Initial Environmental Examination

ARM: Seismic Safety Enhancement Program

Reconstruction of Voskehat secondary school

August 2023

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ABBREVIATIONS

ADB	Asian Development Bank
AP	Affected person
ATDF	Armenian Territorial Development Fund
DLP	Defect Liability Period
EIA	Environmental Impact Assessment
EMF	Environmental Management Framework
EMP	Environmental Management Plan
EARF	Environmental Assessment and Review Framework
GRM	Grievance Redress Mechanisms
HSMP	Health and Safety Management Plan
IA	Implementing Agency
ISA	Initial Social Assessment
MoE	Ministry of Environment
MTAI	Ministry of Territorial Administration and Infrastructure
OM	Operational Manual
AP	Affected Person
PAR	Preliminary Application Report
PCCP	Public Consultation and Communication Plan
RA	Republic of Armenia
RPF	Resettlement Policy Framework
SSEMP	Site-Specific Environmental Management Plan
SPS	Safeguard Policy Statement
SSIP	Seismic Safety Improvement Program
SSRP	School Strengthening and Renovation Program

I. EXECUTIVE SUMMARY

Project Background

1. Armenia is located in one of the most seismically active regions of the world, and earthquakes are the major natural hazard. The most destructive earthquake in recent times occurred in Spitak on 7 December 1988, with a magnitude of 6.9 on the Richter scale. The earthquake killed 25,000 people (including 6,000 school children), injured 15,000 people, left 517,000 people homeless, and destroyed 190 schools. The estimated direct economic loss from the Spitak earthquake is $15 billion–$20 billion.[1] Since 2020, Armenia has experienced 14 earthquakes with magnitude 5 and above, and over 2,700 earthquakes with magnitude less than 5.[2] The devastating earthquakes in southeast Turkiye and Syria of 6 February 2023 and aftershocks have amplified Armenia's exposure to seismic risk. Most public buildings, particularly school buildings constructed during the Soviet time, were not designed to withstand earthquake hazard conditions. Since the Spitak earthquake, one-size-fits-all Soviet building regulations and standards have been updated in 1995, 2006, and 2020. Armenia has about 1,400 public schools, about 1,000 of which need retrofitting or reconstructing as there is a strong possibility that the school buildings will collapse in a moderate or strong earthquake.

2. In 2015, the government approved the School Strengthening and Renovation Program (SSRP) as the core national program of the National Strategy for Disaster Risk Reduction.[3] The national strategy emphasizes resilience to disasters and increased safety of individuals and society—including reconstructing and retrofitting schools and enhancing preparedness and response—as essential for sustainable development. The SSRP provides consolidated list of schools ranked by seismic risk and development needs using the prioritization criteria developed with support of the United Nations Children's Fund (UNICEF). The SSRP aims to retrofit or reconstruct the priority 431 schools over the period of 2015–2035 with an estimated cost of $1.7 billion.

3. The Asian Development Bank (ADB) approved a Seismic Safety Improvement Program (SSIP) for $88.5 million equivalent and an attached technical assistance on 22 September 2015.4 SSIP supports implementation of the National Disaster Risk Reduction Strategy by improving school seismic safety to reduce casualties and damages in schools during earthquakes and enabling better use of school buildings as shelters for general public and focal points for emergency response after earthquakes. The program's outcome is improved coverage of seismically safe school buildings. The outputs are: (i) seismic resilience of school buildings increased, (ii) seismic disaster preparedness and response capacity strengthened, (iii) supportive policies and systems for seismic disaster risk management and reduction improved, and (iv) national capacity in executing and implementing the seismic safety investment program enhanced. The strengthened or reconstructed school buildings will meet the internationally accepted seismic safety standards for an earthquake. The strengthened or reconstructed school buildings will also meet the government's requirements on energy efficiency, with wheelchair-accessible trails and sex-segregated toilets to enable better use of the school buildings as shelters for injured or

[1] World Bank. 2009. *Disaster Risk Reduction and Emergency Management in Armenia*. Washington, DC.
[2] Volcano Discovery. Past earthquakes in Armenia: Jan 1, 2020–Apr 9, 2023 – list, stats and map (accessed 31 March 2023).
[3] Government of the Republic of Armenia. 2017. *Endorsing the National Strategy for Disaster Risk Management and the Action Plan.* Yerevan.

[4] ADB. Armenia: Seismic Safety Improvement Program.

disabled persons after earthquakes. The program will directly benefit about 18,000 students and 3,100 teachers and other school staff upon its completion in 2027.

4. The Seismic Safety Enhancement Program (Project) to be financed by JFPR grant will complement the Seismic Safety Improvement Program (SSIP). It involves design and construction of one public school near Yerevan. The school will be socially inclusive, suitable for 21st century education, transformative for community activities, and in line with high seismic safety standards. The Project will incentivize the government counterparts at all levels to institutionalize innovative and cost-efficient solutions in disaster risk management. The Project will provide (i) unconventional cost-effective design solutions for seismic retrofitting that will be replicated and scaled up in other SSRP schools, (ii) a building maintenance guide for the completed JFPR school which will be used and operationalized in other schools, and (iii) approaches for targeted and effective DRR campaigns in Armenia. If needed, the building norms for seismic design will be further upgraded and will affect country's entire construction sector. Another aspect of the JFPR grant support, a well-planned assessment visit to Japan with pre-confirmed meetings and consultations with Japanese counterparts, will enhance effectiveness of the capacity building component. Japanese experience in mitigating seismic disaster risk through innovative and targeted awareness campaigns will be studied and applied in Armenia. Using technologies, social media, and celebrities as goodwill ambassadors for enhancing public awareness and preparedness for seismic events will be novel in terms of the unusual subject to be promoted through social media. Lessons learned during the SSIP implementation will be applied to the Project and will (i) further enhance the IA's capacity for engineering design and construction of seismic resilient building; (ii) define selected project readiness actions, such as identification of the project school, number of students, selection of the design firm/consultant, as pre-conditions for effectiveness of the grant, and (iii) carefully monitor exogenous factors that could further affect the Project.

5. The Project's impact will continue to align with the National Strategy for Disaster Risk Reduction. The outcome of the program is to have at least 290 children studying in a school meeting seismic safety standard, with potential to be a replicable model for resilient schools. The Project outputs are: **Output 1. Strengthened capacity for seismic disaster resilient infrastructure and risk management.** The Project will finance design and construction of Voskehat secondary school named after Khrimyan Hayrik in Armavir region, 20 km away of Yerevan. The school has 5 buildings with one to three stores and was selected because i) the school building is in obsolete physical condition and is included in the SSRP, ii) it is relatively small with the capacity of 290 students, and can be completed with the grant financing, iii) based on the initial visual assessment the building can be retrofitted, a preferred type of intervention that can be more easily replicated in other schools, iv) it is in Armavir region of Armenia famous for vineries with a potential for international and national wine tourism and will ensure broad visibility of the model school and Japanese support. A building maintenance and operations guide will be developed and operationalized for the completed building, which will be replicated in other schools. The administrative staff of the school will receive respective training on the application of the guide. An Armenian delegation comprised of government officials will visit Japan to learn and experience country's context of disaster prevention and management. The main learning directions will be resilient design and construction, and seismic disaster risk management. **Output 2: Raised awareness on seismic safety.** The Project will strengthen awareness of managing seismic disaster risk in Armenia. Selected female and male celebrities and social influencers will be engaged and will serve as goodwill ambassadors. The power of technology and social media will be used to drive the wider reach of information dissemination beyond communities of the JFPR and SSIP schools.

6. The Ministry of Territorial Administration and Infrastructure (MTAI) will be the executing agency and the Armenian Territorial Development Fund (ATDF) will be the implementing agency.

7. An environmental and social screening was conducted to ensure that environmental and social considerations are incorporated into the project design from an early phase with the overall aim of demonstrating the sustainability of the proposed Project. The level of review and assessment required at the detailed design stage under national and international standards are determined and the findings of the screening are summarized and presented in the Initial Environmental Examination (IEE) for the reconstruction of Voskehat secondary school.

Compliance and Fulfilment of the SPS Policy and EIA Law of Armenia

8. An assessment of the environmental and social impact has been performed for the Project and this IEE report is prepared in full compliance with ADB Safeguard Policy Statement (SPS, 2009) and in accordance with the Armenian legislative framework, particularly with the RA Law on Environmental Impact Assessment and Examination (2014).

9. Actual study has been undertaken in accordance with the ADB's Safeguard Policy Statement (2009), Environmental Assessment Guidelines (2003) and the Environmental Assessment and Review Framework (2015) prepared to guide the IA, in carrying out the environmental assessment of the projects to be financed under SSIP and agreed between the Government of Armenia and ADB. The EARF sets out the general principles: selection criteria, procedure and organization for conducting environmental impact assessment, and implementing EMP throughout the project cycle under the SSIP. Internationally recognized standards and guidelines have provided guidance where local standards are not available.

Screening and Classification

10. The institutional systems of the SSIP will apply to the JFPR Project. A program safeguard systems assessment (PSSA) has been prepared for the SSIP and updated for additional financing. Most of the actions to mitigate the identified risks have been implemented during implementation of the SSIP and the institutional capacity and systems are established to manage environmental and social impacts. For the JFPR Project localized within the construction sites and temporary negative impacts are expected during the construction works and can be mitigated through good construction management practices. No involuntary resettlement or indigenous people impact is envisaged, as reconstruction/retrofitting of the school building will be at the existing location and Armenia is homogeneous in ethnic composition. Due diligence on social safeguards confirmed the absence of land acquisition and resettlement impact and suggested mitigation measures for any potential issue that might arise during the construction phase. The Project safeguard classification is Category B for the environment, Category C for involuntary resettlement, and Category C for indigenous peoples. A completed Rapid Environmental Assessment Checklist (REA) is attached as Annex 1 of this report.

Meetings, Public Consultation, and Information Disclosure

11. Public communication, consultations and engagement has been carried out in compliance with Armenian legislation and ADB SPS (2009). In order to ensure meaningful and effective participation of all stakeholders, consultations are planned in all stages of the Project starting from design through construction and to operation.

12. An introductory meeting was held with authorities of the impacted Voskehat settlement of Vagharshapat community. A joint meeting of the project engineering and environmental safeguard teams with Mr. Armen Khudabashyan, administrative head of the Voskehat settlement and Mrs. Sophik Petrosyan, principal in charge of the Voskehat Secondary School took place on May 12,

2023. During the meeting, the project team presented the proposed Project, informed on the need of an IEE and the required mitigation measures, and requested support for the effective an meaningful public consultations. An advertisement on the upcoming public consultation was also provided for disclosure and dissemination among affected people and other interested public.

13. Information about the Project has been disclosed through the Public Consultation meeting conducted on 18 May 2023 in the Voskehat settlement of Vagharshapat community. The details on public communication, consultation, and information disclosure are presented in Annex 3.

Grievance Redress Mechanism

14. A Grievance Redress Mechanism (GRM) inspired by the problem-solving function of ADB guidelines and policies has been developed for the SSIP and will be applied to the project. It aims to continuously communicate with affected people during project implementation to receive and address their concerns, complaints, and suggestions about the Project's environmental performance. The grievance redress mechanism has been designed for the project implementation parties to address affected peoples' concerns and complaints promptly, timely and effectively using a simple procedure and transparent process readily accessible to all segments of the affected people at no costs and without retribution. The mechanism does not pose impediments to the country's judicial or administrative systems. The affected people will be appropriately informed about the GRM during public consultations. The GRM for all stages of the Project is presented in detail in Annex 4.

Report, Methodology and Scope of the Study

15. The environmental assessment and the Environmental Management and Monitoring Plan (EMP) which is a guidance document to measure and achieve compliance with the environmental protection and mitigation requirements of a project, which are typically requirements for project permits/approvals, involves the following major activities:

i. Gathering of baseline information on the physical, biological, and socio-economic environment of the project area and understanding the technical, social, and institutional aspects.
ii. Discussions with officers of the relevant agencies.
iii. Public consultation.
iv. Screening of potential issues, concerns, and impacts related to location, design, construction, and operation to distinguish those that are likely to be significant and critical during the further study.
v. Preparation of EMP indicating impact areas, recommended mitigation measures, method of monitoring the impacts, responsible agencies/persons, and associated costs; and
vi. Proposing the institutional set-up for implementation of the EMP.

16. The Structure of this IEE report follows the following outline:

a) Executive Summary
b) Environmental Policy, Legal and Administrative Framework
c) Description of the project
d) Analysis of Alternatives
e) Baseline conditions
f) Anticipated environmental and social impacts.
g) Information Disclosure, Public communication, Consultation and Participation, Grievance Redress Mechanism
h) Environmental management and monitoring plan(s)
i) Conclusions and recommendations
j) Annexes

17. Baseline data and other information were obtained from published and unpublished sources including climate, topography, geology and soils, natural resources, flora and fauna and socio-economic data. Physical baseline data on air quality were obtained from the Hydrometeorology and Monitoring Center of the Ministry of Environment (MoE). The detailed field surveys, data processing and consultations with stakeholders will be conducted in the detailed design stage and will be incorporated in the updated IEE.

II. ENVIRONMENTAL POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

Armenian Legislation Governing Environmental Management and Assessment

18. Armenia has rather well developed legislative and regulatory framework for environmental protection. The Article 12 of the Constitution (06.12.2015) outlines the state responsibility for environmental protection, reproduction, and sustainable use of natural resources.

19. The legal framework embraces more than 30 laws and more than 100 supportive legal regulations to protect the environment. The national policies and legislative regulatory framework containing regulations to a greater or lesser extent applicable to urban development, as well as their practical implementation were studied in the scope of the screening. Most applicable national laws and regulations, and legal obligations related to environmental and social protection are listed below:

Environmental legislation

Codes and Laws

20. The Law on Environmental Impact Assessment and Expertise (May 3, 2023) requires evaluation of projects on their environmental impacts, screening, and categorization according to activity type, expert examination of evaluation reports and issuing an expert examination conclusion. This Law serves as a framework for MoE for granting an approval of various development projects in the country. In accordance with the Chapter 3 Article 12 the economic activities or projects subject to EIA and expertise, shall undergo environmental impact assessment in the design stage, and implementation shall start only after MoE approval The Chapters 4 and 7 define procedures and requirements for the EIA and expertise, and for the public notification and meetings, respectively.

21. The Law on Wastes (2004) regulates the collection, transportation, storage, treatment, re-cycling and disposal of the wastes including construction- related ones.

22. The Law on Environmental Oversight (2005) regulates the organization and enforcement of oversight over the implementation of environmental legislation of the Republic of Armenia.

23. The Law on Organization and Implementation of Inspections in Armenia (2000) provide s the procedures on performance of inspections over the economic activities.

24. The Law on Atmospheric Air Pollution (1994 and last amended in 2007) regulates the emission permits and provides maximum allowed loads/concentrations for atmospheric air pollution, etc.

25. Land Code (2001) regulates the relationships that emerge in land use and provides legal basis for effective land use, for improvement and maintenance of soil fertility and protection of land resources taking into account their environmental, economic and social importance.

26. Water Code (2002) provides legal basis for protection and effective management of the country's water resources for future generations. The following regulations and procedures of the Water Code (2002) are relevant: (a) water use permitting procedures, (b) environmental flows, (c) drainage water, (g) reservation of underground water sources, and (i) public awareness and publicity of the documents developed by the Water Resources Management Department of MoE (WRMD) and other normative documents which provide guidelines directly linked with water and environmental issues.

27. Law on Flora (1999) outlines the national policies for the conservation, protection, use, regeneration, and management of natural populations of plants, and for regulating the impact of human activities on biodiversity. The laws provide for assessing and monitoring the species, especially rare and endangered species.

28. The RA Law on Fauna (ՀՕ -52 03.04.2000) defines the policy for conservation, protection, use, regeneration and management of animals in the Republic of Armenia, as well as for regulating the impact of human activities on the number of animals and their habitats. It also sets out the requirements for monitoring and assessment of species, in particular endemic and endangered species.

29. The RA Law on Specially Protected Areas of Nature (ՀՕ -211 27.11.2006) defines the policy for conservation, protection, use, regeneration and management of specially protected areas of the Republic of Armenia, as well as for regulating the impact of human activities on biodiversity.

30. Law on the Preservation and Use of Historical and Cultural Immovable Monuments and Protection of Historical Area (11.11.1998).

Other Legal Acts

- ✓ Sanitary Industrial Design Standards 245-71,
- ✓ RA Government Decree N 1325-Ա on Procedures of Information Disclosure and Public Consultations" (19.11.2014),
- ✓ RA Government Decree N160- Ա on Maximum Permissible Concentrations of Air Polluting Emissions for Settlements and Maximum Permissible Limits of hazardous Substances in the Exhaust Gases Emitted by the Motor Vehicles in Armenia (02.02.2006),
- ✓ RA Government Decree N 121-Ա on Procedures of Treatment, Utilization, Storage, Transportation and Disposal of Hazardous Waste in RA provides regulations on handling hazardous waste generated in Armenia including those in urban development sector (2003),
- ✓ RA Ministry of Nature Protection and Mining Order N 120 on Classification of the Wastes by the Hazard Level Originated within the Territory of the Republic of Armenia (05.12.1996),
- ✓ RA Government Decree N 1404-Ա on Determination of Topsoil Stripping Norms and on Requirements to the Topsoil Preservation and Utilization (02.11.2017),
- ✓ RA Government Decree N 1396-Ա Order on Utilization of Stripped Topsoil (08.09.2011),
- ✓ RA Government Decree N108- Ա on Requirements for Determination of Size and Types of Green Zones for Settlements (08.02.2018),
- ✓ RA Government Decree N 967- Ա on the List of Nature Monuments (14.08.2008),

- ✓ The RA Decree No 764-Ն on Procedure for Assessment and Compensation of Possible Economic Damage to the Environment" (27.05. 2005),
- ✓ RA MoE Minister Order N64-L on Determination of Computer Programs for Calculation of Dispersion of Hazardous Gas Emissions from the Immobile Facilities (18.02.2020),
- ✓ RA Health Minister Order N 20-Ն on Sanitary-Hygienic Rules and Norms N 2.1.7.001-09 on Utilization, Storage and Transportation of Dangerous and Hazardous Chemical Wastes and Hazardous Chemical Substances (29.11.2009),
- ✓ RA Minister of Health Order № 138 on adoption of Sanitary Norms № 2-III-11.3 on Noise in Workplaces, in Residential and Public Buildings and in Residential Construction Areas (06.03.2002),
- ✓ GOST 17.2.4.05-83. Environmental protection. Atmosphere. Gravimetric Method for Determination of Suspended Dust Particles,
- ✓ RA Government Decree № 160- Ն. on Norms of Maximum Permissible Concentrations (MPC) of Atmospheric Air Pollutants in Residential Areas (02.02.2006),
- ✓ The RA Government Decree No. 72-Ն on the Red Book of Plants of the Republic of Armenia (29.01.2010),
- ✓ The RA Government Decree No. 71-Ն on Red Book of Wild Fauna Species of the Republic of Armenia (29.01.2010),
- ✓ The RA Government Decree No. 1059-Ա on Strategy, State Program and Measures in the Sphere of Protection and use of Specially Protected Areas of Nature of the Republic of Armenia (25.09.2014),
- ✓ The RA Government Decree No. 781-Ն on RA Flora Protection Objects and the Procedure for their use for Reproduction in Natural Conditions (14.08.2014),
- ✓ RA Government Decree N438 on State Registration, Study, Preservation, Repair, Rehabilitation and Use of Historical and Cultural Immovable Monuments (20.04.2002),
- ✓ RA MoE Minister Order N246-L on adaptation of the Guidance on Handling Asbestos-Containing Materials (28.07.2020).

Occupational Health and Safety legislation

Codes and Laws

31. RA Law on State Regulation for Ensuring Technical Safety (2005),

32. RA Law on Population Protection in Emergency Situations (1998).

Other Legal Acts

- ✓ RA Gov. Decree N 1631 on adaptation of the Regulations on Personal Protective Equipment (2004),
- ✓ RA Gov. Decree N 1089 on adaptation of the Medical Examinations (2004),
- ✓ RA Gov. Decree 2390-N on Safety Requirements for Machines and Equipment (2006),
- ✓ RA Gov. Decree N286 on Procedure of Granting Permission for Alienation, Construction and Use of the State and Community Property Lands (12.04.2001),
- ✓ RA Health Minister Order N 15-Ն on adaptation of the Sanitary Norms and Rules N 2.2.8-003-12 for Sanitary Facilities for the Personnel of Companies and Organizations (19.09.2012),
- ✓ RA Minister of Urban Development Order RACN[5] IV-11.07.01-2006 (ICN[6] 3.02-05-2003) on adaptation of Accessibility of Buildings and Structures for the Disabled People.

[5] RACN – Republic of Armenia Construction Norms
[6] ICN – International Construction Norms

International Environmental Regulations

Armenia's Participation in International Environmental Conventions and Protocols

33. The Republic of Armenia has signed more than 35 International Conventions, 24 of which are ratified since 1993. The proposed Project is screened for compliance to these international obligations. The finding is that none of them will be violated.

34. With respect to handling of hazardous substances the Government of the Republic of Armenia ratified the Stockholm Convention and is a party of the Basel Convention. Full list of International Environmental Conventions and Protocols signed and ratified by RA is presented in Annex 2.

35. Internationally recognized standards shall be applied where local standards are not available and international guidelines shall be applied when the background baseline data are already exceeding the national legislative standards in the cases when the national guidelines are not available. In all such cases, the IEE report will provide justification for the levels and approaches chosen for the particular project or site.

ADB Safeguard Policy Statement (2009)

36. The assessment has been undertaken in accordance with SPS 2009, Environmental Assessment Guidelines (2003) and the Environmental Assessment and Review Framework (EARF) agreed between the Government of Armenia and ADB. Internationally recognized standards and guidelines have been applied where local standards were not available. This includes World Bank Group Environmental, Health, and Safety General Guidelines (2007).

37. SPS 2009 describes common objectives of ADB's safeguards, lays out policy principles, and outlines the delivery process for projects funded by ADB. It also sets the requirements of impact assessments (IA) for all projects. Depending on the significance of project impacts and risks, the assessment may comprise a full-scale environmental impact assessment (EIA) for category A projects, an initial environmental examination (IEE), or an equivalent process for category B projects. The level of detail and comprehensiveness of the assessment is directly linked with the significance of potential impacts and risks to the environment. One of the main policy principles is to apply screening 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.

Screening and Classification

38. The institutional systems of SSIP will apply to the Project. A program safeguard systems assessment (PSSA) has been prepared for the SSIP and updated for additional financing. Most of the PSSA actions to mitigate the identified risks have been implemented during the implementation of the SSIP and the institutional capacity and systems are established to manage environmental and social impacts. Under the Project localized within the construction sites and temporary negative impacts are expected during the construction works and can be mitigated through good construction management practices. No involuntary resettlement or indigenous people impact is envisaged under the program, as reconstruction/retrofitting of the school building will be at the existing location and Armenia is homogeneous in ethnic composition. Due diligence on social safeguards confirmed the absence of land acquisition and resettlement impact and suggested mitigation measures for any potential issue that might arise during the construction phase. The

Project's safeguard classification is Category B for the environment, Category C for involuntary resettlement, and Category C for indigenous peoples.

Project Implementation Framework

39. The SSIP systems and implementation arrangements will be retained for the Project. The Armenian Territorial Development Fund (ATDF) will be the Implementing Agency responsible for daily management of the Project activities. ATDF is fully staffed with necessary specialists and is led by a full-time Executive Director. MTAI will be the Executing Agency and will oversee the implementation. SSIP Steering Committee will coordinate the implementation and facilitate Project-related decisions and government approval procedures. The ATDF Governing Council will approve national policy guidelines and provide strategic leadership and support.

40. ATDF will engage professional engineering design and technical supervision firms for preparing detailed engineering design and daily supervision of construction activities. The firms' will be staffed with environmental and health and safety experts to cover respective aspects in line with Project requirements. Supervising Engineer/Technical Supervisor will ensure and supervise the construction of the Project including implementation of the EMP during construction and defect liability period, manage contract changes, claims, and scope revisions.

41. The Construction Contractor will

i. implement the EMP,
ii. hire the services of one full-time Environment and Social Specialist and one full-time health& safety specialist or one full-time environmental and social specialist with a background in health and safety, as defined in the tender document,
iii. Hire a part-time reptile specialist (herpetologist) to train the staff and collect and isolate the individuals of snakes and other reptiles if there will be observed
iv. notify the technical supervisor and the relevant emergency authorities immediately, in cases of emergencies and accidents or extraordinary situations,
v. obtain permits and approvals from relevant agencies and provide copies to technical supervisor,
vi. monitor construction works and provide Corrective Action Reports,
vii. report on the environmental program as specified in IEE/ EMP.

42. ADB will monitor the implementation and may carry out periodic reviews and inspections in conformity with the principles and requirements embodied in the SPS 2009. ADB will support ATDF in managing the social and environmental impacts and risks. ADB will also disclose Project information through the placing IEE and EMP English versions, as well as annual Environmental Monitoring Reports on its website. Below are ADB's responsibilities in the different phases of the Project:

<u>Pre-Construction</u>

i. Review the project screening results and approve project categorization,
ii. Review and approve the IEE on a no-objection basis,
iii. Disclose IEE report to the public through posting on ADB website.

<u>Construction Phase:</u>

iv. Review annual reports and provide necessary advice to the ATDF,
v. Undertake annual environmental review missions for the project.

<u>Post-construction Phase:</u>

vi. Review post-construction audit report and annual reports until the Project completion report is issued.

III. DESCRIPTION OF THE PROJECT

General background

43. The project finances the design and reconstruction of Voskehat Secondary School in the Armavir region, at a distance of 28 kilometers from Armavir town (administrative center of the region) and around 20 km away from Yerevan. The school has 5 buildings with 1-3 stories. The school's buildings are in obsolete physical condition and are included in the SSRP. The school capacity is 355 pupils. In 2023 290 students aged 7 to 18 study in the school. The number of staff of the Voskehat school is 39 of which women are 84.7% and men 15.3%.

44. Based on the initial visual observation the building will be retrofitted. The school will be a pilot with i) innovative engineering solutions for seismic safety, ii) climate mitigation and adaptation measures, iii) inclusiveness for people with disabilities, iv) design suitable for 21-century education and pedagogical standards, v) transformative facilities/spaces for community activities after the school hours. A respective building maintenance guide will be developed and operationalized for the completed building which will be replicated in other schools.

Location of the Project

45. Voskehat is a village in the Armavir Region of Armenia. The village was founded in early 1930s. The village is in the eastern part of the Armavir marz, east of the M3 highway, at a distance of 28 kilometers from Armavir, administrative center of the region. The absolute height is 850 meters above sea level[7].

46. The area is in the warm climate zone and has a severe continental climate with hot summers and cold, windless winters. Summer is long, from May to October, the average monthly air temperature reaches 24 °C to 26 °C, and the maximum is 42 °C. The warmest month of the year is August, with an average temperature of 25.4 °C. Winters begin in mid-December. January is the coldest month, with temperatures averaging -1.8 °C. The minimum temperature in winter is 5°C. The average temperature in Voskehat is 11.8 °C Precipitation here is about 377 mm per year. Around 3624.43 hours of sunshine are counted in Voskehat throughout the year. On average there are 119.04 hours of sunshine per month.[8]

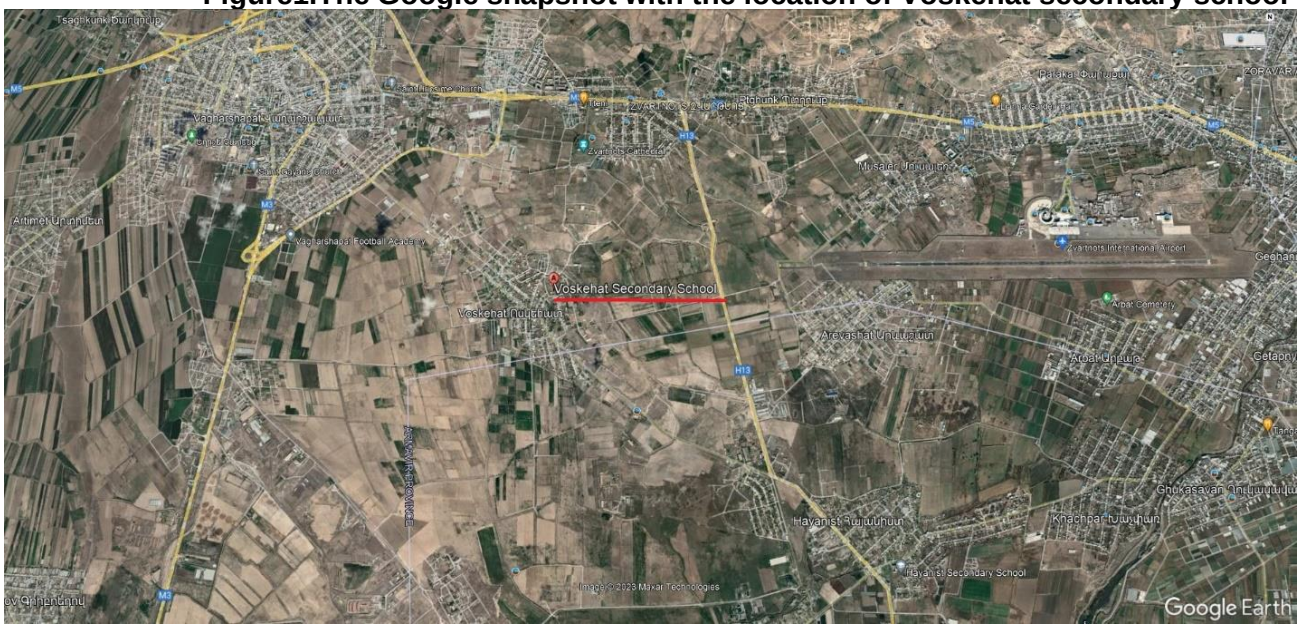
47. The population is engaged in viticulture, horticulture, vegetable growing, and animal husbandry.

48. According to the 2011 census, its population is 3491 (up from 2369 in the 2001 census), of which 1672 are men and 1819 are women.

[7] Dictionary of Settlements of the Republic of Armenia, "Center of Geodesy and Cartography" SNCO, Yerevan 2008, page 162
https://web.archive.org/web/20140912150541/http://www.cadastre.am/storage/files/pages/pg_907871769_HH_bnak._bar..pdf

[8] https://en.climate-data.org/asia/armenia/armavir/voskehat-640488/

Figure1.The Google snapshot with the location of Voskehat secondary school



Description of existing facilities

49. The anticipated civil works will increase the seismic resilience of the school buildings. The type of intervention (reconstruction or retrofitting) will be determined after detailed assessment of the school buildings and the detailed design will be prepared based on the decision. The school's main building consists of three sections/buildings - a one-story building for junior grades, a three-story building for middle and senior grades, and a corridor connecting the two buildings which has administrative and technical rooms. The territory of the school is quite large, while the main building occupies only 51% of the area. The storage, boiler house, not operating school toilet, rifle range and swimming pool are the property of the school are also located on the territory of the school overall occupying 15% of the territory.

50. The total surface area of the land plot to be impacted under the Project is 3.1169 ha. The land plot of the school is state-owned. The area of the school is fenced. A Cemetery is located in a 10-meter distance from the left side of the land plot. In the backside of the area, a community road (5-meter width) is separating the school area from private houses and private greenhouse. On the right side about 50 meters from the boundaries of the school cultivated land plots and private houses are located. Photos of the existing situation are presented in “Annex 9. Photos”.

51. The current buildings of the school are not of historical and cultural value and are not included in the list of historical and cultural monuments. The school construction area is not included in the list of zones subject to special conservation and is not an object of special regulation. There is no business activity in the development area and the land is fully used by the Voskehat School.

52. The energy (electricity) supply of the secondary school is organized through the delivery contract with Electric Networks of Armenia.

53. The natural gas supply is delivered by GasProm Armenia.

54. The water supply of the secondary school is organized through the delivery contract with Veolia Water. Sewage water is discharged to the existing sewage water system which belongs to and served by the Voskehat community. The community water sewage system is in bad condition and the treatment plant was damaged and does not operate several years, as a result, uncleaned sewage water is discharged into the nearby drainage system.

55. On the territory of the school, there is an artesian well that pumps out groundwater using an electric pump for the irrigation needs of nearby rural households. The well is served by a local water users' organization. Even though the well is located on the school grounds, its green areas are not irrigated due to the lack of irrigation system.

Figure2.The Google snapshot of the school territory

Description of the Works

56. The concept design and detailed design will be prepared by a national engineering design firm recruited through competitive selection. The firm will be guided by experienced international structural engineer and architect who will have good knowledge and experience of technologies on modern and cost-effective seismic design of buildings. Based on the detailed design the IEE will be updated by ATDF and included in the bidding documents for tender documentation.

57. The reconstruction of the Voskehat Secondary School will be designed to accommodate in total 290 students. The design will include the following components: (i) main school building, (ii) solar power facility (solar photovoltaic panels and solar water heater), (iii) boiler house, (iv) sports

facility, (v) storage and (vi) school area. Dropping irrigation system will be established, provided that the outcome of the detailed cost estimation and the feasibility assessment is positive.

58. The school will be strengthened to meet the safety standards for MSK 9 (IX) scale earthquake. The school will be equipped with elevator, wheelchair access, sex-segregated toilets, and special toilets for students with mobility impairments/disabilities. All buildings of the school will be equipped with firefighting equipment and hydrants, as well as evacuation exits. Staircases and evacuation exit on all floors will be designed according to current norms and meet seismic and fire protection requirements. The school will be thermally insulated according to the current norms. The school will be heated through individual gas heating system built in the school area. The whole school area is planned to be improved and will include the open-air sports field, recreation areas and landscaping. Solar panels will be installed on the roof of the newly constructed building, and the produced energy will be used for the school's electricity supply, and the excess energy will be sold to the electricity grid. Thermal-insulated solar collectors will also be installed to provide hot water supply. A video surveillance system is planned, with the help of which internal and external control of the school will be carried out. The school is currently operational and is provided with electricity, gas, water supply, and other infrastructures. No changes are envisaged in these systems. Their provision during the construction and operation phases will be carried out according to existing contracts.

Organization of construction

59. Before starting construction works, the Contractor must have a well-planned construction logistics and have all the necessary consents regarding the crossing of existing communications, power lines and gas pipelines, transportation of construction waste, construction works on the territory of existing roads (if any), etc. Proper preparations activities will precede the start of construction works and will include: (i) demarcation of the outer area of the construction site with a temporary fence, installation of lighting and blocking signs, (ii) clearing and grabbing, and (iii) installation of temporary buildings on the open area inside the construction site. It is proposed to provide special container-type buildings, such as an office for engineers, a rest mobile house, a tool warehouse, a mechanical workshop, a dry closet, a semi-closed pantry, and a locker room. The final list of temporary outbuildings and facilities will be determined during construction. The labor force involved in construction work should mainly be a team of highly qualified specialists. The use of unskilled labor should be kept to a minimum. The general management of the construction will be carried out by the construction site manager and the foreman. The maximum number of workers required during construction is estimated at around 60 people. The construction works will be implemented in strict compliance with national regulations on construction safety and the ADB requirements. During demolition temporary props and supports will be used to prevent the collapse of the roof and walls, and the presence of a safety engineer will be mandatory. Safety nets and other measures will be taken to protect the workers from falling or from falling objects during dismantling of the building. The construction will be carried out in traditional ways, using the construction company's own construction machines and mechanisms, and in case of their absence, leased from other organizations. The construction site, including the temporary storage of building materials, waste storage areas, etc., shall be organized exclusively within the boundaries of the school's administrative area. The construction waste will be regularly removed from the construction site to a place designated by the local government in covered trucks.

IV. ANALYSIS OF ALTERNATIVES

60. Both the ADB's SPS (2009) and the Armenian legislation require consideration of feasible alternatives to the Project in terms of project location and design allowing measures to be proposed to avoid or prevent potential environmental impacts. Two options have been considered for the reconstruction of Voskehat Secondary School: (i) the "no project" (business-as-usual) option; (ii) the "school reconstruction" option.

61. The **"Zero" or "no action" option** is leaving the present situation as it is. In that option the existing supporting structures of the school, already damaged, are expected to undergo further deterioration over time, potentially compromising the school's seismic resistance. Despite the potential increase in the community's population, the capacity to accommodate more students cannot be expanded. This situation may place the community administration and parents in a challenging position: they would have to either arrange the educational process in neighboring villages or consider constructing a new school within the community. Additionally, students with disabilities would continue to encounter difficulties in attending classes. Conversely, opting for this approach would offer the advantage of mitigating potential impacts on both the natural and social environments throughout the construction phase. This includes avoiding issues such as dust generated by earthworks, emissions from operating machinery and equipment, elevated noise levels, increased traffic on community roads, the necessity to transport students from the reconstructed school to neighboring schools, and the organization of their education there throughout the construction period.

62. The **option of "school reconstruction"** holds the promise of creating a secure educational environment for a minimum of 290 students. This project involves rebuilding the school structures while taking into account seismic and other disaster vulnerabilities specific to the region. The upgraded school will align with governmental energy efficiency standards and will feature wheelchair-accessible pathways and gender-separated restrooms, allowing the buildings to also serve as shelters for injured or disabled individuals following earthquakes. Embracing energy-efficient measures, such as installing solar panels on the new building's roof, thermal-insulated solar collectors for hot water supply, and energy-efficient LED lighting, will contribute to energy conservation and a reduction in carbon emissions (CHS emissions). The design solutions are intrinsically linked to ecological advantages, incorporating resource-saving principles including water, material, and energy efficiency. Landscaping initiatives not only enhance the ecological value but also assist in runoff infiltration, stabilize soil structure, enhance the visual aesthetics of the area, and contribute to noise reduction. At the community level, socio-economic effects are anticipated during the construction phase due to the employment opportunities generated for local residents. It is estimated that around 60 employees will work on the construction simultaneously. The salaries earned are expected to be primarily reinvested within the region, potentially impacting the poverty reduction process positively.

63. Considering the aforementioned factors, and acknowledging that the majority of adverse impacts are likely to be transient and mostly confined to the construction phase, with effective mitigation achievable through sound engineering and meticulous site management, the preferred course of action is "the school's reconstruction" option. This approach guarantees several key benefits, encompassing: (i) the establishment of seismic resilience in the school's structure and its overall safety, (ii) an elevated level of disaster preparedness for both students and educators, (iii) enhanced accessibility for students with disabilities, (iv) the provision of hygienic and sanitary facilities, (v) the creation of an optimal learning environment tailored to the demands of 21st-century education, and (vi) the facilitation of climate-friendly energy generation via solar panels.

V. BASELINE CONDITIONS

General scope

64. The impact assessment and the preparation of the IEE report including the Environmental Management Plan (EMP) will be done through the collection, analysis, and further updating, based on the detailed design, of the information and data on the physical, biological, archaeological-cultural and socio-economic environment of the Project area. For efficiency purposes only the data necessary and useful to the impact assessment are collected at the level required for a robust assessment. Collection of the baseline data and other information starts with the desk study search for readily available existing data. Those are obtained from published and unpublished sources including climate, topography, geology and soils, natural resources, flora and fauna and socioeconomic data. The data requirements are focused on those aspects of the environment which may be affected by the project activities. For this purpose, a Data Collection Plan is developed.

Table 1. Data Collection Plan

	Environmental parameters	**Source of Data**	**External Specialized Expert**
Air quality	Climate	CNRA II-7.01-2011 Construction Climatology	N/A, desk study
	Dust Sulfur Dioxide (SO2) Nitrogen Dioxide (NO2)	data from Hydrometeorology and Monitoring Center under MoE	N/A, desk study
Ecological resources	Flora including trees within the Project footprint	Desk study habitat types and presence of Red listed, endangered and/ or endemic species. Walk over project site and counting the trees within project area hindering the construction process	N/A, desk study
Soils	Topsoil	Geological survey report	N/A, desk study
	Contaminated soil	N/A	N/A
Social systems Residential houses Businesses	Socio- economic data	supplemented by published and unpublished information sources. Walk over project site	N/A
	Property under Land Acquisition and Resettlement procedure (if any)	Cadastral documents	N/A
	Presence of communication cables, water, sewage and gas pipelines, electricity piers and lines, drainage systems	Utility survey consultations with service providers, site meetings	N/A

Material Resources	Backfilling material will be purchased from the registered quarries.	New quarries/ borrow sites will not be opened	N/A
Archaeological and Cultural Heritage	Archaeological sites Cultural resources	Desk study Data from Ministry of Education, Science, Culture and Sport Walk over project site and survey	N/A

Climate

65. The area of the Project is in Voskehat settlement of the Vagharshapat community of Armavir Marz. The distance to the marz center is 28 km. The settlement is in the Middle Araksian plain, 850 m above sea level[9]. The area is in the warm climate zone and has a severe continental climate with hot summers and cold, windless winters. Summer is long, from May to October, the average monthly air temperature reaches 24 °C to 26 °C, and the maximum is 42 °C. The warmest month of the year is August, with an average temperature of 25.4 °C. Winters begin in mid-December. January is the coldest month, with temperatures averaging -1.8 °C. The minimum temperature in winter is 5°C. The average temperature in Voskehat is 11.8 °C Precipitation here is about 377 mm per year. Around 3624.43 hours of sunshine are counted in Voskehat throughout the year. On average there are 119.04 hours of sunshine per month.[10] The natural landscapes are semi-deserts, which during irrigation have been transformed into a cultural-irrigable landscape. From the agro-climatic point of view, the community lies in the absolute irrigation zone.

66. From the geomorphological point of view, the studied area is in the north, northeastern parts of the Ararat intermountain accumulative valley.

Geology

67. The geological structure includes volcanic tuffs of lower-upper Quaternary height and coarse-grained soils, which are covered by modern sediments represented by alluvial coarse-grained, clayey, sandy, and man-made soils. Exogenous geological dangerous phenomena, such as karst, collapses, landslides, rock falls, etc., are absent in the construction area. More detailed information on the site geology will be presented in the detailed design.

Seismic characteristics of the area

68. From a seismotectonic point of view, the school area is in an area with a complex seismotectonic structure. The Yerevan deep fault passes through the area adjacent to Zvartnots airport to which the Parakar earthquake center is connected. The Garni and Araxian active faults also pass through the adjacent area of this site, which are associated with the Garni, Dvin and Ararat strong earthquake foci with a magnitude of up to 10 MSK scale. More detailed information on the site seismology of project area will be presented in the detailed design.

Air quality

69. Air basin pollution monitoring works are carried out by the Hydrometeorology and Monitoring Center of RA Ministry of Environment. Observations of dust, sulfur dioxide, nitrogen dioxide, and ground-level ozone are carried out in the city of Yerevan. The location of Voskehat settlement of Vagharshapat community is close to the capital Yerevan, where there are 45 mobile

[9] Dictionary of Settlements of the Republic of Armenia, "Center of Geodesy and Cartography" SNCO, Yerevan 2008, page 162

[10] https://en.climate-data.org/asia/armenia/armavir/voskehat-640488/

observation posts and 5 stationary observation stations. According to the data of atmospheric air quality monitoring for Yerevan, the average monthly concentrations of nitrogen dioxide and sulfur dioxide do not exceed the respective MPC (Maximum Permissible Concentrations)[11]. Some minor increases were observed in dust concentrations, which may be due to vehicles, road dust, construction, agricultural and other activities. Data on Noise and Vibration will be provided in the detailed design.

Surface and underground water bodies

70. There are no surface water reservoirs and streams in the development area. According to the results of preliminary studies, groundwater around the planned activity has not been tapped by wells up to 100 m deep. In the territory of the school, there is an artesian well that pumps out groundwater using an electric pump for the irrigation needs of nearby rural households. Even though the well is located on the school grounds, its green areas are not irrigated due to the lack of irrigation system.

Ecological resources

71. The project implementation area is included in the floristic region of Yerevan, where mainly petrophilic versions of semi-desert vegetation are spread, with ochindra-ephemeral and halophilic, psammophilic desert plant species. Fauna in the region is represented by species characteristic of desert and semi-desert landscapes. Among the amphibians, there is the lake frog, the Syrian garlic frog, the green toad, among the lizards - the roundhead, the snakehead, and the long-legged skink, and among the snakes - the blind snake, the rhinoceros snake. Birds and insects are diverse. Among the butterflies, satyrs and large butterflies are typical. In the Voskehat Secondary School area, there is a green landscape predominantly comprising beech, poplar, acacia, decorative thuja, and fruit trees (approximately 70 trees and 30 shrubs). There are no endemic or Red Book species of plants and animals in the school area under construction, and there are no migration routes passing through the area due to the urbanization of the surrounding area.

72. The actual location of the Project activity is in an actively developed zone. All works will be carried out in the demarcated area of the school. Greening works are planned to be carried out in the school area, where a green zone will be created with a combination of different types of trees. Detailed greening and landscaping plan will be presented in the detailed design. During the construction the topsoil layer will be removed and temporarily stored and will be used for landscaping.

Social - economic conditions

73. The Voskehat is a village in the Armavir Region of Armenia. The village was founded in the early 1930s. Most of the population of the village are repatriates, as well as those who moved from different regions of Armenia. The village is in the eastern part of the Armavir marz, east of the M3 highway, at a distance of 28 kilometres east of the city of Armavir, the administrative center of the region. The absolute height is 850 meters above sea level.

74. According to the 2011 census, its population is 3492 (up from 2369 in the 2001 census), of which 1673 are men and 1819 are women[12]. According to the age structure, the population is distributed as follows: 25% of pre-working age people, 64% of able-bodied population, and 11% of post-working age people. The village has 753 existing households. It has a school, a library, a medical center, post office and community center. The population is engaged in viticulture, horticulture, vegetable growing, and animal husbandry. Arable land has a large share in

[11] http://armmonitoring.am/page/5
[12] https://armstat.am/file/doc/99486813.pdf

agricultural plots, there are orchards and vineyards. State lands are mainly used as arable land, pastures, and perennial plantations. The population is engaged in fruit growing, viticulture, field farming, cultivation of vegetable crops, poultry breeding, animal husbandry. The community lacks irrigation water, other major infrastructure such as drinking water pipes and community roads need to be improved. The market of agricultural products is well developed.

VI. ANTICIPATED ENVIRONMENTAL AND SOCIAL IMPACTS

75. This section identifies the scope of the project's likely positive and negative direct and indirect impacts to physical, biological, cultural, socioeconomic (including occupational health and safety, community health and safety, vulnerable groups and gender issues), and impacts on livelihoods. The global and cumulative impacts are also assessed as appropriate. Also, the uncertainties associated with predictions are identified and topics that do not require further attention are specified.

Positive effects

76. The purpose of the Project is to reconstruct the Voskehat Secondary School to provide safe education environment for at least 290 students. The structural elements of the school building will be designed with consideration of the seismic and other disasters risk in the region. The school will also meet the government’s requirements on energy efficiency, with wheelchair-accessible trails and sex-segregated toilets to enable better use of the school buildings as shelters for injured or disabled persons after earthquakes.

77. Solar panels will be installed on the roof of the newly constructed building, the energy produced will be used for the school's electricity supply, and the excess energy will be given to the electricity grid. Thermal-insulated solar collectors will also be installed to provide a hot water supply. These measures will support saving energy and reducing CHS emissions.

78. The design of the Voskehat Secondary School is sustainable and environmentally friendly in the choice of construction materials. The various considerations regarding the materials and finishes include:

i. The design reflects the regional and local architectural features.
ii. The architectural style is consistent throughout the complex.
iii. The use of modular furniture is recommended to provide flexibility and promote a sense of organization and visual order.
iv. Natural lighting and ventilation are provided, where practical. Energy-efficient LED lighting shall be specified where artificial lighting is needed.
v. Roofs are constructed to accommodate photovoltaic panels.
vi. The school has facilities to serve the community in out of school hours.

79. Ecological benefits are tightly connected with the design solutions in terms of natural resource savings, like water-, material- and energy-saving solutions. The benefits of landscaping include enhancing ecological value, facilitating infiltration of run-off, stabilizing soil structure, enhancing visual aesthetics of the locality, and providing some noise reduction.

80. Some community-level socio-economic effects are anticipated in the construction stage due to the employment opportunities for locals. Thus, the social problems otherwise caused by non-local workers will be minimized. It's planned that about 60 employees will work on the construction

at a time. The received salary will mainly be spent in the region which will have some impact on the poverty reduction process.

Negative impacts

81. On-site and off-site temporary impacts on the surrounding natural and social environment may take place during construction. On-site impacts result from construction activities carried out within the Project footprint while off-site impacts result from activities implemented outside the construction site, such as construction-related traffic, establishment of a camp and other facilities directly linked to the project. The civil works may cause adverse environmental impacts typical for small to medium-sized construction. The assessment has been implemented in tight cooperation with the project implementation team, who committed to mitigate the negative impacts in the detailed design and construction stages. The mitigation measures and monitoring requirements are provided in the EMP which encompasses the entire life of the project including design, pre-construction, construction, commissioning, and operational phases.

Valued Environmental Receptors (VER)

82. The project activities may affect the components of the natural environment and social systems valued by society and by legislation. The areas of influence are predetermined by the project footprint making it possible to identify what aspects shall be included as VERs. The VER for the Project are identified, and potential risks and their significance were finalized through consultation and communication with all stakeholders including members of the community, persons affected by the Project, NGOs, etc. The severity of Impacts caused by project activities on the VER are analyzed as presented in Table 2 below.

Table 2. Temporal Scope of Impacts

VER	Impact	Design Phase	Construction Phase	Operational Phase
Ambient Air Quality	dust caused by earth works, gas emissions produced by operating machinery and equipment	N/A	Certain	N/A
Noise	caused by operating machinery and equipment and by the increased traffic	N/A	Likely	N/A
Vibration	caused by operating machinery and equipment and by the increased traffic	N/A	Likely	N/A
Underground water quality	spill or leakage of the fuel, oil (hydraulic, transmission, engine, etc.) lubricants and other liquid material and waste from inappropriately stored material, during refueling or other reasons caused by operating heavy machinery.	N/A	Unlikely	N/A
Flora & other vegetation	The loss of species caused by the destruction of vegetation, cutting of trees and shrubs. The loss or destruction of the habitat caused by excavation,	N/A	Certain	N/A

	compaction, and soil relocation works.			
Soils and topsoil	Soil and topsoil removed by the earth works. Soil erosion and sedimentation. Soil contamination and pollution by the leakages.	N/A	Certain	N/A
Material sources (quarries/ borrow sites)	Borrowing of material for backfilling from the surrounding environment like nearby agricultural lands	N/A	Unlikely	N/A
Social Systems	Disturbance and / or nuisance.	N/A	Certain	N/A
	Damage of property.	N/A	Unlikely	N/A
Utilities	Risk of damage during the earth works	N/A	Likely	N/A
Traffic and Transportation	Increased traffic during construction stage for the transportation of construction materials, trucks and other machinery. Blocking of the existing roads and pedestrian walkways. Public safety endangered	N/A	Certain	N/A
Landscape beauty and aesthetics	Modified by the earth works, material and waste accumulations, removal of trees and other vegetation, establishment of temporary facilities	N/A	Certain	Not likely Improved aesthetics due to the landscaping
Cultural Heritage and Archaeology	Damage and loss of chance finds	N/A	Very unlikely	N/A

83. For the determination of the severity of impact, the following criteria are taken into consideration and the system of scores is applied (see Table 3).

Table 3. Criteria for determination of severity of impacts

Criteria	**Classification/ Score**			
	4	**3**	**2**	**1**
Sensitivity (size of impact)	High	Moderate	Low	Negligible
Extent of impact	International	National	Regional	Local
Duration of impact	Long term (permanent)	Medium	Short term	Transient
Frequency of impact	Continues	Frequent	Infrequent	One off
Probability of impact	Certain	Likely	Unlikely	Very unlikely
Reversibility of impact	Not reversible	Partially reversible	Mostly reversible	Fully reversible

Type of impact

84. The severity of impacts also depends on the type of impact. The project activities may impact the VER directly or indirectly and is summarized in the Table 4 below.

Table 4. Direct (D) and Indirect (I) impacts of the project activity on the VER

Project activity	**Ambient Air Quality**			**Soils, topsoil**	**Social Systems**			**Traffic**	**Flora**	**Landscape and aesthetics**
	Dust	**Noise**	**Vibration**		**Public infrastructure**	**Residential houses**	**Businesses**			
Demolition of existing structures	D	D	D	-	I	I	I	I	I	D
Excavation earth works	D	D	D	D	I	I	I	I	D	D
Backfilling	D	D	D	-	I	I	I	I	I	D
Concrete works	D	D	-	-	I	I	I	I	I	I
Utility relocation and diversion	D	D	-	I	I	I	I	I	I	D
Paving with asphalt	D	D	D	-	I	I	I	I	I	D
Construction of school building	D	D	-	-	I	I	I	I	-	D
Construction of the wall	-	D	-	-	I	I	I	I	-	D

Significance of Impact

85. As followed from the analysis of Severity of Impacts anticipated impacts on the bio-physical environment of the project mostly will be temporary and most likely will occur only during the construction period. Significance of impact is determined both with and without the mitigation measure which is summarized and presented in the Table 5. The scoring model for the described aspects of the severity of impact results in scores across a range of 6 – 24. The description of impact severity level uses a four-point terminology with banding of scores. The descriptors for the levels of severity and the score bands are shown in Table 5.1 below.

Table 5. Severity of Impacts

VER	Size of impact (sensitivity to change)	Extent of impact	Duration of impact	Frequency of impact	Probability of impact	Reversibility	Severity of Impact (Score Bands)	Significance before mitigation	Description
Ambient Air Quality (dust and exhaust gases)	4	2	2	3	4	1	Moderate (16)	Moderate	Dust and gas emissions will regularly occur within the project footprint and immediate surrounding area during the project implementation. Effective mitigation measures are required.
Noise	3	1	2	3	3	1	Minor (13)	Low	An increase in the noise & vibration will regularly take place within the project footprint and immediate surrounding area during the whole project lifetime (construction phase). Effective mitigation measures are required.
Vibration	2	1	2	2	3	1	Minor (11)	Low	
Flora & vegetation	4	1	2	2	4	2	Minor (15)	Low	Loss of local and common habitat within the site during clearance works will occur. The cleared vegetation shall be partly reversed through the planting of new trees and bushes. The mitigation measures are required.
Soils including topsoil	3	1	2	4	4	2	Minor (15)	Low	The soils and topsoil will be disturbed and/or contaminated only within the project footprint. Disturbance will take place during the earth works, and contamination without mitigation is a permanent process. The impact will be mostly reversed by the preservation of the topsoil and by the asphalt pavement of the surface. The mitigation measures are required.
Material sources (quarries/ borrow sites)	2	2	2	2	1	3	Minor (12)	Low	The probability of the impact is very low because the opening of new quarries is not envisaged, and the borrow pits will be prohibited by the EMP. The tender winner contractor shall purchase the construction material from registered sources.

Hydrogeology (ground water quality);	1	1	2	2	1	2	Negligible (9)	Non-significant	According to the existing geological data infiltration into the ground water in the project area is very unlikely. Moreover, the surface of the school area will be mainly asphalt paved, so the impact is negligible.
Social Systems	4	2	2	4	4	1	Moderate (17)	Moderate	This will include the health and life standards of affected local people, private and community property, businesses. Effective mitigation measures shall be planned in the EMP.
Impact on the utilities	4	1	2	2	3	2	Minor (14)	Low	The damage of utilities located in the school area of the project is probable because the underground utility survey is not implemented. The impact can be fully reversed by the repair or replacement of the damaged utilities.
Traffic and Transportation	4	1	2	3	4	1	Minor (15)	Low	Disturbance of the public due to the civil works, especially traffic, will definitely take place. The impact will be extended outside the project footprint because the traffic on the community roads will increase. The impact shall be fully reversible as after the construction period transportation will be ceased. Effective mitigation measures shall be planned in the EMP.
Landscape & aesthetics	2	1	4	3	4	2	Moderate (16)	Low	The area of influence will be restricted by the project footprint. Modification of the landscape will definitely occur during and after the project implementation. Effective mitigation measures shall be planned in the EMP.
Cultural Heritage &: Archaeology	2	3	1	1	1	2	Negligible (10)	Non-significant	Although the impact is not probable, but some small risk of a chance find exists, so the relevant procedure will be planned in the EMP.

Table 5.1. The severity of Impact and Score Bands

Severity	Score band
Major	21 - 24
Moderate	16 - 20
Minor	11 - 15
Negligible	6 - 10

86. For determining the significance of environmental impacts, the criteria of the below Table 6 proposed by the ADB Guidance[13] are being applied.

Table 6. Determining the Significance of Environmental Impacts[14]

VER ⇒ Severity⇓	International/ Extreme	National/ High	Regional/ Moderate	Local/Low
Major	-	-	-	-
Moderate	-	-	Air quality Social Systems	Landscape & aesthetics
Minor	-	-	Material sources	Traffic and Transportation Noise Vibration Flora & vegetation Soils including topsoil. Utilities
Negligible	-	-	-	Archaeological chance finds Hydrogeology (ground water quality);

87. After the comprehensive analysis of the impacts on the physical, biological, social, and cultural environment both negative and positive influence in the project's area is identified. The impacts are manageable and can be minimized if not eliminated through timely and proper implementation of the mitigating measures, so the corresponding mitigating measures are being proposed based on significance and occurrence throughout the project cycle from the engineering design, preconstruction, construction to the maintenance period. Mitigation measures are presented in the EMP of this IEE report.

88. For the proposed Project the following environmental receptors were valued:

[13] Good Practice Note Impact Assessment Process for Initial Environmental Examination (IEE), CWRD, ADB, 2019. (https://www.adb.org/sites/default/files/project-documents/48109/48109-001-tacr-en_0.pdf)

[14]

High (H)	Medium (M)	Low (L)	Non- significant (NS)

Ambient Air Quality (including Noise and Vibration)

89. The impact on ambient air quality is likely during the construction phase in the form of dust caused by earthworks and exhaust gas emissions produced by operating machinery and equipment which will also be a main source of noise and vibration.

90. To assess the impact on air, as a result of emission diffusion during construction works, the calculations on emissions and expected near-earth concentrations are made. During the construction works emissions of harmful substances will be caused by excavation, loading works, pavement, markings, and equipment operation.

Noise and Vibration

91. . The operation of construction machinery and equipment will generate high noise and vibration levels which may affect the health of construction labor and nearby community members if exposed to longer durations. Short-term impact is also possible, which may be more easily reversed. To control this and keep within the permitted standards regular monitoring is planned in EMP.

Water

92. As it is already mentioned, there are no water bodies and water streams (rivers, lakes, reservoirs, etc.) within and/ or immediately nearby the project area that could be impacted by the project activities. On the other hand, the rainwater will be drained into the centralized drainage system and the sewage (mainly household during the construction stage) will be collected in separate tanks and further transported and discharged into the sewage system by a specialized company, so some impact in terms of water pollution and sedimentation is possible. The rainwater outflow from the construction site might be a source of pollution and sedimentation. Impacts are probable during the construction phase. The sedimentation of the waters resulting from the earthworks, as well as pollution by the construction-related discharges like concrete wash water, liquid and solid waste, etc. are possible. There is potential for spill or leakage of the fuel, oil (hydraulic, transmission, engine, etc.) lubricants and other liquid material and waste from inappropriately stored material, during refueling or other reasons caused by operating equipment and machinery during the construction period. However, these will not lead to the infiltration and contamination of the underground waters. Although the likelihood of impact is low, some relevant mitigation procedures to protect water resources from potential pollution and sedimentations, as well as to minimize leakages and spillages during construction are planned in the EMP.

Flora and vegetation

93. A botanical (flora) investigation has been conducted during the design stage. The survey confirmed that the investigated area is a modified area with the landscape green zones maintained by the school staff, so this cannot represent an area of significant ecological concern. Moreover, as a result of the conducted flora investigation rare ecosystems, endemic plants of Armenia, species registered in the Red Book of Armenian Flora, the International Union for Conservation of Nature (IUCN) Red Data Book and the IUCN Red List of Threatened Species, as well as edible, medicinal, spice, fodder and other useful plants in the area, which could be of interest to the population, were not observed. .

94. During the site visit to the proposed Voskehat Secondary School area, preliminary 70 trees and 30 shrubs in total were counted. Detailed estimation of the trees and shrubs to be cut down for the preparation of the school construction site will be done after the Detailed Design. The number and type of trees and shrubs to be cut down will be presented in the updated IEE. The offset and mitigation measures for the trees requiring special protection during construction will be presented

in the EMP. The contractor shall be responsible for maximum preservation of the trees and the relevant measures, shall be envisaged in the Tree Management Plan.

Soils and Topsoil

95. The project footprint is restricted by the territory of the currently functioning Secondary school. Any induction of the new lands into the Project footprint will not take place, thus any serious volumes of topsoil are not presented. All the topsoil available is limited by the landscape green areas of the Voskehat Secondary School. The total amount will be estimated during the Detailed Design stage. Despite the small amounts of topsoil, the issue of stripping and stockpiling for the preservation of the topsoil, the upper humus-rich layer of the soil is raised. All the topsoil shall be preserved within the allocated project footprint with the purpose of further usage for landscaping.

96. The total volume of earthworks will be estimated during the Detailed Design stage. The Contractor based on the estimated amount of the earthworks shall submit to the Supervising Engineer, for approval, the detailed construction methodology for various types of earthworks and special attention shall be paid to the vertical planning solutions providing proper safety and drainage, to avoid possible erosion and sedimentation problems during the construction.

97. There is some risk of soil contamination in the construction stage by the fuel, oil (hydraulic, transmission, engine, etc.) lubricants, and other liquid material and waste. However, the scale and severity of the impact will not be high. The regular mitigation measures in the EMP typical for small and medium-scale construction projects are sufficient with special attention paid to the technical specifications for transportation, storage, and handling of fuel, oil, lubricants, and other liquid material and waste, as well as mitigation measures for the safe handling of the contaminated soil.

Natural and material sources (water- energy- supply, quarries/ borrow sites)

98. Rocks, gravel, sand, and other materials required for backfilling, as well as asphalt and concrete, shall be purchased from the registered quarries and plants.

99. Any borrowing of material for backfilling from the surrounding environment is not intended, nevertheless, the risk of such activities exists, and the mitigation measures are planned in the EMP.

100. The water supply for technological purposes both during the construction and operation of the secondary school will be organized through the delivery contract with the relevant entity (Veolia Djur CJSC or relevant Water Users Association). The possibilities to connect with the existing utilities will be explored at the detailed design stage and preliminary approval is obtained.

101. Energy (electricity) supply for technological purposes both during the construction and operation of the secondary school will be organized through the delivery contract with the relevant entity - “Electrical Networks of Armenia” LTD.

102. Natural gas supply for operational purposes of the school will be organized through the delivery contract with the relevant entity- “GasProm Armenia” LLC.

Waste generation

103. One of the possible impacts on the environment is the generation of waste which, if not properly managed, becomes a source of pollution, contamination, and deteriorated and aesthetic landscape. Wastes generated from construction activities are categorized under two main categories as follows:

Non- Hazardous wastes

- ✓ Waste generated during the activities for the demolition of buildings, structures, and other construction-related waste.
- ✓ Excavated unsuitable soil, sand, rocks, and stones resulted from the earthworks. .
- ✓ Construction-related solid waste such as metal, wooden, plastic parts, empty sacks, containers, garbage (litter), etc.

Dangerous & Hazardous wastes

- ✓ Liquid dangerous materials and their wastes, including the residues of fuel, waste oil, paints, lubricants, and concrete wash out water.

Unclassified hazardous waste

- ✓ Any solar panel modules damaged during the construction phase will be transported to the premises of the solar panel system's installation contractor. These modules will undergo storage, subsequent processing, recycling, or potential reuse.
- ✓ Storing the waste from these damaged modules within the project area or depositing it in municipal landfills is explicitly prohibited.
- ✓ Upon the expiration of the service life of the installed solar panel modules during the operational phase or in the event of damage, a dismantling process will ensue.

104. It is pertinent to highlight that the waste originating from these modules is not encompassed within the ambit of the RA Minister of Environment's decision dated 26.10.2006, as outlined in the list ratified under order N342 (with addendum N167 dated 27.05.2022). Presently, the Republic of Armenia lacks licensed entities specifically designated for the processing of waste from solar modules. In light of ongoing developments in hazardous waste policy overseen by the RA Ministry of Environment and considering the widespread deployment of solar installations across the country, there is a presumed likelihood that avenues for their utilization will be established in the near future. Moreover, the subsequent use, application, or disposal of these solar modules will be guided by the prevailing legislative norms of the Republic of Armenia in effect at the conclusion of their operational life. The types of material and waste as well as their handling and proposed mitigation measures are detailed in EMP.

Social Systems

105. The impact on social systems is one of the most sensitive components of the project. They include any adverse disturbance and/or nuisance caused by the civil works of the reconstructed school. First of all, staff, teachers, pupils of Voskehat Secondary School, as well as population of Voskehat settlement of Vagharshapat community will be directly impacted by the intervention. There are few residential houses, agricultural land plots and the cemetery in close vicinity. The closest residential area is located about 50m from the school's main building, so some temporary indirect impact on the local people is likely. The background information on the presence of social systems within the project area of influence which might be both directly and indirectly impacted by the construction was collected during the walk-over site visits. Analysis of the possible impact has been assessed and presented in the separate Due Diligence report which states that there is not any impact on the private property. Land acquisition and alienation is not relevant to this project.

106. In order to adequately assess the impacts on the surrounding public, and their life standards, the sensitive valued receptors are identified within and surrounded project area. The measures to avoid, prevent and/or mitigate the negative impact on the local population with a clear indication of responsible entities during construction works are presented in the EMP.

107. The emergency situations including Infectious Diseases (such as Covid-19) control are manageable. All the project parties (PIU, Supervising Engineer, and Contractor) are under the risk and will have critical roles during the Infectious Diseases outbreaks by ensuring the effective implementation of the HSMP, specifically the measures for Infectious Diseases prevention, control, and mitigation.

Impact on the utilities

108. The impact on the utilities- gas pipes, electricity lines, tele- telecommunication lines- is assessed in terms of the damage and over-burden on the existing facilities' capacity. Non-significant risk of damage is relevant only to the construction period for the over-ground utilities located close to the school area. Local population nearby shall be notified prior to the start of works in case any short-term disruption to the services occurs. Prior to the start of works the civil works contractor shall be required to implement his own utility survey and manage the utility relocation following the mitigation measures planned in the Utility Relocation sub- Plan. The impact caused by the damage of utilities located directly within the project footprint will be fully reversed by the diversion, repair, or replacement of the damaged utilities.

Traffic and Transportation

109. The reconstruction of the Voskehat secondary school will increase the traffic on the adjacent local roads during the transportation of trucks, machinery, and construction materials to and from the construction area. Any long-term occupation and/ or blocking of the existing roads and pedestrian walkways is not envisaged. Nevertheless, some safety risks for the public and passers-by exist. Public safety might be endangered, and the access roads to the residential houses and businesses might be blocked or complicated. Routine mitigations during the construction focused on the safety of the public, minimization of congestion, and other disturbances to the traffic are described in the EMP.

Landscape beauty and other aesthetics.

110. The clearing of the area from the trees, temporary construction fencing, establishment of the camps and mobile houses, parking of construction machinery and the accumulation of construction material and wastes will cause a modification to the landscape. However, this impact will be temporary and will last until the end of the civil works. Mitigation of the impact during the construction phase shall be ensured by the Waste and Material Management plan, Environment Protection plan, and Site Management Plans for using the area outside the project footprint. After the civil works are completed the site restoration and aesthetics rehabilitation shall be implemented.

Archaeology and Cultural Heritage/ Physical Cultural Resources

111. Although the proposed project area doesn't contain any archaeological sites presented in the State list of the Historical and Cultural Immovable Monuments of the Republic of Armenia, the mitigation measures planned in the Cultural Heritage Management Sub-Plan of the EMP will be focused on compliance with Armenian legislative requirements on the chance find procedures.

Cumulative Impact Assessment

112. Following the ADB SPS (2009) and Armenian legislative requirements after the potential impacts and effects caused by the Project are considered and analyzed in isolation, the integral environmental impact assessment and planning of corresponding mitigation measures are implemented. Both inter- and intra- project effects are being examined.

113. Investigations of the relevant documents including the Community Development Program, as well as communication with the Voskehat authorities showed that no projects/activities are

planned to be implemented simultaneously in the project area of influence which could lead to negative cumulative environmental effects.

114. The scope of the intra- project cumulative effects and their severity might be enlarged based on further studies, consultations with local self-governing bodies, affected people and other stakeholders. During construction any future plans or projects which may be under construction or operation in the same timeframes shall be identified. Additional mitigation to reduce the level of significance of such effects shall be envisaged in the updated EMP, as well as a liaison between projects to reduce the cumulative effects shall be established to the extent possible.

VII. INFORMATION DISCLOSURE, PUBLIC COMMUNICATION, CONSULTATION AND PARTICIPATION

115. The Public communication, consultations, and engagement has been carried out in compliance with Armenian legislation and ADB SPS (2009) The Public Consultation and Communication Plan (PCCP) has been developed in the scope of the IEE/ EMP as a consistent part of the Environmental Management Plan. The PCCP should be implemented in order to ensure the meaningful and effective participation of all the stakeholders, affected people, NGOs, and other interested public in all the stages of the project starting from the design stage through the construction up to the operation phase. The PCCP includes:

i. Project-related Information disclosure to the public with the purpose to raise awareness of the Project.
ii. Public consultations with the purpose to ensure the participation of the public and APs in the design and IEE/ EMP drafting stage. Moreover, the Contractor shall implement a pre-construction public hearing prior to starting the civil works and then on an on-going basis if required (ex. in the case if the design is changed and/ or any significant unanticipated impact occur). Further public hearings might be requested and shall be implemented by the Contractor with the assistance and participation of the Engineer and ATDF.
iii. Grievance Redress Mechanism aiming to ensure the everyday constant communication with affected people and stakeholders for the prompt response and resolution of complaints and suggestions.

Information Disclosure

116. The process of the disclosure of information on the Project has started earliest possible in the design stage. The Project related information, including the detailed design and final IEE including EMP, are made available to the public, the relevant authorities, and other interested parties. The information about the Project has been disclosed:

i. through the series of follow-up meetings with the Voskehat settlement of Vagharshapat community, Voskehat Secondary School authorities, and other official authorities,
ii. through public consultation events,
iii. the first version of the IEE report (English and Armenian) on the ATDF website.

117. The following documents shall be put on the ADB's and ATDF websites and regularly updated when needed:

- ✓ IEE report (final) being posted on the ADB (English version) and ATDF web sites (English and Armenian versions).

- ✓ Environmental Assessment and Review Framework (EARF)[15].
- ✓ Annual reports on project progress and implementation of EMP prepared by the borrower.

118. In order to determine the framework for the introductory and follow-up meetings for public consultations, the list of the project's key stakeholders is determined which might be specified and enlarged during the impact assessment process and by the MoE as prescribed in the RA Decree N 1325-Ա “On the procedures of information disclosure and public consultations” (19.11.2014).

Consultation and Participation

119. An introductory meeting on the intention to implement the Project within the territory of the village, with a brief description of the project sent to the administration of the impacted community, has been conducted with the head of the impacted Voskehat settlement of the Vagharshapat community on May 12, 2023. (See Annex 3).

120. During the introductory meeting stakeholders were informed about the details of the proposed Project and progress of the Initial Environmental Examination process and planning of mitigation measures. The head of the impacted community was informed that the Project initiators are in the process of organizing the public consultation events in accordance with Armenian legislation and ADB Safeguard Policy and were kindly requested to assist in this and to contribute to ensuring public participation and making the public consultation effective and meaningful. The public consultation is be implemented to meet the ADB SPS requirements on Public Consultation and Information Disclosure and the requirements of the RA legislation, particularly the RA Decree N 1325-Ա “On the procedures of information disclosure and public consultations”. To fully comply with the ADB’s policy requirements and to meet the requirements of Armenian legislation public consultation shall be organized in the impacted Voskehat settlement.

121. Prior to organizing public consultation event the ATDF ensured that all the relevant and adequate information is timely disclosed and is understandable and accessible to affected people and is responsive to the needs of women, disadvantaged and vulnerable groups. The notification of the public consultation was placed on the official website and social network webpages of the Vagharshapat community, as well as attached in publicly visible places of the affected community.

122. The public consultation was organized and took place on May 18, 2023, in the Voskehat settlement of the Vagharshapat community. It was headed by Mr. Armen Khudabashyan, the administrative head of the settlement. The representatives of the impacted community, as well as the representatives of the impacted population, ATDF, and ADB, were invited. The public consultation was held with the purpose to inform the interested stakeholders and public on the intention and general concept of the project and to give them the opportunity to raise their concerns earliest possible, as well as incorporate all the reasonable suggestions into the Project detailed design, mitigation, and monitoring plan. In particular, the participants of the public consultation were requested the Project team to include in the school's design an irrigation system for irrigating existing trees, and restoration of the dilapidated shooting range, as well as to construct a stone fence to demarcate the school and the cemetery. Recognizing the importance of these suggestions, it was agreed that these matters would be further discussed and potentially included in the Detailed Design phase. The announcement, agenda, attendance list, and minutes of the public consultation containing full information on the issues and concerns raised by the participants and the agreements and resolutions achieved are being properly documented and attached as an Annex 3 “Report on Public Communication and Consultation” to the present report.

[15] EARF is already disclosed on ADB and ATDF websites.

123. According to the requirements of the Law on Environmental Impact Assessment and Expertise of Armenia, two additional consultations will be organized by ATDF in the frame of preparation for the local EIA and expertise stage.

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VIII. ENVIRONMENTAL MANAGEMENT PLAN

124. An Environmental Management Plan contains:

- ✓ Introduction, objectives of the EMP, and the structure of the EMP.
- ✓ Implementation arrangements which outline the roles and responsibilities and organizational arrangements in carrying out the EMP and monitoring.
- ✓ Management and monitoring of impacts, including the unanticipated and design changes.
- ✓ Training and Orientation Program to strengthen the project's environmental management capacity and budget.
- ✓ Public Consultation and Communications Plan for the project implementation phase and GRM.
- ✓ Record keeping and reporting requirements.
- ✓ Summary of impacts.

- ✓ Cost estimates for the implementation of EMP.

Introduction

125. An EMP has been prepared to ensure compliance with the ADB's environmental safeguard requirements and all applicable RA laws, regulations, and standards for environmental protection. It sets out all the project commitments to environmental and social protection. The EMP contains the measures to avoid any unwanted effect that may arise during the Project lifetime and where avoidance is not possible, minimize, mitigate, and/or offset adverse impacts and enhance positive impacts by means of environmental planning and management.

Implementation arrangements

126. The EMP is being prepared as a working instrument for the Contractor and Engineer so that it is clear to EMP end users what they are required to include in their work methods and activities for the prevention and mitigation of environmental impacts related to the implementation of the construction works, as well as shall serve as a guide for the ATDF and other relevant authorities.

127. The EMP as an integral part of the IEE will be included in the tender and contract documents and will be considered as a consistent part of the Contractor's contractual liabilities.

128. The implementation arrangements with a clear indication of the role and responsibility of each party involved in the project implementation, monitoring and supervision of the EMP, as well as the timetable and the budget for the implementation are provided in the Matrix for EMP presented in Annex 6(a) and 6(b). The schedule and responsible entities of the IEE/EMP implementation are also provided in Annex 5.

Management of Impacts.

129. The EMP consists of two major sections: the text and tabular forms. The text form is presented below, and the tabular part has been developed and is attached as Annex 6 to the IEE

report. Both parts, in turn, consist of 2 parts - A. Mitigation and B. Monitoring: (i) Table of environmental mitigation measures and (ii) Table of monitoring.

Mitigation

130. This section has been prepared using tabular format containing the following:

- ✓ Project activities.
- ✓ Their potential environmental impacts.
- ✓ Proposed mitigation measures through the whole Project cycle: from the engineering design phase, preconstruction, and construction through the operation period including the capacity development and training measures.
- ✓ Entities responsible for implementation and reporting requirements, related institutional or organizational arrangements.
- ✓ Indicative cost estimates of the proposed mitigation measure.

131. This section provides general principles and common mitigation measures grouped in the following sub-plans:

I. Construction phase

1. Environmental and Safety Orientation Plan
2. Occupational Health, and Safety Plan
3. Public Consultation and Communications Plan
4. Flora & Fauna Protection and Vegetation Clearing Plan
5. Environmental Protection Plan
6. Surface and Underground Water Protection plan
7. Utilities Protection and Relocation Plan
8. Construction Work Camps Plan
9. Site Management Plan (Quarry and borrow pit, dumping sites, concrete batching, and asphalt plants)
10. Traffic and Access Management Plan
11. Emergency Response Plan
12. Waste and Material Management Plan
13. Cultural Heritage Management Plan
14. Site Reinstatement, Landscaping, and Revegetation Plan

II. Post- construction phase

15. Defect liability period
16. Operation stage

Environmental and Health & Safety Orientation Plan

132. An environmental and safety orientation training program will be developed and implemented during all Project cycles. The training program shall include:

I. Training sessions on ADB Safeguards and national legislative requirements organized by the Engineer for engineering and environmental, health & safety personnel of ATDF and Contractor prior to starting construction activities within 1 week after commencement is issued to the contractor on the following topics:
   a. Environmental Management
   b. Health & Safety Management
   c. Social safeguards

II. Training on environmental and health & safety issues organized by Contractor's Environmental and Health & Safety specialists for all Contractors' and Sub-contractor's

Personnel in accordance with the Safeguard Orientation Plan developed in EMP. Engineering staff and workers will be required to attend an orientation/safety induction course within their first week of on-site and regularly held trainings for newly recruited workers. Training sessions organized by the Contractor shall include:

a. Environmental orientation/safety induction course within the first week on-site and then regularly for newly recruited workers, including Sub-contractors on the following topics:(i) general environmental and safety rules and regulations set in IEE/EMP to be followed on the work site and camps, (ii) Cultural heritage: train the whole staff on the archaeological chance find procedure and (iii) other topics listed in Occupational Health and Safety Plan, Flora & Fauna protection plan, etc.
b. Regular Environmental /Health & Safety orientation training sessions for all the staff including Sub-contractors on the above topics at least twice per year.
c. Regular targeted job-specific Environmental /Health & Safety on-site trainings with different groups of workers (on-height workers, earth workers, workers with electrical tools, drivers, etc.) prior to starting a new type of work.
d. Intermediary additional trainings upon the Supervising Engineer's request.

Occupational Health and Safety Plan

133. The purpose of this Sub-Plan is to document ADB's and Armenian legislation requirements to the Contractor and the Sub-Contractors to ensure occupational safety and health protection through the Project implementation. This Sub-Plan shall contain the requirements to safeguard the health, safety and welfare of all persons entitled to be on the Site including the relevant orientation program. The Contractor shall be requested to prepare and submit for Engineer's approval a method statement for the works which shall contain the occupational safety plan for every type of work. The Plan shall include job-specific safety measures to ensure that all the works are carried out in a safe and efficient manner. Occupational Health and Safety Plan consists of the following parts:

Health & Safety Orientation Program

134. The Contractor organizes and implements the trainings on the following topics:

- ✓ General safety rules and regulations to be followed on the construction site and camps.
- ✓ Job-specific rules and regulations including on-height working, working with electrical tools, excavated pits, etc.
- ✓ General health and safety awareness program for educating construction workers on sexually transmitted diseases and HIV/AIDS.
- ✓ Special health and safety awareness program for educating construction workers on the Infectious Diseases (such as COVID-19) risks on their prevention and control as an integral special part of the Contractor's Occupational Safety Plan.
- ✓ Illegal trafficking: workers should be made aware that trafficking of humans, wildlife, endangered species, and illegal substances through the road corridor will not be tolerated and be advised of a progressive penalty scheme up to and including dismissal.
- ✓ Other specific topics as requested by Supervising Engineer.

Personal Protective Equipment (PPE)

135. The Contractor provides its staff with and ensures that both its and Sub-contractor's staff including workers, engineers, foremen, managing staff, and construction site visitors are wearing and using season-fit working uniform and job-specific PPE. The working uniform includes high-visibility vests, jackets, pants or overalls, shoes/ boots, helmets, and gloves. The uniform is to be provided with companies' logo.

136. The PPE might include special eye-protective, ear-protective gears, masks or respirators, face-protective shields, belts or harnesses, job-specific overalls like for welding workers, etc. depending on job-specific hazards and risks. The Contractor shall provide the relevant mechanism of incentive measures and penalties to enforce the use of PPE.

Tools & auxiliary facilities

137. The Contractor provides all the relevant safety tools and establishes auxiliary facilities (back railed scaffoldings, staircases, access bridges, electrical protective shields, fire-resistant equipment prior to starting the works based on the work-specific hazards and risks (on-height, deep tranches, and pits, falling hazards, cranes and other machinery, etc.).

138. The Contractor ensures that any hazardous unsafe situations (unprotected tranches and pits, carelessly left electrical tools, non-regulated operation of heavy machinery, etc.) for the Contractor's and Sub-contractor's working staff are excluded inside the working area.

Workplace health care

139. The Contractor shall take all measures necessary to the health, safety, and welfare of contractor's and Sub-contractor's personnel. For this purpose, it hires a medical worker who is responsible for compliance to IEE/EMP. The Contractor cooperates and makes an agreement with a specialized medical organization for cases of accidents/ incidents.

140. The Contractor's medical worker approved by the Supervising Engineer prepares the training program and conducts the trainings indicated in the Health & Safety Orientation Program for the contractor's and Sub-contractor's personnel. He/ she implements the regular health check of workers and other staff, keeps the records available for inspection at the field office and provides the report on a monthly basis.

141. The Contractor provides and ensures that the working areas in all the road sections are provided with the means and tools to ensure prompt first-aid: a fully manned and easily accessible first-aid kit, and visibly posted posters indicating the availability and contacts of responsible personnel. In order to recognize the poisonous species and to be able to provide first aid, the Contractor shall invite a specialist and provide instruction to the staff. The manual Poisonous Snakes of Armenia where the poisonous snake species and emergency action required in instances of snake bites are described in detail is recommended.

142. In case of Infectious Diseases (such as COVID-19) risks the Contractor prepares an Infectious Diseases Health& Safety Plan based on the ADB CWRD Suggested Operating Procedure on "Working Safely from Infectious Diseases (such as Covid-19)" and obtains Supervising Engineer's approval, as well as provides all the Infectious Diseases control means, tools and facilities prescribed by the national regulations, international guidelines, and Health& Safety Plan.

143. The Contractor provides the personnel with a regular appropriate HIV/AIDS/ Sexually Transmitted Infection (STI) prevention and treatment means and other health promotion to reduce the risk factors of and vulnerability to HIV/STI infections. Those activities shall be incorporated in the orientation course and shall be coordinated with related initiatives of the government agencies, international agencies, non-government organizations (NGOs) and others, including the National AIDS Centre, and ADB-contracted consultants.

Public safety measures

144. The Contractor undertakes all necessary measures to ensure the safety, health and welfare of local residents, Aps, businesses and their employees, passers-by, and other public. The Contractor erects temporary fencing and undertakes all measures to isolate the working area and restrict the entrance of people unauthorized to be on-site. The guard is appointed where needed, and the fencing, barriers, and guardrails are erected. The Contractor installs the solid fencing (1.5-2 m high plastic network or concrete blocks) in sections indicated by Supervising Engineer. The Contractor properly informs the public on the ongoing civil works, the relevant signs, and the shields warning about danger and on the presence of working machinery and/or equipment are erected, and posters prohibiting the entrance are visibly attached. The bold text of announcements and posters will be in the native language.

Responsible persons

145. The Environmental/ H&S Specialist of the Supervising Engineer is responsible for the supervision and monitoring of compliance of Project activities to the requirements set in the Occupational Health and Safety Plan of the IEE/ EMP and for the reporting to the ATDF.

146. The Contractor shall impose the overall management and responsibility for Occupational Health and Safety on his Environmental/ Safety Specialist who will be assigned with the task to implement the orientation training program for all the Contractor's and Sub-contractor's staff on the topics detailed above, as well as to coordinate and report on Occupational Health and Safety to the Supervising Engineer, including the report on all accidents/ incidents and the near misses immediately according to the format attached in Annex 7.

Public Consultation and Communications Plan

147. The purpose of this sub-plan is to document all measures the Contractor and Supervising Engineer must implement to maintain the project information disclosure and constant communications with the stakeholders, the project-affected people, NGOs, and other interested groups about the project in compliance with the ADB SPS 2009 and with the Armenian legislation. The Public Consultation and Communications Plan (PCCP) creates a connection between the ATDF, Supervising Engineer and Contractor (and Sub-contractors), and the affected people (local residents, businesses, and other public) with regard to providing a channel for consulting and advising in advance and during the civil works and possible impacts. This sub-plan aims to ensure the meaningful involvement of all the stakeholders and raise public awareness through the timely dissemination of information about the program, including construction works and related activities' timetable, employment opportunities and benefits of the project.

148. This sub-plan shall contain the general requirements to meet the concerns and interests of all the stakeholders including the local population and request the Contractor to establish an effective GRM.

149. For this purpose, the PCCP includes:

a. Pre-construction and further regular meetings to provide information and consultation opportunities to public about the project, including informing the public about the GRM and associated procedures.
b. GRM to be implemented by the Contractor.
c. Information disclosure.

Pre- construction meeting

150. A pre-construction public meeting will be arranged and held by the Contractor during the mobilization period, immediately after access to the site and the commencement permit for civil works is issued by the ATDF, at least 10 days prior to the start of civil works.

151. The Contractor shall attach posters announcing the date, place and purpose of a pre-construction meeting in visible public places and shall distribute among affected people. Notifications shall provide also contact details.

152. The Pre-construction consultation meetings will be held to present and discuss the project, the civil works program, the IEE/EMP, environmental protection and Health & Safety awareness program for the local community, anticipated environmental and social impacts, such as increased dust, noise, temporary road closures and traffic diversions, as well as GRM.

153. The Contractor shall address the raised issues to the Supervising Engineer in case the affected persons' comments/ issues are out of the scope of his responsibility. The Contractor shall report on the issues status (solved/ not solved) in the first monthly progress report. The Contractor shall ensure the working feedback mechanism for transparency to the stakeholders, valued sensitive receptor's and the project affected and interested public participation. Details of the meeting attendees and comments shall be recorded by the Contractor and included in the EMP.

Grievance Redress Mechanism

154. A Grievance Redress Mechanism has been developed to communicate with affected people to receive and facilitate the resolution of affected peoples' concerns, complaints, grievances and suggestions about the project's performance which shall be maintained for the duration of the Project. Constant communication with members of the local communities, stakeholders and the general public will be maintained via GRM established by the Contractor in accordance with IEE/EMP (for details see Annex 4). The constant communication means in the form of signboards and posters will be available beforehand to the impacted population attention to timely inform them of any inconveniences such as interruptions to traffic access and conditions, or local water supply, electricity, etc. via.

155. The GRM will intend to assist aggrieved persons in filing their complaints and to describe the mechanism designed to address the grievances in a timely and effective manner. The parties potentially involved are affected persons other stakeholders, Contractor, Supervising Engineer, ATDF, MTAI, and the court. The public will be informed about the GRM during the pre-construction public consultation meeting. Also, information on the existence of GRM and the steps the AP could undertake to raise suggestions or complains are disclosed on the ATDF website, as well as on the Project informational board installed on construction sites by the Contractor.

156. The GRM will include:

- ✓ Posters or project informational boards with relevant information for the public to be installed at the entrance to the construction site: field office location, operating hours, names of responsible contact persons, "hotline" phone numbers, postal and email addresses, etc.
- ✓ Grievance registers log-book to be kept available at the field office or in any other easily accessible location for affected people.
- ✓ Contractor's representative (construction foreman, engineer, social or environmental responsible person) on-site is assigned with the responsibility to address the complains /suggestions raised by impacted people and let the suggestion/complain be registered into the grievance register log-book kept by Contractor at the field office. The Contractor's

representative makes the records on the complaint/ suggestion: the initial data (APs name, the date of the issue, description of the issue, the follow-up action, and the resolution status).

157. The contractor shall record in the log- book all the complains (verbal and written), as well as the status, solution and mitigation measure to be applied. If the issue is out of Contractor's responsibilities the complaint will be directed to the Engineer. If the Engineer cannot resolve the complaint, it will be directed to the ATDF.

158. The procedural steps of the Grievance Redress Mechanism for the Project:

- ✓ Maintain a register of complaints (name, description of the problem, incoming date, response date, further follow-up action and resolution status).
- ✓ Make sure that mechanism of prompt forwarding complains and suggestions to Engineer are in place.

Flora Protection and Vegetation Clearing Plan

159. The purpose of this sub-plan is to document the approach of the Contractor and the Supervising Engineer to minimize impacts on flora and fauna. The plan has been developed to comply with Ministry of Environment policy and the RA Laws on Flora (23.11.2009) and Fauna (03.05.2000), as well as legislative regulations on the use of chemicals for vegetation clearing works.

160. Although the significance of the impact on flora and fauna in the project area is evaluated as low (see Table 5), nevertheless the measures to mitigate the localized and non-large-scale likely adverse environmental impacts are planned. The general principle here is to restrict unnecessary tree cutting, maximally avoid further pollution of the territory, and conservation of nature to the extent possible.

161. The measures on protection of the fauna as a result of civil works are aiming to prevent any unnecessary destruction of animals' habitats, raise workers awareness on protection of the environment to avoid destroying nesting places, burrows and holes of animals, and killing the animals during construction. The Contractor is obliged with the responsibility to implement mitigation measures listed in the EMP Matrix.

162. To ensure the proper management of trees and shrubs Contractor should undertake its own survey and confirm that all the trees and shrubs laying under the project footprint and hindering the construction process in order to escape unnecessary cutting down of the trees. Also, those located close to the construction site that could be damaged by the works are to be identified in order to ensure their protection. The Contractor should prepare a Tree Management Plan within the Flora Protection & Vegetation Clearing Plan and submit to Supervising Engineer's approval during the mobilization period according to the following outline:

A. Introduction (purpose of the document).
B. Permits and approvals.
C. Impact Evaluation.
   a) Verification of trees (shrubs) hindering the construction process which shall be cut down.
   b) Identification of trees (shrubs) located close to the working area which needs protection.
D. Mitigation measures.
   c) Location and schedule of the tree planting (re-planting) according to the landscaping design and agreements with the Voskehat settlement of Vagharshapat community.
   d) Tree cutting procedure and Management of the wood waste.
   e) Protection of the trees which might be damaged by the works.

f) Maintenance of the newly planted trees (shrubs).

E. Appendixes containing permissions/ agreements, maps, tables, pictures, etc.

163. The Contractor should update the Tree Management Plan, notifies the Supervising Engineer, and obtains approval prior to starting the process of cutting down the trees and shrubs. Areas to be cleared or otherwise disturbed are to be minimized and marked.

164. For vegetation clearance purposes, pesticides shall not be used. If necessary, use only pesticides that are not listed in the Government decree N293 of 17 March 2005 and exclude the use of POP-containing chemicals.

165. The Contractor shall plant new trees/ shrubs instead of cutting ones. The general rule will be a ratio 1:10 (10 trees/ shrubs instead of one cut tree/ shrub). The trees/ shrubs shall be planted at locations indicated in the landscaping plan approved by ATDF and in areas agreed with the Voskehat community based on consultations with the local population in accordance with the Tree Management Plan.

166. Measures aimed at the restoration of temporary used land plots (if any) disturbed as a result of works will be implemented through plants, which are considered typical for the given area. Any illegal transfer of plant habitats/growing areas and acclimatization of other species in that area, as well as the introduction of foreign/invasive species will be strictly prohibited. The Contractor shall provide a Method statement for the restoration of vegetation in used areas.

Environmental Protection Plan

167. The purpose of this plan is to document the approach of the Contractor and the Supervising Engineer in the implementation of measures to protect the soil, air, and water bodies, from erosion and sedimentation, dust, and other emissions, as well as noise and vibration as a result of the construction activities. The Plan contains mitigation measures to reduce the risk of any impacts up to the legislative acceptable level for all the used areas: construction sites, camps, haul roads, quarries, borrow pits, dump sites, etc. Particularly the following aspects are to be addressed: (i) air pollution and dust control, (ii) noise and vibration control, (iii) soil erosion and sediment control and, (iv) water quality and sediment control.

Air pollution and dust control

168. The management measures are being developed to minimize dust and gas emissions resulting from the demolition and construction activities thus controlling the air pollution and potential health and nuisance impacts on the neighboring public. The Contractor is requested to implement air quality control via the proper scheduling and organization of works. The main principle is a implementation and application of the proper technologies for the demolition of the old buildings, minimization of exposure time of earth surfaces, and timely removal of excavated subsoil and remaining bulk construction material.

169. The Contractor is requested to use electricity or battery power where possible (or practical) for hand tools rather than diesel and avoid the use of diesel- or petrol-powered generators. The Contractor shall avoid using and operating outdated machinery and equipment producing excessive gas emissions, as well as shall implement regular double checks of the technical state and timely repair. Further construction-related measures are detailed in Matrix for EMP, para 5. “Environmental Protection Plan”.

Noise & vibration control.

170. The purpose of noise and vibration control is to minimize and manage potential impacts of increased levels of noise and vibration causing health and property risks like nuisances, and hearing impairment for both construction workers and the nearby public. The most significant control measures are the mitigation of temporary increased noise & vibration during the construction phase of the project. These measures are included in the IEE and shall be monitored visually and/or by means of instrumental measurements. The Contractor is requested to comply with the Armenian legislative regulations related to noise and vibration national legislation (Ministry of Health, Republic of Armenia, Order N138, 6 March, 2002, urban construction).

171. To control the impact of the construction activities on the surrounding properties (houses, buildings, structures) Supervising Engineer will be assigned with the responsibility to implement regular operational vibration instrumental measurements for the circle of buildings exposed to the vibration in case of excavation and compaction works (if any). Operational measurements of vibration will be implemented by specialized entity. Should the project or legislative thresholds be exceeded, the working process will be temporarily stopped, and the mode of construction will be re-considered.

Soil erosion and sediment control

172. This sub-plan includes the issues related to soil and topsoil management. The Technical Specifications for the protection of the environment and topsoil will be developed within the design. The Contractor is requested to follow the regulations on the preservation of the topsoil prescribed by the relevant Armenian legislation.

173. The Soil erosion and sediment control sub-plan includes the measures for the appropriate organization of works on-site in order to minimize the topsoil losses and avoid soil erosion. The Contractor shall implement the erosion control in accordance with Technical Specifications - Erosion Control, as well as shall perform the topsoil stripping and stockpiling in accordance with Armenian legislation and Technical Specifications – Topsoil.

Underground Water Protection Plan

174. Although the impact on the underground waters is not probable, nevertheless a series of measures are proposed and are incorporated into the design. Mitigation procedure to minimize contamination during construction is planned in the EMP, particularly the measures for providing bounded areas for fuel storage, re-fueling stations and machinery maintenance workshops, clean-up of any spill/leak, and reporting to the MoE in case of large-scale spills and leaks.

Utilities Protection Plan

175. The purpose of this sub-plan is to document the approach of the Contractor to organize environmentally, socially friendly, and safe installation of utilities according to the utility design, to protect identified utilities that are not a subject of relocation, and to manage the protection or relocation of any utilities encountered during the construction works.

176. Utility designs shall be validated by the utility owner. The Utilities Protection and Relocation Plan will be implemented in accordance with the Technical Specifications special section named “Relocation of Utilities”. Mitigation measures for proper management of the utility relocation process are interconnected with the Public Consultation and Communications Plan and presented in the EMP Matrix

Construction Work Camps Plan

177. The purpose of this sub-plan is to document the approach of the Contractor and the Supervising Engineer in the implementation of measures to manage construction work camps taking into consideration that the project area is almost entirely located in a rural public district.

178. The sub-plan contains general requirements to the Contractor related to planning and establishment of the main office and construction field camps, organization of machinery parking, material and equipment storage, and sanitary of mealtime and rest-time facilities for working staff. The measures are included in the EMP should be implemented by the Contractor to minimize disturbance of residents, avoid any conflict situation with the population and local authorities, as well as to minimize soil and water pollution.

179. The main criteria/principle for the location of facilities for the Contractor's and Sub-contractors' offices, housing for personnel, storage of equipment and vehicles, parking and machinery treatment workshop, and material temporary storage area is a requirement on their location within the Project footprint which is within the existing Secondary school area. Any usage of the area outside the area allocated for the project will be excluded.

180. Location for the construction camp outside the road alignment which might be needed during the Project implementation and used either by the Contractor or any other Sub-contractors will be selected by the Contractor in consultation with and approval by the Supervising Engineer. The Contractor shall obtain permission from the land plot owner in writing prior establishment of any facility. The campsite selection, location of facilities for the Contractor's offices, equipment storage and vehicle parking, especially outside the school area and close to the residential and agricultural area will be organized emanates from the principal to minimize soil compaction and pollution, as well as disturbance to nearby public.

181. The field camps shall be established according to the Contractor's mobilization plan and the location scheme should be provided by Contractor to the Supervising Engineer. The preventive/mitigation measures are detailed in EMP Matrix.

Water supply

182. Water supply for technological purposes during the construction will be organized through the delivery contract with the relevant entity. The possibility of joining the closest existing water systems with the perspective to make a water delivery contract will be explored in the detailed design stage. Approval/contract will be provided by the Contractor to the supervision Engineer before commencement of works.

183. Drinking water should be available in all the construction working sections. The Contractor shall supply sufficient bottled drinking water (minimum of two liters of bottled drinking water per person daily) for the entire personnel both managing and working staff.

Power supply

184. Construction Campsite will be provided with electricity through the delivery contract with the relevant entity or through the installation of compact generators. Electricity will be needed both for the civil works and for the lighting of the construction area and the camp during night hours for security purposes. The Contractor shall provide sufficient lighting to ensure that in all places, where work is in progress, safe working conditions are provided for the Contractor's personnel.

Sanitary facilities

185. The Contractor furnishes temporary sanitary facilities in the camp for all Contractors' personnel. Sanitary facilities (toilets and washing, mealtime, coffee break, rest, wintertime warming facilities) are to be of adequate capacity, properly maintained throughout the construction period, and obscured from public view to the greatest practical extent. The Contractor will ensure access to such sanitary facilities by all personnel at the site. The temporarily established facilities shall be timely removed as soon as the works are completed.

Machinery parking and storage areas

186. The Contractor will organize material temporary storage, machinery parking and repair workshop areas within the camp. The Contractor will ensure the safety and the cleanliness of these facilities which will be located in a way not to disturb the community members.

187. Material temporary storage areas will be properly maintained: the material collected in regular heaps and covered in the case of fugitive substances, the sacks and containers provided with the label indicating the name of the material and harmfulness- hazardous/non-hazardous.

188. Parking and re-fueling area are to be organized at the impenetrable surface. The Contractor shall avoid locating the parking area on bare earth and on the area covered with grass and other vegetation.

Site Management Plan (Quarry and borrow pit, dumping sites, concrete batching and asphalt plants)

189. The purpose of this sub-plan is to document the approach of the Contractor and the Supervising Engineer in the implementation of measures to manage the impacts of the construction activities on the areas outside the project footprint used for quarries, borrow pits, crushing plants, concrete and/ or asphalt plants, haul roads that may be required for the works.

190. The Project does not envisage any opening of new quarries and/ or sites for borrowing construction materials. Nor the establishment of concrete batching or asphalt-producing plant planned. It is supposed that the tender winner contractor buys the material from the existing quarries and/ or asphalt plants. The Contractor is therefore required to provide the Supervising Engineer and ATDF with copies of contracts on the purchase of construction material.

191. Also, any opening of new dump sites for permanent disposal of the waste is not envisaged. All the waste will be disposed of at the existing landfills based on the agreement with the Voskehat settlement of the Vagharshapat community. The relevant permission will be provided by the Contractor to the Supervising Engineer.

192. Should the Contractor nevertheless open the new quarries and/ or sites for borrowing construction material, dump sites or establish the concrete batching or asphalt-producing plant, the general requirement is that the Contractor will be charged with the responsibility to strictly follow the relevant Armenian legislation and prepare and submit for approval a site-specific environmental management plan (SSEMP) for every area temporary used outside the project footprint.

193. In the event, that new quarries, concrete batching, and asphalt plants are required, the Contractor shall provide the appropriate agreement/license issued by relevant authorities and shall obtain approval of MoE on Environmental Expertise on the operation of quarry and borrow pit, dumping site, as well as the gas emission permissions for concrete batching and asphalt plants.

Traffic and Access Management Plan

194. The purpose of this Plan is to document the approach of the Contractor and the Supervising Engineer, and their workers in implementation of measures to manage the public traffic and access of construction machinery to the construction site during the construction works. The traffic management and access plan will be developed by the Contractor and agreed upon with ATDF and Road police within the mobilization period and will be updated every time when needed. The main principle in this planning shall be avoiding traffic congestion and providing safe movement conditions for public traffic and pedestrians. The plan shall contain the regulations on vehicle management on and off-site, like the organization of parking, repair, technical treatment, and double check, re-fueling, etc. The Contractor is required to undertake a Pre-construction Road and Property Condition Survey to document the condition of the local road network and roadside-affected properties and shall offset and restore any caused damage. The measures envisaged by the Traffic and Access Management Plan are listed in the EMP Matrix.

Emergency Response and Preparedness Plan

195. The purpose of this Plan is to document the approach of the Contractor and the Supervising Engineer in implementation of measures for the prompt response to emergency situations during the civil works. An emergency Response and Preparedness Plan should be prepared by the Contractor to address the risks to occupational health and safety as well as to community health and safety in case of accidents/incidents, fire, etc.

Waste and Material Disposal Plan

196. The purpose of this Plan is to document the approach of the Contractor and the Supervising Engineer in implementation of measures for the storage of construction material, as well as disposal of wastes and spoil materials produced during construction and for the management of the soil presumably contaminated during construction activities.

197. The key waste management philosophy of this plan is based on the following hierarchy of waste management approaches (highest to lowest priority):

i. avoid waste generation, when possible,
ii. minimize waste generation including the contaminated soil,
iii. reuse the waste as practical,
iv. recycle the waste as practical, and
v. dispose of any remaining waste and displaced contaminated soil in an environmentally suitable manner in locations assigned by the municipal authorities.

198. The main principle of material management is that the Contractor shall properly organize the delivery and storage of all the construction materials. Construction materials shall be delivered in daily consumption quantities to avoid keeping within the construction area for a long time, being spread all over the sites and becoming a source of garbage, dust, and mud. Those materials which are not delivered in daily consumption quantities shall be kept in a specially allocated storage area indicated in the Contractor's mobilization Plan and shall be equipped with necessary facilities ensuring the safety and contamination control rules: containers, sheltered storage, containers for collection of residues, etc.

199. Some excessive amount of subsoil material might be originated from the excavation and grading activities. If the case, the spoil will be classified, transported, and disposed of in accordance with Armenian legislative requirements. The Contractor shall apply to relevant authorities and shall obtain all the necessary legislative permissions and licenses for the categorization, transportation, re-cycling and disposal of wastes, including hazardous waste.

200. The management of waste, spoiled materials, and contaminated soil according to the aforementioned principles for proper collection, segregation, storage, disposal, and education/training methods will ensure a low level of risk associated with waste generation and contaminated soil manipulation. Solvents and volatile materials shall be handled according to the procedures prescribed by MoE, Armenian legislation and best international practices.

201. The general principles of waste management and proposed mitigation measures, including the requirements on waste records are listed in the EMP Matrix. The Contractor shall be required to provide a more detailed waste management and waste minimization program, that will include the modes of collection of the concrete wash-out wastewater and the oil/ fuel/ lubricants residues for their further re-use. The Contractor shall provide the details on its approach for all the types of material and waste generated during construction works to the management.

Non-Hazardous Wastes

202. Waste generated during the demolition activities and other construction-related waste such as dismantled structures, concrete blocks, and non-hazardous construction debris like metallic, plastic, wooden parts, etc shall be removed from the construction site. All the Non-hazardous wastes will be segregated into the material which is suitable for reuse and non-suitable waste. The suitable material will be handed over to the owner and removed from the site. The unsuitable part will be removed from the site and disposed of in approved sites-landfills. The Contractor shall apply to the Voskehat settlement of the Vagharshapat community for a waste disposal site and shall provide written permission to the Supervising Engineer.

203. Solid waste includes waste off-cuts from metal and timber, concrete, paper, plastics, cardboard, cans, bottles, workshop waste and organic food waste (garbage and litter). The Contractor is charged with responsibility for the cleanliness of the working area and the area surrounding the construction sites. No waste will be allowed to overflow into the surrounding area. Any waste that is blown away from the containers will be picked up by the Contractor/Subcontractor. All the garbage will be removed by the Contractor to the landfill designated by the Voskehat settlement of the Vagharshapat community.

Liquid & Dangerous Waste

204. Liquid dangerous materials and their wastes are materials that are combustible and/or toxic to life forms. Dangerous materials and their wastes include any of the following and will require special procedures for storage, handling, and disposal: fuel including petrol and diesel, waste oil, waste petrol, diesel, and bitumen, and cement wash water.

Waste Minimization

205. The Contractor shall reuse the part of the generated waste like excavated soil, rocks and stones, demolished asphalt, concrete parts, waste oil and concrete wastewater where practicable. Thus, the Contractor will reduce the waste quantities and comply with the pollution control requirements.

Cultural Heritage Management Plan

206. Although the impact on the cultural and archaeological heritage is evaluated as “non-significant” and negligible, nevertheless Cultural Heritage Management sub-plan is included in the EMP. The purpose of this sub-plan is to document an approach of the Contractor and the Supervising Engineer to the archaeological chance find procedure and the measures for preservation and careful relocation of the values which might be discovered within the project footprint.

Site Reinstatement, Landscaping, and Revegetation Plan

207. The purpose of this plan is to document an approach of the Contractor and the Supervising Engineer in the implementation of site cleaning and restoration of the area of the Voskehat Secondary School, including restoration, landscaping, and re-vegetation measures as part of the construction works. By the completion of the project or when the works at the site are completed the site should be cleaned of remains of all material and debris. The site should be restored as much as possible to its original condition. The plan is applied to all the working sites and all the areas where the contractor has established facilities (mobile houses, storage areas, parking, etc.).

208. Detailed requirements for re-vegetation work should be provided in the landscape design, referring to the relevant sections of the Technical Specifications: Topsoil, Trees & Shrubs, and Turf Establishment. Species should be relatively easy to propagate and maintain.

Defect Liability Period (DLP)

209. During the DLP, the Contractor will be responsible for the environmental safeguard's compliance to ADB SPS and Armenian legislation. The Contractor's liabilities under the DLP are supplemented with the requirements specified for this period and detailed in the EMP Matrix.

Monitoring

210. Monitoring within the EMP shall present the project's monitoring system to check compliance of the project activities to the Armenian legislative and ADB standards and regulations. The section "Monitoring" sets the requirements for environmental monitoring to check compliance of construction activities to the mitigation measures set in the EMP via regular inspection site visits (visual monitoring).

211. This section of the EMP is presented also in a tabular format (see Annex 6 (b) Environmental Management Plan: Monitoring and includes the following data:

- ✓ project activity to be monitored – demolition, earthworks, backfiling, asphalt pavement, etc.,
- ✓ parameters to be monitored- the valued environmental receptors (soil, noise, air quality, etc.),
- ✓ location to be monitored (construction site, camp area, dump site, etc.),
- ✓ Instruments and methods (review of relevant documentation, visual inspection site visits, instrumental measurements, etc.),
- ✓ Environmental Performance Indicator,
- ✓ responsible entities (broken down by all parties – ATDF, Supervising Engineer, Contractor),
- ✓ frequency of monitoring (refers to the assignment tasks based on the cost-effectiveness principle).

212. The visual environmental monitoring shall be implemented via site inspection visits with the purpose to determine the effectiveness of the mitigation measures for prevention and control of the negative impacts of the Project with the purpose to decide the necessity of the appropriate corrective action at the earliest practical time. All the sites occupied and established by the contractor shall be monitored: working areas, construction camps, storages, parking areas, topsoil preservation sites, waste disposal sites, crushing plants, concrete, and asphalt plants (if any).

213. The inspection site visits shall be carried out in accordance with the formal monitoring schedule planned in the EMP: Contractor- daily, Supervising Engineer - daily, ATDF – monthly. The findings of the monitoring inspection visits shall be reported by Contractor via Corrective

Action Reports, by Engineer - via completion of the Mitigation Compliance & Inspection Monitoring Check Lists (the format provided in Annex 8).

Reporting

214. The environmental safeguards compliance of the Project shall be regularly reported on all project implementation levels: Contractor, Supervising Engineer, ATDF, MTAI, and ADB.

215. The following environmental reports shall be submitted by the Contractor to the Engineer:

i. Weekly Corrective Action Reports (CAR). The corrective actions and their status will be documented in a specially developed by Supervising Engineer and approved by the ATDF template. The weekly Corrective Action Report shall include the environmental performance indicator and assessment of the effectiveness of the mitigation measures.

ii. Monthly Environmental Compliance Report. Summary environmental report shall be submitted as part of the Contractor's Monthly Progress Report. Monthly reports shall be analytical and provide explanations for anomalies, non-compliance and problems encountered.

iii. The progress reports prepared by ATDF and submitted to ADB will include a section on the implementation of environmental safeguards and mitigation measures.

iv. Annual Environmental Monitoring Reports (AEMR) shall be prepared by ATDF and provided to ADB. The AEMR summarizes all environmental safeguards activities during the annual period. All AEMRs will be filed in the track record system ready for ADB audit and disclosed on ADB's website. The AEMRs and IEE should also be translated into Armenian and disclosed on ATDF's website.

216. The outline of the AEMR contains the following parameters and will be updated and agreed upon with the Supervising Engineer and ATDF:

I. Introduction
II. Management
    1. Environmental safeguard program
    2. Awareness Raising and Environmental Training
    3. Safety and accident report
    4. Complains received (GRM system)
    5. Communication with Contractors and APs
III. Monitoring
    1. Findings of monitoring visits
    2. Corrective action plan
    3. Non-compliances issued and addressed
IV. Conclusion and Recommendations for the Next Reporting Period

217. The Reports shall comprehensively include all relevant aspects in implementing the mitigation measures of the EMP (e.g., what type of mitigation, purpose and object(s), site/location, materials, and activities involved, others specify) compliance to any environmental regulations and requirements such as training/orientation, permits, license, etc. undertaken during the period covered by the report.

218. In cases of accidents (personnel death and/or injury, fire, explosion, oil spill and bitumen overflow, etc.), the Contractor must notify the Supervising Engineer immediately. Initial notification may be verbal and shall be followed by a written Initial Accident/ Incident Report within 24 hours when the incident or accident happened. The Final Accident/ Incident Report shall be submitted to the Supervising Engineer within a 2-week period after the completed investigation of the case and

will contain the report on the undertaken measures prescribed by the initial report. (Accident/Incident Reports form is provided in Annex 7)

Cost estimate and estimated budget

219. The initial estimated cost of the EMP implementation will be 75,000 USD. The cost estimates and an estimated budget will be updated based on Detailed Design.

Table 7. Indicative Cost Estimate for Contractor's Environmental Management and Monitoring.

Item description	Unit	Included in the budget of	Total amount in USD	Total amount in AMD[16]
Appointment of personnel responsible for environmental/ H&S and social safeguards.	Remuneration for 24 months is estimated at: US$ 36 000	Supervising Engineer	36 000	13 860 000
	Cost of 1 HSE Specialist available fulltime during the 24 months construction period is estimated at: US$ 24 000	Contractor	24 000	9 240 000
Occupational Health, and Safety Plan	Cost of PPE for 60 workers at US $250 per worker is estimated at: US$ 15 000.	Contractor	15 000	5 775 000
			75 000	28 875 000

220. The estimates for the presented Plans implementation below will be included in the Contractor's budget based on the Detailed design and estimated general construction costs:

- ✓ Environmental and Health &Safety Orientation Plan
- ✓ Rest part for Occupational Health, and Safety Plan
- ✓ Flora & Fauna Protection and Vegetation Clearing Plan
- ✓ Environmental Protection Plan
- ✓ Surface and Underground Water Protection plan
- ✓ Utilities Protection and Relocation Plan
- ✓ Construction Work Camps Plan
- ✓ Site Management Plan (for the areas used outside the project footprint)
- ✓ Traffic and Access Management Plan
- ✓ Emergency Response Plan
- ✓ Waste and Material Management Plan
- ✓ Cultural Heritage Management Plan (chance find procedure)[17]
- ✓ Site Reinstatement, Landscaping, and Revegetation Plan[18]

[16] 1 USD = 385 AMD

[17] If archaeological chance find resources are discovered, included in total construction cost, estimated to be maximum 2% of the general construction cost.

[18] The cost for protection of existing community trees for an estimated in Detailed Design trees and shrubs will be estimated in the updated IEE, based on the counted amount and type of trees and shrubs.

221. The implementation arrangements with a clear indication of the role and responsibility of every party involved in the project in the implementation, monitoring, and supervision of the EMP, as well as the timetable and the budget for the implementation of each measure are provided in the Matrix for EMP presented in Annex 6 a.

IX. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

222. The scope of work under the reconstruction of Voskehat Secondary School in the Armavir region involves innovative engineering and construction solutions for the school's seismic safety, ensuring the inclusiveness for people with disabilities, designing and constructing the school buildings suitable for 21-century education and pedagogical standards, ensuring transformative facilities/spaces for community activities after the school hours, as well as the implementation of the climate mitigation and adaptation measures.

223. Most of the adverse impacts during the construction stage, will be site-specific, limited within the RoW, and can easily be mitigated through good engineering and housekeeping practices, with specific measures provided in the EMP.

224. No involuntary resettlement or indigenous people impact is envisaged under the program, as reconstruction/retrofitting of the school building will be at the existing locations and Armenia is homogeneous in ethnic composition. Due diligence on social safeguards confirmed the absence of land acquisition and resettlement impact and suggested mitigation measures for any potential issue that might arise during the construction phase.

225. The SSIP's safeguard classification is Category B for the environment, category C for involuntary resettlement, and Category C for indigenous peoples. The safeguards classification will continue for this grant project. At the same time according to Armenian EIA legislation, the EIA and expertise procedure is required for this project.

226. The project will certainly have essential positive effects on the socio-economic environment through the reconstruction of the mentioned school, at least 355 students will be studying in school buildings meeting the seismic safety standards.

227. The design of the Voskehat Secondary School is sustainable and environmentally friendly in the choice of construction materials. Ecological benefits are tightly interconnected with the design solutions in terms of natural resource savings.

228. The potential negative impacts, such as nuisances from dust, noise, traffic, and access changes, which are likely to be experienced by nearby residential districts, the impact on the local flora and others identified in Chapter "Negative Impacts" will be temporary and may be minimized by the mitigation measures planned in the EMP, as well as by the constant monitoring providing adequate supervision and ensuring the timely implementation of the outlined mitigating measures.

Recommendations

229. The contractor will consider the present IEE (tree identification and counting, environmental baseline data, utilities) and EMP as part of the Contract.

230. The compliance of construction activities to the ADB safeguards requirements and to Armenian legislation shall be checked through regular monitoring carried out by the Contractor, Supervising Engineer and ATDF.

231. The Supervising Engineer shall monitor and supervise the implementation of mitigation measures by the Contractor as specified in the EMP and issue a non-compliance notice if they are not properly implemented in a timely manner. The non-compliances will be ranked according to the criteria of non-compliance levels specified in the Environmental Safeguards Information kit. A penalty system could be applied to Contractor for the Non-compliance with the requirements of the IEE and EMP. The Engineer may also stop all relevant works (at the Contractor's cost) until the requirements of the IEE and EMP have been fulfilled and rectified to the Engineer's satisfaction. Those penalties shall be independent of any penalties imposed by the laws of the Republic of Armenia.

232. In the Detailed Design stage, the locations of trees will be considered to avoid and skip any damage to these trees.The Contractor's appropriate specialist together with Engineer will survey the location of the trees and shrubs most likely to be damaged by the construction activities and shall propose methods to prevent their loss. All the trees and shrubs that could be preserved but are close to work sites will be protected. Instead of trees and shrubs that cannot be preserved and will be removed, new ones will be planted at a 1:10 ratio. The planting of those trees and shrubs for replacement will be performed in locations with suitable soil conditions. The newly planted tree seedlings will be maintained for 1 year by the Contractor during the defect's liability period. Afterward, the maintenance of vegetation planted within the school area footprint will be transferred to the Voskehat Secondary School, and those outside the school will be cared for by the Voskehat settlement of the Vagharshapat community.

X. ANNEXES

Annex 1. 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 Safeguards Division (SDSS) for endorsement by Director, SDSS 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:	ARM: Seismic Safety Enhancement Program - Reconstruction of Voskehat Secondary School
Sector Division:	CWUW and ARRM

Screening Questions	Yes	No	Remarks
A. Project Siting Is the project area adjacent to or within any of the following areas:			All physical work will take place in the premises of existing schools.
▪ Underground utilities		X	
• Cultural heritage site		X	
• Protected Area		X	
• Wetland		X	
• Mangrove		X	
• Estuarine		X	
• Buffer zone of protected area		X	
• Special area for protecting biodiversity		X	
• Bay		X	
B. Potential Environmental Impacts Will the Project cause…			
▪ Encroachment on historical/cultural areas?		X	

Screening Questions	Yes	No	Remarks
▪ Encroachment on precious ecology (e.g. sensitive or protected areas)?		X	
▪ Impacts on the sustainability of associated sanitation and solid waste disposal systems?	X		Limited impact
▪ dislocation or involuntary resettlement of people?		X	
▪ disproportionate impacts on the poor, women and children, Indigenous Peoples or another vulnerable group?		X	
▪ Accident risks associated with increased vehicular traffic, leading to loss of life?	X		Could be limited impact but manageable
▪ Increased noise and air pollution resulting from increased traffic volume?	X		Could be limited impact but manageable
▪ Occupational and community health and safety risks?	X		Could be limited impact but manageable
▪ Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?		X	
▪ Generation of dust in sensitive areas during construction?	X		Could be limited impact but manageable
▪ Requirements for disposal of fill, excavation, and/or spoil materials?		X	
▪ Noise and vibration due to blasting and other civil works?	X		Could be limited impact but manageable
▪ Long-term impacts on groundwater flows as a result of needing to drain the project site prior to construction?		X	
▪ Long-term impacts on local hydrology because of building hard surfaces in or near the building?		X	
▪ Large population influx during project construction and operation that causes an increased burden on social infrastructure and services (such as water supply and sanitation systems)?		X	
▪ Social conflicts if workers from other regions or countries are hired?		X	
▪ Risks to community safety caused by fire, electric shock, or failure of the building's safety features during operation?	X		Could be limited impact but manageable
▪ Risks to community health and safety caused by management and disposal of waste?		X	
▪ Community safety risks due to both accidental and natural hazards, 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		Could be limited impact but manageable

Annex 2. International agreements and conventions relating to the protection of the environment and biodiversity signed/ratified by the Republic of Armenia

No	Convention or Protocol, Name and Place	In Force	Signed	Ratified	Comment
1.	Convention on Wetlands of International Significance especially as Waterfowl Habitat (Ramsar, 1971)	1975	1993	Ratified by USSR	
2.	Convention on Biological Diversity (Rio-De-Janeiro, 1992)	1993	1992	1993	Re-registered in UN 1993
3.	Cartagena Protocol on Biological Safety (Cartagena, 2000)		2000	2004	
4.	UN Framework Convention on Climate Change (New York, 1992)	1994	1992	1993	Re-registered in UN 1993
5.	Kyoto Protocol (Kyoto, 1997)			2002	Re-registered in UN 2003
6.	Convention on Long-range Transboundary Air Pollution (Geneva, 1979)	1983		1996	Re-registered in UN 1997
7.	Convention on Environmental Impact Assessment in a Transboundary Context (Espoo, 1991)	1997		1996	Re-registered in UN 1997
	Protocol on Strategic Environmental Assessment (Kiev, 2003)		2003		
8.	Convention on the Transboundary Effects of Industrial Accidents (Helsinki, 1992)	2000		1996	Re-registered in UN 1997
9.	Protocol on Civil Liability and Compensation for Damage caused by the Transboundary Effects of Industrial Accidents on Transboundary Waters (Kiev, 2003)		2003		
10.	UN Convention to Combat Desertification (Paris, 1994)	1996	1994	1997	Re-registered in UN 1997
11.	Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (Basel, 1989)	1992		1999	Re-registered in UN 1999
12.	Convention for the protection of Ozone Layer (Vienna, 1985)	1988		1999	Re-registered in UN 1999
13.	Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal, 1987)	1989		1999	Re-registered in UN 1999
14.	Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (Aarhus, 1998)	2001	1998	2001	

No	Convention or Protocol, Name and Place	In Force	Signed	Ratified	Comment
15.	Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (Rotterdam, 1998)		1998	2003	
16.	Convention on Protection and Use of Transboundary Watercourses and International Lakes (Helsinki, 1992)	1996	1999		
17.	Protocol on Water and Health (London, 1999)		1999		
18.	Stockholm Convention on Persistent Organic Pollutants (Stockholm, 2001)		2001	2003	
19.	Convention on the Prohibition of Military or any Other Hostile Use of Environmental Modification Techniques (Geneva, 1976)	1978		2001	Re-registered in UN 2002
20.	European Convention on Landscape (Florence, 2000)			2004	
21.	Convention on Protection of the World Cultural and Natural Heritage (Paris 1972)			1993	
22.	Energy Charter Treaty (Lisbon, 1994)			1997	
23.	Energy Charter Protocol on Energy efficiency and Related Environmental Aspects (Lisbon, 1994)			1997	
24.	European Convention on Protection of Wild Nature and Habitat (Bern, 1979)	1982	2006		

Annex 3. Report on Public Communication and Consultation

Introductory meeting with the administration of Voskehat settlement of the Vagharshapat community

1. An introductory meeting was held on May 12, 2023, with the administration of Voskehat settlement in the Vagharshapat community. The purpose of the meeting was to inform the community about the Project and provide a brief overview of its environmental and social impacts, along with the proposed mitigation measures. The meeting took place at the Voskehat settlement administrative building and was attended by Mr. Armen Khudabashyan, the administrative head of Voskehat settlement, Mrs. Sophik Petrosyan, acting director of Voskehat Secondary School, Mr. Tigran Oganezov, National Environmental Consultant from ADB, and Mrs. Knarik Grigoryan, Social Specialist from ATDF.

2. The introductory meeting with the community administration provided detailed information about the proposed Project, the progress made in the Initial Environmental Examination process, and the planning of mitigation measures. The head of the impacted settlement was informed about the Project initiators' commitment to organizing public consultation events in accordance with Armenian legislation, particularly the RA Decree N 1325-Ա “On the procedures of information disclosure and public consultations”, and ADB Safeguard Policy requirements on Public Consultation and Information Disclosure.

3. The assistance and contribution to ensure effective and meaningful public participation in planned public consultation were requested from the administration of the Voskehat settlement.

4. Before conducting the public consultation events, ATDF ensured the timely disclosure of relevant and comprehensive information that is accessible and responsive to the needs of affected people, particularly women, disadvantaged, and vulnerable groups.

5. The administration representatives pledged to assist in disclosing and disseminating project-related information by placing public consultation advertisements on their websites and posting them in publicly visible areas.

6. The following text (non-official translation) of the advertisement was provided to the administration of the impacted community for disclosure and dissemination among affected people and other interested public:

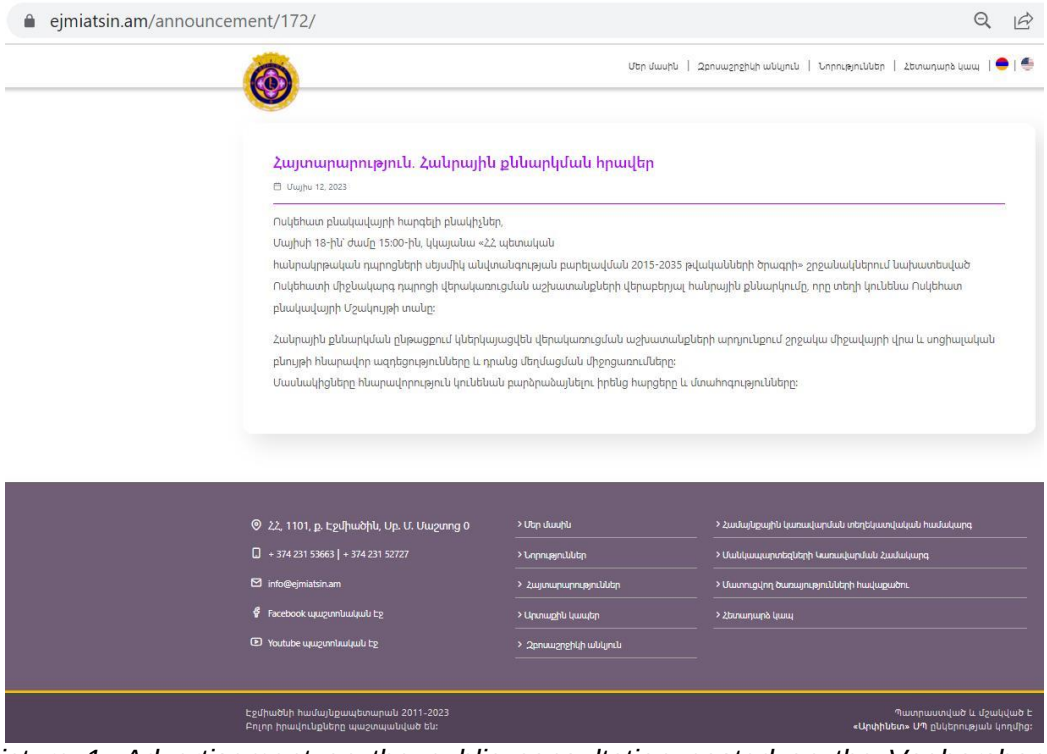
> *“On May 18, 2023, at 3:00 p.m., we invite you to participate in the public hearing on the reconstruction works of Voskehat secondary school planned within the framework of the "2015-2035 program for improving the seismic safety of RA state public schools", which will take place in the Voskehat House of Culture. During the public discussion, possible environmental and social impacts of the reconstruction work, and their mitigation measures will be presented. Participants will have the opportunity to voice their questions and concerns.”*

7. The notice was posted on the Vagharshapat community's official website (picture 1), and their social network webpage (picture 2), as well as prominently displayed in public places such as Voskehat Secondary School, the House of Culture and the administration building of Voskehat settlement (pictures 3-4).

Public consultation in Voskehat settlement of the Vagharshapat community

8. The public consultation event took place on May 18, 2023, and was organized to meet the requirements outlined in ADB SPS on Public Consultation and Information Disclosure, as well as the provisions of the RA Law on Environmental Impact Assessment and Expertise and RA Decree N 1325-Ա "On the procedures of information disclosure and public consultations."

9. The public consultation was hosted by the Voskehat settlement administration, led by Mr. Armen Khudabashyan, the administrative head of Voskehat settlement. A detailed protocol, including an attendance list and minutes of the event, documented the issues and concerns raised by participants.

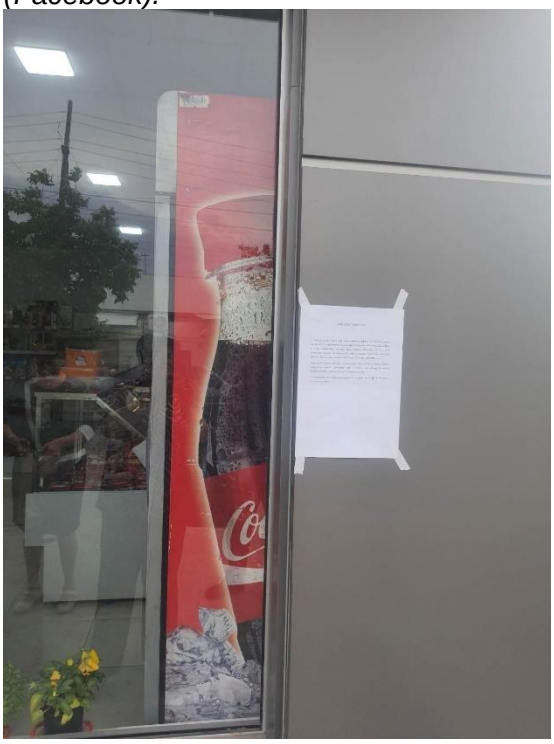


Picture 1. Advertisement on the public consultation posted on the Vagharshapat

community's official website

Picture 2. Advertisement on the public consultation posted on the Vagharshapat community's social network webpage (Facebook).

Picture 3. Advertisement on the public consultation attached in publicly visible places.



Picture 3. Advertisement on the public consultation attached in publicly visible places.

Picture 4. Advertisement on the public consultation attached in publicly visible places.

Protocol on Public Consultation prepared on May 18, 2023

PROTOCOL

on public consultations on the Initial Environmental Examination of the

RECONSTRUCTION OF VOSKEHAT SECONDARY SCHOOL

Date/ Time May 18, 2023 / 15:00- 17:00

Venue House of Culture event hall

Address Armavir marz, Vagharshapat community, Voskehat settlement

Participants:

1. Mr. Armen Khudabashyan, Administrative Head of the Voskehat settlement of Vagharshapat community
2. Mrs. Sophik Petrosyan, Acting Director of the Voskehat Secondary School
3. Mr. Tigran Oganezov, National Environmental Consultant, ADB,
4. Mrs. Knarik Grigoryan, Social Specialist, ATDF
5. Representatives of the Vagharshapat community, Voskehat settlement administration, Voskehat school administration, and teachers, as well as residents of the Voskehat settlement, in total 78 people (see the list in Appendix 1).

Agenda: Presentation of the general environmental and social components of the reconstruction project for Voskehat Secondary School.

The public consultation event was opened by Mr. Armen Khudabashyan, the administrative head of Voskehat settlement, who highlighted its purpose: to discuss the reconstruction project of Voskehat Secondary School, to be implemented by ATDF, and address potential environmental and social impacts. Mr. Khudabashyan mentioned that the meeting was organized by ADB and then handed over the floor to Mr. Tigran Oganezov, ADB National Environmental Consultant.

Mr. Tigran Oganezov greeted the participants and informed them that the reconstruction of Voskehat Secondary School will be financed by the grant from Japan Fund for Prosperous and Resilient Asia and Pacific which will complement ADB's SSIP and will be implemented by ATDF. He briefly outlined the agenda for the meeting, stating that after presenting the potential environmental and social impacts, a question-and-answer session would follow to address all queries related to the presented IEE. Mr. Oganezov further informed the participants about the innovative engineering and construction solutions planned for the school, focusing on seismic safety, inclusiveness for people with disabilities, compliance with 21st-century education standards, and the provision of community facilities/spaces after school hours. He assured that most adverse impacts would occur during the construction stage, remain site-specific, and be limited to the Right of Way, with effective mitigation measures outlined in the EMP.

Mr. Oganezov presented the potential environmental impacts that could arise during the project's implementation, emphasizing their limitation to the construction period, as well as their local and temporary nature. He highlighted the expected impact on ambient air quality due to dust generated by earthworks and exhaust emissions from operating machinery and equipment. To mitigate these impacts, the EMP includes measures such as regular water spraying of surfaces in construction

areas. Construction equipment would also be a significant source of noise and vibration, as well as air emissions of harmful substances. Mr. Oganezov assured the attendees that the project footprint would be confined to the existing Secondary School territory, without expanding into new lands. He mentioned the importance of preserving topsoil within the allocated project footprint for future landscaping purposes and outlined the mitigation measures to prevent soil contamination from fuel, oil, and other liquid materials and waste.

Another environmental impact discussed was waste generation, which, if not properly managed, can lead to pollution, contamination, and aesthetic degradation. Mr. Oganezov detailed the types of waste generated during construction and presented the proposed management methods and mitigation measures.

The impacts on social systems are of paramount importance in this project, given their sensitivity. These impacts encompass any adverse disturbances or nuisances arising from the civil works involved in the reconstruction of Voskehat Secondary School. The project will directly affect the school's staff, teachers, and pupils, as well as the residents of Voskehat settlement within the Vagharshapat community. Additionally, the proximity of a few residential houses, agricultural land plots, and a cemetery near the school raises the possibility of temporary indirect impacts on the local population. Mr. Oganezov has outlined a comprehensive set of planned measures in the EMP aimed to address these concerns. These measures are designed to avoid, prevent, and mitigate any negative impact on the local population. By adhering to these plans, the project aims to minimize any adverse effects and ensure the well-being of the affected community members throughout the reconstruction process.

The reconstruction of the Voskehat secondary school will also increase the traffic on the adjacent local roads during the construction stage during the transportation of trucks, machinery, and construction materials to and from the construction area. Any long-term occupation and/ or blocking of the existing roads and pedestrian walkways is not envisaged. Nevertheless, some safety risks for the public and passers-by exist. Public safety might be endangered, and the access roads to the residential houses and businesses might be blocked and made difficult. Mr. Oganezov informed the residents that to minimize and avoid this impact the routine mitigations during the construction are focused on the safety of the public, minimization of congestion, and other disturbances to the traffic.

At the second part of the meeting the ATDF social specialist Mrs. Knarik Grigoryan presented the purpose and the methodology of social and resettlement impact assessment, the result of the survey conducted under the DDR exercise, the Project GRM structure, and the information channel to apply to the Project GRM.

Following the presentation, a question-and-answer session commenced, providing an opportunity for participants to engage and share their queries and suggestions. The following questions and suggestions were raised by the attendees:

- ✓ The teacher of military science expressed concerns regarding the poor condition of the building and questioned the feasibility of restoring the supporting structures.

In response, Mr. Oganezov acknowledged the concern and assured the participants that a seismic expertise assessment of the building would be conducted. Based on the findings of the assessment, a decision would be made regarding the raised issue.

- ✓ The Administrative head of the settlement inquired about the inclusion of an irrigation system in the school's design. This query was prompted by the current problems the school faces in irrigating existing trees. Additionally, it was mentioned that a deep well is present on the school premises, albeit currently unused.

Mr. Oganezov addressed this concern by stating that the design of the irrigation system would be based on the technical conditions specified by the Community and other responsible entities involved in the project.

- ✓ A proposal was made by the participants to restore the dilapidated shooting range.

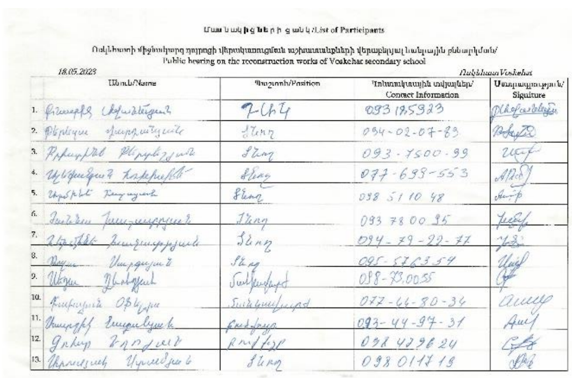
Mr. Oganezov assured the attendees that their request would be duly considered within the framework of the sub-project's design.

A request was also put forward by the participants to construct a stone fence to demarcate the school and the cemetery. Additionally, they proposed placing the new school building on the opposite side of the land plot, away from the cemetery. Recognizing the importance of these suggestions, it was agreed that these matters would be further discussed and potentially included in the Detailed Design phase.

By actively addressing these questions and suggestions, the meeting fostered a collaborative environment where concerns were acknowledged, and participants were assured that their input would be considered during the decision-making process. The project team demonstrated a commitment to conducting necessary assessments and considering technical requirements to effectively address issues raised by stakeholders.

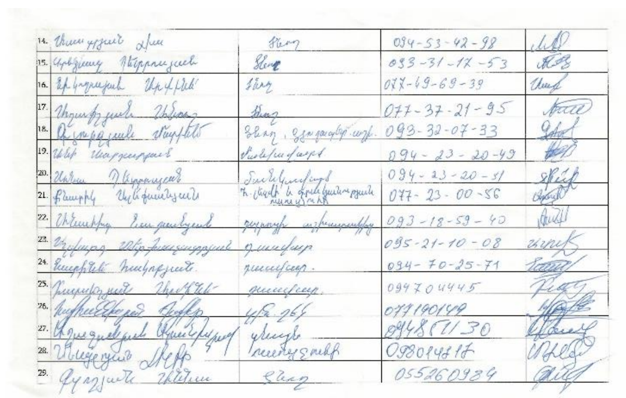
The project team recognized the importance of these suggestions and acknowledged the need to involve the engineering and design team in the discussion. Their expertise and insights will be invaluable in assessing the feasibility and practicality of incorporating the suggestions into the overall design of the project.

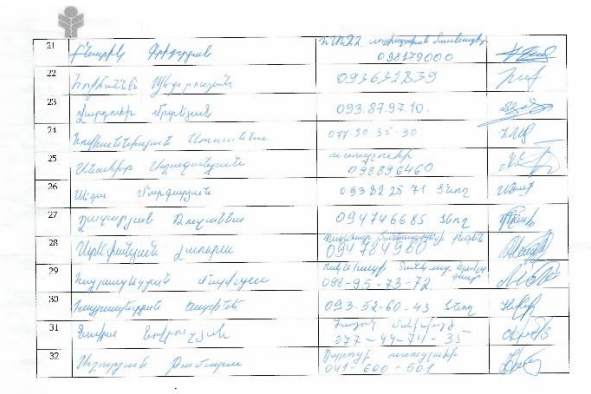
List of participants

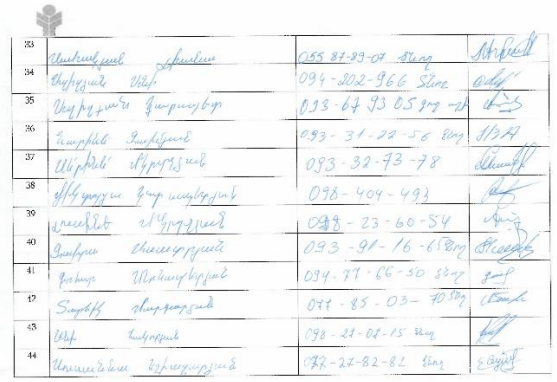

List of Participants

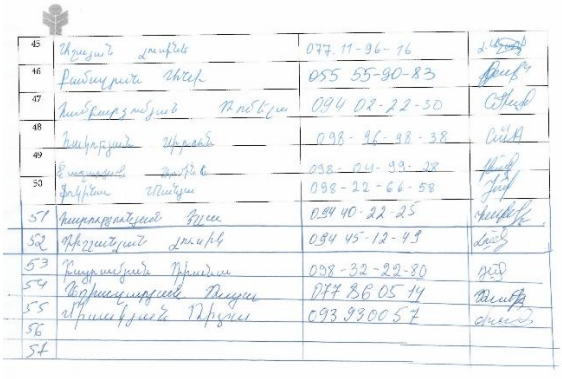
Public hearing on the reconstruction works of Voskehat secondary school

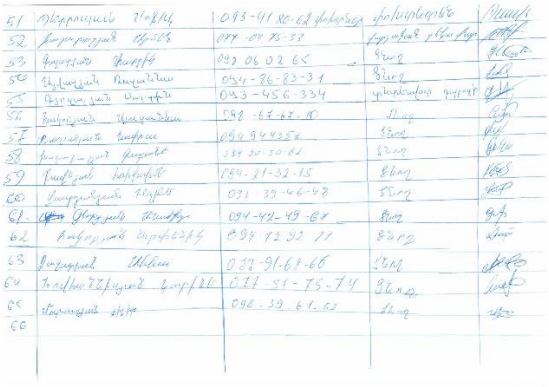
18.05.2023 Voskehat











Photos of the public consultation


Annex 4. Grievance Redress Mechanism (GRM)

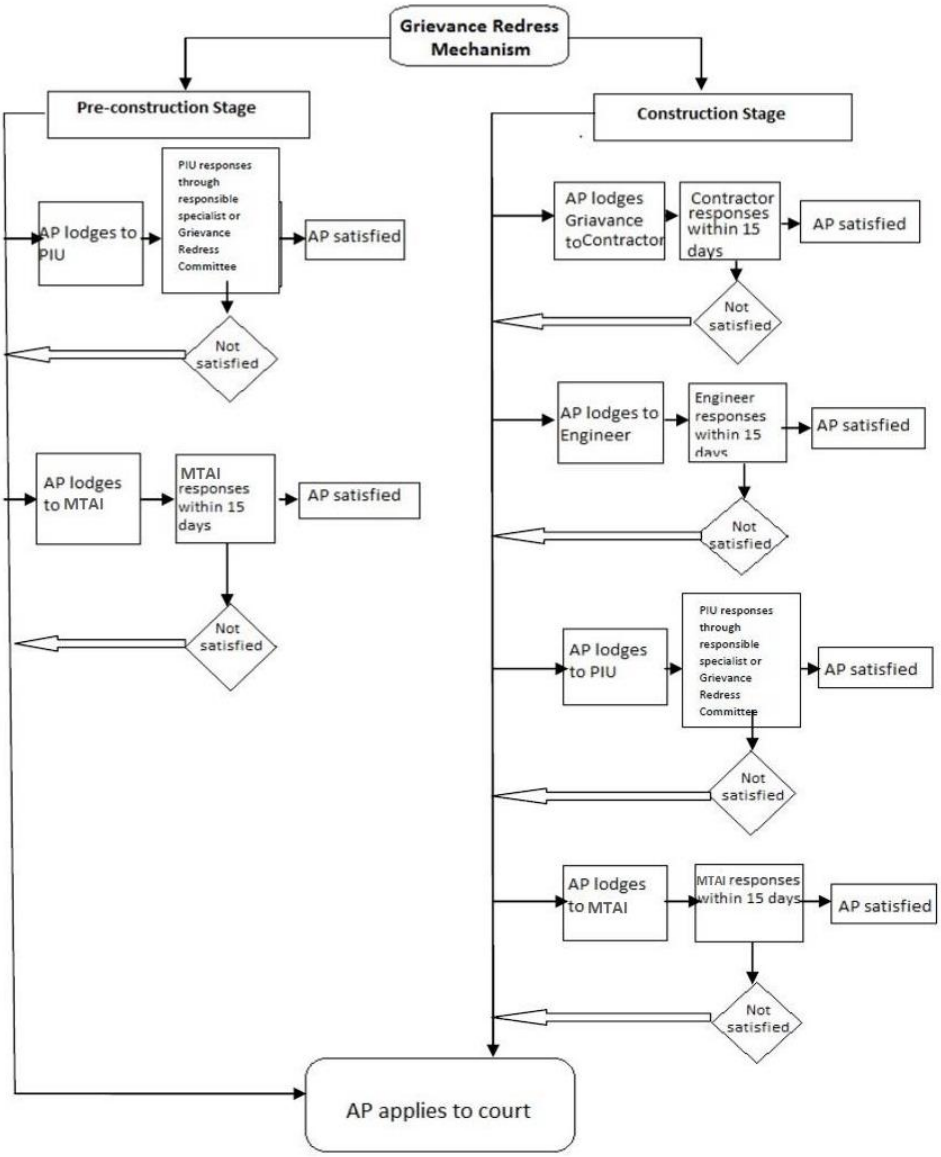
1. A Grievance Redress Mechanism (GRM) inspired by the problem-solving function of ADB guidelines and policies has been developed within IEE/ EMP aiming to continuously communicate with affected people during the project implementation in order to receive and address their concerns, complaints, and suggestions about the Project's environmental performance. The grievance redress mechanism has been designed to enable the Project implementing parties to address the raised issues while keeping the following basic principles:
   - to address affected people's concerns and complaints promptly, timely, and effectively,
   - use a simple procedure and transparent process,
   - have access to all segments of the affected people at no cost and without retribution.
2. The parties potentially involved in the process and addressing the logged complaint shall be APs, Contractor, Engineer, ATDF, EA, and the Court and/or ADB. The mechanism designed to redress the grievances shall be in detail presented to the public. The affected people have been appropriately informed about the mechanism during the public consultation and participation. The same will be done also during further public consultations. Also, information on the existence of GRM and the steps the AP can undertake to raise suggestions or complaints shall be disclosed on the ATDF website.
3. The IEE/EMP contains a special sub-plan for permanent communication with the project-affected people and other interested groups. Moreover, the tender winner contractor shall be obliged with the responsibility to adopt the GRM requirement and install the Project informational board with relevant information on how to apply it on construction sites.
4. The procedural steps of the GRM for the Project to file a complaint on matters relating to the project, environmental concerns, and other issues which are proposed to be included in IEE/ EMP and established for the project are designed and proposed below in the Flow-chart (Figure 1).

Pre-construction stage

5. **Step 1.** The person affected by the Project raises the suggestions/concerns/complaints first of all to the ATDF. The ATDF receives and resolves/replies to the grievance. If an AP is not satisfied with the response or ATDF responsible staff needs additional capacity to address the APs' grievance, the Grievance Review Group (GRG) can be formed to ensure legitimacy, comprehensive, equitable, and transparent discussion of the case. The composition of the GRG should be balanced and include an independent observer to ensure the impartiality and transparency of the complaint review process. The following composition of the GRG is proposed:
   a. Representative of PIU – a Chairperson
   b. Representative of safeguards team (PIU) –a Member
   c. Representative of Local Government, as relevant – a Member
   d. Certified technical expert, as relevant – a Member
   e. Representative of Engineer/Contractor, as relevant – a Member
   f. Representative of the APs - a Member
   g. Independent party (for example NGO) – an Observer

6. **Step 2.** If AP is not satisfied with ATDF's decision even after the GRG has reviewed the grievance, then s/he can log the grievance to the MTAI. MTAI follows RA law On Public Administration for registration, revision, and resolving the case.

Figure 1. Chart of Grievance Redress Mechanism



Construction Stage

7. **Step 1.** The person affected by the Project could raise his/ her suggestions/concerns/complaints first of all to the Contractor's dedicated grievance staff (construction foreman, engineer, social or environmental specialist) so that an attempt will be made to resolve complaints timely and promptly at the local level. The mechanism established by the Contractor will be an integral part of the Project's GRM:
    a. Contractor ensures the provision of contact information (field office location, operating hours, names of responsible contact persons, phone numbers, regular mail and email addresses, etc.) via posters and Project informational boards.
    b. AP's may approach Contractor's representative on-site and/ or register the suggestion /complain into the grievance register book kept by Contractor at the field office located within or nearby the project footprint. The template for recording the grievance, content and format of the application shall be specified in the Contractor's EMP and agreed upon with Engineer.
    c. Contractor addresses the grievance immediately, undertakes appropriate mitigation measures to solve the issue within a reasonable time and within 15 days provides

the written response/reply to the AP with copy to Engineer and ATDF. The filed data regarding the logged complaints/ suggestions shall be provided by contractor in the monthly report which will be updated monthly to reflect the status of the complaint.

8. **Step 2.** Should the AP not satisfied with the Contractors' solution to his/her complain, further opportunities shall be available. AP may then apply to the Engineer by logging the complaint within one month after receiving/not receiving the response from the Contractor. The incoming suggestions/ complains shall be classified into environmental and social/resettlement items. The social/resettlement safeguard related complains shall be handled in the scope of Engineer and ATDF relevant specialists. The Engineer shall respond to the complaint within 15 days.
9. **Step 3.** Should the Engineer fail to satisfy the complaint, AP may apply to ATDF, MTAI, and ADB. The complaint in the Construction stage at the PIU level will be proceeded with the same scheme as in the pre-construction stage. All the contact information shall be provided by the Contractor on posters and on the Project informational board. The contractor shall serve as an entry point in this stage and provide the necessary explanations and assistance in application to the mentioned entities if needed through personal contact with AP.
10. **Finally,** the AP can always seek the attention and interference of the court. However, all the efforts will be made to settle the issues at the Contractor's, Engineer and ATDF's level. If not possible, attempts will be made to resolve the issues at the MTAI level to avoid/minimize litigation as much as possible. Should the AP not be satisfied after exhausting all the possibilities provided by the GRM he/she can apply to ADB. All complaints regardless of the outcome and solutions will be properly documented and made available for review, monitoring and evaluation purposes.

Annex 5. Tasks & Accomplishments of Responsible Entities

Tasks/ accomplishments	Contractor	Supervising Engineer	ATDF	ADB
Capacity building: Appointment of the safeguard's staff	National Environmental, Health & Safety and Social Specialists (full time).	National Environmental, Health & Safety and Social Specialists (full time).	National Environmental Officer (full time) National Social Specialist (full time).	International Environmental Specialist, National Environmental Consultant
Capacity building: Trainings and orientation courses	Conducts trainings on environmental and health & safety. issues in accordance with Safeguard Orientation Plan.	Training sessions on ADB Safeguards and national legislative requirements.	Attends the trainings.	Attends the trainings.
Public consultation & communication	Pre-construction meetings with APs and another public. Establishment of GRM.	Participation in Public Consultations and Contractor's pre-construction meetings.	Participation in Public Consultations and Contractor's pre- construction meetings. Disclosure IEE and annual reports on the website	Public Consultations in the scope of IEE in accordance with ADB SPS (2009). Disclosure IEE and annual reports on the website.
Additional surveys	Pre- construction Road and Property Condition Survey and Survey of trees and shrubs hindering the construction process.	Reviews the report on Contractor's Road and Property Condition Survey and official approval. Review and approval of the Contractors' Survey of trees and shrubs hindering the construction process.	Consideration and approval.	Consideration and clearance.
Contractors' Specific Environmental Management Plan	Preparation and update (if requested).	Review and official approval.	Consideration and approval.	Consideration and clearance.
Mitigation measures as per IEE/ EMP	Implementation of mitigation measures described in EMP on daily basis. Self- monitoring of the implementation on daily basis.	Monitoring of the implementation by Contractor.	Inspection	Audit through the Mission visits.

Site visits	Daily	weekly	Monthly	according to ADB schedule
Method Statements for the Works	Preparation of the Method Statements for the Works including the Environmental/ Health& Safety/ Social impact assessment and mitigation program.	Review Contractor's Method Statement and approval.	Consideration and approval.	Consideration and clearance upon the need.
GRM	Establishment of GRM in accordance with procedures described in IEE. Reporting on GRM and status of complaints within Monthly report.	Monitoring the GRM log- book, follow- up the issues and consultation with APs. Forwarding the issues that are out of Contractor's responsibility to the ATDF.	Following- up the status of correction by Contractor. Solving the issues that are out of Contractor's responsibility or forwarding to MTAI.	Following- up the status of correction.
Reporting	Corrective Action Report based on non- conformance/ partial conformance and corrective action requests set in SE's Mitigation Compliance & Inspection Reports on weekly basis. Monthly Safeguards' Activity Report (SAR) as a part of Contractor's MPR in accordance with format instructed by the Engineer. Accident/ incident report in accordance with format in APPENDIX K. Monitoring report during DLP twice per year.	Review Contractor's weekly CAP and monthly Safeguard's Activity Reports and approval. Review Contractor's Accident/ Incident Report. Preparation of Monthly Environmental Safeguard Report as a part of SE's MPR. Preparation of the End-of- Phase report by the completion of the Construction Phase of the Project.	Annual report to ADB Disclosure of the Annual report on the ATDF website in Armenian and in English Post-construction audit report to ADB. Review Engineer's monthly and End- of- Phase reports.	Disclosure of the Annual report on the ADB website.

Annex 6 (a). Environmental Management Plan: Mitigation

Reconstruction of Voskehat Secondary School				
Project Activities	**Potential Environmental Impacts**	**Proposed Mitigation Measures**	**Responsible Entities**	**Indicative cost of mitigation**
DESIGN PHASE				
Design stage				
1. Preparation of tender and contract documents.	Safeguard considerations are not reflected in tender and contract documents.	Develop Technical Specifications based on mitigation measures defined in the EMP and incorporate environmental clauses into Particular conditions of the tender and contract documents.	Design Engineer/ATDF Develop Technical specifications (TS) and include the relevant environmental clauses into the tender and contract documents. ATDF Review tender and contract documents. ADB Be informed on results of ATDF's review.	Included in Design Engineer budget.
2. Information disclosure, public communication, consultation, and participation.	Lack of information and understanding by stakeholders and affected parties about the Project may lead to frustration and complaints, which in turn could result in delays for the Project.	1. Organize the discussion meetings with key stakeholders and the public consultations/hearings on the Project according to the Public Consultation and Communications Plan. 2. Present the GRM which shall be established for the Project. 3. Place the information on the project and the final IEE/EMP at the ATDF and ADB websites.	Design Engineer/ATDF Organize the public consultations/ hearings events and documents. ATDF Places the information on the project and the final IEE/EMP on website. Assists the organization and participates in the public consultations/ hearings.	Included in Design Engineer/ATDF budget

			ADB Places the information on the project and the final IEE/EMP on website. Participates in the public consultations/hearings.	
PRE-CONSTRUCTION PHASE				
Mobilization stage				
3. Appointment of personnel responsible for environmental/ H&S and social safeguards.	Lack of environmental/ H&S and social management could lead to non-compliance to the contract clauses, TSs and IEE/EMP.	Appoint personnel responsible for implementation and monitoring of compliance of project construction activities to the contract clauses including IEE/ EMP.	ATDF Appoint an Environmental Officer for the project. Supervising Engineer Appoint an Environmental/ H&S Specialist and Social Specialist for the project. Contractor Hire full time Environmental/ H&S and Social Specialists	Included in relevant budgets and contract. Supervising Engineer Remuneration for 24 months is estimated at: US$ 36 000 and is included in budget. Contractor Cost of 1 HSE Specialist available fulltime during the 24 months construction period is estimated at: US$ 24 000.
4. Communication with public	Lack of information and understanding by communities and affected	Implement measures according to Public Consultation and Communication Plan.	Contractor Organize meetings.	Included in Contractor's budget

	parties about the planned works, activities and schedule of their implementation may lead to frustration and complaints, which in turn could result in delays and other impediments for the Project.	1. Conduct the pre-construction meetings on the planned works activities and implementation schedule. For this purpose: ✓ identify the potentially sensitive receptors using the data provided by present IEE/EMP and walk over site visits, ✓ communicate with the heads of Voskehat settlement of the Vagharshapat community informing them and seeking their assistance, ✓ inform the potential APs and public via announcements and posters placed in visible places, containing the information on the project, the date, location and agenda of the meeting, and the contact details, ✓ prepare the brief visual presentation of the Project including the description of civil works, schedule and environmental and H&S mitigation measures, ✓ present to the public the GRM of the present IEE/EMP. 2. Record the pre-construction meeting minutes, agenda, list of participants, raised issues, pictures and include the full information into the EMR. 3. Address the raised issues or forward them to the Supervising Engineer and then report on their status (solved/ not solved) in the first	<u>Supervising Engineer</u> Assists in organizing and participates. <u>ATDF</u> Assists in organizing and participates.	

		monthly progress report.		
5. Orientation, awareness raising and training of all the Project parties on environmental/H&S/ and social safeguards	Lack of information and understanding by the Project's managing, engineering / technical supervision and contractor's staff on the ADB safeguards and Armenian legislative requirements in the area of environmental, H&S and social protection leading to disregard of contract clauses.	Implement measures according to the Environmental and Safety Orientation Plan. Training sessions on ADB Safeguards organized by Supervising Engineer for engineering and environmental, health & safety personnel of ATDF and Contractor prior starting the civil works. Ensure an Environmental orientation/safety induction course organized by Contractor for all Contractors' and sub-contractor's personnel within the first week after the commencement is issued and prior starting the civil works.	<u>Supervising Engineer</u> Organize the training sessions after commencement is issued during mobilization period prior starting civil works. <u>Contractor</u> Develops the Safeguard Orientation Plan and implements training of all the personnel during mobilization period prior starting civil works. <u>ATDF</u> Participates in Training sessions. <u>ADB</u> Participates in Training sessions.	<u>Supervising Engineer</u> The cost of the training is included in the cost of Supervision Engineer's full-time HSE Specialist budget. <u>Contractor</u> The cost of the training is included in the cost of Contractor's full-time HSE Specialist budget.
6. On- site mobilization works: road marking, main office and field camps.	The civil works begin prior the safeguard measures are undertaken.	1. Implement visible road marking and clearly outline the Right of Way by installation of solid and tape fencing (as required by Engineer). 2. Organize the field camp area including the storage, parking, workshops, etc. 3. Provide sanitary facilities for the whole staff. 4. Provide the staff with the uniform and PPE.	<u>Contractor</u> implements the Mobilization Plan. <u>Supervising Engineer</u> Monitors the implementation of the Mobilization plan. <u>ATDF</u> Inspects the implementation of the Mobilization plan.	Included in Contractor's budget.
7. Road and	Local roads might be	Report on the survey prepared and	<u>Contractor</u>	Included in

Property Condition Survey	damaged by the operating machinery and trucks.	submitted prior starting the civil works.	Performs the survey and submits the report on survey. <u>Supervising Engineer</u> Reviews and approves the report. Monitors the implementation of the survey. <u>ATDF</u> Oversees the process	Contractor's budget.
CONSTRUCTION PHASE				
1. Environmental and Health &Safety Orientation Plan				
8. Orientation, awareness raising and training of all the Project parties on environmental/ H&S/ social safeguards	Lack of information and understanding by the Project's engineering / technical supervision and contractor's staff on the ADB safeguards and Armenian legislative requirements on environmental, H&S and social protection leading to disregard of contract clauses.	Implement measures according to the Environmental and Safety Orientation Plan. 1. Implement training of Supervising Engineer's staff on environmental/ H&S/ social safeguards on a regular basis every time when personnel replacement takes place. 2. Implement training of contractor's and sub-contractor's staff on a regular basis according to the Safeguard Orientation Plan following the requirements: a. at least one obligatory training sessions for all the staff per year, b. training of the newly hired staff on safeguards including emergency response training prior to starting the job, c. job-specific safety training prior to starting new type of work, d. intermediary additional trainings on	<u>Contractor</u> Prepares the orientation program. Implements trainings mentioned under the point 2. <u>Supervising Engineer</u> Reviews and approves the Program and assist monitors the implementation. <u>ATDF</u> Inspects the implementation.	<u>Contractor</u> included in the cost of fulltime HSE Specialist. <u>Supervising Engineer</u> Included in the remuneration of EHSS specialist.

		specific topics and/or with targeted working groups upon the Engineer's request, e. other trainings and orientation sessions in accordance with Occupational Health, and Safety Plan.		
2. Occupational Health, and Safety Plan				
9. All site activities	Lack of information on applicable health and safety regulations for the Project may lead to sickness, injury, or death of workers, as well as Project affected people and other people near the site caused by exposure to substances; slips, trips and falls and falling objects.	I. HEALTH & SAFETY ORIENTATION PROGRAM 1. Ensure all the staff is undergone Occupational Health & Safety orientation trainings. 2. Responsible for Health & Safety are appointed in every working section their contacts are placed in visible places. 3. Regular job-specific instructions on safe working of the whole staff as per Armenian legislation and prior starting the new work, as well as newly hired workers prior starting the job are implemented. The register–book is maintained and is available for inspection. II. PERSONAL PROTECTIVE EQUIPMENT 4. Provide to the staff and ensure that everybody on-site is wearing the uniform and PPE. 5. Health& safety accidents/ incidents to be recorded and reported to the Engineer and to relevant authorities. III. TOOLS & AUXILIARY FACILITIES 6. Provide safety tools and establish auxiliary facilities. 7. Exclude unsafe working practices	<u>Contractor</u> Prepares, submits, and implements the sub plan. Hire a reptile specialist (herpetologist) to train the staff and collect and isolate the individuals of snakes and other reptiles if there will be observed in the construction site area. <u>Supervising Engineer</u> Reviews, approves the plan and monitors the implementation. Reviews incident logs. <u>ATDF</u> Reviews the plan and assists the Engineer.	Included in Contractor's budget. Cost of PPE for 60 workers at US $250 per worker is estimated at: US$ 15 000.

		and unsafe tools at the construction site. 8. All the excavated tranches, pits, manholes etc. are safely fenced, covered and protected during and by the end of the working day. 9. Fire-extinguisher is available and easily accessible in all operating machinery, field camps and in all sections of the construction site. IV. WORKPLACE HEALTH CARE 10. Regular medical check-ups of worker's and other personnel's health by the medical worker and records available on-site for inspection. 11. First aid kits are available and easily accessible in all operating machinery and in all sections of the construction site 12. Provide the Contractor's Personnel lubricants, education materials, with sufficient quantity of high-quality condoms, regular STI/HIV testing, and for necessary cases, STI treatments and AIDS treatments, all free of charge. 13. Develop an Infectious Diseases (such as Covid-19) Health & Safety Plan; Ensure availability of Infectious Diseases (such as Covid-19) control means, tools and facilities at all the working areas. V. PUBLIC SAFETY MEASURES 13. Take all reasonable precautions (solid and tape fencing, guard points, prohibiting posters, etc.) to isolate the working area and prevent		

		unauthorized entry to the construction site. 14. Visibly install the signs/ posters informing on the ongoing civil works and warning on the danger. 15. Provide the by-pass way for the local residents and other people to ensure they don't enter the working area. Install the signs indicating the by-pass walkway where needed. 16. Provide safe corridor for passers-by inside the working area when the by-pass is not possible. 17. Provide bridges over the excavated tranches to ensure the access to the residential houses and/or businesses. 18. Keep the pathways used by people clean and exclude the surface became slippy from the mud out-coming from construction sites. VI PROTECTION FROM POISONOUS REPTILES 19. Use the PPE: work with high shafted shoes and protective gloves. 20. As much as possible keep safe distance from any kind of snakes and other reptiles. 21. Involve a reptile specialist (herpetologist) at the beginning of the works, who will train the staff how to recognize them and will capture the individuals of the reptiles found in the working area and release them in a safe place favorable for inhabiting of those animals. 22. Considering that the construction		

		works will be carried out in Armavir marz, where professional medical care is available (in hospitals), there is no need to have an anti-snake serum or other medicines used in case of poisonous snake bites, the victim should be taken to the nearest hospital as soon as possible.		
3. Public Consultation and Communications Plan				
10. Public consultation, hearings, meetings, awareness raising	Lack of information and understanding by communities and affected parties about the planned works, activities and schedule of their implementation may lead to frustration and complaints, which in turn could result in delays and other impediments for the Project.	1. Implement measures described in the present IEE and implement a Public Consultation and Communications Plan. 2. Establish and maintain the GRM for the Project, namely: a. Install posters or project informational boards with relevant information for the Public: field office location, operating hours, names of responsible contact persons, "hot line" phone numbers, postal address and email addresses, etc. b. allocates personal responsible for dealing with issues raised by the Public and APs in every section of the road. Ensure their prompt cooperation with the Social Specialist. c. develops an application template for public complains and suggestions. d. maintains a grievance log-book and keep available at the field office easily accessible for affected people and for inspection. Record all the applications of Aps both written and verbal in the log- book and report on the resolution status in the monthly progress report. 3. Organize regular meetings with	<u>Contractor</u> Implement PCCP and establishes the GRM. <u>Supervising Engineer</u> Addresses and/or forwards the issues out of Contractor's responsibility. ATDF Addressed and solves the issues under his responsibility.	Cost of developing, implementing and managing this sub-plan included in Contractor's budget.

		community members to discuss newly arisen issues if any. 4. Inform the impacted population on any inconveniences like interruptions to traffic access and conditions, blasting works, local water supply, electricity, etc. beforehand (at least 1 day prior) via sign boards and posters.		
4. Flora & Fauna Protection and Vegetation Clearing				
11. Clearing & grabbing and earthworks, other construction works	Degradation of flora and fauna habitat, loss of species. Disturbance of the fauna species and their habitat during clearing of vegetation at detrimental times.	1. Ensure that all workers and other personnel is trained on the requirements of the Flora and Fauna Protection and Vegetation Clearing Plan before commencing work on any section. *Tree (shrubs) cutting.* 2. Clearly mark areas to be cleared or otherwise disturbed. The workers and equipment stay within marked areas to prevent and/ or minimize the damage to habitats. 2. Notify the Engineer prior starting of any cutting the trees and shrubs. 3. A register of cut trees and shrubs is maintained and kept available for inspection. 4. Strictly perform vegetation cutting and clearing works in accordance with Technical Specification Section - Clearing and Grubbing and Section – Trees and shrubs 5. Ensure that workers are using a fit PPE when cutting the trees and applying the vegetation clearing chemicals.	<u>Contractor</u> Prepares the Flora & Fauna Protection and Vegetation Clearing Plan including the Tree Management Plan, implements required mitigation measures and manages. Hire a reptile specialist (herpetologist) to collect and isolate the individuals of snakes and other reptiles if there will be observed in the construction site area <u>Supervising Engineer</u> Reviews and approves the plan, monitors the implementation and management. <u>ATDF</u> Assists the liaison with MoE. Oversees the process and inspects the implementation	Cost of developing, implementing and managing this sub-plan by the Contractor's HSE specialist included in Contractor's budget. The cost for protection of existing community trees for an estimated in Detailed Design trees and shrubs will be estimated in the updated IEE, based on the counted amount and type of trees and shrubs.

		6. Manage the cut down and cleared vegetation as per Waste and Material disposal plan. Exclude burning of the wood waste. 7. Allocate a site for temporary accumulation of the wood waste and cleared grass and remove within 2 days. 8. Put in place measures to protect trees and shrubs that will not be cut but may be affected (marking them easily recognizable for the workers; regulation of vehicles movement, waste and material disposal, etc.). 9. Avoid any pollution of the territory and unnecessary tree cutting and vegetation clearing. Cut only the trees and shrubs which are hindering the works, refrain from destroying, removing or clearing trees, timber, scrub, crops and other flora to any extent greater than is being necessary for the execution of the works. 10. Restore the grassing and other vegetation in the temporary used areas. *Fauna protection measures.* 11. Stop the works in the case when the unknown species are encountered and clarify whether these are Red Book listed, rare or endangered species. If applicable, erect the temporary protective walls on the sections where animals (if any) often appear. 12. Avoid placing waste and/or		

		material outside the project footprint in order to prevent any damage to the surrounding fauna. 13. Use the equipment with low noise, vibration and with less exhaustion in areas close to the encountered nestles and other sections where animals often appear. 14. Schedule the works to minimize the risk of disturbance of nesting/breeding/rearing failure. Avoid construction works in the evening and nighttime, during animal's breeding season, etc. 15. Undertake the measures on protection and notify the Engineer in case of an injured animal is found. 16. If it possible, catch the vertebrate animals found in the construction area, place in special containers and transport to the area typical for the species, far from human settlements. 17. On the stage of the earthworks involve a reptile specialist (herpetologist), who will collect and isolate the individuals (if any) 21. Implement the measures on protection from the poisonous reptiles are proposed in this IEE. 22. Maximally avoid further pollution of the territory and restrict tree cutting.		
5. Environmental Protection Plan				
12. Earthworks Roads works. Hauling and transport of materials	Soil erosion. Excessive dust and air pollution due to vehicle emissions.	*Air pollution and dust control* 1. Minimize dust emissions through regular water spraying of surfaces in areas of construction works.	<u>Contractor</u> Implements required mitigation measures and manages. Draft and submit to the	The following costs are related to the protection of the environment: a) Volume of topsoil

Other construction activities	Excessive noise and vibration.	The frequency of watering shall be agreed with Engineer depending on the soil types and from the seasonal and weather conditions but not less than 2-3 times per working day. 2. Schedule works so that to minimize the exposed excavated areas as a main source of dust emissions and avoid keeping the excavated earth piles on-site for a long time. 3. Deliver the construction material at the time of use and exclude any premature piling of bulk material on-site which cannot be used the very day. 4. Cover the piles of bulk materials should they nevertheless left on-site for a long time to prevent dust emissions. 5. Regulate the speed level of vehicles and machinery to minimize dust emissions. The speed level within the construction site should not exceed 10-20 km/h. 6. Regularly clean the roads from the mud and sand accumulated on the roadsides as they became a source of dust emissions. 7. Ensure all the trucks are using covers while transporting the bulk material on the public roads and within the construction sites next to the residential areas. 8. Provide the workers with dust protective masks as necessary and ensure they are using them. 9. Implement regular technical check-	Supervisor Engineer for approval the Demolition Method Statement. <u>Supervising Engineer</u> Monitors the implementation and management of the required mitigation measures. Review and approve the Demolition Method Statement drafted by Contractor. <u>ATDF</u> Assists the liaison with MoE. Oversees the process and inspects the implementation.	will be estimated in Detailed design. The cost of extraction, stockpiling and reuse topsoil will be estimated based on Detailed Design and included in the Contractor's budget. b) Volume of seeding grass will be estimated in Detailed design and included in the Contractor's budget. Cost of seeding grass on the barren ground where risk of erosion and growth to prevent dust emission during 6 months (180 days) out of the 18 months of the construction timeline will be estimated based on Detailed Design and included in the Contractor's budget. d) Cost of spraying water on barren ground and construction tracks will be estimated based on Detailed Design and included in the Contractor's

		up and repair of the machinery and equipment to avoid excessive gas emissions. 10. Implement and apply the proper technologies for the demolition of old buildings according to the Demolition Method Statement approved by Supervisor Engineer *Soil erosion and sediment control* 1. Preserve existing soil layer where possible. Never disturb the soil if not necessary. 2. Provide temporary cover such as fast-growing grass in areas where soil layer is removed, and the ground is exposed for a long period. 3. Take the necessary measures to prevent soil erosion and to ensure stability of slopes. 4. Strip the topsoil after clearing and grubbing works before starting earth excavations and separate from big stones and rocks. 5. Measure the stripped and preserved topsoil and keep the records in record-book available for inspection. 6. Preserve the topsoil in regular heaps not higher than 2 m in specially assigned areas agreed with Engineer keeping safe distance from waste and other materials. 7. Manage topsoil to keep its chemical and biological qualities. Reuse it for planting trees, shrubs and for other landscaping needs.		budget.

		8. Seed grass on topsoil heaps preserved for a long period to avoid erosion and losses. 9. Make the drainage lines on the topsoil heaps to ensure the storm water outflows in order to avoid erosion. *Noise & vibration control.* 1. Avoid locating construction facilities, camps, machinery and equipment near sensitive receptors such as poorly insulated houses, schools, other public and residual areas. 2. Schedule noisy activities towards the middle of the day whenever it is practicable. 3. Ensure that vibration levels at sensitive receptors (poorly insulated houses, schools) are regularly controlled: the foremen and workers are aware on the proper construction method requested by the Engineer is applied. 5. Ensure that all machinery is equipped with proper silencers and exclude those that are improper state. 6. Ensure workers and other staff on-site are provided with appropriate PPE including ear protective equipment while working in noisy environment.		
6. Surface and Underground Water Protection plan				
13. School re-construction works	Surface and underground water pollution.	1. Locate pollution, dust and sediment producing facilities and equipment as far away from irrigation canal and water ditches as possible. 2. Construct a drainage system of the	<u>Contractor</u> Implements required mitigation measures. <u>Supervising Engineer</u>	Included in Contractor's budget.

		working area, preliminary collect run-off water and treat before the discharge into the local drainage line. Prevent any untreated discharge of storm and run-off water from all construction sites. 3. Prevent run off from all construction sites including: construction camps, quarries, crushing, and concrete batch plant, waste disposal site, etc. 4. Clean the runoff flows originated by construction activities from soil and other sediments prior discharge into the canals. 5. Regularly inspect, repair and maintain drainage structures to avoid any sedimentation especially after rainfall events. 6. Construct oil-separators and catchers of other substances to strictly control the discharge of solid and liquid wastes into the irrigation canal and water ditches. 7. Clean the machinery and equipment, undertake works on repair and refueling at safe distance from the irrigation canal and water ditches. 8. Install catchers at all trucks and machinery to prevent water pollution in the event of accidental spillage. 9. Exclude any unpermitted intake and provide unrestricted stream flow in the irrigation canal and water ditches. 10. Install penstock or similar restriction devices at all facilities to prevent pollution in the event of accidental spillage.	Monitors the implementation and management. <u>ATDF</u> Assists the liaison with MoE. Oversees the process and inspects the implementation.	

7. Utilities Protection and Relocation Plan				
14. Earthworks and Utilities relocation works	Damage of operational utilities and disruption of provided services causes impact and raises dissatisfaction of APs.	Contractor shall notify the population on all the interruptions in water, electricity, gas supply prior starting works in the area. 1. Implement the protection and relocation of utilities strictly in accordance with Technical Specifications. 2. Together with utility owner identify the exact location of services and, if necessary, carry out the trial excavations. 3. Schedule and implement the works to minimize the temporary disturbance of services. 4. Notify the APs on the possible disturbance of services prior to the start of works. 5. Relocate utilities discovered during construction works that were not identified during the Design stage or protect them from the possible damage. 6. Restore the damaged utilities during maximum 1-2 days on contractor's own expense.	<u>Contractor</u> Survey utilities prior excavation works. Liaise with utility owners, local authorities, and service providers. <u>Supervising Engineer</u> Supervises and monitors the implementation. <u>ATDF</u> Assist with liaison with owners, local authorities and service providers.	Cost of protecting and relocating utilities cannot be exactly counted as an environmental mitigation measure.
8. Construction Work Camps Plan				
15. Establishment of works' related facilities: main office and field camps including the	Disturbance to local residents, possible conflict situation with population and local/central authorities, as well as soil	1. Locate the field camp strictly within the project footprint as far as possible from residential areas to avoid disturbing the residents. 50 m buffer distance from sensitive receptors:	<u>Contractor</u> Implements required mitigation measures and manages.	Cost of developing, implementing and managing this sub-plan by the Contractor is already

mobile houses, equipment and material storage area, machinery parking area, sanitary and lunch- and rest-time facilities for workers and other staff	and ground water pollution.	residential and other buildings and businesses is kept. 2. Should the camp be established outside the project area then obtain the landowner permission prior establishment of the camp on his/ her territory. 3. Avoid installing camps, temporary structures, vehicle and machinery parking and other facilities on natural landscape and on surfaces covered with vegetation. 4. Supply sanitary facilities for the whole staff: sufficient drinking and washing water, toilets, mealtime and rest time season-fit facilities. Ensure that such facilities are available to all workers and other staff have reasonable access to proper comfort stations (toilets, hand sinks, showers, etc.), canteen and offices. 5. Ensure the lightning of the construction site and camp in the nighttime. 6. Material temporary storage areas allocated, and the material collected in regular heaps and covered in the case of fugitive substance. 7. The sacks and containers are to be provided with the label indicating the name of material and harmfulness- hazardous/ non-hazardous. 8. Machinery parking, repair and re-	<u>Supervising Engineer</u> Monitors the implementation and management. <u>ATDF</u> Oversees the process and inspects the implementation.	included into the general construction costs.

		fueling workshop organized in the impenetrable area covered with gravel and/ or other absorbent, 9. Regular technical inspections of the machinery implemented prior starting working day to prevent any leakage and contamination of soil. 10. In the case of oil, lubricants, fuel leakages the area are cleaned, and the contaminated absorbent removed to the designated waste disposal site. 11. Camp area wash cleaning regularly organized to prevent the spread of mud and dirt from the construction site will be spread. 12. All reasonable precautions are taken (solid fencing, guard points, etc.) to prevent unauthorized entry into the site. 13. All the machinery including the private cars of the working personnel are provided with Project and/or Company logos.		
9. Site Management Plan (for the areas used outside the project footprint)				
16. Quarries and borrow sites Concrete batching and asphalt plants Crasher plants Dump sites	Noise and dust related nuisance, Impacts on ambient environment including the historical, cultural sites and monuments, losses to aesthetics, disruption of local livelihood and communication patterns, interaction with the	1. Give preference to existing quarries, concrete batching and asphalt plants, instead of opening new ones. 2. Establish and operate the quarry and borrow pit, dumping site, concrete batching asphalt plants strictly in accordance with the Site-specific environmental management plan (SSEMP) approved by the Engineer. 3. In the event, that concrete batching	<u>Contractor</u> Prepares the SSEMP, implements required mitigation measures and manages. <u>Supervising Engineer</u> Reviews and approves the plan, monitors the implementation and	Cost of developing, implementing and managing this sub-plan by the Contractor is already included into the general construction costs.

	construction work force, pressure on surrounding natural resources such as erosion and sedimentation, road damage, and human services.	and asphalt plants are newly established, this will be implemented, as far as possible from the potential impacted receptors identified based on the risk assessment within (SSEMP) that is from residential areas to avoid disturbing the local population. 4. Avoid installing concrete batching and asphalt plants on undisturbed natural landscape and on surfaces covered with vegetation. 5. Apply all the mitigation measures planned above to minimize impact on air, water quality, flora and fauna, drainage and other utilities, as well as population of nearby residential areas. 6. Prepare TMP for access and operation of machinery. 7. Prepare waste management plan to address all the issues related to the waste generation.	management. ATDF Inspects the implementation	
10. Traffic and Access Management Plan				
17.Vehicle movements on and off the construction site	Blocking the traffic Hazards and safety issues related to traffic. Damage to local roads by construction heavy equipment and vehicles. Dust, Noise & vibration Dirt and mud carried onto public roads.	1. The Contractor is required to undertake a Pre-construction Road and property Condition Survey to document the condition of the local road network and roadside-affected properties and shall offset and restore any caused damage. 2. Organize the movement of vehicles and machinery in a manner creating least interference to the flow of public traffic. 3. Escape blocking the public roads not envisaged by the TMP scheme. 4. Ensure availability of temporary by-	Contractor Implements, and manages the. Supervising Engineer Monitors the implementation and management. ATDF Inspects the implementation	Cost of developing, implementing and managing this plan by the Contractor is already included in general construction costs.

		pass roads for traffic and pedestrians. Obtain approvals from official authorities for TMP including the temporary by-pass traffic routes. 5. Locate entrances and exits of the construction sites so that they cause minimal disturbance to general traffic and that they do not compromise public safety. 6. Install enough signs warning on the ongoing civil works and signs, marking and flagmen regulating the traffic at all possible entrances to the construction site. 7. Implement an appropriate construction signage scheme including direction signs, markings, traffic signals, lighting, clearly visible solid barriers to channel traffic, and maintenance of diversions. 8. Ensure alternative safely fenced walkways for pedestrians. 9. Ensure unrestricted 24 hours access of public to houses, shops, business, etc. 10. Reinforce 20 km/h speed limits within the working area for safety and dust control. 11. Schedule the movement of vehicles to avoid rush hours where practicable. *Vehicle management on and off-site* 12. Regularly train drivers on safety, impose the working hours and speed limits (20 km/h), apply penalty system for disobedience.		

		13. Allocate parking area and locate parking of machinery in designated sites only. 14. Ensure that all vehicles (trucks and private cars) are provided with identification logos of the company. 15. Ensure that the vehicles are provided with and are using covered loads when carrying sand, soil, spoil, and waste material when leaving construction site and within the working area close to residential houses and businesses. 16. Ensure that vehicles are equipped with exhaust attenuators, silencers 17. Allocate a properly equipped workshop area for repair, re-fueling and maintenance of trucks and vehicles and treat the vehicles only within this area. 18. Check that vehicles are regularly maintained to prevent fuel and oil leakages. 19. Stop the operation of leaking machinery and replace with those in proper working condition. 20. Provide measures on cleaning the tires (graveled surfaces and vehicle wash facilities at site provided with suitable runoff protection) before leaving the construction site to prevent the construction dirt and mud be spread out 21. Check regularly dirt and mud accumulation coming from the construction sites on adjacent roads. Sweep and clean whenever is		

		required.		
11. Emergency Response Plan				
18. Handling hazardous substances and other emergency situations (incidents, accidents, etc.)	Potential work and public safety hazards related to construction. Leakage or spillage of diesel fuel, oil or other toxic substances entering soil, and groundwater.	*Handling hazardous substances* 1. Develop and implement procedures to ensure safe handling and storage of hazardous substances. Visibly attach the posters with emergency response procedures and keep the safety data sheets available for inspection. 2. Keep the tools for clean-up of spillages readily available on site and train the workers on their proper use. 3. Clean the area of spillage immediately to prevent potential contamination of soil and groundwater using dedicated absorbent material. 4. Use only those chemicals and indicated hazardous substances and update the list when needed. 5. Those substances should be stored on site, provided with identification labels, and covered, within secure and naturally ventilated area with an impervious floor and impervious bund around it. The bund should have a capacity of at least 110% of the capacity of the largest tank. 6. Locate the storage area away from drainage lines and keep the access strictly restricted only for authorized people. 7. Provide all construction sites with emergency contact information, site responsible persons & safety officer name(s), telephone numbers, etc. 8. Ensure that the ER and all	<u>Contractor</u> Implements required mitigation measures and manages. <u>Supervising Engineer</u> Monitors the implementation and management. <u>ATDF</u> Assists the liaison with MoE. Inspects the implementation	Cost of developing, implementing and managing this sub-plan by the Contractor is already included into the general construction costs.

		personnel handling chemicals and hazardous substances receive hazard and risk management training. 9. Inform the SE on any large-scale spillages and leakages that could lead to the soil contamination and water pollution. *Work and public safety accidents/ incidents* 10. Immediately inform the Engineer on any accidents/ incidents/ near misses happened within construction area and in close vicinity and undertake the first aid measures. 11. Investigate the case determining the reasons and report by filling in the accident report form. 12. Undertake effective measures to prevent the re-occurrence in the future.		
12. Waste and Material Management Plan				
19. All site activities	Spoil disposed in inappropriate locations. Pollutants from the waste and materials are entering the drainage system and/or infiltrating the groundwater. Potential hazards related to road safety and construction because of not cleared construction sites. Potential hazards related	*Management of construction material* 1. Allocate a storage area for all the type of material used during construction equipped with fit facilities for every type. 2. Avoid delivering excessive quantities of material and their long-term accumulation within construction area. 3. Cover the heaps of fugitive material to avoid spread and dust. 4. Keep the working instruments, tools and auxiliary facilities like staircases, scaffolding, welding and cutting equipment, etc. regularly organized	<u>Contractor</u> Implements and monitors. <u>Supervising Engineer</u> Monitors the implementation and management. <u>ATDF</u> Assists the liaison with MTAI and MoE in obtaining permits and disposal sites. Inspects the implementation	Cost of developing, implementing and managing this sub-plan by the Contractor is already included into the general construction costs. Cost of the removal and disposal of waste is included in the contractor's budget.

	to disposal of the damaged solar panel's moduls	within the allocated storage areas. 5. Keep the dangerous and hazardous material in special facilities provided with safety equipment, labels and posters warning on danger. The facility will be covered and secured to restrict access to it and contain a waterproof pavement that directs runoff to a safe storage area. 6. Regularly inspect the integrity of containers keeping the liquid material to avoid the leakages and spillages. *Waste Management* 1. Categorize, spoil and other construction wastes by types: solid, liquid, dangerous and hazardous, as well as recyclable material. 2. Maintain the Record-book for registering the type and quantity of the generated waste, update the registered data at the beginning of every month and keep available for inspection. 3. Organize a training program on waste management for the Contractor's Personnel and ensure all the staff is trained. 4. Remove construction waste, garbage and rubbish from the site regularly to avoid dust and long-term accumulation of the litter. The frequency of removal as a threshold for monitoring purposes will be specified by SE. 5. Before the transportation and final disposal collect all the waste and		

		material in regular heaps at the temporary accumulated sites within the project footprint or at the areas agreed with the land plot owner. 6. Collect excessive amounts of oil, lubricants and fuel to avoid spillages. Hold them in sealed tanks for proper disposal in allocated disposal sites. 7. Collect all the waste oil and re-use within the construction process or deliver to the waste oil processing facility, otherwise collect in special containers and transport to the approved disposal area. 8. Construct the wash water drainage system and direct into the local sewage line. 9. Collect wastewater in special reservoirs and properly treat it from oil and fuel before entering the local sewage line. 10. Obtain all permits for waste disposal and dispose only in permitted sites. 11. Install special containers for garbage collection provided with covers in necessary amounts at all the construction sections in reasonable distance comfortable for the use and at the Contractor's facilities-offices, field camps and mobile houses. 12. Garbage collection containers have sufficient capacity to contain the expected waste for the period before they are next emptied. 13. Timely empty the garbage collection containers avoiding the		

		overloading. The garbage and litter are to be removed from the site daily or even more frequently especially in summer season. 14. Avoid any stockpiles outside the project area that may become an impediment for the traffic and public. 15. Any solar panel modules damaged during the construction phase will be transported to the premises of the solar panel system's installation contractor. These modules will undergo storage, subsequent processing, recycling, or potential reuse. 16. Storing the waste from these damaged modules within the project area or depositing it in municipal landfills is explicitly prohibited.		
13. **Cultural Heritage Management Plan (chance find procedure)**				
20.Construction activities at immediate vicinity to the archaeological or historical sites	Damage and loss of the archaeological, historical and cultural resources.	In the event of archaeological chance find, the Contractor follows the hereunder procedure: ✓ stops works immediately. ✓ notifies the Supervising Engineer and ATDF. ✓ isolates the site. ✓ documents (photographs) the finds and the immediately surrounding area. ✓ informs the MoESCS and consults to determine how to preserve. ✓ obtains the MoESCS permission to proceed with construction works.	<u>Contractor</u> Follow chance find procedure when needed. <u>Supervising Engineer</u> Modifies the design to integrate recommendations of Archaeological/cultural Investigation if any. ATDF Assists with liaison with relevant authorities. Inspect the implementation.	<u>Contractor</u> If archaeological chance find resources are discovered, included in total construction cost, estimated to be maximum 2% of the general construction cost.
14. Site Reinstatement, Landscaping, and Revegetation Plan				

21. Site reinstatement of all areas. Re-vegetation, and landscaping	Construction waste and materials are not removed and are left on construction site. Cleared vegetation and trees are not fully off-set by vegetation restoration works. The site aesthetics is not satisfactory	1. Remove all construction-related materials and equipment from the working and surrounding area including mobile houses, wastes and unused materials. 2. All machinery including unserviceable machinery and vehicles are to be removed from the site. 3. Remove all the temporary facilities and temporary fencing taking the site over. 2. The site landscaped to ensure that the area drains properly. 3. Clean the construction site from the litter and traces of oil and fuel spillages if any. 4. Restore the soil layer and loosen soil caused by heavy machinery where needed. 5. Perform the vegetation restoration works according to the Landscaping design and Tree Management Plan, which includes planting, maintenance and monitoring to ensure high survival rate and fast growth of trees, shrubs, other plants and lawn.	<u>Contractor</u> Implements all the measures under the p.1-p.5 <u>Supervising Engineer</u> Provides the landscaping design. Reviews the plan and monitors the implementation. <u>ATDF</u> Monitors the implementation	The cost for protection of existing community trees for an estimated in Detailed Design trees and shrubs will be estimated in the updated IEE, based on the counted amount and type of trees and shrubs. Costs are related to trees and shrubs situated in the school area.
POST-CONSTRUCTION PHASE				
Defect liability period	All the impacts identified in Construction Phase	All the activity-specific mitigation measures envisaged in the Construction Phase Environmental audit by the end of DLP	<u>Contractor</u> Implements the EMP for the time period the Contractor has implemented defect correction works and provides an environmental safeguard report to Engineer.	Cost of monitoring by the Contractor cannot be evaluated at the moment.

			Supervising Engineer Monitors the tree and other plants' survival during the works and DLP provides an environmental safeguard report to ATDF. ATDF Post-construction environmental audit will be performed, the check list prepared and submitted to ADB.	
School administration	Landscaping aesthetics is endangered	Monitoring the growth and health of trees, shrubs, other plants, and lawns, replacement of the death, damaged, or unhealthy specimens, and re-seedling of the incorrectly grown surfaces of lawns.	School administration Develops and establishes the Environmental Social Management System. ATDF Implements an environmental audit on annual basis.	Cost of long-term audit by the ATDF included in ATDF budget

Annex 6 (b). Environmental Management Plan: Monitoring

	Activity / Location	Parameters to be monitored	Monitoring Location/s	Instruments & Method	Environmental Performance Indicator	Responsible Entities	Frequency (formal monitoring)
	1	2	3	4	5	6	7
	PRE- CONSTRUCTION PHASE (Mobilization stage)						
1.	Work opportunities for local workers, unskilled	local workers, unskilled workers and women hired	Construction site	Review of Contractor's documents including the	Number of local workers, unskilled workers and women	Contractor Develops the hiring program for local and unskilled	Once during the mobilization when Contractor is

	workers and women			number of jobs postings for the local workers, unskilled workers and women.	that have been hired for the project.	workers, and for women. <u>Supervising Engineer</u> Social Specialist reviews the Contractor's hiring program and approves. The cost of the supervision will be included in Engineer's budget. <u>ATDF</u> Supervises the Supervising Engineer	planning the recruitment. Update and reporting during construction phase.
2.	Safeguard's Management System	Personnel responsible for environmental / H&S and social safeguards is appointed.	Construction site	Review the CVs and interview with the candidates.	CVs of Contractor's environmental, H&S and social specialists, the list of site responsible persons	<u>Contractor</u> Provides the CVs of Environmental specialist, H&S Specialist and Social Specialist, the list of site responsible persons and hires them after Supervising Engineer's approval. <u>Supervising Engineer</u> Reviews the CVs and approves the safeguard	Once during the mobilization and update in case of replacement and changes in design.

						specialists. ATDF Supervises the process.	
3.	Pre-construction meetings about the planned works	Pre-construction meeting with public is organized and implemented.	The area for which a permission for commencement of works is issued.	Information disclosed via posters, invitations. Presentation material prepared. Meeting organized documentation maintained.	Contractor's posters, presentation material, MoM	Contractor Prepares presentation material, organizes the meeting with public, invites the Engineer, prepares MoM. Supervising Engineer Informs the ATDF, participates in the meeting and reviews the Contractor's MoM ATDF Invites the ADB representatives to participate in the meeting. Supervise the process.	Once during mobilization period and every time when a new permission for commencement of works is issued
4.	Orientation, awareness raising and training on environmental/ H&S/ social safeguards	Training session is organized and implemented.	Construction site.	Review of Contractor's Training Program including the training material. Attendance of the Training course organized by	Number of engineering, managing and working staff of contractor and sub-contractor's attended the training course.	Contractor Implements the Training program, invites the Engineer and reports. Supervising Engineer	Once during the mobilization period for all the staff and when a new sub-contractor is contracted.

				Contractor.		Informs the ATDF, participates in the training and reviews the Contractor's report. <u>ATDF</u> Invites the ADB representatives to participate in the training. Supervises the process.	
5.	On-site mobilization works	Road marking implemented, main office and field camps established.	Construction site.	Review of Contractor's Mobilization Plan. Monitoring site visits.	All the requirements set in Mobilization Plan and implemented.	<u>Contractor</u> Prepares and implements the Mobilization Plan. <u>Supervising Engineer</u> Reviews and approves the Contractor's Mobilization Plan. <u>ATDF</u> Supervises the process.	Once during the mobilization period and further as soon as permission on commencement in new road sections is issued.
6.	Occupational Health and Safety	Uniform and PPE provided to all the personnel. Safety equipment installed and established at	Construction site.	Monitoring site visits.	All construction sites are safely equipped. All the personnel are provided with uniform and PPE.	<u>Contractor</u> Implements the Occupational Health & Safety requirements. <u>Supervising Engineer</u>	Once during the mobilization period and further during construction.

		all the construction sites.				Monitors implementation. <u>ATDF</u> Supervises the process.	
	CONSTRUCTION PHASE						
7.	Environmental and Safety Orientation	Uniform and PPE provided to all the personnel. Safety equipment installed and established at all the construction sites.	Construction site.	Inspection of Occupational Health & Safety Documentation Inspection of construction sites Inspection of Register of incidents and/or accidents	Safety instructions are available at field office. List of attendees to the training session is available. Reports on site inspection visits are available. Incident/ accident reports are available	<u>Contractor</u> Implements the Occupational Health & Safety requirements and self-monitors. The cost included in Contractor's budget. <u>Supervising Engineer</u> Monitors the Occupational Health and Safety requirements implementation. Supervision cost is included in Engineer's budget. <u>ATDF</u> Supervises the process	According to the regular monitoring schedule.
8.	Public Consultation and Communications	Information for APs about Project's Grievance Redress Mechanism.	Construction site.	Review of Register log- book. Monitoring site visits.	Public Consultation and Communication Plan is available. GRM	<u>Contractor</u> Implements Public Consultation and Communication Plan	According to regular formal monitoring Schedule.

				Public consultations and meetings.	implemented.	<u>Supervising Engineer</u> Reviews and supervise the Public Consultation & Communication Plan implementation. Supervision cost is included in Engineer's budget. <u>ATDF</u> Supervises the process	
9.	Cultural Heritage Management (chance find procedure)	Implementation of mitigation measures set in the Cultural Heritage Management Plan.	Construction site.	Visual monitoring via the site visits.	Archaeological and chance find training implemented.	<u>Contractor</u> Implements the Cultural Heritage Management Plan requirements. <u>Supervising Engineer</u> Supervise the Cultural Heritage Management Plan requirements implementation. Supervision cost is included in the Engineer's budget. <u>ATDF</u> Supervises the process	The Plan is to be validated prior the commencement of construction works and then updated regularly to meet the changes in case of new discoveries. Regular monitoring is according to the regular formal monitoring.

10.	Surface and underground water Protection	Implementation of mitigation measures .	Irrigation canal	Visual monitoring of the construction works near the surface water bodies	Surface and Underground Water Protection plan is available	<u>Contractor</u> Implements the Surface and Underground Water Protection plan requirements. <u>Supervising Engineer</u> Supervises the Surface and Underground Water Protection plan requirements implementation. Supervision cost is included in the Engineer's budget. <u>ATDF</u> Supervise the process.	According to the regular monitoring schedule.
11.	Flora & Fauna Protection and Vegetation Clearing	Vegetation clearing is minimized to the extent possible. Vegetation near the work sites is protected.	Construction site.	Monitoring site visits Review the register of cut trees and shrubs	Mitigation measures are put in place for protecting Fauna or Flora species. The register of cut trees and shrubs is available.	<u>Contractor</u> Implements and self-monitors the Flora and Fauna Protection and Vegetation Clearing Plans' requirements. Monitoring cost is included in contractor's budget. <u>Supervising Engineer</u> Supervises the Flora & Fauna Protection	According to regular formal monitoring Schedule.

						and Vegetation Clearing Plans' requirements implementation. Supervision cost is included in Engineer's budget. <u>ATDF</u> Supervise the process.	
12.	Utilities Protection and Relocation	Cases of disruption of services impacting the end Users. Re-location of utilities according to the design and newly discovered and their allocation.	Construction site.	Monitoring site visits	Cases of disruption of services impacting the end users recorded and investigated.	<u>Contractor</u> Implements and self-monitors the Utilities Protection and Relocation Plans' requirements. Monitoring cost is included in the Contractor's budget. <u>Supervising Engineer</u> Supervises the Utilities Protection and Relocation Plans' requirements implementation. Supervision cost to be included in Engineer's budget. <u>ATDF</u> Supervise the process.	According to regular formal monitoring Schedule.

13.	Environmental Protection	Soil erosion and weed's invasion. Sediment laden run-off. Water pollution and sedimentation. Topsoil stockpiles. Emissions of dust & other air pollutants. Noise and Vibration level.	Construction site. Sensitive receptors for Air quality. Noise and Vibration sensitive receptors located at the zones 50-100 m away from the construction activities.	Visual monitoring of construction sites Review of the complaints logged in the GRM.	Number and severity of complaints logged in the GRM. Monitoring visits of construction sites sensitive to erosion, drainage sedimentation, as well as topsoil stockpiling sites.	<u>Contractor</u> Implements the Environmental Protection Plan and self-monitors. The cost is to be included in Contractor's budget. <u>Supervising Engineer</u> Supervises and monitors the implementation of mitigation measures. The cost is to be included in Engineer's budget. <u>ATDF</u> Supervises the process	According to monitoring schedule.
14.	Construction Work Camps	Location, layout and management of work camps.	Field based main office and field camps.	Review the Work Camps Plan implementation.	Location and the layout of the Construction Work Camp comply with the requirements. Number and severity of complaints logged in the GRM.	<u>Contractor</u> Implements the Construction Work Camps Plans' requirements and self- monitors. The cost is to be included in Contractor's budget. <u>Supervising Engineer</u> Supervises and monitors the	Regular monitoring is according to the regular formal monitoring schedule

						implementation of mitigation measures. Supervision cost is to be included in Engineer's budget. ATDF Supervises the process	
15.	Site Management Plan (for the areas used outside the project footprint)	Location layout and management of quarries, borrow pits, waste disposal sites, concrete batching and asphalt plants (if any) Nuisances to the locals.	Borrow pits, waste disposal sites, construction camps, concrete batching, asphalt plants (if any)	Review the Site Management Plans	The Site Management Plans are available. The layout of the location of used territories complies with the specifications of the Plan. Number and severity of complaints logged in the GRM.	Contractor Develops the Site Management Plans, implements and self- monitors. The cost is to be included in Contractor's budget. Supervising Engineer Reviews and monitors the Plan. Supervision cost is to be included in Engineer's budget. ATDF Supervises the process	The Plan is to be developed and validated prior the commencement of construction activities. Regular monitoring is according to the regular formal monitoring schedule.
16.	Traffic and Access Management	Public roads and access locations. Material and waste transportation	Roads used for transportation of equipment, material and wastes. Accesses to the	Monitoring site visits	The Traffic and Access Management Plan is available and is approved by the Road Police.	Contractor Implements the Traffic and Access Management Plan and self- monitors. The cost is to be	Regular monitoring is according to the regular formal monitoring schedule

		itineraries. Nuisances to locals and public safety issues. Damages to the road and drainage lines.	construction site.		Itineraries and access locations and layouts comply with specifications. Number and severity of complaints logged in GRM	included in Contractor's budget. <u>Supervising Engineer</u> Supervises and monitors the implementation of mitigation measures. Supervision cost is to be included in Engineer's budget. <u>ATDF</u> Supervises the process	
17.	Emergency Response	Handling of hazardous substances. Management of hazardous health& safety situations.	Construction site.	Monitoring site visits	The Emergency Response Team is assigned and have received the training. All accidents/ incidents/ near misses are recorded and treated.	<u>Contractor</u> Implements the Emergency Response Plans' requirements and self- monitors. Monitoring cost to be included in Contractor's budget. <u>Supervising Engineer</u> Supervises and monitors the implementation of mitigation measures. Reviews the Accident report.	Regular monitoring according to regular formal monitoring schedule. Accident report whenever the accident/incident/ near miss happened.

						ATDF Supervises the process	
18.	Waste and Material Management	Management of waste and construction material during construction.	Construction site. Waste temporary and permanent disposal sites.	Inspection of Waste records.	Legal grounds for waste categorization and disposal are obtained and are available. All types of wastes and material are managed in compliance. A waste register is maintained.	Contractor Implements the Waste and Material Management Plans' requirements and self- monitors. The cost is to be included in contractor's budget. Supervising Engineer Supervises and monitors the implementation of mitigation measures. Supervision cost is to be included in Engineer's budget. ATDF Supervises the process	According to regular formal monitoring schedule. The waste register is updated at the beginning of every month.
19.	Site Reinstatement, Landscaping, and Revegetation	Construction site is cleaned from all the material, equipment and waste. All the temporary used surfaces are restored	Construction site	Site inspections	All the used surfaces are restored to their original state. Location and number of trees and shrubs planted complies with the landscape design documents.	Contractor Implements the Site Reinstatement, Landscaping, and Re-vegetation Plans' requirements and self-monitors. Maintains the landscape areas over the period	Monitoring implemented according to the regular formal monitoring schedule. During the DLP the health state

		and revegetated.			98% of trees and shrubs seedlings survived the liability period.	specified in the contract. Monitoring cost to be included in contractor budget. <u>Supervising Engineer</u> Supervises and monitors the implementation of mitigation measures. Supervision cost to be included in Engineer budget. <u>ATDF</u> Supervises the process and implements inspection visits.	and growth of shrubs and trees is checked twice per year, in late spring and early fall.
20.	Records and reporting	Site inspection checklists, Minutes of meetings, Log-books for APs, Consultation records, Training records, Accident/ incident reports, Corrective Action Reports.	Reports submitted to the Supervising Engineer Log-books available at main office within project site	Review of the records/ reports	Records are available and are correctly completed. Follow-up records are available.	<u>Contractor</u> Provides the CAP s keeps and maintains the log- books, public consultation records, training records, etc. <u>Supervising Engineer</u> Reviews the Contractor's records/ reports. Reports to ATDF	Contractor submits weekly CAP and monthly progress report. Engineer submits a monthly progress reports, End of Phase report, Audit report ATDF submits the

						ATDF Reviews the Engineer's reports. Reports to ADB	annual report to ADB
	POST-CONSTRUCTION PHASE (Defect Liability Period)						
21.	All the works on elimination of defects	Impact on the environment because the EMP is not followed and is neglected.	Project RoW, all the working areas.	Visual monitoring site visits.	All the paragraphs of IEE/EMP	Contractor Implements the IEE/EMP and monitors. Supervising Engineer Supervises the implementation of IEE/EMP. ATDF Implements audit site visit. Reports to ADB	At least twice per year and at the end of works and until Snag-list is signed
22.	Landscaping	Normal growth of trees, shrubs and lawn	All surfaces where the landscaping works have been implemented	Visual monitoring site visits	Sanitary state and growth of trees, shrubs and lawns	Contractor Monitors the state of landscaping and ensures the sanitary state and growth of 98% of all the trees and shrubs. The cost of monitoring will be included in Contractor's budget. Supervising Engineer Monitors the state of landscaping and	At least twice per year and at the end of works and until Snag-list is signed

						sanitary state of planted trees/ shrubs twice per year. Reports to ATDF <u>ATDF</u> Landscaping control the sanitary state and growth of trees and shrubs Reports to ADB	

Annex 7. Accident/incident report forms

INCIDENT NOTIFICATION FORM			
Project:		**Incident Date:**	
Location:		**Incident Time:**	
Equipment Involved:		**Operation in Progress:**	

Weather: ☐ Clear ☐ Dark ☐ Rain ☐ Snow ☐ High Winds ☐ Other (describe):

Visibility: ☐ Artificial Light ☐ Dark ☐ Dawn ☐ Daylight ☐ Dusk

Reporting Level of Incident:

☐ Fatality ☐ Lost Time ☐ Restricted Work ☐ Medical Aid ☐ First Aid	☐ Near Miss ☐ Equipment Damage ☐ Property Damage ☐ Fire/Explosion	☐ Business Interruption ☐ Security/Trespass/Theft ☐ Mobile Equipment ☐ Vehicle ☐ Spill/Release	☐ Government Reportab ☐ Non-reportable ☐ Contravention ☐ Public Complaint

Contractor Incident: ☐ Yes ☐ No **Contractor name:**

Report Prepared by: Signature: Date:	**Supervisor's Name:** Tel. No. Date:

AFFECTED PERSONS (Worker Positions)

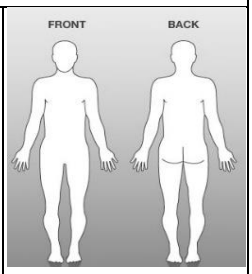
DESCRIPTION OF INCIDENT (Describe what, when, why, who and how. Use separate pages if required. Attach photos if applicable.)

WITNESSES- Provide separate witness reports

Name	Position	Contact Information

NOTIFICATIONS

What internal notifications have been made?	What external notifications have been made?

INJURY INFORMATION (if applicable)	
Position:	Current condition:
Was injured person(s) taken to hospital? Yes ☐ No ☐ *(If yes, provide name and location of the hospital)*	
Indicate the area of injury, if applicable, on the diagram to the right, and describe the injury in the space below:	
VEHICLE INFORMATION (if applicable)	
Driver's Name:	Driver's License No.:
Year, Make & Model:	Driver's Phone Number:
License Plate or Serial Number:	Insurer and Policy No.:
Was seat belt done up? ☐ Yes ☐ No	Was a cell phone being used? ☐ Yes ☐ No
Were police notified? Yes ☐ No ☐	Name of police officer:
Road conditions: ☐ Dry ☐ Gravel ☐ Wet ☐ Icy	Other Info/Attachments:
Spill/Release Information (if applicable)	
Product: **Volume:** **Quantity Recovered:**	
Initial Causal Analysis of Incident:	
Direct Cause: (what / how)	
Root Cause: (why)	
Corrective Actions to Prevent Recurrence:	

Note: Refer to the "Root Cause Investigation & Corrective Action Form" for further detail.

INCIDENT ROOT CAUSE INVESTIGATION AND CORRECTIVE ACTION FORM

Project:		**Incident Date:**	
Location:		**Incident Time:**	
Incident Title:			

Has the Incident Notification Form been completed? ☐ Yes ☐ No

If not, complete the incident notification form before completing this form.

☐ Fatality ☐ Lost Time ☐ Restricted Work ☐ Medical Aid ☐ First Aid	☐ Near Miss ☐ Equipment Damage ☐ Property Damage ☐ Fire/Explosion	☐ Business Interruption ☐ Security/Trespass/Theft ☐ Mobile Equipment ☐ Vehicle ☐ Spill/Release	☐ Government Reportab ☐ Non-reportable ☐ Contravention ☐ Public Complaint

Report Prepared by: Signature: Date:	**Supervisor's Name:** Signature: Date:

This form is used to help analyze incident **root causes** and **contributing factors**. Incidents rarely arise due to one single cause, and there are often multiple contributing factors that are involved in an incident.

A **cause** is a condition that produces an effect. If a cause is eliminated, the effect is eliminated.

A **contributing factor** is a condition that influences the effect but does not cause the effect. If the contributing factor is eliminated, the effect is not necessarily eliminated but may be influenced in other ways, such as being less severe, less likely, proceeding more slowly, or other similar effects.

DESCRIPTION OF INCIDENT (Use separate pages if required. Attach photos if applicable.)

Root Cause and Contributing Factor Analysis (add more pages if necessary for any section)

LEADING EVENTS ANALYSIS (Describe the events leading up to the incident that were different to a normal sequence of events for this activity. Consider whether changes from normal sequences of events were causes or contributing factors to the incident.) (Refer to Chapter 6 of the ADB OCHS Guide for detail)

Were the proper safe work practices and procedures being used by the workers in the events leading up to the incident? If not, why not?

Were relevant legislation and standards being followed by the workers in the events leading up to the incident? If not, why not?
Were there any mechanical failures or defects that led to the incident? If yes, describe below:
Were the proper safety devices in place and being used? Were workers using proper personal protective equipment (PPE)? If not, why not?
Did the actions or lack of actions of anyone at the worksite contribute to the incident? If yes, describe below:
Were there any unusual conditions that contributed to the incident, such as (but not limited to) weather, other activities in the area, or anything else that was not typical for the task?
Did the workers present at the incident respond in a safe and appropriate way? Describe below:
Were the workers adequately trained to respond to the incident? If not, what training would have helped to lead to a better outcome?
Are there adequate procedures in place to respond to similar incidents? If not, what procedures need to be developed?
Check any causes and contributing factors from the following list. If necessary, add additional causes and contributing factors.

☐ Operating equipment without training	☐ Inadequate site security
☐ Operating equipment without proper care	☐ Inadequate worker protection from toxic substance
☐ Operating equipment without safety devices in place or with inoperable safety devices	☐ Inadequate PPE
☐ Inadequate warning to workers of a safety issue	☐ Improper use of PPE
☐ Inadequate barriers or barricades	☐ Inadequate lighting
☐ Using defective tools or equipment	☐ Inadequate ventilation
☐ Proper equipment unavailable	☐ Inadequate supervision
☐ Improper loading	☐ Inadequate training
☐ Poor housekeeping practices	☐ Fatigue
☐ Repetitive action injury	☐ Worker(s) under the influence of substances such as alcohol or medications
☐ Poor maintenance of tools/equipment	☐
☐ Hazardous conditions (gas, dust, fumes)	

List the contributing factors and their involvement as a cause of the incident.	
Contributing Factors	**Involvement**

Describe the root cause (s) below:

Corrective Action Analysis		
List the corrective actions already taken or planned to prevent a similar incident from occurring. Indicate whether the corrective action is already complete and who is responsible for implementing it.		
Corrective Action	**Person Responsible**	**Status?**

Summarize any further information learned from this root cause and contributing factor analysis, including any information that needs to be shared with the workers or worksite management.

Annex 8. Mitigation Compliance & Inspection Monitoring Check Lists (Example)

Project:
Implementing Agency:
Site of Inspection:
Scope of Inspection:
Contractor:
Weather Condition:
Attendees: Name & Position:
Date:

Design stage						
Construction Activity		**Mitigation Measure (as per PAR/EMP)**	**Mitigation Implemented Yes/No/NA**	**Responsible entity**	**Corrective Action Request (CAR) including deadline for effective CA.**	**Resolution Status of previous CAR (resolved/outstanding actions required)**
Preliminary Assessment Application Report		Positive Conclusion of Environmental State Expertise (ESC) is available				
Dump sites		Permission for disposal of waste available				
Tree cutting		Permission on tree cutting available				
CONSTRUCTION STAGE						
WORK SITE: General						
Environmental management: environmental team, health& safety, emergency, trainings, grievance redress mechanism						
Construction Activity		**Mitigation Measure (as per PAR/EMP)**	**Mitigation Implemented Yes/PY/No/NA**	**Responsible entity**	**Corrective Action Request (CAR) including deadline for effective CA.**	**Resolution Status of previous CAR (resolved/outstanding actions required)**
Environmental team						
All activities	1.	Person in charge of environmental/ health &safety management is appointed and is				

		present on-site				
Management measures						
All activities	2.	Any use of land outside the school footprint including camps and parking sites is excluded				
All activities	3.	Tree cutting is implemented in accordance with permission. Other trees and vegetation are properly protected				
Health& safety						
All activities	4.	Warning signs, fencing and exclusion barriers erected around all open pits and work site areas				
Excavation works	5.	Open pits are backfilled within reasonable time. Unnecessary open pits are not detected				
All activities	6.	Access of strangers and outsiders (especially school children) is excluded				.
All activities	7.	Workers are provided with and are using the uniform, applicable safety/protection equipment for site conditions				
Dismantling of asbestos-containing material	8.	Workers dealing with hazardous including asbestos materials are using the special protective equipment and follow the Guidelines on				

		ACM				
All activities	9.	Board with information on project and implementing agencies is installed				
All activities	10.	Sanitary-hygienic conditions for workers are provided: drinking and washing water supply, mealtime utilities, toilets, rest time, etc.				
All activities	11.	First aid kit is available on-site and is accessible to all workers				
All activities	12.	Fire extinguisher available				
All activities	13.	Dark time illumination is available				
Emergency Response Plan						
All activities	14.	Person in charge on emergency management is appointed and is present on-site				
All activities	15.	Copy of ERP and emergency contact list are available, updated and posted in a visible place at all work sites				
All activities	16.	Accident report maintained				
Trainings and orientation courses						
All activities	17.	Workers briefed on PAR/ EMP at time of starting employment				
All activities	18.	Workers briefed on ERP at time of starting employment				

All activities	19.	Workers receive introductory job-focused safety trainings before starting work; training event is properly registered in the instructions' book.				
Work site cleanliness						
All activities	20.	The work site kept clean from debris, garbage, etc.				
All activities	21.	Bins for garbage collection are installed				
Public communication and grievance redress mechanism: environmental issues						
All activities	22.	Meeting with APs on construction activities, environmental impacts and mitigation measures held				
All activities	23.	Register of complaints maintained, Complains observed during the last visit addressed				
All activities	24.	School management and people are notified on inconveniences: water, electricity breaks, etc.				
Environmental parameters: <u>Dust control</u>						
Earth works, material delivery, removal of generated waste	25.	Trucks are operating using covers				
	26.	Construction sites watered				
	27.	Equipment and haul vehicles are fitted with effective emission control				

		equipment				
Noise control						
Operation of machinery	28.	Construction noise levels are acceptable at closest sensitive receptor				
	29.	Equipment fitted with effective silencers				
	30.	Activities are managed by restricting operating hours				
Vibration control						
Operation of machinery	31.	Managed by reducing time exposed to vibration,				
Runoff control:						
All activities using liquid materials	32.	Spillages are managed properly				
Earth works	33.	Sediment laden runoff is prevented				
Earth works, material delivery, removal of existing pavement, asphalt pavement	34.	Drains are kept open and water bodies are not blocked by sediment				
All activities using machinery	35.	Tires of trucks are cleaned before leaving the school footprint and entering the roads				
Earth works	36.	Excavated waste is either hauled from work site or is retained temporary on-site in spoil dumps				
Construction waste management						
Removal of	37.	Construction waste				

construction waste		is disposed of in approved sites				
Earth works, demolition of structures, dismantling of utilities	38.	Non-hazardous waste (excavation material, rocks, concrete and metallic parts, etc.) is managed in accordance with EMP				
Dismantling of structures	39.	Hazardous waste (including asbestos-containing waste) is managed in accordance with WMP				
Use of chemicals, fuel, lubricants, etc. while all activities	40.	Leakages and liquid waste, contaminated soil is managed in accordance with WMP				
Dump sites						
Use of territory	41.	All permits and SMP for the use of, dump sites are available				
Use of territory	42.	SMP for the site use is available				
Use of territory	43.	The use of the site is in accordance with SMP				
Site re-instatement and rehabilitation (including dump sites)						
All activities	44.	All the waste and material is removed from the site The site is clean				
All activities	45.	All machinery is removed from the site				
All activities	46.	Trees (shrubs and other vegetation) are planted and maintained				

Annex 9. Photos

School entrance and access road

School entrance

School yard

School yard

School green area

Memorial in the school yard

3 flour school building

1-flour school building

Gas substation in the schools' backyard

Electrical substation in the school area

Abandonded and damaged schools' workshop

Abandonded and damaged schools' shooting range

School stadium (sport area)

Damaged swimming pool

Electrical pump on artesian well used for irrigation of nearby rural areas

Cracks and damages of exterior walls of the school buildings

Cracks and damages of exterior walls of the school buildings

Cracks and damages of exterior walls of the school buildings

Damages and cracks on the basement of the building

Damages and cracks on the basement of the building

Cracks on the ceiling in the classrooms

Cracks on the ceiling in the classrooms