal reserves in the Vale-Akhaltsikhe basin, with around 71.3 million tons of resources, though the mine is currently not operating.

I. **Waste Management**

205. Municipal solid waste management has been significantly improved. The service is provided to whole settlements. There are bins for solid and household waste collection in the whole territory of the municipality, which is regularly served by the Akhaltsikhe Service Group, which transfers the collected waste to landfill located in village Chachraki and managed by the Georgian Solid Waste Management Company.

J. Education

206. There are 38 public and 1 private schools in Akhaltsikhe municipality.

207. The construction site of the kindergarten was selected taking into account the following circumstance: there are 26 Kindergartens in Akhatlstikhe municipality, one of them is located in village Agara.

208. However, the kindergarten is not adopted to the kindergarten building requirements and modern standard. Additionally, there is no enough space available for the whole contingence in Agara. Moreover, the neighboring villagers from villages Zikilia, Sakuneti and Tkemlana will be beneficiaries of the new kindergarten as well and they will be able to accommodate their children in the new kindergarten. The construction of a new technological university for estimated 60 thousand students is under way, the concept and syllabi of which are being developed in cooperation with the Technological University of Munich.

K. Infrastructure

209. A branch of the Georgian Railway ‘Khashuri-Akhaltsikhe-Vale’ (60 km in length) is functioning in Samtskhe-Javakheti for cargo and passenger transportation. “Marabda-Akhalkalaki” railway stretch is being rehabilitated (178km).

210. Akhaltsikhe is connected by transportation lines with Georgian capital, using which the freight turnover is performed. Akhaltsikhe is the transit traffic city as well. In particular, transport coming in from the territory of Armenia gets across to Ajara via the Goderdzi Pass. Trailers guiding towards Azerbaijan and Armenia are coming in from Turkey, while transport directed to Turkey through the Vale custom-house has to cross the territory of the city.

211. The city of Akhaltsikhe is administrative, economic, political and cultural center of the Samtskhe-Javakheti Region. This is conditioned by convenient geographic location of the city, being at the crossroad between Kartli, Javakheti, Ajara-Imereti. The highways coming from Turkey and Armenia are joining in Akhaltsikhe, making this city an important transportation junction. The city is permanently overloaded with the local or transit vehicles.

212. The disposition of the city, being at the crossroad of region's central and the state highways, and the lack of circuit road causes the daily traffic of vehicles riding through the Region at the territory of the city. Due to the proximity of Armenia, Turkey and Adjara the number of vehicles is always significant.

L. Cultural heritage

213. Akhaltsikhe city history dates back to the IX century. However, the city is not mentioned by its name in the Georgian sources of that period. According to Vakhushti Batonishvili, the city was probably given another name – Lomisa. According to 'Matiane Karlisai' (history chronicles), the city was built by Gvaram Mamfal in the IX century. The city occupies both banks of the river. The left bank is mountainous and here lies the old city with the so called Rabati and the Great Fortress, which previously housed the Akhaltsikhe Palace. The right bank is a plain. The city districts were built here in the XIX century, and this area is also surrounded by hills.

214. Some parts of the city are located on the slopes of these hills. Today, Akhaltsikhe city is an important cultural center. Most tourists are attracted to the Rabati Castle. A fortress, a palace, a mosque and a synagogue remain in the old part of the city. The Jakeli Fortress (XIII-XIV centuries), St. Marine Church, Samtskshe-Javakheti Historical Museum, as well as the Akhaltsikhe Eparchy Cathedral are also located in AKhaltsikhe.

215. There are no cultural heritage monuments in village Agara, therefore preparation of heritage impact assessment (HIA) is not required as per ADB SPS 2009.

216. In case of chance finds of potential archaeological value, following steps are taken:

- Construction workers are obliged to stop works and immediately report to the Supervision Company.
- 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 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 Agency of Cultural Heritage Preservation of Georgia;
- Agency 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 Agency will issue decision on recommencement of stopped construction works.
- In exclusive cases of valuable and spatially spread findings, agency may issue request to relocate the project works on a safe distance from the archaeological site.

M. Tourism

217. The majority of tourists are interested with the fortress of Rabati and other historical monuments. Large portion of visitors is arriving from Germany, the Ukraine, Russia, France, Poland, Israel and the United States.

Figure 11 Visitors statistics, 2015-2018[11]

218. Tourism infrastructure within the region is deficient with few accommodation facilities or products – camping places, guesthouses, family hotels or hotels - available.

[11] source: https://www.akhaltsikhe.gov.ge/

VII. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

A. Methodology

219. The updated 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 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.

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

221. The general methodology (criteria) used for impact assessment is include under □. 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.

222. 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

223. This project will have an important positive impact on population of villages Agara, Zikilia, Sakuneti and Tkemlana 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.

224. 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

225. The potential environmental effects of the pre-construction activities, such as Construction Company (CC) 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.

226. Number of pre-construction surveys, including noise and vibration, soil contamination, air pollution, flora and fauna species survey has been carried out by Construction Company (CC) prior to the commencement of construction works.

227. Construction Company (CC) will ensure materials and wastes to be removed are disposed in proper manner and disposal sites are authorized by the government.

Phase 2: Construction works

228. Environmental effects likely to occur during the construction of the Project are noise, vibration, dust, solid and liquid wastes. Effects likely to occur during the construction phase are short term effects and they cannot deteriorate the existing conditions. The Construction Company (CC) will be required to execute works in compliance with applicable environmental standards and to restore and re-instate any disturbed areas to pre-works conditions or better.

Phase 3: Operation

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

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

Table 24 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, air pollution – baseline assessment,	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,

Site	Activity	Environmental Aspect	Impact	Probability	Risk	Notes
						and drinking water supply systems;
	Development 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);Technical report of the stationary sources of harmful substances emitted into the atmospheric air (if necessary)	Damage to environment and workers health due to the absence of required plans	Moderate	Moderate	Moderate	Preparation and submission to IA of the required plans prior civil-works commencement, 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 required); Agreement on construction waste

Site	Activity	Environmental Aspect	Impact	Probability	Risk	Notes
						disposal on the nearest landfill; Agreement on hazardous waste disposal (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	Excessive soil removed from the area will be temporary stored on the site and used for backfilling purposes.
	Construction works	Dust, noise, vibration	Moderate	High	Moderate	Kindergarten, residential buildings are located at 60-80m,
		Pollution of surface water	Moderate	Minimal	Moderate	Tsinubnitskali River is located in 9-10 m distance from the project land plot
		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

Site	Activity	Environmental Aspect	Impact	Probability	Risk	Notes
		Infrastructure and Transport	Moderate	Moderate	Moderate	Local residents movement
		Waste	Moderate	Moderate	Moderate	No sensitive receptors in proximity
		OHS / Community Health and afety	Moderate	Moderate	Moderate	There are residential buildings at 60-80m distance from the project site.
		Emergencies	Minimal	Minimal	Minimal	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 wastewater pollution	Moderate	Minimal	Moderate	Tsinubnitskali River is located in 9, 2 m distance from the project land plo
		Emissions	Minimal	Minimal	Minimal	No sensitive receptors in proximity
		Noise and vibration	Minimal	Minimal	Minimal	No sensitive receptors in proximity

C. Required Environmental Documents

231. The Construction Company (CC), prior to the onset of construction, will be conducted a number of studies and developed environmental plans, including:

1. Site-Specific Environmental Management plan (SSEMP)
2. Traffic Management Plan
3. Noise and Vibration Management Plan
4. Waste Management Plan (WMP)
5. Health and Safety Management Plan
6. Emergency Response Plan (ERP)
7. Camp Site Management Plan
8. Topsoil Management Plan

9. Post-Construction Audit Report

232. The Construction Company (CC) will 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 MDF and the Construction Supervisory Consultant (CSC).

233. The Construction Company (CC) 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, and to follow any recommendations of the project supervision consultants.

234. The CC is required for post-construction clean-up and reinstatement of worksites to pre-works condition or better. The IA's confirmation notice that all works and clean-up have been satisfactory shall be part of "Acceptance of Works" and condition for payment.

235. The audit report shall include the following information but not limited to:

(i) Main executed civil works under this Project;

(ii) Project organization and management team;

(iii) Environmental audit and its methodology;

(iv) Audit findings;

(v) Conclusion and Recommendations.

D. Air quality

Impact at construction phase

236. 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 exhaust emissions of carbon monoxide, NOx, SO2, hydrocarbons, and particulate matter.

237. 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.

238. 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 residential houses located near the project site. A distance of 60-80-m 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

239. Relatively high impact is connected with the dust emissions, which hardly can be quantified. However, it is obvious that the earth 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;
- 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;
- Ensure proper state of maintenance of buildings, machinery and vehicles to minimize exhaust emissions. Smoke emitting vehicles and equipment shall not be allowed and shall be repaired or removed from the project;
- Instrumental measurements of ambient air pollution quality as defined in the Table 2;
- Instruction of staff in environmental, occupational health and safety issues;

240. 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.

241. Emissions of heavy machinery involved in the construction will 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

242. In the operation phase, minimal impact on ambient air quality is expected.

E. Noise and Vibration

Impact at construction stage

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

244. 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 especially vulnerable to noise disturbance (residential buildings).

245. 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
Compacters (rollers)	72 – 75
Front loaders	72 – 83
Tractors	78 – 95
Trucks	83 - 93
Compressors	75 - 88
crane, movable	75 – 85
Hammer drills	82 - 98
Vibrator	82 - 98
Saw	72 - 82

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

247. 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:

248. Sound level 1 – Sound level 2 = 20 log r2/r1.

249. 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 [12]
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	

12 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

160	50	60	

250. 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.

251. 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).

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

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

Mitigation

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

- 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 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.

255. 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.

256. 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.

257. 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.

258. 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.

259. 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.

260. 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.

261. 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.

262. 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.

263. 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.

264. 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.

265. 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

266. The construction Company (CC) shall provide instrumental measurement and monitoring of noise and vibration levels during the construction phase and implement mitigation measures to ensure that noise and vibration levels are kept at the acceptable range as it will be defined in the Noise and vibration Management Plan.

Impact at operation phase

267. No noise and vibration propagation are expected in the operation phase.

F. Water quality

Impact at construction stage

268. During implementation of the project the risk of surface and ground water contamination is of minimum level. The Mtkvari River is located in 150 m distance from the Project site and the Tsinubnistskali River directly edges (distance from the cadastral boundaries is 9-10 m) the area intended for the project. The surface and ground water may be contaminated due to improper placement of the excavated soil, poor management of construction camp, and improper storage of construction materials and leakage of fuel and lubricates from construction machinery.

Mitigation

269. 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 50 m away from water bodies;
- Topsoil stripped material shall not be stored where natural drainage will be

disrupted;

- Ensure no waste materials are dumped in the river, including re-enforced concrete debris;
- Place generators more than 20 meters from the river;
- Ensure that no concrete waste from concrete mixers is dumped in the river;
- Provide areas where concrete mixers can wash out leftover concrete without polluting the environment. This may be in the form of a lined settling pond (if required) at each bridge site. Drivers will be informed of these locations and the requirements to use these settling ponds on a routine basis by the Engineer. Dried waste from the settling ponds can be used as backfill for culverts, etc;

270. During the construction phase the Construction Company (CC) 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 Construction Company (CC) will responsible for ensuring that no construction materials or construction waste block existing drainage channels within the project site.

Impact at operation phase

271. Minimal risks of surface water contamination are expected during operational phase.

272. As the local municipality is responsible for the maintenance and operation of the constructed facilities, the local self-government will be responsible for monitoring water quality in waste water recipient stream/river quarterly as it is recommended.

G. Soil Quality and Topsoil Management

Impact at construction stage

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

274. 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.

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

276. The area for the re-cultivation defined by the project is 1000 m2 for restoration/reclamation of the territory. In total, the volume of topsoil to be removed is 200 m3. The topsoil removed in the project area be fully used for further restoration purposes.

277. Topsoil removal coordinates

Longitude	Latitude
X-344049	Y-4617367
X-344091	Y-4617359
X-344085	Y-4617336

X-344044	Y-4617346

278. Topsoil storage coordinates

Longitude	Latitude
X-344012	Y-4617370
X-344007	Y-4617343
X-344023	Y-4617339
X-344028	Y-4617363

Mitigation

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

- Site for temporary storage of the topsoil must be selected prior to commencement of works with due regard to environmental norms and conditions on the sites and approved by Engineer. The area must be flat, located away from any surface water body, protected from runoff and erosion;
- Topsoil and subsoil must be stored separately until reuse;
- The top soil of about 0.2-0.3 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;
- 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°;
- 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.
- Any temporary fuel tank (if contractor decided to have small stock of fuel on the site) shall be placed in a covered area with berms or dikes to contain any spills. Capacity of containment must be 110% of capacity of the tank. Any spill shall be immediately contained and cleaned up with absorbent material;
- On-site vehicles and equipment shall be inspected regularly for leaks and all leaks shall be immediately repaired. Incoming vehicles and equipment shall be checked for leaks. Leaking vehicles/equipment shall not be allowed on-site;
- 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

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

H. Biological Environment

Impact at construction stage

281. The impacts on vegetation during the construction phase are minor. There are several trees and shrubs within the project area. Cutting existing trees during the construction of a kindergarten is not envisaged. The kindergarten construction building excavation area is free from plantings.

282. Pre-commencement walk through (rapid assessment) – to be undertaken just before enabling works to identify presence of sensitive receptors such as nesting birds, roosting bats and sheltering reptiles etc. Expected to take place before work commences and results should be reflected in the SSEMP. To be conducted by an appropriately qualified Biodiversity Specialist and focus on notable habitats and species.

Mitigation

283. If trees cutting or replanting will become necessary during the project implementation, the Construction Company (CC) 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 Akhaltsikhe 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. 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 Company (CC). The trees shall be cut under supervision of designated specialist.

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

285. Cutting existing trees during the construction of a kindergarten in the village Agara does not require a special permit. According to the results of the assessment, the construction area is not distinguished by the abundance of trees and plants. Species of protected plants included in the Red List are also not observed.

286. There are no plans to clear/cut the vegetation in the project area.

Impact at operation phase

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

I. Waste Management

Non-hazardous waste

288. **Non-hazardous construction waste** will generate on the construction area and will be collected by Construction Company (CC)'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.

289. Non-hazardous construction waste shall be managed according to the waste management plan. 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. Most probably all inert waste will be used at the site for backfilling purposes.

290. 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.

291. Municipal solid wastes and waste waters will be generated at the construction/camp site. 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 site. In addition, it may lead to conflict with local population.

292. Municipal waste should be collected both by the specially assigned personnel and the workshop workers on the area. Approximate total amount of municipal waste is 3000 kg per year. The waste will place into 0.24 m^3 plastic containers and disposed at the local Municipal landfill according to the agreement with Solid Waste Management Company. 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

293. No large amounts of hazardous waste are expected to originate in the project construction phase. Approximate total amount of hazardous waste is 100 kg per year. This waste must be handed over to the Construction Company (CC) having the relevant license. During

construction phase hazardous wastes may be generated from vehicle operation, as well as on construction camp.

294. Hazardous waste will be temporarily stored at the dedicated place at the construction site and transferred to licensed company for final disposal.

295. 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 roofing, concrete base and drainage system as well as 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.

296. 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.

297. Construction Company before start construction activities shall prepare a project specific Waste Management Plan. The plan 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.

Medical Waste

298. 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.

Municipal Waste Management during Operation Phase

299. The local municipality will be responsible for management of waste at the operation stage.

300. The impact of waste generation on environment during operation will be mitigated by proper storage, maximum reuse and recycling of waste and timely removal of unusable waste to agreed location according to national waste management regulations.

301. The impact of waste generation on environment during construction will be mitigated by

- proper storage, maximum reuse and recycling of waste;

- timely removal of unusable waste to agreed location according to national waste management regulations;
- placing it into plastic containers and a local Sanitary Service will take it to landfill;
- Plastic containers should be closed to prevent spread of the smell and also to avoid contact of rodents and insects with the waste

Sludge Management during operation phase

302. The following impacts can be caused due to the improper operation of the waste water treatment device:

- impairment of the downstream water quality due to inadequate sewage treatment or release of untreated sewage;

- deterioration of water quality due to inadequate sludge disposal or direct discharge of untreated sewage water;

- contamination of surface and ground waters due to inadequate sludge disposal;

- Overflows and flooding of the neighboring properties with raw sewage;

303. Local Municipality is responsible for sludge Management at operation stage, it include carrying out the following measures but not limited to:

- Ensure that no wastewater is discharged into a water course in which it could be a hazard to downstream users (e.g. a waterway that is used as a source of water for domestic or municipal supply).;
- Include measures to ensure the safe disposal of sewage sludge and if possible, to promote its safe and beneficial use as an agricultural fertilizer. In view of the lack of Georgian legislation with regard to the use of sludge in agriculture, internationally-accepted practices as recommended by World Bank Group's Environment, Health and Safety (EHS) Guidelines shall be considered in case the sludge will be considered for re-use as fertilizer;
- Regular monitoring shall be conducted to ensure proper operation of the waste water treatment devices especially of effluent to ensure that it meets discharge standards;
- Disposal of excess sludge in the nearest landfill in village Chacharaki.
- If waste water is to be discharge into the surface water body, the Municipality will be obliged to calculate the limits of discharge into the waterbody. The limits are to be approved by the MoEPA. The quality of waste water should ensure compliance of recipient surface water quality (in the section located in 1 km upstream the point of use) with the limits set in the Annex 1 and 2 to the technical regulation for protection of water from pollution. To protect the surface water quality, for the point of discharge maximum permissible discharge limits must be defined separately. The document (limits of discharge) must set the discharge limits to ensure compliance of recipient water body with the quality standard.

J. Traffic

Impacts and mitigations during construction

304. A traffic control and operation plan will be prepared together with the local traffic management authority prior to 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;

305. 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. Site will be secure, discouraging access by members of the public through appropriate fencing whenever appropriate.

306. The Construction Company (CC) shall include the necessary safety procedures regarding traffic diversion or temporary road closures that are needed in execution of the works.

307. The Construction Company (CC) shall include in his costing of works, any temporary works or diversion that are needed during the construction period. The Construction Company (CC) in consultation with the Engineer, local authorities (such as traffic police), and local communities (if required) will come up with an appropriate traffic management plan.

308. All traffic diversion or temporary road closures should be designed for the safety of both the motoring public and the men at work. It shall ensure the uninterrupted flow of traffic for traffic diversions and minimum inconvenience to the public for temporary road closures during the period concerned. As such, adequate warning signs, flagmen and other relevant safety precautionary measures shall be provided as approved by the Engineer to warn motorists well ahead of the intended diversion or road closure.

309. For temporary road closures, the Construction Company (CC) shall be fully responsible for informing and seeking approval from all the relevant authorities and providing adequate closure notices in accordance with the timing laid out by the relevant authorities or regulations. The Engineer, will provide assistance to the Construction Company (CC) in securing approvals from relevant authorities for temporary road closures to facilitate contract management and, in coordinating with the traffic police, in implementing the traffic management plan.

310. All traffic devices used shall be designed in accordance with prevailing laws and regulation, or as instructed by the Project Manager. The Construction Company (CC) shall provide red lanterns (or warning lights of similar type) with a sign board indicating DANGER mounted on barricades and keep lit from sunset to sunrise.

Impacts during Operation

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

K. Archaeological and Cultural Heritage Sites

312. 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.

313. The Construction Company (CC) shall ensure workers are aware of potential chance finds during excavation work, stop work immediately, and inform the Employer/Engineer to allow further investigation if any finds are suspected.

314. In project sites near, adjacent or in areas with potential physical cultural resources, the Construction Company (CC) shall refer to the Employer/Engineer a detailed chance find protocol and include specific mitigation measures in the SSEMP.

315. 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 Supervisor reports to the Chief Engineer and the works are restarted. Appropriate record regarding the case is made in record book.
- In case the finding is estimated as potential archaeological relic, the Archaeological Supervisor reports to Chief Engineer of the Construction Company (CC) 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 Company (CC) also reports to MDF informing about the stopped operations and requesting immediate engagement of Ministry of Education, Science, Culture and Sport of Georgia.
- 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 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

316. 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.

317. The civil works Construction Company (CC) 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.

318. 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 25 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: (i) drinking water demand will not compete with adjacent communities; and (ii) 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 Construction Company (CC) 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

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

320. 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 26 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 Company (CC) 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 Construction Company (CC) 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, Construction Company (CC) 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	
Worker Health & Safety – Risks and hazards of work are real day-to-day occurrence. Hence, health and safety should be taken seriously for the general welfare of the workers.	The Construction Company (CC) shall be responsible for provision of: (i) 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.; (ii) 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; (iii) Safety Inspections. The Construction Company (CC) 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; and (iv) 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 Construction Company (CC) shall coordinate with local public health officials and shall reach a documented understanding with regard to the use of hospitals and other community facilities. Construction Company (CC) 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.

N. Construction Camps

321. The location of construction camps and facilities is not known at this stage of the Project and will be a decision for the Contractor to make based on a range of issues, such as availability of land, cost, access, etc., as well as environmental and social issues. However, a range of good practices measures can be applied to these sites to ensure that they have minimal impacts on the environment and the local communities.

322. The establishment of Construction Company (CC) work camp may cause adverse impacts if various aspects such as liquid and solid waste management, topsoil, equipment maintenance, materials' storage, and provision of safe drinking water are not addressed properly.

323. To ensure that potentially resulting impacts are kept at a minimum the Construction Company (CC) 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);
- 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.
- These plans will be approved by the Engineer prior to beginning of construction activities.
- The Engineer will undertake regular monitoring of the construction camps to ensure compliance with the SSEMP and the Construction Camp Site Plan.
- The Construction Company (CC) will ensure that potable water for construction camps and workers meets the necessary water quality standards of the GoG. If groundwater is to be used it will be tested to ensure that the water quality meets the GoG drinking water standards.

O. Impact assessment due to COVID-19

324. 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 sub-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 beregular 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.

325. 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. Project 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.

326. 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.

327. 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.

328. 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.

329. 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.

330. 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.

331. 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

332. 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.

333. The main mode of transmission, which is through the air, will be considered in the DED and Construction Company (CC) 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, sewage and on surfaces, (iii) keeping water supplies safe and (iv) safely managing wastewater and fecal waste.

334. 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.

P. Cumulative Impacts

335. Currently, there are no cumulative effects associated with the project due to the nature and size of the civil works to be implemented which are directed on construction, of the building. The project will have positive impacts on the population of village Agara, Zikilia, Tkemlana and Sakuneti especially young people and working parents who will get access to well planned, high quality service.

VIII. INFORMATION DISCLOSURE, CONSULTATION AND PARTICIPATION

A. Stakeholder Consultations

336. 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 Akhaltsikhe local government. All these stakeholders have already been contacted using distant communication channels (via personal computer, mobile phone).

337. The first consultation was carried out on the 10th of August at 12:00, 2021. Meeting was held with the representatives of Akhaltsikhe 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 Appendix B.

338. Prior to the meeting, representatives of City Hall and local residents were informed through announcements, disseminated in village Agara Building and at public places (e.g. bus stations, drug stores, shops) (see Appendix B). 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.

339. 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.

340. 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.

341. 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.

342. Draft and final IEE reports in Georgian and English Languages are disclosed on MDF and ADB websites and updated version will be made available on MDF and ADB websites upon approval of ADB.

343. 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 bodies13. 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 IA 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 Mechanisms

ADB's accountability and grievance redress mechanism

344. 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. Construction Company (CC) shall inform the affected persons on the ADB as an alternative opportunity for solving of problems.

345. 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.

346. 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 Construction Company (CC)/Operator. If successful, no further follow-up is required.

[13] 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.

C. Georgian grievance redress process

347. 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 Construction Company (CC), on site focal point from Construction Supervision Consultant (CSC) / Construction Company (CC), 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 Construction Company (CC). 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.

348. The grievance redress procedure of Stage 1 is an informal tool of dispute resolution allowing the APs 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 Construction Company (CC) who should notify the Construction Supervision Company (CSC) 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.).

349. 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.

350. 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.

351. 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.

352. 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.

353. 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.

354. 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.

355. 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.

356. 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.

357. The complaints and grievances will be addressed through the process described below in Figures 10 and 11 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 12. Grievance Redress Mechanism

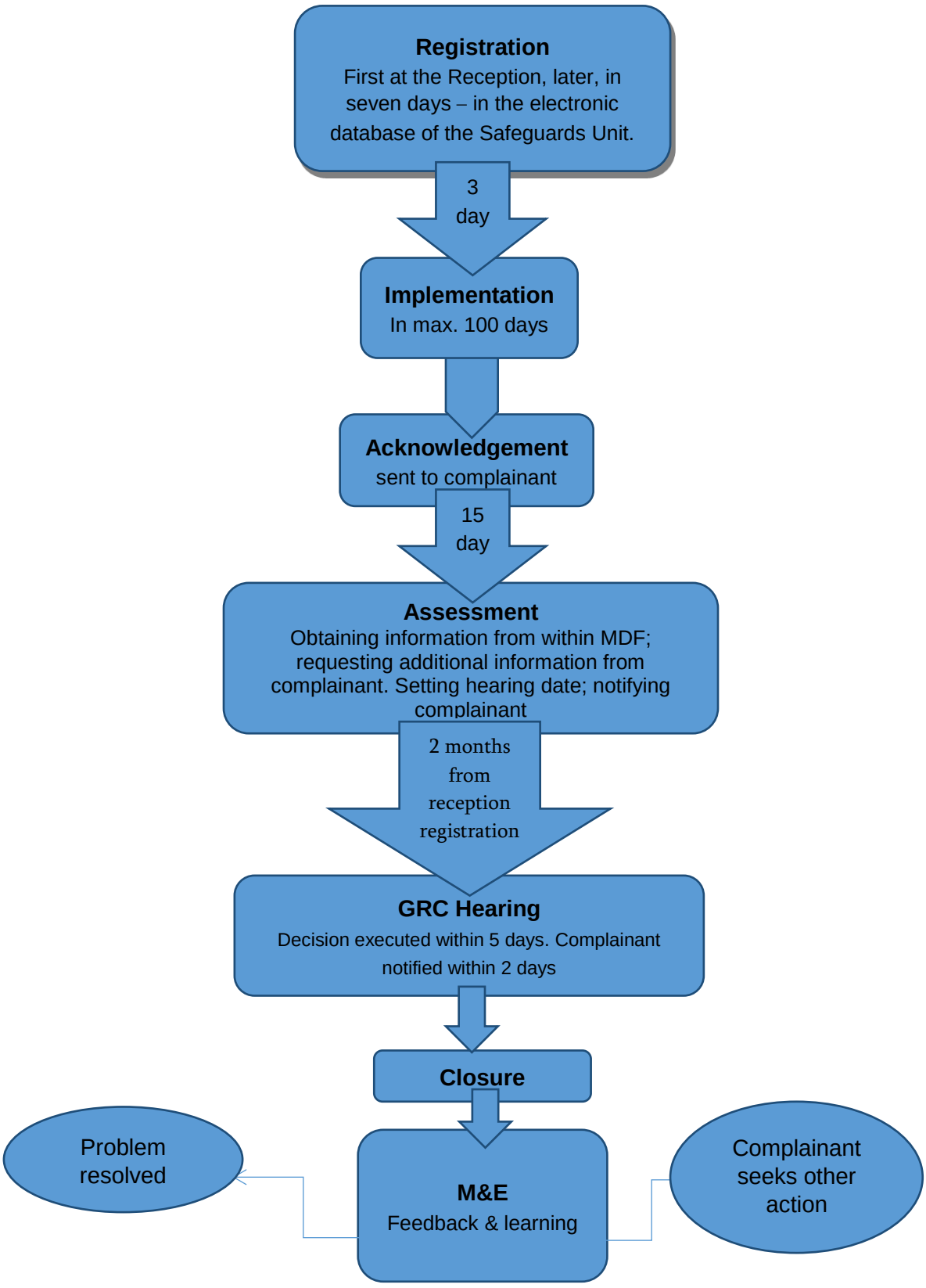


Figure 13. Grievance Form

#	**…**
Full Name, Surname	
Contact Information **Please, fill in how you want to be contacted (post, telephone, e-mail)**	☐ **Postal address:** … ☐ **Telephone:** … ☐ **E-Mail:** …
Preferred contact language	☐ **Georgian** ☐ **English** ☐ **Russian**

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

What is the reason of your claim?
…
Signature: Date:

IX. ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN

A. Environmental Management Plan (EMP)

358. 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.

359. 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.

360. 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.

361. The environmental management plan specifies the need for the civil works Construction Company (CC) 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.

362. The required plans will include:

(i) Site-Specific Environmental Management Plan (SSEMP);

(ii) Traffic Management Plan;

(iii) Noise and Vibration Management Plan;

(iv) Waste Management Plan (WMP);

(v) Health and Safety Management Plan including COVID-19 prevention at worksites;

(vi) Emergency Response Plan (ERP);

(vii) Camp Site Management Plan;

(viii) Post-Construction Audit Report.

363. The Construction Company (CC) will furthermore be required to employ full time Environment, Health and Safety (EHS) staff responsible for preparing the SSEMP, and prepare other plans, 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 information to MDF (IA) and the Construction Supervisory Consultant (CSC).

364. The Construction Company (CC) will also be required to document pre-works conditions of sites, address field- and/or site-level complaints/grievances, submit monthly monitoring reports to IA/CSC provide engineering and administrative control to ensure safety and health of workers and communities, support IA/CSC in raising awareness on safeguards, health and safety and labor standards, and to follow any recommendations of the project supervision consultants.

365. According to the detailed engineering design, generation of ACM is not expected.

366. The CC shall manage health and safety risks for the local community in accordance with IFC's EHS Guidelines for the Community Health and Safety.

367. The civil works Construction Company (CC) will be required to develop a health and safety management plan prior to construction works. The management plan will also cover occupational health and safety risks.

368. The CC is required for post-construction clean-up and reinstatement of worksites to pre-works condition or better. The IA's confirmation notice that all works and clean-up have been satisfactory shall be part of "Acceptance of Works" and condition for payment.

369. Prior final acceptance of works, the CC shall develop post-construction audit report, that includes the following information but not limited to:

(i) Main executed civil works under this Project;

(ii) Project organization and management team;

(iii) Environmental audit and its methodology;

(iv) Audit findings;

(v) Conclusion and Recommendations.

B. Implementation Arrangements and Responsibilities

370. The main institutions that will be involved in implementation of the SSEMP and monitoring are the implementing agency (IA), the Construction Supervisory Consultant (CSC) the Construction Company (CC) and to a lesser extent the Ministry of Environmental Protection and Agriculture. The IA and CSC 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.

371. MDF, as the IA, 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 MDF through Environmental and Resettlement Unit, established in October 2014. From that time, the 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, 2 resettlement 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.

372. 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 updated 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 IA 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 Construction Company (CC) 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 Construction Company (CC) in implementing the provisions of IEE and EMP;

xi. Direct/instruct project consultants the review of the Construction Company (CC)' 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 (if required), inventory of asbestos-containing materials (ACMs) if found in subproject sites, vibration studies, noise level studies and/or biodiversity assessment (if required);

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 Construction Company (CC)'s post-construction activities as specified in the EMP.

xvi. Coordinate with national and state level government agencies;

xvii. Coordinate with consultants and Construction Company (CC) 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 Construction Company (CC), 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.

373. **Environment Specialist in CSC.** The 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 IA;

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

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

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

(v) Conduct field-level verification of the Construction Company (CC)'s pre- and post-work site conditions and submit confirmatory report to IA;

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

(vii) Ensure Construction Company (CC) 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 IA in addressing any grievances in a timely manner as per the GRM;

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

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

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

(xiii) Submit monthly/semi-annual environmental monitoring reports to IA;

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

374. The Construction Company (CC) is obligated to follow the IEE/EMP and good construction practice. In order to meet this obligation, a Construction Company (CC) shall establish an environmental management team and procedures. The Construction Company (CC) 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.

375. Key responsibilities of the Construction Company (CC) are as follows:

- Preparing the Site Specific Environmental Management Plan (SSEMP) for endorsement by Supervision Consultant and approval by the IA;
- Ensuring the SSEMP is implemented effectively throughout the construction period. (iii) Coordinating community relation issues through acting as the Construction Company (CC)'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; and (ix) Ad-hoc reporting to the Employer's Engineer of environmental incidents/spillages including actions taken to resolve issues of Site-Specific Environmental Management Plan (SSEMP);

- Implement 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.

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

377. Following the award of the contract and prior to construction commencing the Contractor will review the EMP and develop this into a detailed Site 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 Construction Company (CC)'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.

378. The SSEMP will also include a monitoring plan and a reporting program corresponding to the requirements of the EMP. The SSEMP will be submitted and approved by IA.

379. In addition to creating the SSEMP additional topic specific EMPs will be developed by the Construction Company (CC) (e.g. waste management plan, traffic management plan, topsoil management plan, camp management plan, etc.). In addition, at key locations a site-specific EMP may also be developed.

380. Prior to the onset of construction, the Construction Company (CC) will prepare a Traffic Management Plan. The developed plan will be agreed with the supervising company. The construction permit will be issued and approved by the construction supervising company and IA.

381. The Construction Company (CC) will be responsible for ensuring that all sub-contractors abide by the conditions of the SSEMP.

C. Reporting

382. Semi-annual Environmental Monitoring Reports (EMRs) are to be submitted within 1 month at the end of each reporting period by the IA 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 IA 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.

383. The Construction Company (CC) 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.

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

385. MDF as the Implementing 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.

386. 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.

387. 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.

D. Environmental documents and records

388. The Construction Company (CC) 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) Noise and Vibration Management Plan

(iv) Waste Management Plan (WMP)

(v) Health and Safety Management Plan including COVID-19 prevention at worksites

(vi) Emergency Response Plan (ERP)

(vii) Camp Site Management Plan

(viii) Post-Construction Audit Report.

389. In addition, the Construction Company (CC) 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.

E. Costs of implementation

390. All types of waste must be managed according to the approved project specific 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.

391. Monitoring. The Construction Company (CC) will undertake permanent noise, vibration and emissions measurements. Measurement results will be submitted to CSC.

392. Occupational and Community H&S. The Construction Company (CC) 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.).

393. Staff. The Construction Company (CC) 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.

394. 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 Construction Company (CC). The Construction Company (CC) shall be aware that the IEE will require updating.

Table 27 Environmental Management Costs

Item	Unit Cost	Total Cost	Remarks
Updating the IEE for the detailed design	-	-	-
Baseline Parametric Measurements (at least 2 points)	$ 100	$ 200	To be conducted by the Construction Company (CC) for noise-vibration, air emissions, dust (and water, if necessary) measurements
Monthly Parametric Measurements (at least 2 points)	$ 200	Monthly for the entire construction period	Tests to be conducted by the Construction Company (CC) at 2 points
Environmental Management Specialist (CSC)	$ 2,500	Monthly for the entire construction period	The costs are included in the contract signed between MDF and CSC and no additional costs will occur.
Environmental Specialist (Construction Company (CC))	$ 1, 500	Monthly for the entire construction period	The costs will be included in the contract signed between MDF and Construction Company (CC).
Construction dust and noise barriers (if needed)	$5 000	$ 5 000	To be installed by Construction Company (CC) at construction sites, temporarily if needed

Item	Unit Cost	Total Cost	Remarks
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 28 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 Construction Company (CC) shall conduct the following surveys: 1. Noise and vibration – baseline; 2. Air pollution – baseline;	Construction Company (CC)	Construction 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; • Emergency response plan • Camp site management plan • Top Soil Management Plan (if required)	Construction Company (CC)	Construction Supervision Company, MDF

Type of work	Potential negative impact	Mitigation Measures	Responsibility	Supervision
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 or purchase document • Agreement on construction waste disposal on the nearest landfill • Agreement on hazardous waste disposal	Construction Company (CC)	Construction 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	Construction Company (CC)	Construction Supervision Company, MDF
Notification of local population on civil works commencement	Potential conflicts with local residents	• Installation 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 (A board showing the details of the project will be displayed at the construction site for the information of public.	Construction Company (CC)	Construction 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	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	

Type of work	Potential negative impact	Mitigation Measures	Responsibility	Supervision
design, layout				

Construction Phase

Type of work	Potential negative impact	Mitigation measure	Responsibility	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	• Ensure proper state of maintenance of buildings, machinery and vehicles to minimize exhaust emissions. Smoke emitting vehicles and equipment shall not be allowed and shall be repaired or removed from the project; • Earthwork operation to be suspended when the wind speed exceeds 20 km/h in areas within 500 m of any community; • Undertake immediate repairs of any malfunctioning construction vehicles and equipment.	Construction Company (CC)	Construction Supervision Company, MDF
	Risks of pollution of ground waters and soils	• Use of non-faulty construction techniques and vehicles. • Equipping the territory with sewage, stormwater and treatment systems at the initial construction stages. • Limiting the perimeter of the oil products supply reservoirs to prevent the propagation of the pollutants in case of emergency spills. • Discharge of any kind of untreated wastewater into the rivers is to be prohibited. • Making the water-proof layers over the surfaces of the storing areas.		
	Negative visual-landscape change	• Temporal structures, materials and waste will be placed at locations far and not visible from the visual receptors. • The color and design of the temporal structures will be chosen to suit the environment.		

Type of work	Potential negative impact	Mitigation measure	Responsibility	Supervision
		• Demobilization of the temporal infrastructure and re-cultivation works following the completion of the works.		
	Risks of safety of local people and personnel	• Use of non-faulty construction techniques and vehicles; • Fencing the camp territories right at the initial stage of the construction; • Installing the safety signs along the perimeter of the territory. • Protecting the perimeter of territory and controlling the movement of foreign people in the area. • Equipping the personnel with PPE. • Equipping the camps with first aid kits; • Ensuring electrical safety. • Keeping an incident registration log. • Personnel training at the initial stages.	Construction Company (CC)	Construction Supervision Company, MDF
Accomplishing the earth works. The removal of the topsoil	Noise propagation, emissions of dust and combustion products	• Use of non-faulty construction techniques and vehicles; • Accomplishing the noisy works during the day as far as possible; • Give notice as early as possible to sensitive receptors for periods of noisier works such as excavation. Describe the activities and how long they are expected to take. Keep affected neighbors informed of progress. • Running the vehicle drives at minimal speed.	Construction Company (CC)	Construction Supervision Company, MDF
	Vibration	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 Company (CC)	Construction Supervision Company, MDF

Type of work	Potential negative impact	Mitigation measure	Responsibility	Supervision
	Loss of topsoil and degradation of sites	• Cutting the topsoil and piling it in isolation from the lower soil layer and other materials. • 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 degrees • 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. • Site for temporary storage of the topsoil must be selected prior to commencement of works with due regard to environmental norms and conditions on the sites and approved by Engineer. The area must be flat, located away from any surface water body, protected from runoff and erosion; • Topsoil and subsoil must be stored separately until reuse; • Any temporary fuel tank (if contractor decided to have small stock of fuel on the site) shall be placed in a covered area with berms or dikes to contain any spills. Capacity of containment must be 110% of capacity of the tank. Any spill shall be immediately contained and cleaned up with absorbent material; • On-site vehicles and equipment shall be inspected regularly for leaks and all leaks shall be immediately repaired. Incoming vehicles and equipment shall be checked for leaks. Leaking vehicles/equipment shall not be allowed on-site.	Construction Company (CC)	Construction Supervision Company, MDF
	Risks of pollution of surface and ground waters.	• 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.	Construction Company (CC)	Construction Supervision Company, MDF

Type of work	Potential negative impact	Mitigation measure	Responsibility	Supervision
		• 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.		
	Accidental damage to the archaeological objects	Special dust prevention nets will be installed to reduce air pollution around the project site. • In case of finding any artefacts, stopping the works immediately and informing the technical supervisor or the Client; • Renewing the works only after the formal instruction is received from the technical supervisor or the Client.	Construction Company (CC)	Construction Supervision Company, MDF National Agency to protect cultural environment
	Camp Management	• Ensuring compliance with the SSEMP and the Construction Camp Site Plan. • Ensuring that potable water for construction camps and workers meets the necessary water quality standards of the GoG. If groundwater is to be used it will be tested to ensure that the water quality meets the GoG drinking water standards. • Developing 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); • 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		

Type of work	Potential negative impact	Mitigation measure	Responsibility	Supervision
	Personnel safety risks And anti-COVID measures	• Construction Company (CC) 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. • Using relevant ventilation system during digging; • Observing labor safety rules during the drilling; • Equipping the personnel with PPE; • 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. • Post information about COVID-19 prevention measures in the workspace; • Place de-barriers at the entrance of the living room / dining room, as appropriate; • Ensure hand hygiene in the workplace and inform employees; • Periodically, several times a day, provide natural ventilation of enclosed spaces / storerooms; • Disinfect frequently used work equipment, inventory, work tools and workplaces at regular intervals; • 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 work (including timely cleaning of the facility and timely removal of construction waste); • 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	Construction Company (CC)	

Type of work	Potential negative impact	Mitigation measure	Responsibility	Supervision
		• Disinfection and containment shall follow WHO's interim guidance on water sanitation, hygiene and waste management for the COVID19 virus; • Consider in the DED and Construction Company (CC)' SSEMPs the main mode of transmission (by air) and mitigation measures to focus 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. • 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. • 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. • The main mode of transmission, which is through the air, will be considered in the DED and Construction Company (CC)' SSEMPs. . 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.		
Transportation	Noise propagation, emissions of dust and combustion products	• Use of non-faulty construction techniques and vehicles; • Limiting the driving speeds; • Maximally limiting the use of public roads and searching for and using alternative routes.	Construction Company (CC)	Construction Supervision Company, MDF

Type of work	Potential negative impact	Mitigation measure	Responsibility	Supervision
		• Watering the working surfaces in dry weather. • Duly covering the vehicle body during the transportation of dusty materials. • Informing the population about the forthcoming intense vehicle movement.		
	Damage to the local road surfaces	• Limiting the movement of heavy techniques along the public road as much as possible; • Restoring all damaged road sections as much as possible to make the roads available to the people, also other local infrastructure, and agricultural lands to at least their pre-works conditions upon completion of construction.	Construction Company (CC)	Construction Supervision Company, MDF
	Overloaded transport flows, limited movement	• Selecting an optimal bypass to the working area; • Installing road signs and barriers at necessary locations; limiting the movement of heavy techniques along the public road as much as possible; • Using flagmen in case of intense traffic; • Making temporal bypasses; • Informing the population about the time and periods of intense transport operations;	Construction Company (CC)	Construction Supervision Company, MDF
	Risks of safety of local people and personnel	• Use of non-faulty construction techniques and vehicles; • Driving the vehicles with admissible speeds. • Minimizing the use of the roads crossing the settled areas; • Limiting the traffic on holidays	Construction Company (CC)	Construction Supervision Company, MDF
Construction works	Deterioration of ambient air; Noise and	• Use water spray or install dust screen enclosures;	Construction Company (CC)	Construction Supervision Company,

Type of work	Potential negative impact	Mitigation measure	Responsibility	Supervision
	vibration	• Timely removal of all debris and construction waste from the site; • Watering or cover temporary storage waste; • Development and implementation of Noise and Vibration management plans; implementation of appropriate measurement in accordance with the plan; apply mitigation measures; • Use of non-faulty construction techniques and vehicles; • Accomplishing the noisy works during the day as far as possible; • 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.		MDF
Waste management	Irregular propagation of waste, environmental pollution	• Delivering the construction and other necessary materials only in needed quantities. • Re-using the waste as much as possible, including the use of inert materials for make the roadbed. • Arranging the temporal waste storage areas and equipping them with relevant signs. • Assigning the duly qualified personnel for waste management. • Instructing the personnel. • Identification of dump sites for inert and construction waste disposal and ensuring proper permissions; • Ensuring waste management is adequately controlled during both the construction phase of the Project and the waste	Construction Company (CC)	Construction Supervision Company, MDF

Type of work	Potential negative impact	Mitigation measure	Responsibility	Supervision
		hierarchy is followed including prevention, minimization, reuse and recycling; • Timely removal of unusable waste to agreed location according to national waste management regulations; • Providing regular training of staff in waste management issues; • 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. • • 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.		
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	Construction Company (CC)	MDF
	Post-construction Audit Report	(i) Developing of Post-construction Audit Report that includes the following information but not limited to: a. Main executed civil works under this Project; b. Project organization and management team; c. Environmental audit and its methodology; d. Audit findings; e. Conclusion and Recommendations.	Construction Company (CC)	MDF, CSC

Operation phase

Type of work	Expected negative impact	Mitigation measure	Responsible entity
Exploiting the rehabilitated infrastructure in a common mode	Noise propagation	1. Implementing relevant noise standards and requirements in populated areas.	Akhaltsikhe City Hall
	Waste propagation; propagation of oil products.	1. Regular cleaning of the rehabilitated infrastructure; 2. Regular cleaning and repairing of water channels and pipes	Akhaltsikhe 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;	Akhaltsikhe City Hall
	Sludge Management	1. Ensuring that no wastewater is discharged into a water course in which it could be a hazard to downstream users (e.g. a waterway that is used as a source of water for domestic or municipal supply).; 2. Including measures to ensure the safe disposal of sewage sludge and if possible, to promote its safe and beneficial use as an agricultural fertilizer. In view of the lack of Georgian legislation with regard to the use of sludge in agriculture, internationally-accepted practices as recommended by World Bank Group's Environment, Health and Safety (EHS) Guidelines shall be considered in case the sludge will be considered for re-use as fertilizer; 3. Regular monitoring to ensure proper operation of the waste water treatment devices, especially of effluent to ensure that it meets discharge standards; 4. Disposal of excess sludge in the nearest landfill. 5. If waste water is to be discharge into the surface water body, the Municipality will be obliged to calculate the limits of discharge into the	Akhaltsikhe City Hall

Type of work	Expected negative impact	Mitigation measure	Responsible entity
		waterbody. The limits are to be approved by the MoEPA. The quality of waste water should ensure compliance of recipient surface water quality (in the **section** located in 1 km upstream the point of use) with the limits set in the Annex 1 and 2 to the technical regulation for protection of water from pollution. To protect the surface water quality, for the point of discharge maximum permissible discharge limits must be defined separately. The document (limits of discharge) must set the discharge limits to ensure compliance of recipient water body with the quality standard; 6. As the local municipality is responsible for the maintenance and operation of the constructed facilities, the local self-government will be responsible for monitoring water quality in waste water recipient stream/river quarterly as it is recommended.	
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.	Akhaltsikhe City Hall

F. Environmental Monitoring Plan (EMP)

395. As the previous chapters of the updated 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).

396. An environmental monitoring plan is presented in Table 21, 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.

397. 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.

398. 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.

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

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

Table 29 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)?
Baseline				
Required plans	• CC's Office and Documentation	Checking, the following plans are developed: • Site-Specific Environmental Management Plan (SSEMP) • Traffic Management Plan • Noise and Vibration Management Plan • Waste Management Plan (WMP) • Health and Safety Management Plan including COVID-19 prevention at worksites • Emergency Response Plan (ERP) • Camp Site Management Plan	• Prior commencement of civil works	Construction Company (CC) EHS/ environmental specialist; CSC
Required permits, licenses and approvals	• CC's Office and Documentation	Checking the following permits are obtained: • Licenses for inert material extraction or purchase document • Agreement on construction waste disposal on the nearest landfill	• Regularly •	Construction Company (CC) EHS/ environmental specialist; CSC

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)?
Designation of safeguards staff and providing of required trainings	• CC's Office and Documentation	• Environmental and H&S specialists are designated; Trainings as required by the CSC are provided	• Regularly	Construction Company (CC) EHS/ environmental specialist; CSC
Notification of local population on civil works commencement	• CC's Office and Documentation	• Information banner regarding project and indicate contact persons is placed; • Information regarding duration of upcoming works is disseminated; • Periodic Public information campaigns via different communication channels are conducted; Prior to the start of construction, notification on the start date of implementation in information banners are placed public places (A board showing the details of the project will be displayed at the construction site for the information of public	• Prior Commencement of civil works • Regularly	Construction Company (CC) EHS/ environmental specialist; CSC
Dust propagation, exhaust fumes NO_x, SO_2, CO	• Construction camp; • Construction site; • Transportation routes; • The nearest Buildings	Instrumental measurement	• Checking dust propagation – during the intense operations and vehicle movement, particularly in dry and windy weather.	Construction Company (CC) EHS/ environmental specialist; CSC

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)?
	• Sensitive receptors		• Checking the technical state - at the start of the working day; • Instrumental measurement - in case there are complaints	
Dust propagation, exhaust fumes NO_2, NO, SO_2, CO	• Construction camp; • Construction site; • Transportation routes; • The nearest Buildings; • Sensitive receptors.	In the study area, the gases concentration (NO2, NO, SO2, CO) in the air will be assessed according to the measurements made at certain points. During the measurements, the temperature should be ranged from 20C to 30C on average, and the humidity from 45% to 75%. The	• The monitoring of the Atmospheric Air quality will be carried out by outsourcing company. During the transportation operations, in dry weather on a periodic basis, technical check-up of machinery before works, and active construction period; • Laboratory tests will be conducted once a month.	Construction Company (CC) EHS/ environmental specialist; CSC
Noise propagation	The nearest residential houses and public offices	Instrumental measurement	Baseline and in case there are complaints	Construction Company (CC) EHS/ environmental specialist; CSC
Vibration propagation	Sensitive receptors	Instrumental measurement	Baseline and in case there are complaints	Construction Company (CC) EHS/ environmental specialist; CSC
Traffic	Along the materials and waste transportation routes	Visual observation	Permanently	Construction Company (CC) EHS/ environmental specialists; CSC
Engineering-geological stability	Sensitive instable sections	Visual observation;	Particularly after the periods with precipitations;	Construction Company (CC) EHS specialist; CSC

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)?
		• Periodic examinations by the engineering geologist.		
Soil and ground quality	• Areas adjacent to the construction camps; • Construction sites; • Materials and waste storage areas.	Visual observation: • No significant oil spills are observed; • Laboratory control	• Visual observation - at the end of the working day; • Laboratory examination - in case of large spills	Construction Company (CC) EHS/ environmental specialists; CSC
Temporal storage of the removed ground and topsoil	• Construction sites; • Ground storage areas.	Visual observation: • The lower soil layer and topsoil are piled separately. • The height of the topsoil pile does not exceed 2 m. • The inclination of piles does not exceed 45 degrees. • The soil is placed far from the surface water objects. • There are water diversion channels along the perimeter of the storage area; • The soil is stored temporarily at places preliminary agreed with the technical supervisor.	Every day following the completion of ground works.	Construction Company (CC) EHS/ environmental specialists; CSC
Vegetation cover	Construction sites	Visual observation: • The works within the limits of the marked zone and no	Visual observation - at the end of the working day;	Construction Company (CC) EHS/ environmental specialists; CSC

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)?
		additional harm or devices or illegal cuttings take place.		
Waste management	1. Construction camps; 2. Construction sites; 3. Temporal waste storage areas;	Visual observation: • The sites of temporal waste disposal are assigned in the construction area and are duly marked. • The storage areas for hazardous waste are protected against the penetration of strangers and against the weather impact; • On the territory, at due locations, there are marked containers to collect domestic waste. • The sanitary condition of the territory is satisfactory – no dissipated waste is observed. • The waste is not stored on the territory for long;	• Visual observation - at the end of each working day; • Checking of documents on amounts of produced and disposed wastes	Construction Company (CC) EHS/ environmental specialists; CSC
	1. Construction Company (CC)'s office	• Checking the waste registration log, • Checking the documented agreement about waste disposal	Document check - once a month	Construction Company (CC) EHS/ environmental specialists; CSC

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)?
Oils and oil products management	1. Construction camps; 2. Warehousing facilities	Visual observation: • The protected areas for oils, oil products and other liquid products marked in a due manner;	• Visual observation - at the end of each working day; • Document check on amounts and types of oil products	Construction Company (CC) EHS/ environmental specialists; CSC
Technical state of the access road, possibility of free movement	1. Corridors of the transportation routes	Visual observation: • The vehicles move along the routes specified in advance, bypassing the settled areas as far as possible. • The state of the driving routes is satisfactory. • Free movement is not limited. • Driving speeds are observed.	During the intense transport operations	Construction Company (CC) EHS/ environmental specialists; CSC
Labor safety	1. Working area	Visual observation: • The territory is fenced and protected against the illegal penetration of strangers, • The personnel are equipped with PPE. • The technical state of the exploited equipment and mechanisms is satisfactory. • Electrical and fire safety is ensured.	• Visual observation- before the onset of each working; • Documents on site trainings and daily toolbox on health and safety	Construction Company (CC) EHS specialist; CSC

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)?
		• The safety, prohibiting and information signs are installed on the territory and along its perimeter. • There is a banner on the territory with the basic safety rules. • Smoking areas are specially assigned.		
		• Unscheduled control (Inspection): • The personnel observe the safety rules and use the PPE.	Inspection - regularly.	Construction Company (CC) EHS specialist; CSC
		Operation phase		
Surface water	Nearest river	Instrumental measurement. The local self-government will be responsible for the monitoring of treated effluent discharged into the river.	Quarterly	The local municipality
Post-Construction Activities	Project Area	• disturbed area is reinstated to pre-works condition or better • no pending actions to address non-compliances are revealed	• After completion of civil works	Construction Company (CC) EHS specialist; CSC

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)?
		Post-construction Audit Report is developed		
operation		• Implementing relevant noise standards and requirements in populated areas. • Regular cleaning of the rehabilitated infrastructure; • Regular cleaning and repairing of water channels and pipes • Permanent control of the technical state of the infrastructure and accomplishing the relevant rehabilitation measures immediately after any damage. • Equipping the access road with relevant road signs	During operation phase	Local Municipality

X. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

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

401. 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.

402. 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 Agara Municipality for obtaining relevant information and carried out desktop survey. Representatives of village hall of Akhaltsikhe 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.

403. Temporary disturbance of local population is expected during the construction works, which will be connected with the 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;

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

405. 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 Agara village, especially young people and working parents of the city area, where the kindergarten is located, who will get access to well-planned, high-quality service.

406. The Construction Company (CC) 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.

407. Generation of significant amount of inert waste is expected during earthworks within the project. Approximately 2368 t of excess soil will be generated, which should be transported and disposed outside of the project site. 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 will be disposed at the site temporarily and used for backfilling purposes.

B. Recommendations

408. 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 Construction Company (CC) 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. This ensures that all potential bidders are aware of the environmental requirements of the Project and its associated environmental costs.

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

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

411. The management of the Construction Company (CC) 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.

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

413. Before starting the construction works, the Construction Company (CC) shall conduct the following surveys: noise and vibration, air pollution to identify baseline situation

414. Prior to the commencement of the construction works, the Construction Company (CC) 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; (v) Health and safety management plan, (vi) Emergency response plan; (vii) Camp site management plan.

415. The Construction Company (CC) must undertake all mitigation measures in order to reduce the impact of noise emissions on the sensitive receptors.

416. 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 30 Impact assessment criteria for noise and vibration[14]

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 earplugs 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.

14 The Tables represent the criteria of environmental assessment and it is a part of assessment methodology carried out in order to evaluate potential impacts and risks for presented project.

Table 31 Impact assessment criteria for 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	The activity implies using the methods creating certain risks of	The risks of the ground water pollution are associated with the

Kind of impact	Assessment criteria		
	Significant (high) impact	***Average impact***	***Insignificant (low) impact***
	excess pollution of the ground waters (e.g. burying the materials containing polluted substances, etc.); mitigation measures are less efficient, 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.	pollution of the ground waters; however, using the mitigation measures is efficient and significantly reduce the risks, or there is probability of emergencies to occur; however, relevant preventive measures are taken.	unforeseen cases only (minor oil product leakages from technique or equipment and the like.). No large amounts of liquid polluting substances are 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 32 Impact assessment criteria for 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.
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 m^2 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 33 Impact assessment criteria for 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 existing engineering-geological conditions on the project facilities	The engineering-geological properties of the grounds are not favorable needing building deep foundations to 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.	The engineering-geological properties of the grounds allow founding the object, but under certain conditions. The degree 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.	The object is not a facility of a complex structure. The engineering-geological properties of the territory-constituent grounds are satisfactory. Consequently, there is no need for either deep foundations, or significant measures to protect the engineering facilities.

Table 34 Impact assessment criteria for 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 there is a risk for invasive kinds to spread.	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.
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 35 Impact assessment criteria for 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 36 Impact assessment criteria for 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.

Kind of impact	Assessment criteria		
	Significant (high) impact	**Average impact**	***Insignificant (low) impact***
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: • Improved waste management conditions. • Improved water-supply and water-drainage conditions. • Improved power supply and gas supply conditions. • Improved accessibility to other kinds of resources.	For several or high-mountainous villages: • Improved waste management conditions. • Improved water-supply and water-drainage conditions. • Improved power supply and gas supply conditions. • 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 one or several cases of economic resettlement in a high-mountainous village	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
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.

Kind of impact	Assessment criteria		
	Significant (high) impact	**Average impact**	***Insignificant (low) impact***
Other negative social-economic effects	• At a country, regional or municipal level, or for several high-mountainous villages: • Deteriorated waste management conditions and landfill overload. • Deteriorated water-supply and water-drainage conditions or overloaded relevant systems • Limited accessibility to other resources.	• For several or high-mountainous villages: • Deteriorated waste management conditions and landfill overload. • Deteriorated water-supply and water-drainage conditions or overloaded relevant systems • Limited accessibility to other resources.	For several families • Deteriorated waste management conditions and landfill overload. • Deteriorated water-supply and water-drainage conditions or overloaded relevant systems • Limited accessibility to other resources. However, the problem can be solved by searching for alternative routes.

Table 37 Impact assessment criteria for 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 archaeological monuments	Following the historical designation of the project area, there is a probability of the late identification of the archaeological monuments.		The area is quite anthropogenic. Therefore, identification of the recent archaeological monuments is less likely.

APPENDIX B. 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 Agara", on the 10th of August at 12:00, 2021 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: Diana Gvaladze, Tsira Konchoshvili, Davit Gvaladze, Grigol Gambashidze

Representative of Akhaltsikhe Municipality: Ilia Zardiashvili

Representatives of Municipal Development Fund of Georgia:

Environmental Specialist- Niniko Isakadze,

ADB Communication Consultant – Irakli Japaridze

Project Manager – Zura Chinchaladze

Construction of Agara kindergarten is one of the projects implemented under the Liveable Cities Investment Program. The project area is located in Village Agara, Akhaltsikhe Municipality.

The selected area is free of buildings and private ownership. The total land plot area under construction of the new building is 6,294.00 m^2 and the development area of the new building is 980.52 m^2. The project includes arranging of kindergarten for four groups - 100 children in village Agara, with the total area of 1,612.9 m^2. The kindergarten building will include setting up of bedrooms, playing rooms, cloakrooms, canteen, storing rooms, hall, administration rooms, washing rooms, kitchen, alleviator, evacuation stairs, and boiler. The project also envisages arranging garden, benches, sheds, playgrounds, waste bins and water fountains on the rest of the area allocated (c/c: 62.05.58.505)by the Local Government.

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 of access roads are envisaged under the project and associated screening.

Implementation of this project will help improve the livability of the Agara 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 100 families from village Agara, Zikilia, Tkemlana and Sakuneti per year that will be able to accommodate their children in kindergarten.

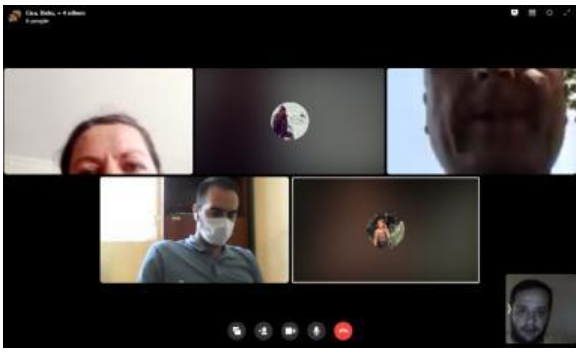
Communication Consultant Irakli Japaridze opened the meeting, reported in brief the objective of the meeting and then turned it over to the next speaker - Project Manager Zurab Chinchaladze. Project Manager familiarized the meeting attendees with the project, as well as with specifics of works to be carried out and reviewed in detail the assignment of Agara Kindergarten. Communication 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 also clarified how and in which form the grievances can be accepted and reviewed by Akhaltsikhe City Hall and MDF.

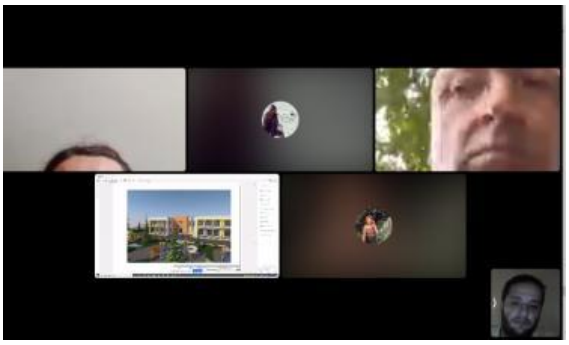
Then MDF's environmental specialist Niniko Isakadze delivered the speech. Niniko Isakadze informed the attendees about the IEE prepared for the project. She shortly explained to the public about the social and environmental screening procedures applied for the ADB and environmental and requirements of 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 labor management measures. She noted that IEE/ EMP forms an integral part of the contract made with the civil works Construction Company (CC) who is obliged thoroughly implementation of the measures specified in the IEE/EMP to protect social and natural environment.

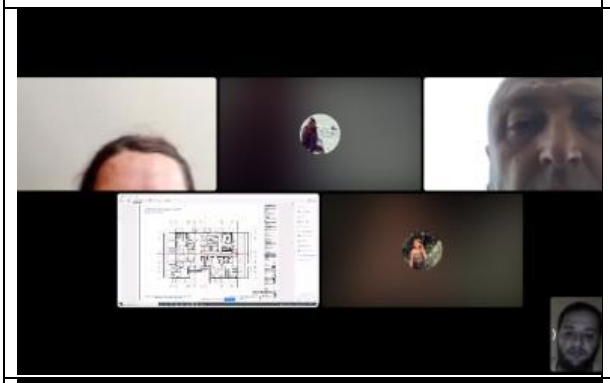
After the presentation, the audience was given a possibility to express their opinions and/or participate in Q&A session concerning presented issues, they posed the following question. Zurab Chinchaladze, Irakli Japaridze and Niniko Isakadze responded to all the questioned asked.

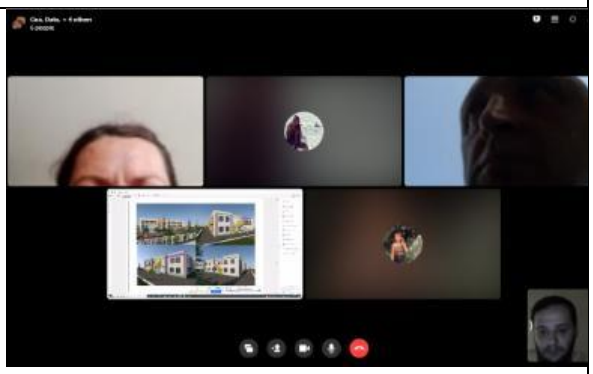
Question	**Response**
When will the civil works be started?	Commencement of civil works is planned in October
When will the project be completed?	Completion of civil works is planned in 2022

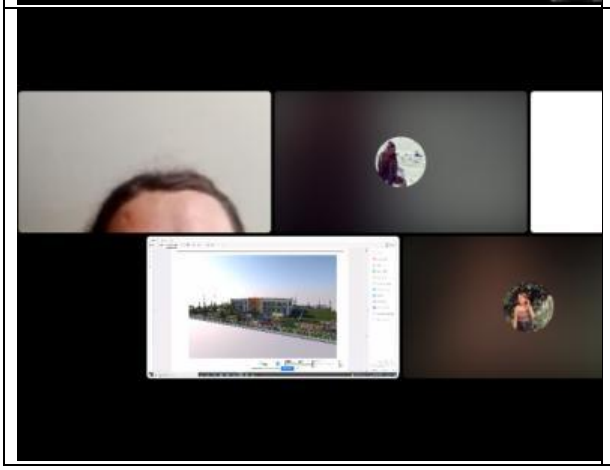
Photos of the Meeting











APPENDIX C. RAPID ENVIRONMENTAL ASSESSMENT (REA) CHECKLIST

Instructions:

(i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (RSES) for endorsement by Director, RSES and for approval by the Chief Compliance Officer.

(ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.

(iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title:	Georgia/53118-001/ Livable Cities Investment Program (LCIP) for Balanced Regional Development
Subproject:	Package LCIP-CW -01 Construction of Kindergarten in village Agara, Akhaltsikhe Municipality
Sector Division:	CWUW

Screening Questions	Yes	No	Remarks
A. PROJECT SITING **Is the project area adjacent to or within any of the following AREAS?**			
▪ Cultural heritage site	**X**		There are no cultural heritage sites in the vicinity of the subproject area.
▪ Legally protected area (core zone or buffer zone)		**X**	There are no protected areas or emerald sites in the vicinity of the subproject site. Nearest protected are –Borjomi-Kharagauli National Park is located 6 km away from subproject site, the Emerald site - 4 km away. All works will be carried out in a highly modified urban landscape. There are known no protected areas that may be affected by the project.
▪ Wetland		**X**	There are no wetlands in the subproject area.
▪ Mangrove		**X**	There are no mangroves in Georgia.
▪ Estuarine		**X**	There are no estuaries in the proximity of the subproject area. Akhaltsikhe is located approximately 1130 km away from the Black Sea shore.
▪ Special area for protecting biodiversity		**X**	Based on the integrated biodiversity assessment tool (IBAT) results used by ADB only one Key Biodiversity Area - Adjara-Imereti Ridge is located within 5 km of the subproject site and

Screening Questions	Yes	No	Remarks
			48 IUCN red list of threatened species are potentially found within 50km of the area of the site
B. Potential Environmental Impacts **Will the Project cause?**			
▪ Impairment of historical/cultural areas; disfiguration of landscape or potential loss/damage to physical cultural resources?		**X**	There are known no historical/cultural areas that may be affected by the subproject.
▪ Disturbance to precious ecology (e.g. sensitive or protected areas)?		**X**	All works will be carried out in a highly modified urban area. No disturbance to precious ecology is expected.
▪ Alteration of surface water hydrology of waterways resulting in increased sediment in streams affected by increased soil erosion at construction site?		X	Alteration of surface water hydrology of waterways is not expected. However, Tsinubnistskali river is adjacent to the project site (distance from the cadastral boundaries is 9, 2 m), while the Mtkvari river flows 150 m away from it.
▪ Deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals used in construction?		**X**	Deterioration of water quality is not expected. Surface water pollution can be caused by accidents, improperly operated works and incorrect management of the generated waste. As a result of the planned works on the project territory, the risk of surface water pollution is medium however, in order to minimize the expected adverse impact on water objects, mitigation measures should be reflected in management plans and accordingly implemented.
▪ Increased air pollution due to project construction and operation?	**X**		There is a risk of increased air pollution associated with construction activities, operation of heavy equipment and service vehicles during the project implementation. This may cause short-term, temporal elevated level of ambient air pollution and suspended particulates. With the use of the most modern, environmentally friendly equipment/ machinery and special dust prevention nets, air pollution can be reduced to permissible levels. The air pollution mitigation measures are provided in the EMP and additional measures, if needed, will be defined in the SSEMP. Environment, Health and Safety specialist will be engaged until the completion of all works to ensure the implementation of SSEMP.
▪ Noise and vibration due to project construction or operation?	**X**		There is a risk of increased noise level associated with construction activities, operation of heavy equipment and service vehicles during the subproject implementation. This may cause short-term, temporal elevated level of ambient noise. With the use of the most modern, environmentally friendly equipment/ machinery and noise mitigation measures at source, such as temporary noise barriers, accomplishing the noisy works during the day as soon as possible, running the vehicles at minimal speed, noise level can be reduced to permissible norms. The noise mitigation measures are provided in the EMP and

Screening Questions	Yes	No	Remarks
			additional measures, if needed, will be defined in the SSEMP. Environment, Health and Safety specialist will be engaged until the completion of all works to ensure the implementation of SSEMP.
▪ Involuntary resettlement of people? (physical displacement and/or economic displacement)		**X**	The subproject doesn't involve any displacement or dislocation of any person. The proposed site is a municipal-owned land.
▪ Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?		**X**	There are no disproportionate impacts on poor, women and children, indigenous peoples, or other vulnerable groups anticipated. On the contrary, owing to the new subproject, the modern infrastructure and comfortable environment will positively effect on children's growth, education process and increase motivation. Moreover, as part of the Gender Action Plan, the project envisages implementation of capacity development and gender mainstreaming measures. Contractor will be required to prioritize hiring local labor force. Some of the skilled workers may be brought from outside but numbers will be insignificant.
▪ Poor sanitation and solid waste disposal in construction camps and work sites, and possible transmission of communicable diseases (such as STIs and HIV/AIDS) from workers to local populations?		**X**	To avoid poor sanitation and solid waste disposal and transmission of contiguous diseases the subproject will provide trainings for all workers in the basic sanitation, general health and safety matters of their work. Moreover, sanitation issues will be regulated by: (i) Site Specific Environment Management Plan (SSEMP); (ii) Site Specific Health and Safety Plan; (iii) Camp Site Management Plan; and (iv) Waste Management Plan;
▪ Creation of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents?		**X**	The type of construction works and the pending climatic conditions will not lead to temporary breeding habitats for vectors.
▪ Social conflicts if workers from other regions or countries are hired?		**X**	Conflicts are possible but unlikely as there will be a limited number of workers from outside of the local area. Information banners regarding the project details as well as contact details of contact person will be arranged and the information regarding the upcoming works will be disseminated. The social conflict mitigation measures are provided in the EMP and additional measures, if needed, will be defined in the SSEMP. Social specialist will be engaged until the completion of all works to ensure the implementation of SSEMP.
▪ Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water		**X**	A large influx of population is not expected during the construction and operation of the project. The limited number of workers from outside of the local area should not have any significant impact on social infrastructure and services.

Screening Questions	Yes	No	Remarks
supply and sanitation systems)?			
▪ Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?		X	Occupational Health and Safety will be a concern, in particular working at heights, live power lines, and treatment of any chemicals during construction. Appropriate safety measures are included in the EMP. Additional mea sures to ensure occupational health and safety will be specified in SSEMP and Environment, Health and Safety (EHS) will be employed, who will be in charge of implementation of SSEMP and managing health and safety risks in accordance with IFC's EHS Guidelines for the Occupational Health & Safety.
▪ Risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during construction and operation?		X	Construction does not involve use of explosives. 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 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 cleaning of the equipment. SSEMP will also include measures and monitoring requirements on community safety for chemical hazards.
▪ Community safety risks due to both accidental and natural causes, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?		X	Work area will be clearly demarcated with security access for the workers and project-concerned members only. Community health and safety risks are present during construction as risks from excavations, equipment and vehicle operations. The contractor will be requested to include community health and safety measures in the SSEMP.
▪ Generation of solid waste and/or hazardous waste?	X		Certain amount of construction waste will be generated during the construction phase. Moreover, accumulation of significant amount of excess ground isexpected during earthworks within the project. The contractor will be required to develop a Waste Management Plan (WMP), in compliance with environmental legislation in Georgia (Waste Management Code of Georgia) and submit to MEPA for approval. Non-hazardous construction waste shall be managed according to WMP. 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. The records regarding waste disposal on a landfill shall be maintained as proof for proper management as designed. No large amounts of hazardous waste (solid and liquid oil-contaminated waste, oil-contaminated ground, paint packing material, lead containing accumulators, asbestos containing pipes) are expected to

Screening Questions	Yes	No	Remarks
			originate in the project construction phase. Hazardous waste should be stored and transferred to licensed companies, transported, and disposed in compliance with legislative requirements and by following the rules for hazardous waste management. The WMP should include the hazardous waste management measures. Moreover, consultant will be required to develop asbestos contained waste management plan, if in the construction phase, at the stage of dismantling and moving the underground infrastructure, asbestos-containing pipes or other parts are identified.
▪ Use of chemicals?		**X**	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. The WMP will include the chemicals management measures.
▪ Generation of wastewater during construction or operation?		**X**	Possible environmental impact during operational phase arise from maintenance of arranged infrastructure and will be related to generation of wastewater.