

Environmental Assessment and Review Framework

Project Number: P42408
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Proposed Multitranche Financing Facility Republic of Azerbaijan: Water Supply and Sanitation Investment Program

A. Introduction

1. The purpose of the proposed Water Supply and Sanitation (WSS) Investment Program is to improve public health and environment in the participating secondary towns, the peri-urban areas surrounding Baku, and other urban centers. Outcome of the Investment Program will be improved coverage, and the continuity and quality of water supplies and wastewater disposal.

2. The Environmental Assessment and Review Framework (EARF) will be adopted for the Investment Program for future subproject environmental assessment and review. This framework has been developed during the preparation of initial environmental examinations (IEEs) for core subprojects in Goychay and Nakhchivan towns. The EARF must be followed for subprojects to comply with the Azerbaijan Law on State Ecological Expertise under the competence of the Ministry of Ecology and Natural Resources (MENR) and the Asian Development Bank's (ADB) *Environmental Policy* (2002), which require infrastructure upgrading projects to be subjected to environmental assessment. This document details the procedures including: (i) possible adverse environmental impacts and recommended mitigation measures, (ii) regulations and guidelines for Azerbaijan's, NAR's and ADB's environmental assessment procedures, (iii) institutional implementation to perform environmental assessments, (iv) guidelines for public consultation and (v) a staffing and budget estimate.

B. Program Review

3. After thorough analysis of six sample subprojects, this Investment Program is classified under ABD guidelines as Category B. The screening and categorization procedure will be completed for each new subproject to be appended to ensure that the subproject's potential environmental impacts will not change the existing categorization. Infrastructure development component of the Investment Program comprises three parts: (i) construction of source water intakes, disinfection and retention infrastructure, (ii) construction, rehabilitation and extension of WSS systems; and (iii) construction of wastewater treatment plants. The first part will address constructing boreholes, new infiltration galleries or new river water intakes near the towns to convey water via trunk mains to the reservoir facilities. The water will be treated before storage in the reservoirs and distributed from the reservoirs to the water network. The second part of this component includes new WSS construction, and rehabilitation/replacement of the existing WSS infrastructure. The third part involves building new wastewater treatment facilities to treat the sewage prior to discharge into collection canals.

C. Impacts and Measures

4. The screening process carried out for the IEEs identified minor possible adverse environmental impacts likely to be caused by the Program. Most potential negative impacts may occur during construction. However, they will be temporary and can be mitigated to acceptable levels. Effort will be made to (i) mitigate source contamination; (ii) limit specific impacts related to the pipeline routes; (iii) enable a sustainable water supply; (iv) eliminate risks of sewer system leakage; and (v) minimize construction pollution and waste. All potential environmental threats and respective mitigation measures are listed in **Attachment 1**. The most likely impacts and crucial mitigation measures are mentioned in **Table 1**.

Table 1: Potential Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Mitigation Measure
Source Abstraction Limits	Calculate flow availability and permissibility during dry seasons. Comply with abstraction limit imposed by AZE law.
Source Protection from Contamination	Create buffer zone around source and establish additional protection measures, as required
Involuntary Resettlement	Framework has been created to deal with resettlement events
Treated Water Quality	Environmental monitoring plan has been detailed
Design of Water Pipelines	Water pipelines must be constructed at higher elevation and in separate trenches than wastewater pipelines
Delivery of Unsafe Water	Adequate water treatment including disinfection and periodic monitoring in strategic locations.
Collection of Sewage and Increased Sewage Generation	Perform detailed design calculations for each community
Damage to Soil, Land, Ecology, Heritage, Crops & Trees	Avoid environmentally and socially sensitive areas by designing around these locations. Add slope stabilization measures. Plant trees to compensate for felled trees.
Construction Pollution & Wastes	Contractor retention fee not returned until site is rehabilitated and cleaned
Operational Handling of Chemicals and Health & Safety	Operators must be trained to handle chemicals such as chlorine and they must be trained on other health & safety matters such as wastewater treatment plant operations and electrical systems, and provision of wash area in case of emergency.

D. Azerbaijan's Environmental Assessment Laws and Institutions

5. **Institutions.** There are four principal environmental institutions (or Ministries in Azerbaijan and the NAR) who handle water resources protection, management and operation. These include (i) MENR, (ii) the Ministry of Health, (iii) the Ministry of Emergency Situations (which implements construction safety supervision and standards and regulates safe sewage discharges and WSS operations), and (iv) AzerSu / State Amelioration and Water Management Agency (SAWMA) who will manage the WSS in their respective areas under the Investment Program:

- (i) **Ministry of Ecology and Natural Resources.** This ministry upholds all natural resource protection laws. The State Ecological Expertise (SEE) acts within this agency on the Program level in reviewing Environmental Impact Assessments (EIAs).
- (ii) **Ministry of Health: (Sanitary and Epidemiology Service sub-body within Azerbaijan only).** Sanitary and hygienic safety is the responsibility of the Ministry of Health. Its main function is the implementation of control over meeting the sanitary and epidemiological rules and standards as well as hygienic standards. This entity implements anti-epidemiological measures throughout Azerbaijan and NAR by legal and physical persons through application of laboratory and sampling controls.
- (iii) **Ministry of Emergency Situations (Commission of Emergency Situations in the NAR).** This agency implements construction safety supervision and standards. Their main involvement in this Program will be to regulate leakage from sewer lines, safe discharges from the sewage treatment system, and safe operation of the wastewater treatment plant and water treatment units.
- (iv) **AzerSu and SAWMA.** AzerSu and SAWMA are Joint Stock Companies (JSCs) which manage and operate in their respective areas the water and wastewater infrastructure such as the delivery of potable water and the collection of wastewater. They also manage and operate the water and wastewater treatment plants. They will manage the WSS infrastructure of their towns under the Investment Program.

6. **Laws.** Laws affecting water and wastewater infrastructure which are have been incorporated into the Environmental Management and Monitoring Plan (EMMP) include the following. These laws have been adopted by the Nakchivan Autonomous Republic.

- (i) Environmental Protection and Utilization of Natural Resources (1992)
- (ii) Environmental Protection (1999)
- (iii) State Ecological Expertise (1996)
- (iv) Environmental Safety (1999)
- (v) Water Code of the Azerbaijan Republic (1998)
- (vi) Water Supply and Wastewater (2000)
- (vii) Health Protection (1999)
- (vii) Sanitary-Hygienic State (1992), part of GOST
- (ix) Water quality, air and noise standards: GOST (various years)
- (x) Program on Strengthening Financial Discipline in the Water Sector (2002)
- (xi) Improvement of Water Supply Management (2004)
- (xii) Construction Norms and Regulations: SNiP
- (xiii) Rule for Use, Protection and Preservation of Trees and Bushes (No 173; September, 2005)
- (xiv) The Land Code (25 June 1999)
- (xv) European Economic Community Directive on Wastewater 91/271/EEC (1991)

7. Detailed information on the most pertinent laws to be applied for this Investment Program are explained below:

- (i) **Law on Environmental Protection (EP) of 1999.** This Law establishes the main environmental protection principles, and the rights and obligations of the State, public associations and citizens regarding environmental protection. According to Article 54.2 of the Law, EIA is subject to SEE. This also explains that the MENR is responsible for the review and approval of EIA reports submitted by developers. Furthermore, in Articles 81 and 82 of the Law on Environmental Protection (1999), the Law specifically provides for the application of international agreements in case an international institute or body has provisions that are different from those of the Azerbaijani legislation.
- (ii) The **State Ecological Expertise (SEE)** mandates an EIA for infrastructure development projects. The objective of the SEE is to identify impacts on the environment caused by construction projects, examine the results of such impacts and propose mitigation measures to prevent adverse effects on the natural environment and people's health. It is essentially a stand-alone check of compliance of the proposed activity with the relevant environmental standards (e.g. for pollution levels, discharges, and noise).
- (iii) The **Law on Sanitary-Hygienic State** is GOST 17.1.3.07-82. This law serves as a basis for drinking water quality standards and mandatory implementation of sanitary-hygienic expertise regarding chemical and biological standards for water quality. Similarly, noise standards are described in GOST 12.1.003-83. However, the GOST does not specify regulations on permitted effluent discharge levels post wastewater treatment. As such, Azerbaijan has adopted Directive No 91/271 from the European Environmental Commission (EEC) in GOST. This regulation identifies the allowable biological and chemical levels for sewage effluent.
- (iv) The **Water Code (1998)** regulates legal relations concerning the protection and use of water bodies (surface, subsoil, and boundary water bodies) in Azerbaijan. The Law details the obligations of the State with respect to the use and protection of water bodies in terms of monitoring and protection schemes as well as the supervision over the use and protection of water bodies. The items most relevant to the Investment Program include the outlining of (i) the use of water bodies as potable and service water; (ii) the use of specially protected water bodies; and (iii) the use of water bodies for the discharge of wastewaters.
- (v) The Construction Norms and Regulations are identified in **SNiP** which details how to carry out noise reduction measures to assure compliance with the relevant sanitary norms (section 3.9) and it details regulations on the dumping of excess materials (section 3.12). SNIP III-4-80 also details regulations on construction worker's health and safety. Chapters 2 and 5 provide organizational procedures of construction work sites and material transport. Annex 9 contains standards on maximum concentrations of toxic substances in the air of working zones. Annex 11 specifically claims that workers need to be informed and trained about sanitation and health care issues and the specific hazards of their work.
- (vi) The **Rule for Use, Protection and Preservation of Trees and Bushes (2005)** is a regulation that details the way to protect trees and shrubs in case of necessary cutting or replanting. These trees are excluded from the Forestry Fund of the Azerbaijan Republic.

- (vii) Article 22 of the **Land Code (1999)** stipulates that the state is required to establish protection zones with a special (restrictive) regime for the purpose of construction and operation of industrial facilities.
- (viii) The **European Economic Community Directive on Wastewater (1991)** regulates the collection, treatment and discharge of domestic wastewater and wastewater from industrial sectors. The directive includes requirements for monitoring the performance of treatment plants and receiving waters. Also, it mandates measures for sludge disposal and re-use as well as means to re-use treated wastewater.

E. Government's Environmental Assessment and Review Procedures

8. Environmental assessment and review procedures in Azerbaijan in accordance with the SEE do not include the categorization of projects. The project is either initially approved with few mitigation conditions if necessary, or the project must undergo a full EIA. If the activity is assessed to result in more than minor potential impacts, a full EIA is automatically required. Since categorization is absent under Azerbaijan environmental regulations, the ADB guidelines will be adopted for subproject categorization under the Investment Program.

9. To accord a SEE by the MENR, an EIA is mandatory. The basic procedures for the conduct of the EIA are laid down in the 1996 *Handbook on the EIA Process in Azerbaijan*. The purpose of this document is to establish the level of ecological danger resulting from prospective and/or actual economic activities which may have an impact on the state of the natural environment and people's health. It also must assess compliance of planned economic or other activity with the demands laid down in environmental protection legislation, in water and wastewater quality regulations and with standards of hygiene. It establishes the sufficiency and justification of the envisaged measures for nature protection as well.

10. The procedure for EIA in Azerbaijan includes the following:

- (i) During the first stage of the EIA process, which takes about one month, an initial examination of the application of the proposed activity is made by the SEE within the MENR and the expected impacts of the proposed activity are considered. This may include preliminary consultations with other agencies, NGOs, experts and initial public inquiries. On the condition that the activity is likely to cause only minor impacts on the environment, the application may be approved with some conditions. If the activity is assessed to have more than minor impacts, a full EIA is required. A decision on processing charges is taken and a scoping meeting of representatives of the applicant, invited experts and invited members of the public is organized and chaired by the MENR. Based on the outcome of this meeting, the SEE will notify the Program Management Offices (PMOs) on the required scope and depth of the investigation and on the results of public consultation during the EIA study.
- (ii) The second stage of the EIA process lasts 3 months, during which the EIA documentation submitted by the EAs is investigated by SEE. At this stage, an environment review expert group of 5-11 skilled and experienced members (e.g. members of the Academy of Science, university staff or officials from other ministries) is formed. There are no firm requirements on group composition, but MENR has a roster of experts and composes each commission based on case-

specific considerations. This environment review expert group, chaired by MENR, carries out the public submissions, investigations and consultations. Finally, a written review of documentation together with recommendations is submitted by the environmental review expert group to the SEE.

- (iii) At this stage, the SEE decides on whether to refuse or approve the application with or without conditions. Conditions for the approval that might typically be considered in the present context mainly relate to the construction phase and may include site management, noise, dust, discharges to the land, subsurface or water and solid waste management. If the application is approved with conditions, either the activity starts or the PMO decides to appeal against the conditions. If the application is accepted, the PMO must provide a report to SEE on progress within 12 months of the SEE decision. After approval is given, the construction works must begin within one year otherwise it will be necessary to conduct another EIA.
- (iv) During construction in the Program, the PMO through PMF must monitor parameters as indicated by the SEE. If the Program designs change significantly from those studied in the feasibility phase EIA, additional reports on the impacts of the changes may be requested by the SEE. Controls are made by the SEE on the accuracy and the reliability of the developer's monitoring results. If it appears that there is a risk of the conditions being breached, the SEE will issue a warning to the developer. If the conditions are breached, the developer is obliged to stop whatever activity is causing the breach of the conditions.

F. Environmental Assessment and Review Procedures

1. Environmental Categorization and Criteria for Subproject Selection

11. The Program is classified as Category B under ADB's *Environmental Assessment Guidelines* (2003) after review of the sample subprojects. Each new subproject will be categorized using ADB's *Environmental Assessment Guidelines* (2003) as A, B or C. Category C stipulates that no EIA or Initial Environmental Examination (IEE) is required but environmental implications and mitigation measures of the project still need to be reviewed if any adverse impacts should be integrated into the project design. Category B specifies that an IEE is required for the subprojects to determine whether or not significant environmental impacts warrant an EIA. If an EIA is not needed, the IEE is regarded as the final environmental assessment report. Public consultation must be undertaken during the IEE process. Category A projects include those with potentially significant adverse environmental impacts. An EIA is required to examine the project's potential impacts, and to recommend an environmentally sound project by comparing all possible alternatives, selecting the best alternatives, and preparing an environmental management plan. Public consultation must be undertaken at least twice during the EIA process, once during the early stage of the EIA field studies and once after the draft EIA report has been prepared. However, Category A subprojects will be excluded under the Program.

12. The criteria for exclusion from the Program include:

- (i) any subprojects located in strict nature reserves;
- (ii) any subprojects with significant loss of primary forest or other sensitive wetland;
- (iii) any subprojects with permanent negative effect on a known rare or endangered species;

- (iv) any subprojects with significant impacts on air or water quality;
- (v) any subproject with significant adverse impacts to downstream ecosystems and water users; or
- (v) any subprojects with permanent damage to cultural relics or archaeological sites.

13. Any subproject accepted under the Program criteria will be subject to this Environment Assessment and Review Framework and procedures described below.

2. Preparation of Initial Environmental Examination

14. Under ADB policies (*ADB's Environmental Policy (2002)* and *ADB's Environmental Assessment Guidelines (2003)*), developing an Environmental Assessment for Category B projects involves submitting an IEE and developing an Environmental Management and Monitoring Plan (EMMP). The content and format of the IEE is in Annex 1. An IEE undertaken in terms of ADB's requirements will be submitted by the PMO to the SEE. ADB regulations require that the first IEE independent of subproject value, be submitted to ADB for approval.

3. Environmental Management and Monitoring Plan

15. An EMMP will be prepared by the PMF as part of the IEE. The EMMP defines the mitigation measures, the responsible party, the cost of mitigation, parameters to monitor, frequency of monitoring, time and location of monitoring, responsibility and cost of monitoring. The EMMP is designed to follow the general template established during the preparation of the candidate subprojects, but adapted to the specific requirements of the subproject in question. The EMMP will be updated and expanded during detailed engineering design. An outline EMMP will be prepared as an appendix to the tender documents. The Program Consultants will update and complete the program details, responsibilities, and contingency plans. Details on environmental monitoring are discussed in Paras. 18-21.

16. **Environmental Management.** As part of the environmental management, the procedures for: (i) workers' health and safety; and (ii) waste disposal and chemical handling for construction wastes will be developed during the detailed design stage and included in the construction contracts. The Program Consultant will prepare a contract-level and site specific EMMP to facilitate tracking of the contractor's performance in the implementation of the mitigation measures. Also, the TOR for the Program Consultant will specify supervision and monitoring of the contractor's performance.

4. Review of Environmental Assessment

17. ADB will review draft final reports of all category B subprojects above \$3 million. Notwithstanding this threshold in each tranche, ADB will review at least one subproject of the subsectors being implemented under respective tranche and any other subproject below the above threshold which, in ADB view, require a review. In addition, the updated and finalized IEE report of all tranche 1 subprojects will be reviewed and approved by ADB during detailed design. ADB also reserves the right to review subproject documentation ex-post and gain access to the subproject sites if it is deemed necessary.

5. Environmental Monitoring

18. **Water.** Candidate subproject analysis and analysis of the Sanitary-Hygienic State regulations indicated that according to GOST 17.1.3.07-82 there are at least three points where water samples have to be taken – one is 1 km upstream and two are 0.5 and 1.5 km downstream from the intake point. Under the EMMP for the Program, each borehole or

infiltration gallery will be sampled during operation and the raw water quality will be monitored continuously. The outlet of the treatment plant and reservoir will also be sampled. Under the Program it is required to test for both free and residual chlorine and perform chemical and microbiological tests. Control on water quality has to be conducted daily and commence at least 3 months before construction to establish a baseline. During operation, intermediate points as well as the extremities of the network must be sampled daily. The PMF's Safeguard Specialist will be responsible for conducting periodic monitoring. All potable water samples must adhere to the Ministry of Health's water quality guidelines as listed in **Annex 2 (Table 1)**.

19. **Wastewater.** As there are no specific wastewater discharge sampling requirements and limits specified under Azerbaijan's regulations, the European Economic Community directive, Directive No 91/271/EEC, has been adopted by the Ministry of Health (MOH) in Azerbaijan to regulate urban wastewater treatment. According to this directive, a town with the population equivalent of Nakhchivan is required to take daily samples at a well defined point in the inlet and outlet of the wastewater treatment plant in order to monitor compliance with the regulations listed in **Annex 2 (Table 2)**. Under the Program, a third sample is required to be taken at a distance downstream in order to determine the effect on the receiving water body. Under the EEC directive, if the receiving water body is prone to eutrophication, special attention must be given to total phosphorous and total nitrogen levels. The sampling points will be determined during detailed design. Any exceedances from the requirements in Table 7 outside of those due to extreme events such as heavy rainfall must be logged. According to the EEC directive, depending on the number of samples taken annually, a maximum number of exceedances are permitted. The wastewater treatment plant operators will be responsible for daily testing. For verification purposes, the Sanitary and Epidemiology Service (SES) will also periodically take samples prior to the inflow to the wastewater treatment plant and at a point after wastewater treatment. As required by the MOH in Azerbaijan, **Annex 2 (Table 3)** should be used if the effluent will be discharged into canals used for fishing purposes.

20. Under the EEC directive, sludge shall be re-used whenever appropriate and disposal routes must minimize any adverse effects on the environment. Under the Program, sludge will be dewatered and dried before disposal to an MOH approved landfill site.

21. During construction, the air quality and noise must remain below specified concentrations and levels. The maximum allowable concentrations of air quality toxins are specified in **Annex 2 (Table 4)**. The maximum allowable noise levels are specified in **Annex 2 (Table 5)**.

6. Environmental Reporting

22. The environmental monitoring and management reports will be prepared by PMF's Safeguard Specialist. The reports will be submitted at least once a year to ADB who will disclose it to the public on receipt. The monitoring report will include the following: (i) compliance with ADB loan covenants and government regulations; (ii) status of implementation of EMMP; (iii) significant issues or changes in scope; (iv) summary of monitoring report findings; (v) required follow-up actions; and (vi) conclusions

7. Public Consultation and Information Disclosure

23. According to Azerbaijan regulation, public consultation for any project has to be carried out twice – first at the detailed design stage (to address all important comments) and secondly at the end of the project when presenting subproject results. All Project stakeholders as well as

any affected persons (APs) have to be present at the second public consultation. Results of the first public consultation have to be documented in the EIA.

24. ADB also requires public consultation in the environmental assessment process. For category-B projects, the borrower must consult with groups affected by the Investment Program and with local NGOs. The consultation needs to be carried out as early as possible in the Program cycle so that views of affected groups are taken into account in the design of the Program and within the mitigation measures proposed. The consultation is typically completed once during the IEE preparation to inform stakeholders of the Program components and to encourage input to identify overlooked environmental issues.

25. Direct public involvement has been an ongoing element in the preparation of the Program. In accordance with ADB's Public Communications Policy (2005), consultations were held in 2009 and the proposed Program components and timeline of construction was disclosed to the public and local authorities. Public consultations included a meeting with local executive powers and a public meeting of 40 randomly sampled people within Goychay and Agdash (including women). The purpose of the public meeting was to inform the public of the Program and obtain their suggestions and experiences with the water supply and wastewater collection systems. The results of these meetings can be found in each subproject IEE.

26. The social assessment process must include project household surveys, focus group meetings, local and executive stakeholder consultations, and informal interviews with vulnerable members of the community in the Azerbaijan language. The proposed Program developments and timeline of construction must be disclosed to the public. Information gathered must include: 1) the frequency of delivery of water and collection of wastewater; 2) water and wastewater tariffs charged to consumers currently; and 3) the community's willingness to pay for water and wastewater services. Environmental concerns must also be noted during public consultations. Public consultation to-date has played an important role in the preparation process to screen design options, to minimize environmental impacts and to seek suggestions for improvement. An example of sample questions for the public is included in **Attachment 2**. Issues raised in these consultations have been incorporated in the proposed mitigation measures. The PMF and SuKanals/JSCs will continue the cooperation with all local executive powers, the local townspeople and NGOs. In particular, the TWUAs will be actively involved in relaying concerns and/or suggestions throughout the implementation of this Program.

27. Azerbaijan mandated the Public Participation in Decision-Making and Access to Justice in Environmental Matters at the UNECE Aarhus Convention in 1999. Since that time, the Aarhus Centre had been open to the public in the office of MENR. All the project documents related with environmental questions have to be stored in Baku's Aarhus Centre for easy access by the public and NGOs' representatives. A copy of the Environmental and Social Assessment documents also has to be filed at the public library (or any other relevant organization) of the subproject town and must be accessible in the Azerbaijan language.

28. Public consultation feedback must also be disclosed in the ADB environmental documents and attached as an annex to the IEEs. The annex must include the disclosure process adopted, medium used to disclose information, affected persons or groups, the consultation process, date of consultation, people consulted as well as concerns raised and how these were addressed. The IEE and the public consultation information included in the annex must be made available to the public.

29. Invited attendees at IEE consultations should include government agencies and district authorities, community representatives as well as non-government organizations. An example of a public consultation sign-in form is shown in Annex 2 (**Table 6**).

8. Complaints and Grievance Redressal Mechanism

30. A grievance mechanism will be available to allow appeals against any disagreeable decision, practice or activity arising from land or other assets compensation. Affected persons will be fully informed of their rights and of the procedures for addressing complaints whether verbally or in writing during consultation, survey, and time of compensation.

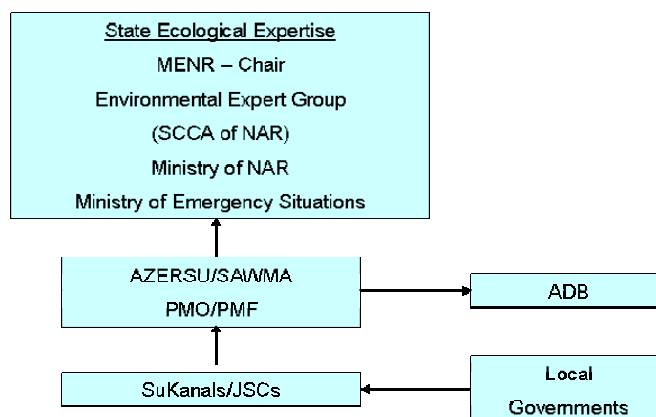
31. Care will be taken to prevent grievances rather than going through a redress process by ensuring active consultation with and participation of affected households in the planning, design and implementation process. If grievances still arise, all attempts will be made to resolve those informally at the local (SuKanal or JSC) level. If this attempt fails, APs will have the option of taking their complaint to the formal mechanism of addressing grievances described below:

- (i) First, complaints resolution will be attempted at town level with the involvement of the SuKanal/JSC/PMF, the local executive power and local NGOs if available.
- (ii) In absence of a resolution, the APs may lodge a complaint with the Rayon Safeguards Compliance Commission (RSCC). It will decide the case within 15 days.
- (iii) If the Rayon Safeguards Compliance Commission decision is unacceptable to the APs, they can register the complaint directly to the Central Safeguards Compliance Commission (CSCC) within 1 month of receiving response from the RSCC with documents supporting their claim. The RSCC will respond within 15 days of registering the complaint. The CSCC decision must be in compliance with these EARF provisions. ADB will assist the borrower in discussions with the APs and explore measures to address the issues.
- (iv) Should all three levels of above grievance redress system fail to satisfy the AP, he/she may approach the appropriate court of law for its resolution.

G. Implementation Framework

32. **Responsibilities and Authorities.** A detailed flowchart schematic is shown in **Figure 1**. A summary of the Environmental Assessment and Review Framework and respective responsibilities are summarized in **Table 2**. The Program will be implemented by the AzerSu and SAWMA through their respective PMOs and PMFs. The PMOs through PMF will provide guidance on environmental issues, and will be the first level of internal monitoring. AzerSu has a significant experience in implementing donor-funded projects, and the necessary technical expertise in monitoring environmental mitigation plans. SuKanals/JSCs will play vital role during the operation phase.

Figure 1: Parties Involved with Program Environmental Assessment and Review



33. AzerSu/SAWMA will establish laboratories for chemical analysis and monitoring of water quality at the reservoir sites. Biological and epidemiological monitoring of water will be carried out by the PMOs and the local SuKanal/JSC offices, in accordance with the Ministry of Health, Sanitary Epidemiology Service (SES) and their relevant administrative procedures.

34. The SESs are responsible for health and water quality-related issues. Under the Investment Program, such agreements will be worked out between the JSCs and the SESs. The SESs, acting under the approved schedule of the Ministry of Health, will conduct regular tests of water quality, and will be taking supervisory charge in monitoring water quality. Within the town, they will have responsibility to take potable water sample from key locations in the distribution system to ensure compliance with the health regulations. Post-construction and during the operation they will take sewage samples prior to the inflow to the wastewater treatment plants and also at a discharge point after treatment. The quality of drinking water supply will be monitored according to international and local standards.

35. The overall responsibility for environmental protection lies with the MENR. At the rayon level they are represented by the rayon agency, which is located within or near the towns. The MENR is charged with a task of providing national monitoring services that includes a monitoring network of baseline information on water sources.

36. Overall supervision of compliance with the EMMP will be undertaken by the Safeguards Specialist assisting the PMF as part of his/her technical supervisory duties. The PMOs and the SuKanals/JSCs will ensure safeguards compliance under the Program.

37. The responsibility for construction standards is with the Ministry of Emergency Situations. Their standards together with ADB's environmental requirements will be incorporated into the Program design. There are no significant environmental management issues relating to the post construction and operation of the Program. The major ones relate to control of leakage from the sewer lines, the safe discharge of sewage to the sewerage system, the safe operation of the wastewater treatment plants and safe discharge of the treated sewage. The environmental management will be regulated through the existing legislation as well as specific clauses with the Contractor. All contracts for small construction works will include requirements for implementation of the specific measures as per EMMP provisions and good construction practices. Daily control and monitoring of construction works will be part of the responsibilities of the Contractor.

38. The Program's environmental impacts will be closely monitored. Specifically, the monitoring and evaluation (M&E) activities by the PMF will include (i) collecting, collating, and analyzing baseline data related to the environmental conditions in the Program towns; (ii) environmental gains as a consequence of Program implementation, and (iii) evaluating environmental impacts within the selected systems. (AzerSu's internal monitoring department is called the Ecology and Monitoring Sector). The M&E activities at the SuKanal/JSC level will also have site inspectors, who will work with the responsible Rayon agencies. For environmental monitoring, they will collect and analyze information on quality of water supplied, sewage discharged, and minimization of construction impact within the towns. The Program performance, monitoring, and evaluation will be done in accordance with ADB's guidelines on its project performance management system.

39. Consultations and participatory approaches developed in the feasibility stages of the Program have demonstrated that there is sufficient interest and concern among consumers to establish a Town Water User's Association (TWUA). TWUAs will be formed in the Program towns as advocacy groups to represent the interests of consumers, and will be recognized by the SuKanal/JSC as important partners in ensuring that WSS services achieve consumer satisfaction. TWUAs already exist in Agdash, Goychay and Nakhchivan.

40. A Safeguards Specialists will be hired to ensure safeguards compliance under the Program. The specialists will be responsible for environmental management, land acquisition/resettlement, and public relation/consultation. The Safeguards Specialists with the Program Consultants will be responsible for IEE preparation for all subprojects. A detailed Environmental Management and Monitoring Plan (EMMP) will be prepared for each subproject and will become an integral part of the IEE. The Safeguards Specialists with the Program Consultants will be also responsible for preparing the preliminary design concepts for SEE approval in accordance with Azeri regulations.

41. Prior to commencement of construction activity, the EMMP will be further refined (when detailed design information becomes available), into a detailed action plan to guide its implementation during construction. Other mitigation measures and monitoring programs during operation will be implemented by the SuKanal/JSC.

42. The SuKanals/JSCs will assist the engineers in supervising the EMMP implementation by the Contractor through regular observation and spot checks of construction-related activities. The PMOs will ensure that the EMMP will be adequately prepared, attached in the bidding documents, and included in the Contractor's contract. The supervising engineer of the PMOs will ensure that adequate and timely remedial actions are taken by the Contractor when issues arise during construction.

43. The design and environmental specialist will be required to refine the EMMP when detailed design information becomes available and prepare mitigation progress and monitoring reports every 3 months, showing progress on mitigation actions defined in the EMMP. At the end of construction a summary report and verification that mitigation actions were completed will be prepared by the PMF, forwarded to the SEE and copied to ADB. AzerSU/SAWMA will ensure that SuKanals/JSCs undertake monitoring of operation and prepare monitoring reports every year for 4 years after construction.

H. Budget and Resources

44. An important up-front cost will be the recruitment of the Safeguards Specialist within the PMO and his/her training on principles of environmental monitoring and management. The Program Consultants will be hired to undertake training and capacity building for environmental management and monitoring as well as assisting in the responsibilities designated in **Table 2**. The Safeguards Specialists of the PMO and PMF consultants will have three working roles, namely 1) the environment, 2) resettlement, and 3) public relations.

45. The cost for hiring specialists for the periods before, during and after construction is listed in **Annex 2 (Table 7)**. The budget needed for various other EMMP activities has been included in the Program costs as these employees will come from within the Government, SuKanal, after their appointment or training. **Table 7** also lists typical mitigation measures and costs for the Program based on analysis of the candidate subprojects. The costs of monitoring will be included under the Program costs as AzerSu/SAWMA has existing capacity and knowledge to perform water quality tests. Extensive training must be completed in these subprojects due to the risks of wastewater treatment operation, construction, chemical handling, and specific water and wastewater network operations and maintenance tasks.

Table 2: Institutional Responsibilities

Institution	Basic Role	Detailed Responsibilities
PMO/PMF environmental safeguards group with assistance from domestic social and environmental specialists	Develop the project, perform all environmental testing and prepare all documents	<ul style="list-style-type: none"> – Preparing Env. Monitoring and Management Plans (EMMPs) for SEE review – Periodic submission of env. monitoring report to ADB for public disclosure – Performing monitoring with site inspectors and civil work surveys – Collecting and analyzing information on water quality, sewage treatment levels, and construction impact within the towns in accordance with MOH and MES regulations – Establishing environmental classifications under ADB regulations & determining need for Subproject (Sp) IEEs – Screening & preparation of SpIEEs including cost estimates for mitigation measures & monitoring plans for SEE. Obtaining IEE development consent approval – Conducting public consultations – Ensuring tender documents are updated with any changes to the EMMP – Ensuring contract document including environmental clearance certificate & conditions and ensuring ADB gets copies of these documents – Implementing and updating environmental mitigation and monitoring measures – Incorporating environmental requirements in civil work contracts – Ensuring that Contractors have fully implemented and completed the detailed EMMP and have submitted this to SEE for approval – Providing environmental training – Undertaking remedial action when unexpected environmental impacts occur during implementation – Submitting quarterly reports to the SEE and ADB including i) compliance with ADB loan covenants and government regulations, ii) significant issues or changes in scope, iii) summary of monitoring report findings, and iv) required follow-up actions – Monitoring operation and preparing monitoring reports every year for 4 years after construction
PMO/PMF - AzerSu / SAWMA	Overall Program coordination and review	<ul style="list-style-type: none"> – Overall coordination with government entities and supervision responsibilities – Submission of IEEs to SEE approval. Submitting to ADB first IEE and all IEEs over \$3 million – Monitoring and evaluation of the Program including analyzing baseline data related to the environmental conditions and impacts in the Program towns – Establishing laboratories for chemical analysis and monitoring of water quality
Env. Expert Group - SEE	Review all env. documents	<ul style="list-style-type: none"> – Review of environmental documents and providing clearance – Providing guidance for upholding environmental policy requirements
ADB - Social and Environmental Specialists	Reviews of major environmental documents	<ul style="list-style-type: none"> – Reviewing first IEE and all IEEs over \$2 million – Disclosing reports over ADBs website (Responsibility of ADB Project Leader) – Reviewing all statutory environmental clearances granted by SEE – Reviewing quarterly reports & taking necessary actions – Monitoring EMMP implementation and due diligence
Local Govts/ TWUAs1	Coordinate with Sukanals and JSCs with decisions	<ul style="list-style-type: none"> – Coordinate with sukanals and JSCs and make key decisions on behalf of the community – Collaboration with Town Water Users Associations – Relaying concerns or requests on behalf of the community

ADB= Asian Development Bank, IEE = initial environmental examination, JSCs = Joint Stock Companies, MOH = Ministry of Health, PMF = Program Management Facility, PMO = Program Management Office, SAWMA = State Amelioration and Water Management Agency, SEE = State Ecological Expertise, MENR = Ministry of Ecology and Natural Resources, TWUA = Town Water Users Association

Association	Basic Role	Detailed Responsibilities
PIU - SuKanal / JSC environmental group with assistance from domestic social and environmental specialists	Develop the project, perform all environmental testing and prepare all documents	<ul style="list-style-type: none"> • Preparing Env. Monitoring and Management Plans (EMMPs) for SEE review • Periodic submission of env. monitoring report to ADB for public disclosure • Performing monitoring with site inspectors and civil work surveys • Collecting and analyzing information on water quality, sewage treatment levels, and construction impact in accordance with MOH, EEC and MES regulations • Establishing environmental classifications under ADB regulations & determining need for Subproject (Sp) IEEs • Screening & preparation of SpIEEs including cost estimates for mitigation & monitoring for the SEE and obtaining IEE development consent approval • Conducting public consultations • Ensuring tender documents are updated with any changes to the EMMP • Ensuring contract document including environmental clearance certificate & conditions and ensuring ADB gets copies of these documents • Implementing and updating environmental mitigation and monitoring measures • Incorporating environmental requirements in civil work contracts • Ensuring that Contractors have fully implemented and completed the detailed EMMP and have submitted this to SEE for approval • Providing environmental training • Undertaking remedial action when unexpected environmental impacts occur • Preparation and submission of quarterly reports to the SEE and ADB including i) compliance with ADB loan covenants and government regulations, ii) significant issues or changes in scope, iii) summary of monitoring report findings, and iv) required follow-up actions • Undertaking monitoring of operation and preparing monitoring reports every year for 4 years after construction
PMU - AzerSu / SAWMA	Overall Program coordination and review	<ul style="list-style-type: none"> • Overall coordination with government entities and supervision responsibilities • Approval of the management contract • Submission of IEEs to SEE. Submitting to ADB first IEE & all IEEs over \$2 million • Monitoring and evaluation of the Program including analyzing baseline data related to the environmental conditions and impacts in the Program towns • Establishing laboratories for chemical analysis and monitoring of water quality
Env. Expert Group - SEE	Review all env. documents	<ul style="list-style-type: none"> • Review of environmental documents and providing clearance • Providing guidance for upholding environmental policy requirements
ADB - Social and Environmental Specialists	Reviews of major environmental documents	<ul style="list-style-type: none"> • Reviewing first IEE and all IEEs over \$2 million • Disclosing reports over ADBs website (Responsibility of ADB Project Leader) • Reviewing all statutory environmental clearances granted by SEE • Reviewing quarterly reports & taking necessary actions • Monitoring EMMP implementation and due diligence
Local Govts / TWUAs ¹	Coordinate with PIU with decisions	<ul style="list-style-type: none"> • Coordination with PIU and making key decisions on behalf of the community • Collaboration with Town Water Users Associations • Relaying concerns or requests on behalf of the community
Association	Basic Role	Detailed Responsibilities
SuKanal / JSC environmental group with assistance from domestic social and environmental specialists	Develop the project, perform all environmental testing and prepare all documents	<ul style="list-style-type: none"> • Preparing Env. Monitoring and Management Plans (EMMPs) for SEE review • Periodic submission of env. monitoring report to ADB for public disclosure • Performing monitoring with site inspectors and civil work surveys • Collecting and analyzing information on water quality, sewage treatment levels, and construction impact in accordance with MOH, EEC and MES regulations • Establishing environmental classifications under ADB regulations & determining need for Subproject (Sp) IEEs • Screening & preparation of SpIEEs including cost estimates for mitigation & monitoring for the SEE and obtaining IEE development consent approval • Conducting public consultations • Ensuring tender documents are updated with any changes to the EMMP • Ensuring contract document including environmental clearance certificate & conditions and ensuring ADB gets copies of these documents

Association	Basic Role	Detailed Responsibilities
		<ul style="list-style-type: none"> • Implementing and updating environmental mitigation and monitoring measures • Incorporating environmental requirements in civil work contracts • Ensuring that Contractors have fully implemented and completed the detailed EMMP and have submitted this to SEE for approval • Providing environmental training • Undertaking remedial action when unexpected environmental impacts occur • Preparation and submission of quarterly reports to the SEE and ADB including i) compliance with ADB loan covenants and government regulations, ii) significant issues or changes in scope, iii) summary of monitoring report findings, and iv) required follow-up actions • Undertaking monitoring of operation and preparing monitoring reports every year for 4 years after construction
PMF - AzerSu / SAWMA	Overall Program coordination and review	<ul style="list-style-type: none"> • Overall coordination with government entities and supervision responsibilities • Approval of the management contract • Submission of IEEs to SEE. Submitting to ADB first IEE & all IEEs over \$2 million • Monitoring and evaluation of the Program including analyzing baseline data related to the environmental conditions and impacts in the Program towns • Establishing laboratories for chemical analysis and monitoring of water quality
Env. Expert Group - SEE	Review all env. documents	<ul style="list-style-type: none"> • Review of environmental documents and providing clearance • Providing guidance for upholding environmental policy requirements
ADB - Social and Environmental Specialists	Reviews of major environmental documents	<ul style="list-style-type: none"> • Reviewing first IEE and all IEEs over \$2 million • Disclosing reports over ADBs website (Responsibility of ADB Project Leader) • Reviewing all statutory environmental clearances granted by SEE • Reviewing quarterly reports & taking necessary actions • Monitoring EMMP implementation and due diligence
Local Govts / TWUAs	Coordinate with PMF with decisions	<ul style="list-style-type: none"> • Coordination with PMF and making key decisions on behalf of the community • Collaboration with Town Water Users Associations • Relaying concerns or requests on behalf of the community

Attachment 1: Summary of Environmental Impacts, Mitigation Measures and Monitoring Plan

Program Activity and Potential Impacts	Proposed Mitigation Measures	Monitoring	Responsible Institutions
Design and Location			
<u>Source Abstraction</u> <ul style="list-style-type: none"> Development of groundwater sources and river intakes will reduce quantity of water available 	<ul style="list-style-type: none"> Perform detailed design to show necessary abstraction limit for towns during dry season Undertake long duration pumping tests to determine safe yield from wells Undertake confirmatory dry flow measurements on river source using the Wetted Perimeter Method Consult with town irrigation department to confirm irrigation needs Confirm river abstractions are not greater than 50 percent of flow (AZE Water Code, 1998) 	Inspection of Feasibility Studies, IEEs, Program designs and contract documents	PMO/PMF, SuKanal/JSC,
<u>Source Protection</u> <ul style="list-style-type: none"> Inadequate protection of intake works, leading to pollution of raw water supply 	<ul style="list-style-type: none"> Construct raised concrete platforms over the wells to serve as a floor for the pump stations and eliminate the risk of surface runoff contamination Equip wells with full water quality and drawdown monitoring devices Cap source to prevent entry of polluted surface water Provide a protection buffer zone of at least 100m upstream of river intakes and 30m surrounding boreholes, Article 22 of the Land Code (1999) Restrict access to intakes or boreholes with a fence or barrier Undertake baseline water quality tests 3 months prior to scheme construction Monitor and control activities in upstream catchment 	Inspection of Feasibility Studies, IEEs, water quality test results, Program designs and contract documents.	PMO/PMF, SuKanal/JSC,, SES
<u>Receiving Water Body Protection</u>	<ul style="list-style-type: none"> Perform pumping tests or infiltration gallery abstractions during dry season to see downstream effects particularly on downstream ecosystems Take water quality samples of receiving water body to see if water body can accept proposed biological load from the wastewater treatment plant Perform daily testing of wastewater effluent at outlet and downstream 	Inspection of Feasibility Studies, IEEs, water quality test results, Program designs.	PMO/PMF, SuKanal/JSC, SES
<u>Damage to Soil, Land, Ecology, Heritage</u> <ul style="list-style-type: none"> Soil erosion, land instability and damage to forests or vegetation 	<ul style="list-style-type: none"> Mainly confine subproject works to previously disturbed areas, access roads and tracks Avoid environmentally sensitive sites and those that would have negative impact on cultural heritage such as cemeteries Use flexible PE pipe for raw water transmission main, enabling pipeline to be routed around trees, obstructions and potentially unstable or erodible areas Provide slope stabilization and improve drainage where necessary Avoid constructing new access roads for water intakes, pipelines and reservoirs, but provide small access tracks for light vehicle access during construction and walking tracks for O&M of completed facilities 	Inspection of Feasibility Studies, IEEs, Program designs and contract documents.	PMO/PMF, SuKanal/JSC,,
<u>Damage to Crops and Tree</u>	<ul style="list-style-type: none"> Avoid or minimize resettlement and damage to crops or plantations by adopting 	Inspection of Feasibility	PMO/PMF,

Program Activity and Potential Impacts	Proposed Mitigation Measures	Monitoring	Responsible Institutions
<u>Plantations</u> <ul style="list-style-type: none"> • Damage to tree plantations and crops 	suitable locations and alignments for Program facilities and pipelines <ul style="list-style-type: none"> • Use flexible PE pipe for raw water transmission main, enabling pipeline to be routed around crops or trees • Replace all vegetation destroyed accordingly if categorized under the Rule for Use, Protection and Preservation of Trees and Bushes (2005) 	Studies, IEEs, Program designs and contract documents.	SuKanal/JSC,,
<u>Resettlement</u> <ul style="list-style-type: none"> • Dislocation or involuntary resettlement of residents and businesses. • Program effects on land and environment 	<ul style="list-style-type: none"> • Install water and wastewater supply pipelines in existing roads, footpaths or rights of way (ROW) wherever possible • Restrict road and drain upgrading to existing ROW where possible • Consult affected persons, prepare Resettlement Plans and provide adequate compensation and grievance redress mechanisms in line with ADB and Government resettlement policies enumerated in the Resettlement Framework • Provide information disclosure and public consultations in accordance with ADB's Public Communications Policy (2005) 	Inspection of Feasibility Studies, IEEs, Program designs, RPs and contract documents.	PMO/PMF and SuKanal/JSC
<u>Treated Water Quality</u> <ul style="list-style-type: none"> • Safeguard quality of water supply and wastewater discharge 	<ul style="list-style-type: none"> • Cover, ventilate and fence all treated water reservoirs • Design distribution network for minimum residual pressure of at least 10 m to prevent entry to mains of contaminated groundwater or backflow • Provide adequate spare parts • Design disinfection units to enable one unit to be taken offline for maintenance without disrupting plant operation 	Inspection of Feasibility Studies, IEEs, Program designs and contract documents.	Sulanal/JSC
<u>Design of Sewer and Water Pipelines</u> <ul style="list-style-type: none"> • Sewage leakage into potable water 	<ul style="list-style-type: none"> • New water pipelines must be constructed at a higher elevation than the sewer pipelines and in different trenches than the water pipelines to prevent leakage of sewage water into the water supply. • Water and wastewater pipes should be constructed with uPVC or HDPE on a sand bed. 	Inspection of Feasibility Studies, IEEs, Program designs and contract	Construction contractor, PMO/PMF and SuKanal/JSC
<u>Delivery of Unsafe Water</u> <ul style="list-style-type: none"> • Water quality violation 	<ul style="list-style-type: none"> • In the event that poor quality water is delivered to the consumers due to insufficient treatment, the PIU must put into effect a mitigation plan. At first, the sample must be collected again to ensure that the operators have not made any operational errors. If the sample has exceeded or gone below the allowable SES approved standards, the region is localized by stopping water supply to the customers. The pipelines are disinfected with chlorine and the water is further disinfected with chlorine. The water will be distributed to the region once tests demonstrate good water quality results and sufficient disinfection. 	Inspection of Feasibility Studies, IEEs, Program designs and contract	SuKanal/JSC, SES
<u>Increased Sewage and sludge Generation and Water Demands</u> <ul style="list-style-type: none"> • Increased sewage due to higher water use and 	<ul style="list-style-type: none"> • Improvement to water supplies will result in an inherit increase in the generation of wastewater. Detailed design calculations must account for the potential impacts of increased sewage generation in each community to verify that channels and infiltration rates can accept increased flow. 	Inspection of Feasibility Studies, IEEs, Program designs and contract	SuKanal/JSC

Program Activity and Potential Impacts	Proposed Mitigation Measures	Monitoring	Responsible Institutions
accounting for population projections	<ul style="list-style-type: none"> Sludge will be recycled in the treatment process and excess will be dewatered and dried before disposal to a designated MOH landfill site 		
Construction			
<u>Air & Noise Pollution, Congestion</u> <ul style="list-style-type: none"> Noise and dust generation from construction activities Traffic congestion and disturbance to community and businesses 	<ul style="list-style-type: none"> Limit night time work in populated areas Avoid use of vehicles/equipment with excessive exhaust or noise emissions; Install/maintain silencers Regularly water down road surfaces Do not burn waste on the construction site Provide secure cover to trucks carrying spoil or fine-grained construction materials Cover disturbed surfaces with mulch Carry out construction in sections, give adequate notice of construction activities, provide effective road signs, diversions or barricades Include appropriate clauses in construction contracts 	Daily site inspection, Monthly inspection of complaints register	Construction contractor, PMO/PMF and SuKanal/JSC
<u>Health and Safety</u> <ul style="list-style-type: none"> Hazards for members of public and construction workers 	<ul style="list-style-type: none"> Install barrier fencing around construction site Control access of unauthorized persons to site Provide first aid and safety training to construction staff Asbestos concrete (AC) piping will be left undisturbed in the ground due to its associated danger with respect to the risks of exposure to airborne asbestos fibers which may lead to diseases such as mesothelioma, asbestosis and lung cancer. The AC pipes will be marked on inventory drawings. In the event that it must be removed, working with asbestos piping requires wearing disposable masks and suits, wetting worksites frequently, and using only manual tools for cutting pipes to prevent the formation of high quantities of asbestos particulates in the air. Waste AC pipe must be removed as intact as possible and placed in designated containers in a wet state for appropriate toxic disposal (National Asbestos Management Plan, 2006, Australia) 	Daily inspection throughout construction stage. Monthly inspection of accident reports and complaints register	Construction contractor, PMO/PMF and SuKanal/JSC

Program Activity and Potential Impacts	Proposed Mitigation Measures	Monitoring	Responsible Institutions
<u>Protect Soil, Land and Ecology</u> <ul style="list-style-type: none"> • Soil erosion and sediment transport • Damage to land due to inappropriate disposal of construction wastes • Damage to streams beds and banks from extraction of construction materials • Impairment of water quality by spoil disposal • Groundwater and surface water contamination by oil and grease 	<ul style="list-style-type: none"> • To prevent soil erosion, administer an initial retention fee to Contractors. They will be able to collect their deposit once they have cleaned-up and revegetated or covered exposed areas created during construction. • Install appropriate slope protection works • Minimize vegetation clearance and minimize the time during which excavations are open • Rehabilitate disturbed surfaces as soon as possible after completion of construction activity • Dispose of spoil in designated spoil areas • Minimize extraction of construction materials from rivers and stream beds • Avoid tipping cut spoil directly into water courses or over the edge of roads • Collect, store and dispose of materials appropriately • Store oil, grease, fuel, bitumen on a sealed surface, away from rivers and streams • Construct silt ponds and install silt retention barriers in drains to prevent runoff • Redirect surface runoff around construction areas • Include appropriate clauses in construction contracts • Undertake construction by manual labor in steep areas to minimize ground disturbance and erosion 	Daily inspection throughout construction	Construction contractor, PMO/PMF and SuKanal/JSC
Operation			
<u>Operational Handling of Chlorine</u> <ul style="list-style-type: none"> • Chlorine hazards 	<ul style="list-style-type: none"> • Chlorine is explosive, corrosive, and incompatible with moisture, steam, and water. Store chlorine in a cool, dry, well-ventilated area in tightly sealed containers. Operators must be trained with the appropriate means of handling chlorine prior to working with the powder. • Install safety showers and eye wash stations near all chlorine equipment 	Monthly inspection of operation and maintenance records	PMF Consultants, SuKanal/JSC

Program Activity and Potential Impacts	Proposed Mitigation Measures	Monitoring	Responsible Institutions
<u>Health and Safety</u> <ul style="list-style-type: none"> • Hazards for AzerSu Workers and the public 	<ul style="list-style-type: none"> • Ongoing training programs for first aid and Occupational Health and Safety training to AzerSu • Undertake periodic inspections of electrical equipment by qualified staff and periodic safety audits • Install barrier fencing around construction site and control access of unauthorized persons to site • If asbestos cement piping exists, it will be left undisturbed in the ground due to its associated danger with respect to the risks of exposure to airborne asbestos fibers which may lead to diseases such as mesothelioma, asbestosis and lung cancer. In the event that it must be removed, working with asbestos piping requires wearing disposable masks and suits, wetting worksites frequently, and using only manual tools for cutting pipes to prevent the formation of high quantities of asbestos particulates in the air. Waste AC pipe must be removed as intact as possible and placed in designated containers in a wet state for appropriate toxic disposal (National Asbestos Management Plan, 2006, Australia) 	Monthly inspection of complaints register and safety records	PMF Consultants SuKanal/JSC
<u>Sustainability of Infrastructure Systems</u> <ul style="list-style-type: none"> • Efficiency and reliability of water supply and drainage systems 	<ul style="list-style-type: none"> • Provide training for water and wastewater network and metering repair training • Provide O&M training for water and sewer distribution networks; maintaining pressures and detecting leaks • Provide adequate budgets and undertake planned maintenance programs in accordance with specific O&M plans • Provide vocational training for AzerSu staff • Undertake planned cleaning of town drains and dispose of sludge to designated disposal sites 	Monthly inspection of operation and maintenance records	PMF Consultants, SuKanal/JSC
<u>Sustainability of WWTP Operation</u>	<ul style="list-style-type: none"> • Provide training for wastewater treatment plant operation 	Monthly inspection of operation and maintenance records	PMF Consultants, SuKanal/JSC

Attachment 2: Public Consultation Questionnaire

**Azerbaijan Urban Water Supply and Sanitation Project
Public Consultation Questionnaire**

Prepared by:
Asian Development Bank, February 2009

Interview Questions:

- 1) How do you obtain your water?
 - a. Tap
 - b. Walking to water truck or source
 - c. Delivery to house by water truck
- 2) If you have to walk to obtain your water, how far or for how long do you have to walk?
- 3) Are you satisfied with the quality of the water?
 - a. Not at all
 - b. Sometimes
 - c. All the time
- 4) How often do you lack water supply?
 - a. Never
 - b. 3 hours out of the day
 - c. 12 hours out of the day
 - d. For some days
 - e. Other:
- 5) Is there good water pressure?
 - a. Yes
 - b. No
- 6) Have you ever been sick because of poor water quality?
 - a. Yes
 - b. No

- 7) How much do you pay now for your water?
- a. Nothing
 - b. List amount:
- 8) Are you willing to pay for water? If yes, please state how much?
- a. No
 - b. Yes
 - i. List amount:
- 9) Are you connected with the AzerSu sewage system?
- 10) Do you have sewage problems on your property or around your house?
- a. Yes
 - b. No
- 11) Are you willing to pay for sewage collection? If yes, please state how much?
- a. No
 - b. Yes
 - i. List amount:
- 12) If you are an industry and are not connected to the AzerSu water supply system currently, would you want to be connected?
- a. Yes,
 - i. Please list how much would you be willing to pay for water supply:
 - b. Yes, but only if I am provided with clean water regularly for 24 hours a day,
 - i. Please list how much you would be willing to pay:
 - c. No
- 13) If you are an industry and are not connected to the AzerSu sewage collection system currently, would you want to be connected?
- a. Yes,
 - i. Please list how much would you be willing to pay for sewage collection:
 - b. Yes, but only if I am provided with good wastewater management regularly for 24 hours a day,

i. Please list how much you would be willing to pay:

c. No

14) Would you be interested in joining a local committee to be entitled 'Town Water Users' to represent the interests of consumers in ensuring that water supply and sanitation services achieve consumer satisfaction?

a. No

b. Yes

i. Please list contact information:

CONTENT AND FORMAT INITIAL ENVIRONMENTAL EXAMINATION (IEE)

A. Introduction

1. IEE is an important tool for incorporating environmental concerns at the project level. IEE should be carried out as early as the project planning stage as part of feasibility thus it can assure that the project will be environmentally feasible. The general objectives of IEE study should at least cover the following:

- (i) to provide information about the general environmental settings of the project area as baseline data;
- (ii) to provide information on potential impacts of the project and the characteristic of the impacts, magnitude, distribution, who will be the affected group, and their duration;
- (iii) to provide information on potential mitigation measures to minimize the impact including mitigation costs;
- (iv) to assess the best alternative project at most benefits and least costs in terms of financial, social, and environment. It is not always necessary to change location of the project, but it can be changed in project design or project management; and
- (v) to provide basic information for formulating management and monitoring plan

2. The IEE is conducted if the project is likely to have minor or limited impacts, which can easily be predicted and evaluated, and for which mitigation measures are prescribed easily. However, the IEE is also used to confirm whether this is, indeed, requires an EIA (see Appendix 2) as a follow up.

B. The Process in Preparing IEE

3. An early step is to determine the scope of the IEE study. This activity is known as “scoping” as a procedure designed to establish the terms of reference (TOR) for the IEE. The scoping procedure should at least produce the following outputs:

- (i) identify the likely environmental impacts or other environmental concerns and consideration that need to be further investigated in IEE study
- (ii) identify environmental component which need detailed or further study
- (iii) determine the general approach and methodology required to carry out the IEE study
- (iv) identify in general all affected interest to be consulted in carrying out IEE study
- (v) identify the need to fit the outputs of IEE into the project context especially on environmental management and monitoring plan

4. The next step is undertaking IEE study, and the following are key important activities:

1. Describing Environmental Condition of the Project Area

5. Collection of baseline information on biophysical, social and economic aspects of the project area is the most important reference for conducting IEE study. The description of environmental settings includes the characteristic of area in which the activity of proposed project would occur and it should cover area affected by all impacts including potential compensation area, and potential area affected by its alternatives. Normally, information is obtained from secondary sources when there is a facility of maintaining database, or other

existing documentation, and through field sampling. Collection of baseline data should be designed to satisfy information requirements and should focus on relevant aspects that are likely to be affected by the proposed project. Therefore, the level of detail in this description of study area should be sufficient to convey to readers nature of environmental and social resources condition of the affected areas.

2. Assessing Potential Impact

6. The "technical heart" of the environmental assessment process involves the prediction of changes over time in various environmental aspects as a result of a proposed project. The prediction of the nature, extent, and magnitude of environmental changes likely to result from a proposed project is aided by various tools and techniques, the choice of which depends upon the impacts of concern, data availability or lack thereof, and the appropriate specificity of quantitative models. However, the choice of the appropriate method for conducting an environmental assessment can only be guided by certain criteria, but no single method will meet all the necessary criteria. In addition, the prediction has to be based on established scientific knowledge that is still very limited in ecosystems in most DMCs. For this reason, the prediction of ecological changes and their impacts often does not generate concrete conclusions on the magnitude of the impacts.

3. Formulating Mitigation Measures

7. Once the impacts have been analyzed, their significance will be determined, i.e., whether they are acceptable, require mitigation, or are unacceptable. Subsequently, measures will be devised to mitigate anticipated environmental changes and consequential impacts during project implementation and operation, or further reduce the residual environmental changes inherent in the selected project design. They normally include technical, social, and institutional measures to be implemented as integral elements of the project. Examples are sound operating rules of a reservoir to ensure minimum impacts on downstream water users, and installation of an electrostatic precipitator to remove fly ash in a coal-fired power plant project, and adequate drainage system in an irrigation project.

4. Preparing the Institutional Requirements and Environmental Monitoring Plan

8. Environmental management involves the implementation of environmental protection and mitigation measures and monitoring for significant environmental impacts. Environmental protection measures are taken to: (i) mitigate environmental impacts, (ii) provide in-kind compensation for lost environmental resources, or (iii) enhance environmental resources. These measures are usually set out in a plan, which covers all phases of the project from pre-construction through decommissioning, and outlines mitigation and other measures that will be undertaken to ensure compliance with environmental regulations and reduce or eliminate adverse impacts. The basic implementation arrangements should be presented - taking account of the local conditions. Responsibilities for mitigation and monitoring shall be defined along with arrangements for information flow, and for coordination between agencies responsible for mitigation. A plan should specify who/which agency is responsible for undertaking the mitigating and monitoring measures, e.g., for enforcement of remedial actions, monitoring, training, and financing. A third party may be contracted in case the local authorities' capacity is limited. Institutional strengthening activities may be proposed, including establishment of appropriate organization arrangements; appointment of key staff and consultants; and arrangements for counterpart funding.

9. Environmental monitoring involves: (i) planning a survey and sampling program for systematic collection of data/information relevant to environmental assessment and project

environmental management; (ii) conduct of the survey and sampling program; (iii) analysis of samples and data/information collected, and interpretation of data and information; and (iv) preparation of reports to support environmental management. Environmental monitoring is normally carried out before and during planning to establish baseline data needed for Environmental assessment and evaluating environmental impacts during project implementation. It continues through project operation to detect changes in the key environmental quality parameters, which can be attributed to the project. The results of the monitoring program are used to evaluate the following: (i) extent and severity of the environmental impacts against the predicted impacts; (ii) performance of the environmental protection measures or compliance with pertinent rules and regulations; (iii) trends in impacts; and (iv) overall effectiveness of the project environmental protection measures.

10. Environmental monitoring should have clear objectives, and the survey and sampling program custom-designed to focus on data/information actually required to meet the objectives. In addition, the design of the monitoring program has to take into account its practicability considering the technical, financial, and management capability of the institutions that will carry out the program and period of monitoring that will be needed to achieve the objectives (see Table 1). The monitoring program should include action or emergency plans so that appropriate action can be taken in the event of adverse monitoring results or trends. It should also be constantly reviewed to make sure that it is effective, and determine when it can be stopped.

Table 1: Features of an Effective Environmental Monitoring Plan

<ul style="list-style-type: none"> • Realistic sampling program (temporal and spatial) • Sampling methods relevant to source • Collection of quality data • Comparable new data with other relevant data used in environmental assessment • Cost-effective data collection • Quality control in measurement and analysis • Innovations (e.g., in tracing contaminants and automated stations) • Appropriate databases • Multidisciplinary data interpretation to provide useful information • Reporting for internal management and external checks • Allowance for, and response to, input from third parties • Presentation in the public arena (external assessment)

11. Both the environmental management and monitoring plans need to include who will implement them, when, and where. The capacity of the executing agency, local government, and community organization should be reviewed to identify feasible approach for implementing the plans. The project lifecycle should be taken into account in setting the timing of implementation. For example, plans should environmental mitigation measures should be implemented in the engineering design for the contract documents, and materials to be avoided in procurement, among others. On the other hand, the location for monitoring should be selected based on where the impacts would occur, and the areas to be affected. To ensure that the environmental management and monitoring plans will be implemented, it is necessary to identify the key management issues to be included as a requirement either as a loan covenant or conditions for implementing the project.

C. Documenting IEE Studies

12. IEE reports and their summaries (SIEE) should be presented in certain way to meet the requirements of ADB and the DMC. However, wherever possible, ADB requests that the Borrower follow ADB-prescribed format for IEE. This is to ensure that environmental assessment results are presented in a clear and concise fashion to contribute most effectively to decision-making. However, if several other financial institutions fund the proposed Project in the form of co-financing modality, it is necessary for ADB to come up with an agreement with those institutions on IEE reporting requirement. In this context, it is necessary to ensure that the content of the IEE reports cover all issues required by ADB. Although the presentation of the IEE report may not follow ADB's standard, it is necessary to ensure that the SIEE should be formulated and presented in accordance to ADB's guideline.

1. Initial Environmental Examination

13. The content and format of the IEE report is in Table 2. If the approved IEE concludes that the project will not have any significant adverse environmental impacts, then the environmental assessment is deemed complete. If there are unresolved issues, the recommendation should be either that further studies be undertaken to resolve the issues, or that a full EIA is required.

Table 2: Outline of an IEE Report

A.	Introduction
B.	Description of the Project
C.	Description of the Environment
D.	Screening of Potential Environmental Impacts and Mitigation Measures
E.	Institutional Requirements and Environmental Monitoring Plan
F.	Public Consultation and Information Disclosure
G.	Findings and Recommendation
H.	Conclusions

a. Introduction

14. This section usually includes the following:

- (i) purpose of the report, including (a) identification of the project and project proponent; (b) brief description of the nature, size, and location of the project and of its importance to the country; and (c) any other pertinent background information; and
- (ii) Extent of the IEE study: scope of study, magnitude of effort, person or agency performing the study, and acknowledgement.

b. Description of the Project

15. Furnish sufficient details to give a brief but clear picture of the following (include only applicable items):

- (i) type of project;
- (ii) category of Project;
- (iii) need for project;
- (iii) location (use maps showing general location, specific location, and project site);
- (iv) size or magnitude of operation;
- (v) proposed schedule for implementation; and
- (vi) descriptions of the project, including drawings showing project layout, and project components. This information should be of the same type and extent as is included in feasibility reports for proposed projects to give a clear picture of the project and its operations.

c. Description of the Environment

16. Furnish sufficient information to give a brief but clear picture of the existing environmental resources in the area affected by the project, including the following (to the extent applicable):

- (i) **Physical Resources: (e.g.)**
 - atmosphere (e.g. air quality and climate)
 - topography and soils,
 - surface water
 - groundwater
 - geology/seismology.

- (ii) **Ecological Resources: (e.g.)**
 - fisheries
 - aquatic biology
 - wildlife
 - forests
 - rare or endangered species
 - protected areas
 - coastal resources

- (iii) **Economic Development: (e.g.)**
 - industries
 - infrastructure facilities (e.g. water supply, sewerage, flood control)
 - transportation (roads, harbors, airports, and navigation)
 - land use (e.g. dedicated area uses)
 - power sources and transmission
 - agricultural development, mineral development, and tourism facilities

- (iv) **Social and Cultural Resources: (e.g.)**
 - population and communities (e.g. numbers, locations, composition, employment)
 - health facilities
 - education facilities
 - socio-economic conditions (e.g. community structure, family structure, social well being)
 - physical or cultural heritage
 - current use of lands and resources for traditional purposes by Indigenous Peoples
 - structures or sites that are of historical, archaeological, paleontological, or architectural significance.

d. Screening of Potential Environmental Impacts and Mitigation Measures

17. Using the checklist of environmental parameters for different sector projects, this section will screen out “no significant impacts” from those with significant adverse impact by reviewing each relevant parameter according to the following factors or operational stages. Mitigation measures, where appropriate, will also be recommended environmental problems due to project location, and related to project design, construction, and operations. Potential environmental enhancement measures and additional considerations will also be covered.

e. Institutional Requirements and Environmental Monitoring Plan

18. This section should state the impacts to be mitigated, and activities to implement the mitigation measures, including how, when, and where they will be implemented. Institutional arrangements for implementation should be described. The environmental monitoring plan will describe the impacts to be monitored, and when and where monitoring activities will be carried out, and who will carry them out. The environmental management and monitoring costs should also be described.

f. Public Consultation and Information Disclosure

19. This section will describe the process undertaken to involve the public in project design and recommended measures for continuing public participation; summarize major comments received from beneficiaries, local officials, community leaders, NGOs, and others, and describe how these comments were addressed; list milestones in public involvement such as dates, attendance, and topics of public meetings; list recipients of this document and other project related documents; describe compliance with relevant regulatory requirements for public participation; and summarize other related materials or activities, such as press releases and notifications. This section will provide of summary of information disclosed to date and procedures for future disclosure.

g. Findings and Recommendations

20. This section will include an evaluation of the screening process and recommendation will be provided whether significant environmental impacts exist needing further detailed study or EIA. If there is no need for further study, the IEE itself, which at times may need to be supplemented by a special study in view of limited but significant impacts, becomes the completed environmental assessment for the project and no follow-up EIA will be needed. If an EIA is needed, then this section will include a brief terms of reference (TOR) for the needed follow-up EIA, including approximate descriptions of work tasks, professional skills required, time required, and estimated costs. The Bank's Environment Guidelines provides a guide for preparing the TOR for different projects.

h. Conclusions

21. This section will discuss the result of the IEE and justification, if any, of the need for additional study or EIA. If an IEE, or an IEE supplemented by a special study, is sufficient for the project, then the IEE with the recommended institutional and monitoring program becomes the completed EIA.

2. Summary Initial Environmental Examination Report

22. The summary IEE (SIEE) report is the executive summary of the IEE report. It describes the significant findings of the IEE report, and recommendations to manage them. The SIEE report should be presented clearly and concisely as a stand-alone document (see Table 3) for submission to the Board and disclosure to the public.

Table 3: Outline of an SIEE Report

<p>A. Introduction (1/2 page)</p>
<p>This section will include the purpose of the report, extent of the IEE study and brief description of any special techniques or methods used.</p>
<p>B. Description of the Project (1/2 page)</p>
<p>This section will include the type of and need for the project; and project location, size or magnitude, operation, and proposed schedule for implementation.</p>
<p>C. Description of the Environment (2 pages)</p>
<p>This section will include the physical and ecological resources, human and economic development, and quality of life values.</p>
<p>D. Forecasting Environmental Impacts and Mitigation Measures (2-4 pages)</p>
<p>This section will identify "no significant impacts" from those with significant adverse impacts and will discuss the appropriate mitigation measures, where necessary.</p>
<p>E. Institutional Requirements and Environmental Monitoring Plan (1 page)</p>
<p>This section will describe the impacts to be mitigated, and activities to implement the mitigation measures, including how, when, and where they will be implemented. The environmental monitoring plan will describe the impacts to be monitored, and when and where monitoring activities will be carried out, and who will carry them out.</p>
<p>F. Public Consultation and Disclosure</p>
<p>This section will describe the process undertaken to involve the public in project design and recommended measures for continuing public participation; summarize major comments received from beneficiaries, local officials, community leaders, NGOs, and others, and describe how these comments were addressed; list milestones in public involvement such as dates, attendance, and topics of public meetings; list recipients of this document and other project related documents; describe compliance with relevant regulatory requirements for public participation; and summarize other related materials or activities, such as press releases and notifications. This section will provide of summary of information disclosed to date and procedures for future disclosure.</p>
<p>G. Findings and Recommendations (1-2 pages)</p>
<p>This section will include an evaluation of the screening process, and recommendation will be provided whether significant environmental impacts exist needing further detailed study or EIA. If there is no need for further study, the IEE itself, which at times may need to be supplemented by a special study in view of some small significant impacts, becomes the completed EIA for the project and no follow-up EIA will be needed.</p>
<p>If further additional study is needed, then this section will include a brief terms of reference (TOR) for the needed follow-up EIA, including approximate descriptions of work tasks, professional skills required, time required, and estimated costs. The Bank's Environment Guidelines provides a guide for preparing the TOR for different projects.</p>
<p>H. Conclusions (1/2 page)</p>
<p>This section will discuss the result of the IEE and justification if any of the need for additional study or EIA. If an IEE or an IEE supplemented by a special study is sufficient for the project, then the IEE with the recommended institutional requirements and monitoring program become the completed EIA.</p>

Table 1: Maximum Allowable Concentrations (MAC) In Drinking Water

No	Substances	MAC Limits (mg/l)
1.	Smell at 20°C temperature	<2 threshold odor number
2.	Color	<20 color units
3.	Turbidity	<1.5 NTU
4.	Ph	6-9
5.	HCO ₃ ⁻	>3
6.	Ca ²⁺	180
7.	Mg ²⁺	40
8.	Na ⁺	170
9.	Polyphosphate residual (PO ₄ ⁻)	3,5
10.	Hardness	7.0 mg-eqv
11.	Mineralization	<1000 (1500)
12.	Total dissolved solids	1000.0
13.	N ₂ O ₅	29.0
14.	NO ₂	traces
15.	NO ₃	10.0
16.	NH ₄	traces
17.	Cl ⁻ (chlorine)	25 - 50
18.	Cl ₂ (chloride)	350
19.	SO ₄ ²⁻	100
20.	both iron oxides Fe ²⁺ and Fe ³⁺	0.3
21.	total content of Fe ⁺ and Mn	0.5-1.0
22.	Oxidation	2.5-3.0
	O ₂	10.0
	KMnO ₄	
23.	Pb (lead)	0.03
24.	As (arsenic)	0.05
25.	Cu (copper)	1.0
26.	F ⁻ (fluoride)	1.5
27.	Al (aluminum)	0.5
28.	Be (beryllium)	0.0002
29.	Mo (molybdenum)	0.25
30.	Se (selenium)	0.001
31.	Sr (strontium)	7.0
32.	Zn (zinc)	5.0
33.	H ₂ S	0.0
34.	Hg, Ba, hexavalent Cl and other poison contaminations	0.0
35.	TVC @ 37°C	100 in 1 cm ³
36.	Total Coliforms in 1000 ml water (E coli-index) (MPN)	3

Source: Maximum Allowable Concentrations, GOST 2874-8, MOH

Note: There are some exclusions for drought regions: content of total dissolved solids can be up to 2,500-3,000 mg/l; Cl₂ up to 400-800 mg/l; SO₄²⁻ up to 1,000-1,500 mg/l; and general water hardness up to 21-40 mg-eqv.

Table 2: Maximum Allowable Wastewater Influent and Effluent Levels

Parameter (at rated temperature 15°C)	MAC at entry (mg/l)	MAC at exit (mg/l)
COD (chemical oxygen demand)	620	125
BOD (biological oxygen demand)	375	35
N (general nitrogen)	35	15
P (general phosphorus)	8	2
Suspended matters	310	35

Source: Directive No 91/271/EEC, European Economic Community

Table 3: Maximum Allowable Concentrations for Water Bodies Used for Fishing

Parameter	MAC (mg/l)
BOD (biological oxygen demand)	3.0
COD (chemical oxygen demand)	20.0
Ammonium (NH ₄ ⁺)	0.5
Potassium (K ⁺)	50.0
Calcium (Ca ⁺⁺)	180.0
Magnesium (Mg ⁺⁺)	40.0
Sodium (Na ⁺)	120.0
Nitrate-ion (NO ₃ ⁻)	40.0
Sulphate-ion (SO ₄ ⁻)	100.0
Chloride-ion (Cl ⁻)	300.0
Fluorine-ion (F ⁻)	0.75
Phosphorus (P)	0.3

Table 4: National Ambient Air Quality Standards

Pollutants	Maximum allowed concentrations (mg/m ³)	
	Maximal concentration for a given moment	Average daily concentration
Carbonic Oxides	3.0	1.0
Sulfur Dioxide (SO ₂)	0.5	0.03
Nitrogen Oxides	0.085	0.085
Benzole	1.5	0.8
Fluoride Compounds	0.02	0.005
Phenol	0.01	0.01
Non-toxic Dust	0.5	0.15
Soot	0.15	0.05
Formaldehyde	0.035	0.012
Chlorine	0.1	0.03
Hydrogen Sulfide	0.008	0.008
Nitrobenzene	0.008	0.008
Ammonia	0.2	0.2
Acetone	0.35	0.35
Methanol	1.0	0.5
Ozone (O ₃)	0.16	0.03
Hydrocarbon (HC)	1.0	-
Lead and its compounds (except tetraethyl lead)	0.0010	0.0002

Source: Maximum allowable concentrations of toxic elements in the working area GOST 12.1.005-88; Ministry of Ecology and Natural Resources, 2003

Table 5: Maximum Allowable Noise Levels

Land use	Noise standard (max) in decibel (dBA)	
	Daytime (07:00-23:00)	Nighttime (23:00-07:00)
Residential Areas	40	30
Commercial Areas	55-60	55-60
Hotels and dormitories	45	35
Industrial areas:		
a) highly qualified workplaces	50	50
b) permanent workplaces within territory or buildings of plants	80	80
c) workplaces of track drivers and service	70	70
d) workplaces of drivers and service for tractors and other equivalent agricultural and melioration mechanisms	80	80
Sensitive areas: a) hospitals and sanatoriums	35	25
b) schools, libraries and conference halls	40	40

Source: Noise Standards GOST 12.1.003-83 UDK 534.835.46:658.382.3:006.354; GOST 12.1.036-81 ST SEV 2834-80

Table 6: Sample of Public Consultation Form

Name	Surname	Profession	Gender	Discussion / Responses / Outcomes
				•
				•
				•
				•
				•

Table 7: Environmental Assessment and Mitigation Costs to Program

Environmental Mitigation Item	Program Costs (US\$)
Hiring Domestic Social & Environ. Specialists	\$147,250 (includes (2) consultants at 30 person-months, and (1) hydrogeologist for 2 person-months, at \$2,375 per month)
Preparing Environmental Assessment Reports	\$10,000
Water and Wastewater Monitoring Cost	\$20,000
Calculating Source Abstraction Limits	Covered by hiring Program Consultants
Protecting Source from Contamination	Covered by hiring Program Consultants
Involuntary Resettlement Issues	Covered by hiring Safeguards Specialist
Performing Environmental Monitoring	Covered by AzerSu and by hiring environmental specialist
Good Design of Water & Wastewater Pipelines	Covered by hiring Program Consultants
Prevention of Unsafe Water Delivery	Covered by hiring Program Consultants
Damage to Soil, Ecology, Heritage, Crops	Covered by hiring environmental & social design specialists
Preventing Construction Pollution & Wastes	
<ul style="list-style-type: none"> • Protecting Against Soil & Water Contamination 	Covered by tender & contract documents with contractor
<ul style="list-style-type: none"> • Dust & Air Quality 	Covered by tender & contract documents with contractor
<ul style="list-style-type: none"> • Noise 	Covered by tender & contract documents with contractor
<ul style="list-style-type: none"> • Proper Waste Disposal 	Covered by tender & contract documents with contractor
Training	
<ul style="list-style-type: none"> • Worker Health & Safety 	Covered by tender & contract documents with contractor
<ul style="list-style-type: none"> • WWTP Operation 	Training provided by Contractor and vendor
<ul style="list-style-type: none"> • Chlorine Handling and Health & Safety 	Training provided by Contractor and vendor
<ul style="list-style-type: none"> • Repair of water, wastewater and metering systems 	\$ 100,000
<ul style="list-style-type: none"> • O&M for water and sewer distribution networks; maintaining pressures and detecting leaks 	\$ 100,000
TOTAL	\$ 377,250