

Draft Environmental Assessment and Review Framework

May 2014

NEP: Third Small Towns' Water Supply and Sanitation Sector Project

CURRENCY EQUIVALENTS

(Official exchange rate of the Nepal Rastra Bank as of 1 March 2014)

Currency unit	-	Nepalese Rupee (NPR)
USD 1.00	=	NPR98.51
NPR 1.00	=	USD 0.010151

Abbreviations

ADB	Asian Development Bank
AP	affected person
CSA	concerned sector agency
DDC	District Development Committee
DSC	Design &Supervision Consultants
DWSS	Department of Water Supply and Sewerage
EARF	environmental assessment and review framework
EIA	environmental impact assessment
EMP	environmental management plan
EMR	environmental monitoring report
ESO	environmental safeguard officer
EPA	Environment Protection Act
EPR	Environment Protection Rules
ESE	environmental safeguard expert
ESS	Environmental and Social Section
IEE	initial environmental examination
GoN	Government of Nepal
GRC	Grievance Redress Committee
GRM	grievance redress mechanism
MoSTE	Ministry of Science, Technology and Environment
MUD	Ministry of Urban Development
NDWQS	National Drinking Water Quality Standards
NPR	Nepalese Rupee
RPMOS	Project Implementation Support Unit
PMO	Project Management Office
REA	rapid environmental assessment
RMSO	Regional Monitoring and Supervising Office
SPS	Safeguard Policy Statement
STWSSSP	Small Towns' Water Supply and Sanitation Sector Project
ToR	terms of reference
USD	United States Dollar
VDC	Village Development Committee
WHO	World Health Organization
WSSDO	Water Supply and Sanitation Divisional Office
WUSC	Water Users' and Sanitation Committee
WWTP	wastewater treatment plant

NOTES

In this Report, "\$" refers to US dollars.

This environmental assessment and review framework is a document of the borrower. The views expressed herein do not necessarily represent those of ADB's Board of Directors, Management, or staff, and may be preliminary in nature. The Final EARF will be uploaded upon ADB Board approval of the Project.

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I. INTRODUCTION

A. The Third Small Towns' Water Supply and Sanitation Sector Project

1. The Third Small Towns Water Supply and Sanitation Sector Project (3STWSSSP) will support the government of Nepal (the Government) in providing water supply and sanitation facilities and services to around 26 small towns in Nepal. Out of the 265 small towns in Nepal, Asian Development Bank (ADB) has already supported the Government, through successful implementation of earlier two projects in 50 towns. Drawing experience from the past projects, the project will fund physical investments in water and sanitation infrastructure in selected small towns in Nepal and non-physical investments in institutionalizing sector reforms, capacity building, project management and service delivery improvement in these towns.

2. 3STWSSSP will be implemented over a five-year period (2015 to 2020) and will be supported through ADB and OFID funds using a sector lending approach of ADB. The Executing Agency is the Ministry of Urban Development (MOUD) and the implementing agency is the Department of Water Supply and Sewerage (DWSS).

3. The outcome will be inclusive and sustainable water supply and sanitation service delivery in project towns. The project will have 3 outputs; (i) Improved water supply and sanitation infrastructure; (ii) Strengthened sector policy, regulatory and institutional capacity and service delivery; and (iii) improved project implementation.

4. Three initial subprojects with water supply and sanitation components have been prepared under the preparatory technical assistance for the Project (TA 8364-NEP). Corresponding initial environmental examinations (IEEs) and environmental management plans have been prepared in accordance with ADB's Safeguard Policy Statement (SPS), 2009. The IEEs have indicated that impacts are site-specific or confined within the subprojects' main areas of influence. The few impacts of high significance (without mitigation) will be temporary and short-term as these are anticipated to arise during construction period and can be mitigated with uncomplicated measures commonly used at construction sites in urban settings and known to civil works contractors.

5. Hence, the Project is classified as a Category B undertaking as per ADB SPS, 2009. Subsequent subprojects are likely to be within the range of scope, scale and setting as that of the initial subprojects, potentially with additional elements in the sanitation component as shown in Table 1, and producing generally the same impacts of same magnitude. Thus, it is expected that subsequent subprojects will be Category B activities. Subprojects that will fall under Category A in ADB's environmental classification will not be considered in the Project.

Table 1. Potential Elements of Subsequent Subprojects

Water Supply	Sanitation
<p>Water Intake: deep tube well/borehole well surface water intake structure</p> <p>Water Treatment Plant: Treatment units (lime dosing, pressure filters, chlorination units) Pump/s and pump house/s Generator/s Small building & small laboratory</p> <p>Storage: ground reservoir tank overhead storage tank</p> <p>Pipes: transmission main distribution network</p> <p>Connections: Household meters</p>	<p>Toilets: Household and public toilets Septic tanks (water tight and sealed)</p> <p>Septage/ Sludge Management: Controlled sludge disposal sites/ sludge drying beds</p> <p>Decentralized Wastewater Treatment System (Dewats): sewerage network Treatment units (reed beds, etc) Sludge drying beds</p>

B. Purpose of the EARF

6. This Environmental Assessment and Review Framework (EARF) is prepared for the 3STWSSSP. It outlines the procedures that will be followed in the environmental assessment and review of subprojects to be prepared after Project approval¹ in order to comply with the ADB SPS, 2009 and Government of Nepal Environment Protection Act (EPA) 1997 and Environment Protection Rules (EPR) 1997, as amended in 1999 and 2007 respectively.

7. The EARF has been developed following ADB's SPS requirements and has been agreed with the MUD. The EARF provisions shall guide the key institutions in the selection, screening and categorization, environmental assessment, and preparation/ implementation/ monitoring and reporting of the implementation of safeguard plans (e.g., an environmental management plan) of subsequent subprojects under the Project. The preparation of environmental assessment documents shall follow the procedures outlined in this EARF. Since environmental assessment reports and environmental management plans to be prepared for subsequent subprojects are Borrower's documents, these shall be officially endorsed by the MUD and submitted to the ADB for review, approval and disclosure.

8. This EARF: (i) provides an overview of the Project and its component outputs; (ii) explains the general anticipated environmental impacts of subsequent subprojects to be financed under the Project; (iii) specifies the requirements that will be followed in relation to screening and categorization, assessment, and planning, including arrangements for meaningful consultation with affected people and other stakeholders and information disclosure requirements; (iv) specifies the environmental safeguard criteria that are to be used in selecting and excluding subsequent subprojects; (v) assesses the adequacy of the Borrower's capacity to implement national laws and ADB's requirements and identifies needs for capacity building; (vi) specifies EARF implementation procedures, including the budget, institutional arrangements, and capacity development requirements; (vii) specifies monitoring and Reporting requirements; and (viii) describes the responsibilities of the Borrower/executing agency and of ADB in relation to the preparation, implementation, and progress review of safeguard documents of subsequent subprojects.

¹ The Initial Environmental Examinations (IEEs) of the initial three sample subprojects (Charaali Town, Mahendranagar Town and Chandrauta Town) have been prepared and will be approved together with the Project. As such, this EARF shall be applied to subprojects that will be prepared subsequent to Project approval.

II. ASSESSMENT OF LEGAL FRAMEWORK AND INSTITUTIONAL CAPACITY

A. Legal Framework

1. National Legislation

9. The Interim Constitution of Nepal 2007 defines the right to live in clean environment as one of the fundamental rights of its citizens (Article 16). It prescribes for the State to give priority to the protection of the environment and prevention of its further damage due to physical development activities (Clause 5 of Article 35). Proceeding from, and conformable to, the Constitution, the Government of Nepal has passed a series of environmental laws, policies and implementing regulations and standards. Among these, the basic legislations that provide the framework within which environmental assessment is carried out in Nepal are the:

Environmental Protection Act (EPA), 1997, which requires a proponent to undertake IEE or environmental impact assessment (EIA) of the proposed project and have the IEE or EIA Report approved by the concerned sector agency or Ministry of Science, Technology and Environment (MoSTE), respectively, prior to implementation. The EPA: (i) sets out the review and approval process of IEE and EIA Reports, that involve informing and consulting stakeholders; (ii) stipulates that no one is to create pollution that would cause significant adverse impacts on the environment or harm to public life and health, or to generate pollution beyond the prescribed standards; (iii) specifies for the Ministry in charge of environment (currently the MoSTE) to conduct inspection of approved projects to ensure that pollution prevention, control or mitigation is carried out according to the approved IEE or EIA Report; (iv) provides for the protection of objects and places of national heritage and places with rare plants, wildlife and biological diversity; and (v) states that any person/party affected by pollution or adverse environmental impact caused by anybody may apply to the prescribed authority for compensation to be recovered from the polluter/pollution generator.

Environmental Protection Rules (EPR), 1997, and its amendments in 1999 and 2007, defines the implementing rule and regulations of the IEE/EIA process, elaborating the provisions in the EPA. The preparation, review and approval of IEE and EIA Reports are dealt with in Rules 3 to 7 and 10 to 14. Schedules 1 and 2 list down the projects of activities that are required IEE and EIA, respectively, as amended in 2007.

10. Other environmental policies, laws and rules that provide general context in the environmental assessment of water supply and sanitation works are presented in Table 2. The relevant environmental quality standards enforced by the Government of Nepal are the following and are presented in detail in Annex A:

- (i) National Ambient Air Quality Standards for Nepal, 2003
- (ii) National Noise Standard Guidelines, 2012
- (iii) National Drinking Water Quality Standards, 2005
- (iv) Tolerance Limits for Wastewater to be Discharged into Inland Surface Waters from Combined Wastewater Treatment Plant, 2004

Table 2. Other Relevant Environmental and Core Labor Policies, Laws and Guidelines of Nepal

Policy/Law/Guideline	Year *	Relevant Provisions	Remarks
Ancient Monument Preservation Act	1956	Digging of ground for drinking water or sewerage in an area declared as preserved monument area shall have prior approval/permit from the Department of Archaeology (Clause 5, Article 3).	Subprojects encroaching into preserved monument area require EIA. Subprojects that will trigger the need for an EIA shall be avoided.
Aquatic Animal Protection Act	1960 (1997)	It prohibits the closure or demolition of fish ladders and other structures that are placed in streams, rivers, lakes and other surface water bodies, to aid movement and migration and/or protect aquatic animals (Article 3A). Concerned water supply projects shall build fish ladder or make an aquatic nursery in the vicinity of affected water bodies for the artificial breeding of aquatic animals (Article 5B).	Relevant to subprojects that will tap surface water as source.
Soil and Watershed Conservation Act	1982	Article 10 prohibits the following on lands within a protected watershed area prescribed as those on which floods, landslides, washouts or erosion occur or may occur, without the prior permission of the concerned Watershed Conservation Officer : (i) block, store or divert in any way water from any stream, rivulet, waterfall or underground water for any purpose; (ii) cut or destroy natural vegetation and other forest products; (iii) cause accumulation, and sedimentation of accumulated, boulders, rocks, sand, soil, mud, etc.; (iv) extraction of natural aggregates; (v) dumping of solid wastes.	Subprojects encroaching into conservation area require EIA. Subprojects that will trigger the need for an EIA shall be avoided.
Water Resources Act	1992	A comprehensive law on the development, use and conservation of water resources in Nepal, it aims to minimize damage to water bodies by requiring the conduct of EIA & preparation of EIA Report before granting license to use water resources for any purpose. Proponents shall make sure that the beneficial use of water resources does not cause damage to other water uses/users (Article 4). Article 7 ranks "drinking & domestic use" as first in the priority order of use of water resources, which will be one of the bases of decision in case of water use dispute. Article 17 requires proponents to apply for any necessary land acquisition accordingly; Article 18, the compliance to quality standards in making use of water resources. Article 19 prohibits the pollution of water resources. Under the Act are two regulations for drinking water purposes: (i) Water Resources Regulation, 1993, setting out the implementation procedures for the Act; and (ii) the Drinking Water Regulation, 1998, which specifies compliance with the drinking water quality standards and control of water pollution (or sanitation) as it affects drinking water.	Relevant to all subprojects. IEE required for grant of use of water resources. Compliance with NDWQS.

Policy/Law/Guideline	Year *	Relevant Provisions	Remarks
Labor Act	1992	Chapter 5 stipulates health and safety provisions at work places, keeping work premises clean and safe, e.g., (i) with provisions for solid waste, sewage and hazardous substance management; (ii) instituting measures to prevent dust, fumes and other impure materials that would adversely affect health; (iii) with supply of potable water and water for emergency situations; (iv) with arrangements for the use of protective devices and wears; (v) with fire safety arrangements; and (vi) measures for protection from hazardous machines/equipment and from physical injury or harm from lifting of heavy weights.	EMP provides measures to mitigate workers' health and safety hazards.
Forest Act	1993	The Act prohibits the extraction of boulders, rocks, pebbles, sand or soil from national forests, defined as all forests, excluding private forests, whether marked or unmarked with forest boundary, to include waste or uncultivated lands, or unregistered lands surrounded by the forest or situated near adjacent forests as well as paths, streams rivers, lakes, riverine lands within the forest.	National &/or protected forests shall be avoided. Encroaching into community forests needs consent/approval from Community Forest Users' Group. If cutting trees, secure a permit as this is a pre-requisite document for IEE review & approval.
National Environmental Policy and Action Plan (NEPAP)	1993	Of its five objectives, the most relevant to the Project are to: (i) mitigate adverse environmental impacts of projects; and (ii) safeguard national & cultural heritage and preserve bio-diversity, within and outside protected areas.	EMP implementation is the overall measure to mitigate adverse impacts. Heritage sites & protected areas shall be avoided.
National Water Supply and Sanitation Policy	1998	The Policy requires the monitoring of water quality supplied by completed WSS projects.	Monitoring of supplied water in compliance with the NDWQS and its Directives will meet the Policy's requirement.
Drinking Water Rules	1998	The Rules: (i) gives the procedure for the settlement of dispute on use of water sources; (ii) requires water supplier to maintain the water quality as prescribed in the Water Resources Act; (iii) prohibits water supplier to construct structures and conduct activities that would pollute the water source & cause significant adverse effect on the environment.	Subprojects to ensure adequate consideration of other water uses of same source during design to avoid disputes; to implement the EMP (both mitigation and monitoring) during construction and operation.
Local Self-Governance Act	1999	The Act gives Local Government the functions, duties and powers to, among others: (i) conserve and protect their local environment and natural resources; (ii) plan, implement and/or operate and maintain local water supply projects; (iii) implement or arrange for implementation local sanitation/sewerage and drainage projects; (iv) protect cultural heritage and religious sites; and/or (v) monitor project activities within their jurisdictions.	Provides basis for Local Government to monitor the environmental performance of the subprojects.
National Urban Policy	2007	Policy gives importance to environment conservation while carrying out urban development works and natural resource use; thus, supporting the required environmental conservation and protection in donor-assisted development projects.	Relevant to all subprojects.

Policy/Law/Guideline	Year *	Relevant Provisions	Remarks
National Urban Water Supply and Sanitation Sector Policy	2008	The Policy requires the IEE or EIA of proposed WSS projects in accordance with the EPA and EPR. Such assessments are to: (i) incorporate consultations with key stakeholders, including end-point users; and (ii) specify measures to mitigate environmental impacts prior to and during construction and during operation, as well as corrective measures.	Requires IEE/EIA of all subprojects.
National Wetland Policy	2003	The Policy provides for the: (i) conduct of environmental assessment according to prevailing laws prior to the approval of development projects around wetlands; and (ii) regular monitoring of development projects around wetlands. The Policy covers all wetlands, not just protected wetlands. It discourages/restricts works that exert adverse impacts on wetlands, e.g., drying up of water, closure of source of flowing water, diversion of water flow, soil erosion, conversion of wetlands to other uses, excavation, extraction of underground water, among others.	Subprojects encroaching into RAMSAR wetlands require EIA. Subprojects that will trigger the need for an EIA shall be avoided.
Implementation Directives for the National Drinking Water Quality Standards	2005	It sets out the water sampling, testing, analysis, monitoring and surveillance procedures to certify that the quality of supplied drinking water conforms to the National drinking Water Quality Standards.	Guide to drinking water quality monitoring.
Updated 15-Yr Development Plan for Small Towns' Water Supply and Sanitation Sector	2009	The Plan defines the population threshold of "small Towns" to be in the range of 5,000 to 40,000. Reference to Schedules 1 and 2 of the EPR, as amended in 2007, places water supply projects in small towns under Schedule 1 or within the threshold of water supply projects requiring only an IEE. The Plan emphasizes monitoring and evaluation as an important component of a project to determine the overall impact of a project.	Emphasizes monitoring and evaluation to determine overall impact of subprojects.
Solid Waste Management Act	2011	Article 4 provides that the management of hazardous, medical, chemical or industrial waste rests upon the generators of such wastes. Management should be as prescribed in the Act. Article 5 provides that individuals and entities have the duty to reduce the amount of solid waste generated while carrying out work or business.	All subprojects to manage generated solid wastes accordingly.

* (Year) - Year last amended

2. International Environmental Agreements

11. Nepal is party to the following international environmental agreements that have broad relevance to works and environmental assessment of works under the Project: (i) World Heritage Convention, in 1978, for parties to ensure the protection and conservation of the cultural and natural heritage situated on territory of, and primarily belonging to, the State; (ii) Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar Convention), in 1987, for parties to conserve and wisely use wetlands (i.e., maintaining their ecological character) as a contribution towards achieving sustainable

development locally and throughout the world; (iii) Convention on Biodiversity, in 1992, for parties to require the environmental assessment of projects that are likely to have significant adverse effects on biological diversity with a view of avoiding or minimizing such effects; (iii) UN Framework Convention on Climate Change, in 1992, and subsequent protocols, for parties to take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects; and (iv) Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, in 1996, for parties to, among others, minimize the amount and toxicity of hazardous waste generated, manage the hazardous and other wastes they generate in an environmentally sound manner and as close as possible to the source of generation.

12. The relevance of the aforementioned environmental agreements to 3STWSSSP works are on their emphasis for human activities (such as development projects) to: (i) take on/institute measures to protect the local, as well as global, natural resources and/or environment; (ii) prevent and/or reduce the causes of climate change; and (ii) anticipate and mitigate the adverse impacts of climate change.

B. National Environmental Assessment and Review Procedure

13. The EPR prescribes the thresholds of projects that would require IEE and EIA in Schedules 1 and 2, respectively. Table 3 presents the required environmental assessment for activities/works under the water supply and sanitation sector. Under the Government of Nepal's IEE/EIA process: (Table 4).

Project Proponent is responsible for: (i) applying for EIA scoping and preparing the IEE/EIA schedule of environmental assessment work and terms of reference (ToR) for approval; (ii) conduct the appropriate environmental assessment following the approved schedule of work and ToR; (iii) conduct the required public consultations; (iv) prepare the corresponding report following the outline prescribed in the EPR; (v) submit to/apply with the appropriate government body for approval; and (vi) implement the IEE/EIA along with the terms and conditions of the approval.

Concerned Sector Agencies (CSAs) are responsible for the: (i) review of applications for EIA scoping and approval of IEE schedules of work and ToRs (ii) review of submitted IEE/EIA Reports; (iii) approval of IEE Reports; (iv) forward of reviewed EIA Reports together with its review opinions and suggestions to MoSTE; and (v) monitoring and evaluation of project implementation impacts.

The **MoSTE** is responsible for the: (i) approval of EIA schedules of work and ToRs; (ii) approval of EIA Reports; and (iii) conduct of environmental audit of completed project after two years of operation.

Table 3. Required Environmental Assessment for Water Supply & Sanitation Activities/Works

Subproject/Activity	Subproject Threshold that would require IEE	Subproject Threshold that would require EIA
Drinking Water		
1. River training	Up to 1 km	Over 1 km
2. Channeling water from one watershed to another	Applicable	Applicable
3. Collection of rain water and use of spewing wetland	Up to 200 ha	Over 200 ha
4. Supply of water in the dry season from surface water source	Safe yield of 1 ft ³ /sec & using up to 50% of available quantity	Safe yield of over 1 ft ³ /sec & using up to 100% of available quantity
5. Groundwater recharge	Up to 50% of total aquifer	Over 50% of total aquifer
6. Water treatment/processing	Up to 25 liters per second (lps)	Over 25 lps
7. Construction of tunnels for channeling drinking water	Tunnel constructed	-
8. Water resources development that displaces people	25-100 people	Over 100 people
9. Settlement of people upstream of water source	Up to 500 people	Over 500 people
10. Supply of drinking water	Population of 5,000-50,000	Population over 50,000
11. Connection of new source to supply water to existing water supply system	Population of 10,000-100,000	Population of over 100,000
12. Operation of a drinking water supply system including a sewage disposal system with sewage treatment system	Installed	Installed
13. Extraction of groundwater from sources located at point and non-point sources of biological and chemical pollution and/or their influence areas	Not done	Done
14. Operation of water supply project included in a multi-purpose project utilizing a source of 25 l/sec. (Construction of multi-purpose reservoir required)	Not operated	Operated
Sewerage/Sanitation		
1. Projects costing 5 crore NPRs and greater	Projects costing 5-25 crore NPRs	Projects costing more than 25 crore NPRs

C. Institutional Capacity

14. The MoSTE is the lead agency for environmental management in Nepal. It is primarily responsible for the implementation of the country's environmental policy. The Department of Environment within MoSTE is responsible for implementing and maintaining the standards in compliance of the EPA and EPR. This Department has wide experience in the review and assessment of environmental assessment reports, particularly EIA Reports, for approval.

15. Under the EPA and EPR, CSAs are mandated to review all IEE and EIA Reports for projects under their sectoral jurisdiction. If reviewed IEE Reports are not found to have substantial impacts on the environment, these are approved by the concerned sector agencies themselves. EIA Reports are reviewed by CSAs for their opinions and suggestions to be forwarded to and taken into account by the MoSTE, which is the main review and approving authority for EIA Reports.

16. The MUD, the executing agency for the Project, is the approving authority for IEE reports for water supply and sanitation projects. Its Water Supply and Environment Division (WSED) has wide experience in reviewing IEE and EIA Reports and recommending the approval of IEE Reports by MUD in compliance with the EPA and EPR.

17. The DWSS, which is under the MUD, will be responsible for subproject execution. The role of DWSS' Environmental and Social Section in the environmental management of

subprojects of previous STWSSSPs was limited to reviewing the readiness of IEE reports for submission to MUD for the review and approval process. The PMO in DWSS has no environmental officer. DWSS mainly relies on the Design and Supervision Consultants (DSC) for the preparation of IEE/EIA reports; and on the support of the DSC and Project Management Consultants (PMC) in carrying out its role in EMP implementation. During the rapid environmental management capacity needs assessment interviews with DWSS undertaken by the PPTA Environmental Specialists, the agency has raised the need to: (i) create an Environmental Officer position within PMO on a permanent basis; (ii) conduct basic environmental and social training to all staff of DWSS, special training to PMO and WSSDO staff and orientation training to WUSCs; (iii) deputize some DWSS &/or PMO staff to the PPTA Team for knowledge transfer and capacity building; and (iv) cover a seminar on strategic environmental assessment of water supply and sanitation sector policy, plans and programmes in the capacity development programme for MUD and DWSS.

18. Under the Project, the PMO will have two local engineers, with one of the two covering environmental management. An environmental safeguard specialist will be engaged to support the PMO. At the subproject level, the Regional Project Management Offices (RPMOs) one for the Eastern region and another for the Western region will have engineers who will also cover environmental management and will be supported by the DSMC and PMC.

Table 4. The Government of Nepal IEE/EIA Report Preparation, Review, Approval and Implementation Process

Steps in the Process		Responsible Entity
1	Refer to Schedules 1 & 2 of the EPR for the prescribed environmental assessment (IEE or EIA) to carry out for the proposed project.	Proponent
2	Preparation of schedules of work/ToR and determination of EIA scope	Proponent
	A. If proposed project requires an IEE <ul style="list-style-type: none"> o Prepare an IEE schedule of work/ToR using the format prescribed in Schedule 3 of the EPR and submit this to the CSA for approval. 	
	B. If proposed project requires an EIA: <ul style="list-style-type: none"> o Determining the scope of the EIA: <ul style="list-style-type: none"> - Publish a notice in a national daily newspaper requesting concerned VDC/s or Municipality, institutions & individuals to send in, within 15 days from date of publication, their opinions & suggestions on the potential impacts of proposed project's implementation on the environment. 	Proponent
	<ul style="list-style-type: none"> - Submit the opinions & suggestions to the CSA along with an application for scope determination. 	Proponent
	<ul style="list-style-type: none"> - Review the submitted documents and forward the application along with its opinion & suggestion to MoSTE. - Review the forwarded documents and determine the scope. 	CSA MoSTE
3	Conduct of IEE/EIA and preparation of IEE/EIA Report	Proponent
	A. IEE: <ul style="list-style-type: none"> o Carry out IEE according to the approved work schedule. o Prepare IEE Report using the format prescribed in Schedule 5 of the EPR, incorporating the opinions & suggestions of stakeholders on potential impacts proposed project's implementation on the environment (requested to be sent within 15 days from date of notice posting at concerned VDC/s or Municipality, Office of the District Development Committee, school, hospital, and health post, and of notice publication in a national daily newspaper). 	
	B. EIA: <ul style="list-style-type: none"> o Carry out EIA according to the approved scope and work schedule. o Prepare EIA Report using the format prescribed in Schedule 6 of the EPR, incorporating the opinions & suggestions obtained from stakeholders through a public hearing. 	

Steps in the Process		Responsible Entity
4	Submit 15 copies of the IEE/EIA Report along with the project proposal and recommendation of the concerned VDC or Municipality to the CSA.	Proponent
5	Review and approval of IEE/EIA Report	
	A. IEE Report	CSA
	<ul style="list-style-type: none"> o If review reveals project implementation to have no substantial adverse impact on the environment, grant approval within 21 days from receipt of Report. o If review reveals the necessity to carry out an EIA, conduct an EIA following the EIA process (commencing from Step 2B in this Table). 	Proponent
	B. EIA Report	CSA
	<ul style="list-style-type: none"> o Review and forward its opinion, 10 copies of the EIA Report together with the project proposal to the MoSTE within 21 days from receipt of Report. o Solicit opinions and suggestions regarding potential impacts from the implementation of the proposed project from: <ul style="list-style-type: none"> - the general public, by publishing a notice in a national daily newspaper granting the public 30 days (starting from the 1st date of notice publication) to make a copy of the Report and proposal themselves for their review and to send their feedback - a Committee of experts of the concerned agencies o If opinions and suggestions and review of Ministry reveal project implementation to have no substantial adverse impact on the environment, grant approval within 60 days, or in case of special reason within 90 days, from receipt of Report. 	MoSTE
6	Implement approved IEE/EIA Report and any terms and conditions given with the approval.	Proponent
7	Monitor and evaluate impact of project implementation. When necessary, issue directives to the Proponent to institute environmental protection measures.	CSA
8	Conduct environmental audit after two years of project commissioning/operation.	MoSTE

CSA Concerned Sector Agency
EPR Environment Protection Rules, 2054 (1997), with amendments in 1999 and 2007
MoSTE Ministry of Science, Technology and Environment
VDC Village Development Committee

III. ANTICIPATED ENVIRONMENTAL IMPACTS

19. The Project will support improvements in water supply and sanitation service delivery in small towns² through the construction of water supply systems, sanitation facilities (toilets and septage management) and pilot DEWATS (small scale sewerage network with associated wastewater treatment). Such civil works will generate adverse impacts, issues and concerns prior to construction, during construction and during operation. The potential impacts, issues and concerns from future subprojects (or subprojects that will be proposed after Project approval) are presented in Table 5. These are drawn from the IEEs of the three initial subprojects.

20. When site or right-of-way acquisition will be necessary and unavoidable, displacement of people, loss of assets and/or economic displacement will be a social concern prior to construction; however should be kept to the minimum as prescribed in the environmental criteria for subproject selection presented in Table 6 of Section IV-A. Inadequate environmental and social considerations during planning and design will render completed works unable to cope with environmental and social impacts.

21. Few significant impacts are expected to be: (i) temporary and short-term, i.e., expected to arise during construction, particularly in the peak construction period; (ii) confined within subprojects' main areas of influence; and (iii) will not be sufficient to threaten or weaken the surrounding resources. Impacts during construction can be easily prevented and mitigated by measures integral to good engineering and construction practices. The magnitudes of impacts during operation can be mitigated through due environmental and

² The Updated 15-Yr Development Plan for Small Towns' Water Supply and Sanitation Sector, 2009, defines small town to have a population range of 5000-40,000.

considerations during planning and design, quality construction, adequate capacity of operator to implement the EMP during operation and sufficient budget for operation and maintenance.

22. The operation of completed subprojects under the Project will lead to benefits/outcome that will far outweigh negative impacts. There will be opportunities for local employment and increased earnings of local enterprises during construction. When operational, improved water supply and sanitation will significantly improve the living conditions in small towns.

Table 5. Potential Environmental Impacts, Issues and Concerns

<p>Prior to Construction</p> <p><u>Involuntary resettlement</u></p> <ul style="list-style-type: none"> - Site or right-of-way acquisition will incur displacement and losses. - Potential social conflicts/tensions over land acquisition, losses and displacement. <hr/> <p><u>Concerns relative to design</u></p> <ul style="list-style-type: none"> - Inadequate consideration and/or incorporation of the following , among others, in planning and design would render the completed works unable to cope with environmental and social impacts: <ul style="list-style-type: none"> A. Both water supply and sanitation subprojects: <ul style="list-style-type: none"> (i) climate change, seismicity, flooding, land subsidence, landslides and other natural hazards; (ii) adequate protection or buffer area around such facilities as water intake, water treatment, water supply reservoir, pumping stations and WWTP, for security and protection; (iii) protection of nearby sensitive ecosystems and state or local protected areas and physical cultural resources, if any; (iv) sufficient distance of noise- and vibration-generating facilities, particularly pumping stations and generators, from human settlements and sensitive institutions (e.g., hospitals/health care institutions, schools, temples/places of worships, other shrines); (v) access to safe sludge disposal facility and stable power supply; and (vi) feedback from stakeholders. B. Water supply subproject: <ul style="list-style-type: none"> (i) sufficiency of raw water yield or discharge to meet demand for the planned period and considering climate change-induced drought, and quality of raw water for cost-effective treatment in meeting the national drinking water quality standards and, where applicable, for the appropriate depth of boreholes. (ii) current and potential future discharges from upstream of the raw water source; (iii) existing/proposed water uses of the identified source and potential water use conflicts; (iv) location of existing or proposed sewerage pipes/combined drains in same area, if any; and (v) existing sanitation practices and facilities in the area, particularly for subprojects using groundwater as source. (vi) access to reliable 24/7 water supply. C. sanitation subprojects: <ul style="list-style-type: none"> (i) suitable locations of latrines, septic tanks with respect to existing wells; (ii) women, children, seniors and physically disabled users of latrines; (iii) sufficient distance of sludge disposal/ management sites and WWTPs from settlements; (iv) access to a suitable effluent discharge location; (v) access to suitable sludge disposal facility/operations and
<p>During Construction</p> <p>Physical/Chemical Environment</p> <p><u>Air pollution due to dust, gas emissions and odor</u></p> <ul style="list-style-type: none"> - Fugitive dust from construction will come from dry disturbed/exposed surfaces; movement of construction vehicles and equipment; loading, unloading and stockpile of aggregate materials; borrowing/quarrying for aggregate materials, such processes as rock crushing and concrete mixing. - Gas and odor will be emitted from equipment/vehicle operation, particularly those that are diesel-fed and/or are poorly maintained; burning of wastes; asphalt processing. - Odor from poor management of solid and hazardous wastes, poor sanitation practices, and inadequate sanitation facilities at construction sites and workers' camps. <p><u>Noise and vibration</u></p> <ul style="list-style-type: none"> - Movement and operation of vehicles and equipment and construction activities and processes will generate noise and vibration.

<p><u>Water resources problems</u></p> <ul style="list-style-type: none"> - Water quality in nearby open wells and/or surface waters will be exposed to potential contamination from poorly managed or poorly stored aggregate materials, excavated soils, solid wastes, sewage/wastewater, &/or poorly managed and spilled hazardous & toxic substances and wastes - Extraction of gravel, sand and soil from river beds will introduce changes to river ecosystems. Washing of extracted materials in or near the river will cause the suspension of fine sediments. Once settled, the sediment would introduce impermeable layers in the river beds, hindering seepage to groundwater, etc.
<p><u>Impacts on land</u></p> <ul style="list-style-type: none"> - Alterations in terrain contours and surface drainage patterns caused by indiscriminate extraction of aggregate materials. - Pollution due to poor solid and hazardous waste management, spillage of hazardous substances, and poor sanitation practices.
<p>Biological Environment</p> <p><u>Impacts on vegetation and aquatic resources</u></p> <ul style="list-style-type: none"> - Shrubs, trees within subprojects' footprints will be largely, if not all, removed. Vegetation immediately outside subprojects' footprints will be potentially subject to trampling or hit by construction vehicles/equipment, temporary construction structures, stockpiles of aggregates, excavated and residual soils, and workers. - Aquatic life in subproject-affected or nearby surface water bodies will be exposed to the hazards of poorly managed construction sediments, chemicals and wastes getting their way into the waters. - New slopes of river beds and turbulent waters that will result from the extraction of gravel, sand and soil from river beds will be harmful to or disturb the life patterns and/or reproduction of aquatic animals.
<p>Physical Cultural Environment</p> <p><u>Damages to/losses of physical cultural resources</u></p> <ul style="list-style-type: none"> - Possible chance find of physical cultural resources should not be discounted, requiring prior coordination with relevant authorities for guidance.
<p>Socio-Economic Environment</p> <p><u>Impacts on the sustainability of existing town services</u></p> <ul style="list-style-type: none"> - Relocation of or accidental damage to any existing power and water supply lines and drainage channels/open drains in or adjacent to subproject footprints will cause disruption of services.
<p><u>Social conflicts arising from the:</u></p> <ul style="list-style-type: none"> - impacts on downstream water users caused by indiscriminate tapping or use of surface water sources to meet construction water demand. - entry of, and/or employment of more, non-local construction workers. - location of noisy and/or nuisance component facilities such as pump house, generators, public toilet, WWTP and sludge drying bed.
<p><u>Disturbance to road traffic flow</u></p> <ul style="list-style-type: none"> - Horizontal construction (for pipe installations), indiscriminate parking of construction vehicles and equipment, and indiscriminate stockpiling of construction materials and wastes will reduce road width. Movements of construction vehicles will add to the road traffic flow.
<p><u>Blocked accesses to properties and social services</u></p> <ul style="list-style-type: none"> - Blocked access from horizontal construction (for pipe installations), stockpile of aggregate materials, excavated soils, wastes and pipes, parking of construction vehicles and equipment will: (i) expose communities to safety hazards; (ii) bring public inconvenience in accessing properties and social and other services; and (iii) disturb economic activities, among others.
<p><u>Local flooding, water logging during heavy rains</u></p> <ul style="list-style-type: none"> - This will likely occur in areas where stockpiles of excavated soils, aggregate materials and construction wastes/debris, as well as stored pipes will impede surface runoff.
<p><u>Impact on community health and safety</u></p> <ul style="list-style-type: none"> - Communities, particularly those within the subproject's main areas of influence, will be exposed to health and safety hazards from, among others: (i) dust and gas emissions and odor; (ii) noise and vibration; (iii) poorly managed wastes; (iv) contamination of drinking water sources; (v) haphazard movements and parking of construction vehicles/equipment; (vi) blocking of accesses to properties; (vii) open pits; (viii) disruption of basic town services; (ix) potential fire and explosion; and (x) potential entry of transmittable disease/s to the communities with the entry of construction workers.
<p><u>Impact on workers' health and safety</u></p> <ul style="list-style-type: none"> - Construction workers will be directly and indirectly exposed to crosscutting threats from: (i) impacts on air quality; (ii) high levels of noise and vibration from the operation of equipment; (iii) inadequate supply of safe potable water and sanitation facilities in construction sites and workers camps; (iv) poor housing conditions in the workers camps; (v) haphazard movement and parking of construction vehicles; (vi) vehicular flows on the affected roads; (vii) open pits/trenches; (viii) poorly managed construction wastes and hazardous substances; (ix) communicable and transmittable diseases in the community and in the workforce; (x) potential fire and explosion; (xi) potential collapse of any structure being built, e.g. overhead tower reservoir; (xii) social conflicts; and (xiii) exposure to extreme weather.

<p>During operation</p> <p>For both water supply and sewerage subprojects <u>Unsustainable service delivery</u> due to damages from any natural hazard event, insufficient budget for operation and maintenance and deferred maintenance and repair.</p>
<p>For water supply subprojects <u>Community health and safety risks (or risks of delivering unsafe water)</u> due to any one or combination of the following: (i) weak leak vigilance/detection & deferred response to leaks and/or broken pipes; (ii) inadequate vigilance of the state of the distribution system in reaction to fed chemicals; (iii) non-compliance of drinking water quality to the limits set in the National Drinking Water Standards; (iv) non-observance of the required drinking water quality monitoring/tests as prescribed in the Implementation Directives of the National Drinking Water Standards; (v) potential human error in manual dosing of chlorine (overdosing or under-dosing); (vi) inadequate cleaning and maintenance of water treatment and storage facilities, e.g., sludge clearing/disposal; and (vii) accidental spill of hazardous substances.</p>
<p><u>Increased generation of wastewater</u> due to improved access to reliable water supply and there is no parallel improvement in the management of wastewater.</p>
<p><u>Occupational health and safety hazards</u> from handling and management of chlorine and other chemicals used during operation and physical hazards posed during operation, maintenance and repair.</p>
<p>For sewerage/sanitation subprojects <u>Community health and safety risks</u> from any one or combination of the following, among others: (i) weak leak vigilance/ detection and deferred response to leaks and/or broken pipes, with raw sewage contaminating open wells or broken water supply pipes; (ii) non-compliance of the quality of discharge from WWTP to the tolerance limits set in the standards for discharges from combined wastewater treatment plant; (iii) non-observance of the WWTP discharge quality monitoring as recommended in the EMP; (iv) odor and contact with raw sewage overflowing from the WWTP and leaking from broken pipes; and (v) odor from inadequate cleaning and maintenance of public sanitation and associated facilities and sludge disposal facilities.</p>
<p><u>Deterioration of surface and groundwater quality:</u> (i) due to indiscriminate disposal of septic tank/WWTP sludge; and (ii) downstream resources due to untreated or inadequately treated discharges.</p>
<p><u>Damage to sewer system from hazardous discharges</u> due to non-regulation of allowable discharges and non-vigilance of the types of wastewater discharged to the system.</p>
<p><u>Occupational health and safety hazards</u> from among others during operation, maintenance and repair: (i) handling and management of hazardous materials; (ii) exposure to odor, gases, sewage flow, pathogens; and (iii) physical hazards.</p>

IV. ENVIRONMENTAL ASSESSMENT FOR SUBSEQUENT SUBPROJECTS

A. Environmental Criteria for Subproject Selection

23. Subsequent subprojects must be proposed in small towns as defined in the updated Fifteen-Year Development Plan for Small Towns' Water Supply and Sanitation Sector, 2009: (i) with a population between 5,000 and 40,000 (hills and Terai); (ii) located on a road linked to the strategic road network and (iii) with at least one lower secondary school and a health post, in addition to grid electricity, basic telecommunications, banking facilities, etc. For environmental safeguarding purposes, the environmental criteria defined in Table 6 shall be applied when selecting future subprojects under the Project.

Table 6. Environmental Criteria for Subproject Selection

<p>A. Subprojects that meet any one of the following environmental criteria shall be EXCLUDED: Subprojects that will:</p> <ul style="list-style-type: none"> ▪ likely not conform to the: (i) national environment-related legislations; (ii) national and ADB-acceptable standards for environmental quality; and (iii) relevant international conventions that Nepal is party of.
<ul style="list-style-type: none"> ▪ likely cause irreversible impacts, or impacts that cannot be mitigated to acceptable levels (or Category A subprojects). Likely cause significant impacts to protected areas and sensitive receptors as a result of project design.
<ul style="list-style-type: none"> ▪ encroach into ancient and preserved monument areas.
<ul style="list-style-type: none"> ▪ encroach into, or cause destruction to, protected/conservation areas (to include natural parks, wildlife and hunting reserves and biodiversity conservation areas).
<ul style="list-style-type: none"> ▪ encroach onto RAMSAR wetlands.
<ul style="list-style-type: none"> ▪ encroach onto other local wetlands and exert adverse impacts on wetlands (as defined in the National Wetland Policy), most importantly any one or combination of the following impacts, whichever would

<p>be relevant to the subproject: (i) drying up of water, (ii) closure of source of flowing water, (iii) diversion of water flow, (iv) conversion of wetlands, (v) excavation over wetlands, (vi) extraction of groundwater resource within wetlands, (vii) contamination/pollution of wetlands.</p> <ul style="list-style-type: none"> ▪ Involve any one of the ten activities in the ADB Prohibited Investment Activities List, presented as Appendix 5 of the SPS 2009.
<p>B. Subprojects that will be planned and implemented under the Project shall meet the following environmental criteria will be INCLUDED:</p> <p><u>General:</u></p> <ul style="list-style-type: none"> ▪ No, or if unavoidable, only minimal, involuntary resettlement will be involved. If involuntary resettlement is unavoidable, the subproject can, without difficulty, explore design/technology alternatives to reduce the size of required land or select another alignment/site to reduce the number of persons that will be affected. ^ ▪ No indigenous people/community will be directly or indirectly affected. If unavoidable, subproject can, without difficulty, explore design/technology alternatives to reduce the size of required land or select another alignment/site to reduce the magnitude of impact on indigenous people. ^ ▪ Will not cause damage/destruction, removal, alteration or defacement of adjacent or nearby structures/monuments and sites of international, national and local significance. Subprojects with component activities in close proximity to (say, within 50 m from) such sites shall have prior coordination with the Department of Archaeology. ▪ Will have all physical components designed to withstand the threats and impacts of seismic and extreme weather events and other natural hazards. ▪ Will not lead to/involve social conflict/s that could be caused by site/ROW acquisition, water use conflict, obstruction of access to sources of food or livelihoods, among others. ▪ Will be based on the perceived needs of the residents, community and town leaders and committees in the areas of water supply and sanitation, identified through consultations and participatory site selection and subproject planning.
<p><u>Water supply subprojects:</u></p> <ul style="list-style-type: none"> ▪ Will extract raw water from source that can sustain the: (i) quantity needed to meet demand during the planned service period even during climate change-induced drought events without adversely affecting other beneficial uses of the resource and downstream users; and (ii) quality for cost-effective treatment during the planned service period. Other key criteria include: <ul style="list-style-type: none"> (i) Detailed investigations (e.g. hydrogeological surveys, bore tests etc) are carried out to confirm adequate and sustainable yield is available from the proposed source for supply of minimum 100lpcd. (ii) Water quality test of the proposed source is carried out to ensure and confirm it meets National Drinking Water Quality Guidelines (NDWQG). Water source with arsenic levels above the national standards will not be selected. If small traces of arsenic (below the national standards) have been detected, testing for arsenic will be conducted once a month for the duration of 3 months. Test results will need to be submitted to ADB for review before the water source is developed for drinking purposes. (iii) Intake of the source is located at least 30m upstream of any sanitation facilities. . Where this cannot be maintained, the design and implementation will ensure that (i) septic tanks will be sealed to make them water tight and emptied as per the design requirements; (ii) appropriate borehole case and screen are installed; and (iii) a test pit is established and water quality monitoring is conducted regularly (at least once every quarter). (iv) Tube well sites will be fenced and security provided to them. (v) Design of the water supply system incorporates a water safety plan to be implemented throughout the operation and maintenance phase. (vi) Design of the distribution system is carried out on a DMA basis. (vii) No infrastructure such as OHT, WTP should be established in floodplains and all pipes should be designed to be constructed underground. (viii) O&M manuals will be prepared, and WUSC/ LGB has committed to implementing the same. ▪ Will have WTPs, intake structures, reservoirs/storage facilities & pumps/pumping stations in sites that: <ul style="list-style-type: none"> (ix) are not vulnerable to flooding, flash flood, earthquake damage, landslide, land subsidence and other natural hazards; (x) have good access to trunk infrastructures, particularly power supply, road, sludge disposal facility. (xi) its pumps/pumping stations and generator sets are not in close proximity to such noise- and vibration-sensitive institutions as schools, hospitals and health centers, temples/places of worship and other shrines; (ideally should be at least 200 m away from*) noise- and vibration-sensitive institutions (xii) If it would be unavoidable to have aforementioned facilities closer than 200 m, no such facilities should be within 50 m and appropriate measures should be in place to mitigate noise, vibration

<p>and other nuisances to acceptable levels and should have been consulted with the affected residents and institutions.</p> <p>(xiii) have considered physical urban growth trends and directions and for WTPs, increase in upstream waste/wastewater discharges; and are sufficient in size to allow for expansion in case of need to accommodate future urban demand and to allow for adequate buffer area.</p>
<ul style="list-style-type: none"> ▪ Will locate pipelines at least 10 meters from latrines, septic tanks and any main drains to avoid contamination
<ul style="list-style-type: none"> ▪ Will propose: (i) fenced & treed buffer area around WTP, reservoir/storage facilities, well field & pumps for security & protection of facilities & quality of water that will be supplied, and for mitigating noise, vibration impacts & other nuisances to adjacent areas; (ii) protection of water intake structures & wells.
<ul style="list-style-type: none"> ▪ Will include sanitation component to manage the increasing wastewater that will be generated with reliable water supply; i.e., at least adequate sanitation facilities, sludge management and sanitation awareness raising program, and ideally also wastewater collection and treatment.
<ul style="list-style-type: none"> ▪ Will have component measures to conserve water, e.g., non-revenue water management, water recycling and reuse, installation of water meters, and/or awareness raising activities.
<ul style="list-style-type: none"> ▪ Will not involve any groundwater source that has arsenic levels above safe drinking standards as may be revealed in water quality and borehole tests.
<ul style="list-style-type: none"> ▪ Will not involve use or installation of asbestos cement pipes.
<p><u>sanitation subprojects:</u></p> <ul style="list-style-type: none"> ▪ Will have proposed WWTP and pumping stations in sites that: <ul style="list-style-type: none"> (i) are not vulnerable to flooding, flash flood, landslide, earthquake damage and other natural hazards; (ii) are as far as possible from settlements: <ul style="list-style-type: none"> - ideally should be at least 200 m away, to also mitigate noise and vibration impacts - if it would be unavoidable to have aforementioned facilities closer than 200 m, no such facilities should be within 100 m and appropriate measures should be in place to mitigate odor, gas emissions, noise, vibration, pests and other nuisances to acceptable levels and should have been consulted and agreed with the affected residents and institutions; (iii) have good access to trunk infrastructures, particularly adequate power supply, water supply, road and/or sludge disposal facility; (iv) have considered physical urban growth trends and directions; and (v) are sufficient in size to allow for expansion in case of need to accommodate future urban demand and to allow for adequate buffer area. ▪ Will have WWTP discharging at suitable distance downstream of any water intake and/or water use points. ▪ Will propose/plan sanitation facilities: <ul style="list-style-type: none"> (i) with adequate septic tank discharging suitably; Septic tanks will be designed as per national standards and DWSS's design guidelines to allow for maximum retention of septage (minimum 3 years) and water sealing. (ii) to be sited at safe distances from existing or proposed boreholes or shallow dug wells; Toilets will be established at least 30m downstream of the drinking water source. and that will be friendly for use by women, children, seniors and physically disabled persons. (iii) An operation and maintenance plan is developed providing details on the frequency and responsibility for collection and disposal of septage at approved site (iv) Hygiene promotion campaign and educational program is developed and implemented to promote ODF in the towns.

[^] If this criterion contradicts with any one or more subproject selection criterion/criteria under the Resettlement Framework or Indigenous Peoples Planning Framework, the criterion or criteria of the Resettlement Framework of Indigenous Peoples Planning Framework shall prevail.

B. Procedure for Environmental Assessment and Review

24. The procedure discussed below and illustrated in Figure 1 was formulated within the expectation that subsequent subprojects will be: (i) Category B activities under ADB classification; and (ii) within the thresholds prescribed in Schedule 1 of Government of Nepal's EPR. Since Government of Nepal requires IEE Reports to follow its prescribed outline, the procedure, therefore, will involve the preparation of the two IEEs, i.e., one following the ADB's SPS-prescribed outline and another following the Government of Nepal's EPR-prescribed outline and details but based on the ADB IEE.

1. Screening and Categorization

25. ADB Categorization. Screening is undertaken at the earliest stage of the subproject cycle (as soon as sufficient information is available after subproject identification), using ADB's sector-based rapid environmental assessment (REA) checklists, to determine the: (i) environmental category of the subproject; and (ii) appropriate extent and type of environmental assessment to conduct.

26. Based on the indications of the screening, a subproject may be assigned to any of the following categories:

- (i) Category A, if proposed activity is likely to have significant adverse environmental impacts that are irreversible, diverse, or unprecedented; and that may affect an area larger than the sites or facilities subject to physical works.
- (ii) Category B, if the potential adverse impacts of a proposed activity are less adverse than those of Category A projects. Impacts are site-specific; and few if any of them are irreversible, and in most cases mitigation measures can be designed more readily than for Category A projects.
- (iii) Category C, if proposed activity is likely to have minimal or no adverse environmental impacts. An IEE/EIA is not required, but ADB will conduct a desk review of the subproject's environmental implications.

27. The initial four subprojects have been classified as Category B by the ADB's RSES. It is expected that subsequent subprojects will use the initial subprojects as model, will be in the range of scope and setting of initial subprojects, will have met the environmental criteria for subproject selection, and hence, will fall under Category B; or possibly, Category C. Subprojects that will potentially trigger Category A shall be avoided.

28. Government of Nepal Categorization. Under Nepal's EPR, the required environmental assessment of a subproject is obtained from the Rules' Schedules 1 and 2, which lists down the types and scales of activities requiring IEE and EIA, respectively. However, for activities listed in Schedule 1 that will unavoidably pass through protected areas and wetlands, the EPA/EPR requires the conduct of an EIA. Subprojects that will trigger the preparation of an EIA shall be avoided.

29. Procedure to be followed under the Project. To comply with ADB's requirement, the appropriate REA Checklist for the subproject (provided as Annexes B and C) will be completed by the PMO. This will be submitted to the ADB for category confirmation/approval. To comply with Nepal's EPR, PMO will refer to EPR Schedules 1 and 2. PMO will inform ADB of the Government of Nepal classification.

2. Scoping and ToR for Initial Environmental Examination

30. Prior to conducting the environmental assessment, the PMO will obtain the category confirmation from the ADB and possibly other specific requirements, such as the subproject's area of influence, monitoring tasks and scope of public consultation, for incorporation in the conduct of the IEE.

31. The PMO will draft the IEE Schedules of Work/ToR for submission to and approval by the MUD: (i) using the format prescribed in Schedule 3 of the EPR; and (ii) incorporating ADB's specific requirements for the environmental assessment. The PMO will share the approved Schedules of Work/ToRs with the ADB and seek ADB's notification to proceed with the environmental assessment. The approved ToR provides ADB a confirmation that under the Government of Nepal policy, the proposed subproject will require an IEE and not an EIA.

3. Environmental Assessment

32. Under the ADB's SPS 2009, Category B subprojects will require an IEE; and Category C subprojects, mainly a review of environmental implications. The DSC will prepare the IEE for subsequent subprojects consistent with Appendix 1 of the Safeguard Policy Statement, 2009, of the ADB (Annex D).

33. Key steps of the environmental assessment process are described below.

Definition of existing environment (as baseline conditions) Establish the baseline conditions for environmental media likely to be affected by the subproject through site visits, stakeholder consultations, and the collection and review of available and relevant data on existing conditions in the project's area of influence, such as: (i) landforms, geology and soils; (ii) climatic condition; (iii) water quality; (iv) air quality; (v) acoustic environment; (vi) biodiversity; (vii) physical and cultural heritage; and (viii) socio-economic characteristics.

Prediction of environmental impacts Predict environmental risks and anticipated impacts as a result of construction activities and operation of subprojects. Assess potential direct, indirect, cumulative, and induced impacts and risks to physical, biological, socioeconomic and physical cultural resources in the context of the subproject's area of influence.

Consultation and participation, grievance redress mechanism and information dissemination Carry out meaningful consultation with affected people and facilitate their informed participation, as described in Section V-A. Received opinions and suggestions will be taken into account in the subproject preparation and IEE and included in the IEE Report. Stipulate the continued consultations with stakeholders throughout project implementation, as necessary, in the IEE Report.

The grievance redress mechanism presented in Section V-B will be enhanced, as necessary, based on the lessons drawn from its implementation in the initial four subprojects.

The measures for information disclosure, including the method of dissemination, applied and adopted in the four initial subprojects will be evaluated. Lessons learned, if any, will be used to improve or enhance information disclosure and dissemination.

Preparation of the environmental management plan (EMP) Prepare an environmental management plan that addresses the potential impacts and risks identified by the environmental assessment. The EMP must include at least: (i) the proposed mitigation measures; (ii) environmental monitoring and reporting requirements; (iii) institutional or organizational arrangements, implementation schedule, indicative budget and additional capacity development and training measures; and (iv) performance indicators.

4. Review, Approval and Disclosure

34. The Environmental Safeguard Specialist of the Design and Supervision and Management Consultants (DSMC) will submit the IEE Report to the PMO. With assistance from the PMO's Environmental Safeguard Specialist, the PMO will undertake review of the IEE prior to DWSS's forward to the MUD for: (i) Government of Nepal review and approval; and (ii) official submission to the ADB for review and approval. Approval of the Government of Nepal IEE must first be secured prior to ADB's approval of the ADB IEE Report.

35. Disclosure. Disclosure of the final ADB IEE on ADB's website will be made upon receipt of the document but before request for subproject financing is approved by the ADB. Hard copies of the approved ADB-IEE and Government of Nepal IEE Reports will be made available at the offices of the PMO, RPMO and WUSC for consultation/perusal by the public.

V. CONSULTATION, INFORMATION DISCLOSURE, AND GRIEVANCE REDRESS MECHANISM

A. Consultation

36. The ADB SPS has, as one of the principles of its environmental safeguard, to carry out meaningful consultation with affected people and facilitate their informed participation. The Policy clarifies meaningful consultation as a process that: (i) begins early in the project preparation stage and is carried out on an ongoing basis throughout the project cycle; (ii) provides timely disclosure of relevant and adequate information that is understandable and readily accessible to affected people; (iii) is undertaken in an atmosphere free of intimidation or coercion; (iv) is gender inclusive and responsive, and tailored to the needs of disadvantaged and vulnerable groups; and (v) enables the incorporation of all relevant views of affected people and other stakeholders into decision making, such as project design, mitigation measures, the sharing of development benefits and opportunities, and implementation issues.

37. Nepal's EPR specifies that the opinion and suggestions on the potential environmental impacts of the proposed subproject shall be sought from the public by the Proponent during the conduct of IEE. MUD, as the proponent, will: (i) send notice to the concerned Town, Village Development Committee, District Development Committee, school, hospital and health post requesting for their written opinions and suggestions within 15 days regarding their perceived impacts of the subproject's implementation; and (ii) publish a 15-day notice in a national daily newspaper, requesting the same from the public. Received opinions and suggestions will be taken into account in the subproject preparation and IEE and included in the IEE Report.

38. To comply with the requirements of both the ADB and the Government of Nepal, public consultation during environmental assessment shall be conducted: (i) at least once, following the procedure of the Government of Nepal described above; and (ii) in the early stages of the environmental assessment process to allow the affected communities and other interested parties to share their views on the proposed activity, environmental issues and concerns without and with the proposed activity, measures to address the issues and concerns, and their willingness to participate in the continuing consultation process throughout activity implementation and in environmental monitoring activities. Additional consultations include key informant interviews and random interviews with affected persons/households.

39. Public consultation shall ensure the participation of a fair representation of stakeholders: (i) those who will benefit from, and will be affected by, the proposed works; (ii) the vulnerable groups – the poor (those within the poverty threshold), ethnic minorities, informal settlers, people with disabilities, youth, migrants, women (especially women that are heads of household) and seniors; (iii) other interested groups, e.g., NGOs, religious groups, business associations, civil society, academe, etc. The consultation shall be conducted, and its handouts shall be written, in the national language. The consultation process shall be well documented. All relevant views and concerns raised during the consultation shall be: (i) incorporated in the IEE Reports; and (ii) considered in the design of the proposed activity. Attendance sheets and notes of informal and formal consultations for shall be included in the IEE Reports as proofs that consultation/s had been held. (Annex E)The PMO and RPMO

should be open to contact for consultation by the public on environmental assessment matters during the conduct of IEE or review of environmental implications.

B. Information Disclosure

40. The PMO (at Project level) and RPMO (at subproject level) will be responsible for ensuring that all environmental assessment, environmental monitoring and grievance redress documents are properly kept as part of the Project and subproject records. These documents shall be made available in the national and English language and at locations, i.e., offices of PMO, RPMO and WUSC where these can be easily accessed by stakeholders, including the affected people. The following documents will be posted on the ADB website: (i) draft EARF, before Project appraisal; (ii) final or updated EARF, upon receipt; (iii) IEEs and their EMPs, upon receipt.

41. For the benefit of the community, the summary of the IEE will be translated in the local language and made available at (i) offices of MUD and DWSS/PMO, (ii) RPMOS offices, (iii) DSC offices; and (iv) contractor's campsites. It will be ensured that: (i) hard copies of the IEE are kept at places which are conveniently accessible to people, as a means to disclose the document and at the same time creating wider public awareness; (ii) an electronic version of the IEE will be placed in the official website of the ADB after approval; and (iii) an electronic version of the Government-approved IEE/EIA Report will be placed in the official websites of the MUD and DWSS/PMO. Copies may be available upon request. Environmental monitoring reports will be disclosed on the ADB, MUD and DWSS/PMO websites.

C. Grievance Redress Mechanism

1. Context

42. As stipulated in SPS 2009, ADB requires the borrower/client to establish and maintain a grievance redress mechanism to receive and facilitate resolution of affected peoples' concerns, complaints, and grievances about the Project's environmental and social performance. The grievance redress mechanism shall address affected people's concerns and complaints promptly, using an understandable and transparent process that is gender responsive, culturally appropriate, and readily accessible to all segments of the affected people at no costs and without retribution. The mechanism should not impede access to the country's judicial or administrative remedies. The affected people will be appropriately informed about the mechanism.

43. Under Nepal's Environment Protection Rules 2054 (1997) and as amended in 1999 and 2007, any person/party affected by the pollution/emissions generated by a project/activity may lodge complaint with the concerned sector agency (CSA). If investigation by CSA confirms the lodged complaint, the Proponent will be issued notice to institute corrective actions within a prescribed timeframe. The CSA may carry out the cleaning activities of the affected area by itself at its own cost but to be recovered from the proponent with 25% surcharge. (Articles 17, 18 and 20).

44. The Environment Protection Act 2053 (1997) also provides the affected party the privilege to apply for compensation from the project proponent. As set out in the Environment Protection Rules: (i) application is to be submitted to the concerned Chief District Officer; (ii) amount of compensation will be determined based on investigations and consultations with the district inspector and/or the CSA; (iii) compensation is to be paid by the Proponent to the affected party within 30 days or in case of Proponent's appeal for extension, within 60 days, from the date of determination of compensation amount; and (iv) in case Proponent fails to pay the compensation within the prescribed time limit, AP may

apply to the Chief District Officer for compensation to be realized from the property of the Proponent.

2. The Grievance Redress Mechanism

45. A project-specific grievance redress mechanism (GRM) will be established to receive, evaluate, and facilitate the resolution of APs' concerns, complaints, and grievances related to social and environmental issues of the project. The GRM will aim to provide a time-bound and transparent mechanism to voice and resolve social and environmental concerns linked to the project.

46. A common GRM will be in place for social, environmental, or any other grievances related to the project. The GRM will provide an accessible forum for receiving and facilitating resolution of affected persons' grievances related to the project. Appendix 7 has the sample grievance registration form. Every grievance shall be registered and careful documentation of process with regard to each grievance undertaken, as explained below. The environmental and social safeguards officer (ESO/SSO) at project management office (PMO) will have the overall responsibility for timely grievance redress on environmental and social safeguards issues. The Social Development Officer at the Regional Project Management Office (RPMO) will be the focal person for facilitating the grievance redress at VDC/Municipality level.

47. A town-level public awareness campaign will be conducted to ensure that awareness on the project and its grievance redress procedures is generated. The social safeguards expert of the project management consultant (PMC) and DSMC's safeguards specialists will support the WUSC and DSMC community mobilisers with information/collateral/awareness material etc. to conduct the town-wide awareness campaign. The campaign will ensure that the poor, vulnerable and others are made aware of grievance redress procedures and project's entitlements.

48. A Grievance Redress Committee (GRC) will be formed at VDC/Municipality level, comprising District Chief WSS as Chairperson and Member of Secretary of concerned WUSC as the GRC secretary. The GRC members will be comprise of (1) RPMO social development officer, (2) representatives of affected persons, (3) DSMC's safeguards specialist (social/environment as relevant), (4) a representative of reputable CBO/SHG/organisation working in the project area³, and (5) contractor's representative. The secretary of the GRC, who will be responsible for convening timely meetings and maintaining minutes of meetings. The concerned social safeguards expert of DSMC will support the RPMO SDO and Regional Director DWSS to ensure that grievances, including those of the poor and vulnerable are addressed. All GRCs shall have at least two women committee members. Representatives of APs, civil society and eminent citizens are to be invited as observers in GRC meetings.

49. The functions of the local GRC are as follows: (i) provide support to affected persons on problems arising from environmental or social disruption; asset acquisition (if necessary); and eligibility for entitlements, compensation and assistance; (ii) record grievances of affected persons, categorize and prioritize them and provide solutions within 15 days of receipt of complaint by WUSC; and (iii) ensure feedback to the aggrieved parties about developments regarding their grievances and decisions of the GRC. The grievance redress mechanism and procedure is depicted in Figure 1.

³ If the complaints are related with IP/dalits/other vulnerable groups, specific NGO/CBO that actively involved in development of these communities should be involved.

50. The GRM for the project is outlined below, with each step having time-bound schedules and responsible persons to address grievances and indicating appropriate persons whose advice is to be sought at each stage, as required:

- (i) **First Level of GRM** (WUSC-level): The first level and most accessible and immediate venue for quick resolution of grievances will be the contractors, DSMC field engineers and PIU supervision personnel, who will immediately inform the WUSC. Any person with a grievance related to the project works can contact the Project to file a complaint. The WUSC will document the complaint within 24 hours of receipt of complaint in the field, and WUSC will immediately address and resolve the issue at field-level with the contractor, supervision personnel of PIU and DSMC field engineers within 5 days of receipt of a complaint/grievance. The assigned DSMC social mobilizer will be responsible to fully document: (i) name of the person, (ii) date of complaint received, (iii) nature of complaint, (iv) location and (v) how the complaint was resolved. If the complaint remains unresolved at the local level within 5 days, the WUSC will forward the complaint issue to the VDC/Municipality level GRM.
- (ii) **Second Level of GRM** (VDC/Municipality level): The complainant will be notified by the WUSC that the grievance is forwarded to the VDC/Municipality -level GRM. The Grievance Redress Committee (GRC) will be called for a meeting. The GRC meeting will be called and chaired by the District chief of WSS. The GRC will recommend corrective measures at the field level and assign clear responsibilities for implementing its decision within 10 days of receipt of complaint by WUSC. If the grievance remains unresolved within 10 days of receipt of complaint by WUSC, the matter will be referred to the third level. The RPMO SDO will be responsible for processing and placing all papers before the GRC, recording decisions, issuing minutes of the meetings and taking follow up action to see that formal orders are issued and the decisions carried out.
- (iii) **Third Level of GRM** (PMO Level): Any unresolved or major issues at Municipality/VDC level will be referred to the PMO for final solution. The PMO's Project Director and WUSC Union representative will have special meeting to find solution. Decision has to be made within 15 days of receipt of complaint by WUSC. The Project Director will sign off on all grievances received by the PMO. The environmental and social safeguards officers (ESO & SSO) will be involved with support from the PMC Social/Environment Safeguards Experts. The Project Director will sign off on all grievances received by the PMO. The PMO Safeguard Officer will be responsible to convey the final decision to the complainant.

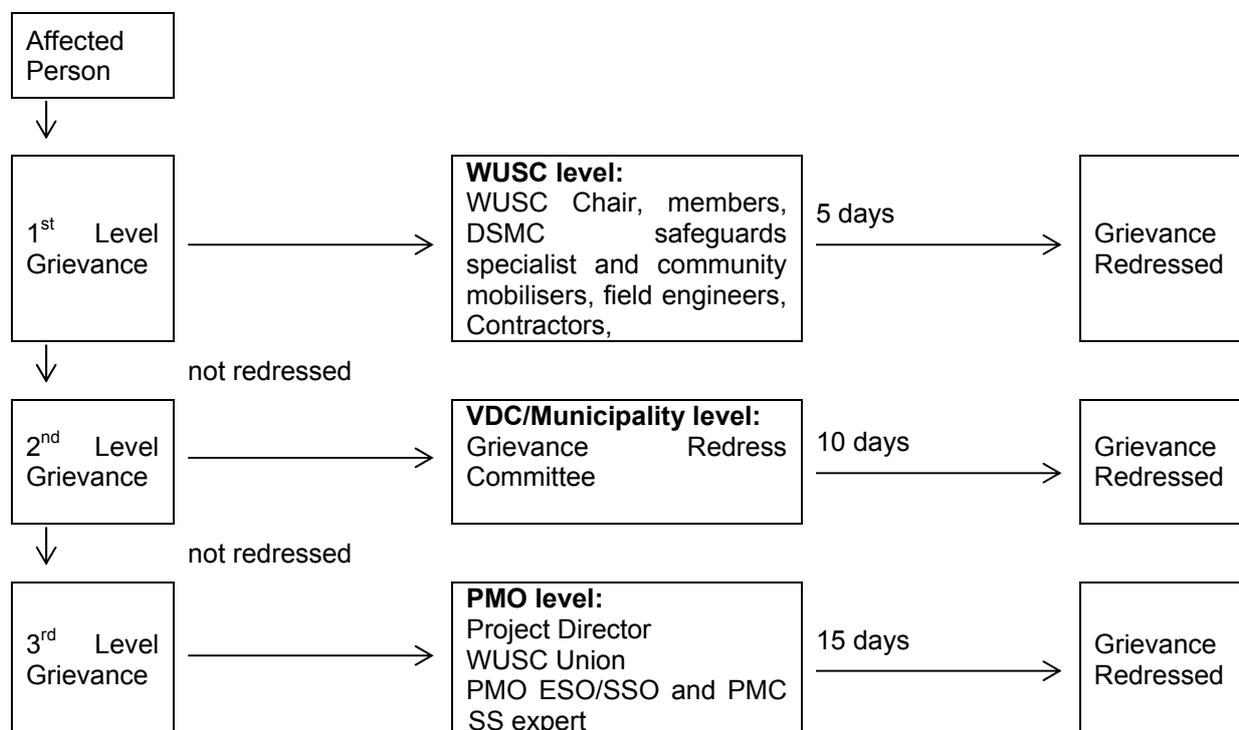
51. All paperwork (details of grievances) needs to be completed by the WUSC member secretary and circulated to the WUSC Chairperson and members. At VDC/Municipality level, the VDC/Municipality SDO will be responsible for circulation of grievances to the Regional Director, DWSS and other GRC members, prior to the scheduled meetings. The PIU SDSO will be responsible for follow-through of all escalated grievances. All decisions taken by the GRC and PSC will be communicated to the APs by the PIU social development and safeguards officer.

52. Despite the project GRM, an aggrieved person shall have access to the country's legal system at any stage, and accessing the country's legal system can run parallel to accessing the GRM and is not dependent on the negative outcome of the GRM.

53. In the event that the established GRM is not in a position to resolve the issue, the affected person also can use the ADB Accountability Mechanism (AM) through directly contacting (in writing) the Complaint Receiving Officer (CRO) at ADB headquarters or the ADB Nepal Resident Mission. The complaint can be submitted in any of the official

languages of ADB's DMCs. The ADB Accountability Mechanism information will be included in the PID to be distributed to the affected communities, as part of the project GRM.

Figure 1: Grievance Redress Process



DSMC=design, supervision and management consultant; ESO = environmental and social safeguards officer; GRC = grievance redress committee; PD = project director; PMC = project management consultant; PMO = project management office; WUSC = water user and sanitation committee.

54. Record keeping and disclosure. Records at the town-level will be kept by the concerned WUSC Member Secretary, of all grievances received, including contact details of complainant, date the complaint was received, nature of grievance, agreed corrective actions and the date of the incident and final outcome. The number of grievances recorded and resolved and the outcomes will be displayed/disclosed in the PMO office, WUSC/municipal/VDC office, and on the web, as well as reported in the safeguards monitoring reports submitted to ADB on a semi-annual basis. For any grievance escalated to RPMO/VDC/Municipality level, the RPMO SDO will be responsible for record-keeping, calling of GRC meetings and timely sharing of information with WUSC. For grievances escalated to PMO and above, the PMO safeguard officers will be responsible for maintenance of records, sending copies to RPMO and WUSC for timely sharing of information with the person filing complaint.

55. Periodic review and documentation of lessons learned. The PMO social safeguard officer will periodically review the functioning of the GRM at town/WUSC level and PIU level and record information on the effectiveness of the mechanism, especially on the project's ability to prevent and address grievances. Indicators pertaining to grievance redress (no. of grievances received, no. redressed/resolved) to be reported by Member Secretary, WUSC to PIU SDSO, and by PIU SDSO to PMO ESO in monthly progress reports.

56. Costs. All costs involved in resolving the complaints (meetings, consultations, communication and reporting/information dissemination) at local (field/ward/town) level will be borne by the concerned focal organisations at each level: WUSC at town level; PIU at regional level and PMO at central level. Cost estimates for grievance redress are included in resettlement cost estimates.

VI. INSTITUTIONAL ARRANGEMENT AND RESPONSIBILITIES

A. Institutions and Responsibilities

57. **Executing and implementing agencies.** The Ministry of Urban Development (MUD) will be the executing agency with responsibility of subproject execution delegated to the Department of Water Supply and Sewerage (DWSS). The Water Supply and Sanitation Division/Sub-division Office (WSSDOs) are the subproject implementing agencies. Water Users' and Sanitation Committees of participating towns are the implementing agencies.

58. The key responsibilities of the executing and implementing agencies are as follows:

Prior to construction

- (i) The MUD will deputize a qualified staff to act as the Environmental Safeguard Officer of the Project management office (PMO).
- (ii) The MUD will establish the grievance redress mechanism, including setting up the Grievance Redress Committee.
- (iii) The Water Supply and Environment Division of the MUD will be responsible for reviewing the EIA Report prior to submission to the Ministry of Science, Technology and Environment (MoSTE) for review and approval.
- (iv) The DWSS will review the IEE/ EIA Report prepared by the Design and Supervision Consultants' Team's Environmental Safeguard Expert (DSMC-ESE) prior to forwarding this to MUD.
- (v) The DWSS will prepare the ToRs for the Environmental Safeguard Specialist that will be engaged to support the PMO and for the Environmental Safeguard Specialists of the two Design and Supervision Consultants that will be appointed to prepare the subprojects.

During construction and operation

- (vi) The DWSS, through the PMO, will oversee the EARF and EMP implementation of all subprojects.
- (vii) The WSSDO, through the RPMOS, will oversee the EARF and EMP implementation at subproject/town level.

1. Safeguard Implementation Arrangement

59. **Project Management Office (PMO).** The safeguard officers (environmental safeguard officer and social safeguard officer) of the PMO will receive support from the safeguards experts (environmental and social) of the Project Management Consultants (PMC) as specified below:

- (i) confirm existing IEEs/EMPs are updated based on detailed designs and that new IEEs/EMPs are prepared in accordance with the EARF and government rules;
- (ii) confirm whether EMPs are included in bidding documents and civil works contracts;
- (iii) provide oversight on environmental management aspects of subprojects and ensure EMPs are implemented by regional project management offices (Eastern RPMO and Western RPMO) and contractors;
- (iv) establish a system to monitor environmental safeguards of the project including monitoring the indicators set out in the monitoring plan of the EMP;
- (v) facilitate and confirm overall compliance with all Government rules and regulations regarding site and environmental clearances as well as any other environmental requirements as relevant;
- (vi) supervise and provide guidance to the RPMOs to properly carry out the environmental monitoring and assessments as per the EARF;

- (vii) review, monitor and evaluate the effectiveness with which the EMPs are implemented, and recommend necessary corrective actions to be taken as necessary;
- (viii) consolidate monthly environmental monitoring reports from RPMOs and submit semi-annual monitoring reports to ADB;
- (ix) ensure timely disclosure of final IEEs/EMPs in project locations and in a form accessible to the public; and
- (x) address any grievances brought about through the Grievance Redress Mechanism in a timely manner as per the IEEs.

60. **Regional Project Management Offices (Eastern and Western RPMOs).** The regional DWSS engineers and social development officers of the RPMOs will receive support from; (i) the PMO safeguards officers (environmental and social); and (ii) the safeguards specialists (environmental and social), the social mobilizers and environmental management plan (EMP) monitors of the design, supervision and management consultant (DSMC) teams as specified below:

- (i) prepare new IEEs/EMPs in accordance with the EARF and government rules;
- (ii) include EMPs in bidding documents and civil works contracts;
- (iii) comply with all government rules and regulations;
- (iv) take necessary action for obtaining rights of way;
- (v) oversee implementation of EMPs including environmental monitoring by contractors;
- (vi) take corrective actions when necessary to ensure no environmental impacts;
- (vii) submit monthly environmental monitoring reports to PMO, and;
- (viii) address any grievances brought about through the Grievance Redress Mechanism in a timely manner as per the IEEs.

61. **Town Development Fund (TDF).** The TDF safeguards officers (environment and social) will receive support from the, (i) the safeguards specialists (environmental and social) of the DSMC, and (ii) the safeguard monitoring specialist of the supervision consultant as specified below:

Environmental Safeguards:

- (ix) prepare new IEEs/EMPs in accordance with the EARF;
- (x) include EMPs in bidding documents and civil works contracts;
- (xi) comply with all government rules and regulations;
- (xii) take necessary action for obtaining rights of way;
- (xiii) oversee implementation of EMPs including environmental monitoring by contractors;
- (xiv) take corrective actions when necessary to ensure no environmental impacts;
- (xv) submit monthly environmental monitoring reports from municipalities to PMO for consolidation and submission of semi-annual monitoring reports to ADB;
- (xvi) ensure timely disclosure of final IEEs/EMPs in project locations and in a form accessible to the public; and
- (xvii) address any grievances brought about through the Grievance Redress Mechanism in a timely manner as per the IEEs.

62. **Civil Works Contracts and Contractors.** EMPs are to be included in bidding and contract documents and verified by the PMO and RPMOSs. The contractor will be required to designate an environment supervisor to ensure implementation of EMP during civil works. Contractors are to carry out all environmental mitigation and monitoring measures outlined in their contract. The government will ensure that bidding and contract documents include specific provisions requiring contractors to comply with all: (i) applicable labor laws and core labor standards on (a) prohibition of child labor as defined in national legislation for construction and maintenance activities, on (b) equal pay for equal work of equal value regardless of gender, ethnicity or caste, and on (c) elimination of forced labor; and (ii) the

requirement to disseminate information on sexually transmitted diseases including HIV/AIDS to employees and local communities surrounding the project sites. Contractors will only start the civil works activities in the section/subproject sites that has IR/IPP impacts upon the completion of RP/IPP implementation and after receiving clearance from the WUSC and endorsed by RPMO's SDO.

63. **Capacity Building.** The PMC safeguards experts (environmental and social) will be responsible for training the; (i) PMO's safeguards officers (environmental and social); (ii) RPMOs' engineers and social development officers; and (iii) TDF safeguards officer and support staff. Training modules will need to cover safeguards awareness and management in accordance with both ADB and government requirements as specified below:

- (i) sensitization;
- (ii) introduction to environment and environmental considerations in water supply and wastewater projects;
- (iii) review of IEEs and integration into the project detailed design;
- (iv) improved coordination within nodal departments; and
- (v) monitoring and reporting system. The contractors will be required to conduct environmental awareness and orientation of workers prior to deployment to work sites.

64. **Water Users and Sanitation Committees (WUSCs).** WUSCs are the eventual operators of the completed subprojects. The key tasks and responsibilities of the WUSCs are, but not limited to:

Prior to construction

- (viii) Facilitate public consultation and participation, information dissemination and social preparation.
- (ix) Provide available data to the DSMC-ESS during the conduct of the IEE/EIA.
- (x) Assist in securing the tree-cutting permit and/or registration of water source.
- (xi) Participate in the capacity development program.

During construction

- (xii) Assist in the observance of the grievance redress mechanism.
- (xiii) Actively participate in the monitoring of Contractor's compliance with the IEE and its EMP and the conditions set out with Government's approval of the IEE/EIA Reports.
- (xiv) Facilitate public consultations, as necessary.

During operation

- (xv) Implement the EMP and the Water Safety Plan.
- (xvi) If applicable, actively work with the engaged licensed and accredited laboratory in water quality monitoring.
- (xvii) Prepare the environmental monitoring report as per IEE.
- (xviii) Ensure observance of the grievance redress mechanism

65. **Licensed and accredited laboratory.** It is recommended that a licensed and accredited laboratory be engaged to conduct water quality monitoring in the first few years of operation and to train the WUSC on the same. The laboratory will ensure that while carrying out the water quality monitoring as prescribed in the National Drinking Water Quality Standard and its Directives, 'hands-on' training is provided to the WUSC.

66. The Local Governments (Village Development Committees, District Development Committees) will support IEE activities where their assistance, collaboration, participation are needed, e.g., in baseline data gathering, public consultations, information disclosure, environmental monitoring and implementation of the grievance redress mechanism.

67. The ADB will: (i) review the completed REA Checklist, confirm categorization of proposed subprojects and provide other specific requirements for the environmental assessment; (ii) review updated EARF, if applicable, and IEEs for clearance and disclosure; (iii) review periodic environmental monitoring reports; (iv) conduct environmental monitoring/review missions; (v) provide advice and guidance on the requirements of the ADB SPS 2009, as necessary; and (vi) disclose environmental monitoring reports on ADB's project website in accordance with ADB's disclosure policies.

B. Institutional Capacity Development

68. Capacity development will be carried out under the Project's Output 2, "Improved Institutional Capacity and Project Implementation Platform". Capacity development in environmental management will primarily aim at ensuring the effective implementation of the Project's EARF and subproject EMPs and will be implemented through the Environmental Safeguard Specialists that will be engaged to support the PMO. While carrying out technical assistance, Environmental Safeguards Specialists will conduct lectures/seminars on topics relevant to the Project's EARF and will ensure that the EARF implementation will be a "hands-on" training particularly for the PMO, RPMOS and TDF staff that may be deputized during subproject preparations for knowledge transfer and capacity development. External experts will be invited under the overall capacity development program of Output 2 to conduct lectures/seminars on other environmental management topics, such as those suggested in Table 8 and/or other topics that would be requested later by the MUD, DWSS, PMO, RPMOS and WSSDOs.

69. The cost to conduct the lectures/seminars is estimated to be USD 4,000. This is included in the budget of the overall capacity development program of Output 2. Table 7

C. Staffing Requirement and Budget

70. Staffing requirement will include the: (i) deputizing a DWSS or PMO staff as the PMO environmental safeguards officer; (ii) deputizing WSSDO staff as RPMOS environmental engineers in each subproject town; (iii) engagement of a PMO-environmental safeguards specialist to provide technical assistance and guidance to the PMO and partly to the RPMOS and capacity development/training; and (iv) a DSC environmental safeguards specialist to conduct the IEEs and prepare the IEE reports according to the provisions of this EARF.

71. The estimated costs for EARF implementation is presented in Table 8. It includes the costs for consultants' support for the PMO and RPMOS, mitigation measures, capacity building, administrative costs and other costs, e.g., conduct of consultations, resolution of grievances and eventual unanticipated impact from project implementation.

Table 7. Proposed Topics for Capacity Building/Training

Topic	Target Participants	Timing	Duration	Estimated Cost
				USD
1. By PMO Environmental Safeguard Specialist 1.1 Legal Framework <ul style="list-style-type: none"> ▪ Relevant national laws, regulations & standards on environmental assessment & management ▪ ADB SPS 2009 ▪ Environmental assessment & review procedure under the Project 1.2 Environmental Assessment <ul style="list-style-type: none"> ▪ Rapid environmental assessment ▪ Initial environmental examination 1.3 Some Aspects of EA Process & Environmental Management <ul style="list-style-type: none"> ▪ Meaningful consultation & info disclosure ▪ Grievance redress mechanism ▪ Environmentally responsible procurement ▪ Occupational & community health and safety 	DWSS, PMO, WSSDO, RPMOS, RMSO, WUSC (15-18)	Early stage of Output 2	1 day	800
1.4 EMP Implementation, part 1 <ul style="list-style-type: none"> ▪ Institution arrangements & responsibilities ▪ Environmental quality monitoring ▪ Emergency response 1.5 EMP Implementation, part 2 <ul style="list-style-type: none"> ▪ Performance monitoring & indicators ▪ Environmental monitoring report ▪ Lessons/experience sharing 				
2. By External Experts 2.1 Other relevant topics, such as: <ul style="list-style-type: none"> A Good engineering and construction practices as mitigation measures B Climate change adaptation (applicable to eligible activities/works under the Project) <ul style="list-style-type: none"> B.1 Climate change impacts on infrastructure B.2 Climate-proofing of infrastructures C Strategic environmental assessment of WSS sector policy, development plans and programs D Other relevant topics that may be suggested by MUD, DWSS, PMO, RPMOS& WSSDO 	MUD, DWSS, PMO, RPMOS, WSSDO, RMSO, DSC (30)	During Project's Capacity Devt. Program	2-3 days	2,400
Grand Total(USD)				4,000

Table 8. Estimated Costs for EARF Implementation

	Particulars	Stages	Unit	Total Number	Rate (NPR)	Cost (NPR)	Cost covered by
A.	Consultants Costs						
1.	Environmental safeguard specialist (1 person)	Responsible for environmental safeguards of the project at PMO	person months (spread over entire project implementation period)	12 person-months	250,000 per person month	3,000,000	Cost featured is only remuneration covered in the individual specialist's contract. Budget for travel under budget for Pool of Experts
2.	DSC environmental safeguard specialists (2 persons)	Responsible for environmental safeguards of the project at RPMOS	person months (spread over entire project implementation period)	30 person-months	250,000 per person-month	7,500,000	Cost covers only remuneration, which together with budget for travel covered in the DSC contract
B.	Mitigation Measures						
1.	Compensatory plantation measures (average estimate)	Construction				2,000	Civil works contract
2.	Air quality monitoring	- Pre-construction - Construction	Per location	2	500.00	100,000	Civil works contract
3.	Noise levels monitoring	- Pre-construction - Construction	Per location	3	500.00	150,000	Civil works contract
4.	Water Quality	- Pre-construction - Construction	Per location	3	500.00	150,000	
C	Capacity Building						
1.	(i) Orientation workshop for officials involved in the project implementation on ADB Safeguard Policy Statement, GoN environmental laws and regulations, and environmental assessment process; (ii) induction course contractors, preparing them on EMP implementation and environmental monitoring requirements related to mitigation measures; and taking immediate action to remedy unexpected adverse impacts or ineffective mitigation measures found during the course of implementation; and (iii) lessons learned information sharing	Module 1- on EARF & EMP implementation to be conducted by PMO-ESS (prior to contract of award for civil works) Module 2 – Anytime after Module 1	Lump sum			400,000	Covered under Output 2 - Improved Institutional Capacity and Project Implementation Platform

	Particulars	Stages	Unit	Total Number	Rate (NPR)	Cost (NPR)	Cost covered by
D.	1. Administrative Costs Legislation, permits, and agreements	Permit for excavation, tree-cutting permits, etc	Lump sum				These consents are to be obtained by contractor at his own expense.
		Environmental assessment and environmental clearances as per ECA and ECR requirements	Per town	10	60,000	600,000	Covered under the PMO
E.	Other Costs						
1.	Public consultations and information disclosure	Information disclosure and consultations during preconstruction and construction phase, including public awareness campaign through media	As per requirement	Lump sum	350,000	350,000	Covered under PMO budget
2.	GRM implementation	Costs involved in resolving complaints (meetings, consultations, communication, and reporting/information dissemination)	As per requirement	Lump sum	200,000	200,000	Covered under PMO budget
3.	Any unanticipated impact due to project implementation	Mitigation of any unanticipated impact arising during construction phase and defect liability period		Lump sum	Contractor's liability	As per insurance requirement	Civil works contract – contractor's insurance

VII. MONITORING AND REPORTING

72. RPMOs will monitor and measure the progress of EMP implementation with assistance from DMSC. The monitoring activities will correspond with the project's risks and impacts, and will be identified in the EIAs/IEEs for the projects. In addition to recording information on the work and deviation of work components from original scope PMO, RPMOs, and DSMC) will undertake site inspections and document review to verify compliance with the EMP and progress toward the final outcome.

73. RPMOs will submit monthly monitoring and implementation reports to PMO, who will take follow-up actions, if necessary. PMO will submit semi-annual monitoring reports to ADB. The suggested monitoring report format is in **Annex H**. Subproject budgets will reflect the costs of monitoring and reporting requirements. For projects likely to have significant adverse environmental impacts during operation, reporting will continue at the minimum on an annual basis. Monitoring reports will be posted in a location accessible to the public.

74. For subprojects likely to have significant adverse environmental impacts, PMO will retain qualified and experienced external experts to verify its monitoring information. PMO-ESS will document monitoring results, identify the necessary corrective actions, reflect them in a corrective action plan, and for each quarter, will study the compliance with the action plan developed in the previous quarter. Compliance with loan covenants will be screened by the PMO, with support from the PMC.

75. ADB will review project performance against the MUDs commitments as agreed in the legal documents. The extent of ADB's monitoring and supervision activities will be commensurate with the project's risks and impacts. Monitoring and supervising of social and

environmental safeguards will be integrated into the project performance management system. ADB will monitor projects on an ongoing basis until a project completion report is issued. ADB will carry out the following monitoring actions to supervise project implementation:

- (i) conduct periodic site visits for projects with adverse environmental or social impacts;
- (ii) conduct supervision missions with detailed review by ADB's safeguard specialists/officers or consultants for projects with significant adverse social or environmental impacts;
- (iii) review the periodic monitoring reports submitted by EAs to ensure that adverse impacts and risks are mitigated, as planned and as agreed with ADB;
- (iv) work with EAs to rectify to the extent possible any failures to comply with their safeguard commitments, as covenanted in the legal agreements, and exercise remedies to re-establish compliance as appropriate; and
- (v) prepare a project completion report that assesses whether the objective and desired outcomes of the safeguard plans have been achieved, taking into account the baseline conditions and the results of monitoring.

ANNEX A

Relevant Environmental Quality Standards

(Note: International Guidelines are presented, where applicable, to show comparison and will be useful if evaluation of quality monitoring results include checking of how subproject's environmental performance fare with international standards.)

A.1 Ambient Air Quality Standards

Parameter	Averaging Period	Nepal's Ambient Air Quality Standard ($\mu\text{g}/\text{m}^3$) *	WHO Air Quality Guidelines ($\mu\text{g}/\text{m}^3$)	
			Global Update [^] 2005	Second Edition ^{^^} 2000
TSP	Annual	-	-	-
	24-hour	230	-	-
PM ₁₀	Annual	-	20	-
	24-hour	120	50	-
PM _{2.5}	1-year	-	10	-
	24-hour	-	25	-
SO ₂	Annual	50	-	-
	24-hour	70	20	-
	10-minute	-	500	-
NO ₂	1-year	40	40	-
	24-hour	80	-	-
	1-hour	-	200	-
CO	8-hour	10,000	-	10,000
	15-minute	100,000	-	100,000
Pb	1-year	0.5	-	0.5
Benzene	1-year	20	-	-

* National Ambient Air Quality Standards for Nepal, 2003.

Source: Environment Statistics of Nepal 2011, Government of Nepal, National Planning Commission Secretariat, Central Bureau of Statistics, Kathmandu, Nepal.

[^] Source: Environmental, Health and Safety General Guidelines, 2007. International Finance Corporation, World Bank Group.

^{^^} Source: Air Quality Guidelines for Europe, Second Edition, 2000. WHO Regional Office for Europe, Copenhagen.

A.2 Noise Level Standards

Receptor / Source	National Noise Standard Guidelines, 2012 (dB)		WHO Guideline Values for Noise Levels Measured Out of Doors * (One Hour L _{Aeq} in dBA)	
	Day	Night	07:00 - 22:00	22:00 - 07:00
Industrial area	75	70	70	70
Commercial area	65	55		
Rural residential area	45	40	55	45
Urban residential area	55	50		
Mixed residential area	63	55		
Quiet area	50	40	-	-
Water pump	65		-	-
Diesel generator	90		-	-

* Guidelines for Community Noise, WHO, 1999.

Source: Environmental, Health and Safety General Guidelines, 2007. International Finance Corporation, World Bank Group

A.3 National Drinking Water Quality Standards, 2006

Group	National Drinking Water Quality Standards, 2006			WHO Guidelines for Drinking-water Quality, 4th Edition, 2011*
	Parameter	Unit	Max. Concentration Limits	
Physical	Turbidity	NTU	5 (10) **	-
	pH		6.5 - 8.5	none
	Color	TCU	5 (15)	none
	Taste & Odor		Would not be objectionable	-
	TDS	mg/l	1000	-
	Electrical Conductivity	µc/cm	1500	-
	Iron	mg/l	0.3 (3)	-
	Manganese	mg/l	0.2	-
	Arsenic	mg/l	0.05	0.01
	Cadmium	mg/l	0.003	0.003
	Chromium	mg/l	0.05	0.05
	Cyanide	mg/l	0.07	none
	Fluoride	mg/l	0.5 - 1.5 ^	1.5
	Lead	mg/l	0.01	0.01
	Ammonia	mg/l	1.5	none established
Chemical	Chloride	mg/l	250	none established
	Sulphate	mg/l	250	none
	Nitrate	mg/l	50	50
	Copper	mg/l	1	2
	Total Hardness	mg/l	500	-
	Calcium	mg/l	200	-
	Zinc	mg/l	3	none established
	Mercury	mg/l	0.001	0.006
	Aluminum	mg/l	0.2	none established
	Residual Chlorine	mg/l	0.1 - 0.2	5 ^^
Micro Germs	E-coli	MPN/100ml	0	must not be detectable in any 100 ml sample
	Total Coliform	MPN/100ml	0 in 95% of samples taken	

* Health-based guideline values

** Figures in parenthesis are upper range of the standards recommended.

^ These standards indicate the maximum and minimum limits.

^^ From WHO (2003) Chlorine in Drinking-water, which states that this value is conservative.

Parameter with WHO guideline value as more stringent than national standard value.

National Drinking Water Quality Standards was obtained from the Environment Statistics of Nepal 2011, Government of Nepal, National Planning Commission Secretariat, Central Bureau of Statistics, Kathmandu, Nepal.

Source: Environment Statistics of Nepal 2011, Government of Nepal, National Planning Commission Secretariat, Central Bureau of Statistics, Kathmandu, Nepal

A.4 Tolerance Limits for Wastewater to be Discharged into Inland Surface Waters from Combined Wastewater Treatment Plant, 2004

Parameters	Unit	Tolerance Limit
TSS	mg/L	50
Particle size of suspended particles		Shall pass 850-micron sieve
pH		5.5 - 9.0
Temperature		Shall not exceed 40°C in any section of the stream within 15 m downstream from the effluent outlet.
BOD ₅ at 20°C	mg/L	50
Oils & grease	mg/L	10
Phenolic compounds	mg/L	1
Cyanides (as CN)	mg/L	0.2
Sulphides (as S)	mg/L	2
Radioactive materials		
Alpha emitters	c/ml	10 ⁻⁷
Beta emitters	c/ml	10 ⁻⁸
Insecticides		Absent
Total residual chlorine	mg/L	1
Fluorides (as F)	mg/L	2
Arsenic (as As)	mg/L	0.2
Cadmium (as Cd)	mg/L	2
Hexavalent Chromium (as Cr ⁺⁶)	mg/L	0.1
Copper (as Cu)	mg/L	3
Lead (as Pb)	mg/L	0.1
Mercury (as Hg)	mg/L	0.01
Nickel (as Ni)	mg/L	3
Selenium (as Se)	mg/L	0.05
Zinc (as Zn)	mg/L	5
Ammonical nitrogen	mg/L	50
COD	mg/L	250
Silver	mg/L	0.1

Source: Environment Statistics of Nepal 2011, Government of Nepal, National Planning Commission Secretariat, Central Bureau of Statistics, Kathmandu, Nepal

ANNEX B
Rapid Environmental Assessment (REA) Checklist – Water Supply

Instructions:

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

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

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

Country/Project Title

Subproject:

Sector Division:

Screening Questions	Yes	No	Remarks
A. Project Siting Is the project area...			
▪ Densely populated?			
▪ Heavy with development activities?			
▪ Adjacent to or within any environmentally sensitive areas?			
• Cultural heritage site			
• Protected Area			
• Wetland			
• Mangrove			
• Estuarine			
• Buffer zone of protected area			
• Special area for protecting biodiversity			
• Bay			
B. Potential Environmental Impacts Will the Project cause...			
▪ pollution of raw water supply from upstream			

Screening Questions	Yes	No	Remarks
wastewater discharge from communities, industries, agriculture, and soil erosion runoff?			
▪ impairment of historical/cultural monuments/areas and loss/damage to these sites?			
▪ hazard of land subsidence caused by excessive ground water pumping?			
▪ social conflicts arising from displacement of communities ?			
▪ conflicts in abstraction of raw water for water supply with other beneficial water uses for surface and ground waters?			
▪ unsatisfactory raw water supply (e.g. excessive pathogens or mineral constituents)?			
▪ delivery of unsafe water to distribution system?			
▪ inadequate protection of intake works or wells, leading to pollution of water supply?			
▪ over pumping of ground water, leading to salinization and ground subsidence?			
▪ excessive algal growth in storage reservoir?			
▪ increase in production of sewage beyond capabilities of community facilities?			
▪ inadequate disposal of sludge from water treatment plants?			
▪ inadequate buffer zone around pumping and treatment plants to alleviate noise and other possible nuisances and protect facilities?			
▪ impairments associated with transmission lines and access roads?			
▪ health hazards arising from inadequate design of facilities for receiving, storing, and handling of chlorine and other hazardous chemicals.			
▪ health and safety hazards to workers from handling and management of chlorine used for disinfection, other contaminants, and biological and physical hazards during project construction and operation?			
▪ dislocation or involuntary resettlement of people?			
▪ disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?			
▪ noise and dust from construction activities?			
▪ increased road traffic due to interference of construction activities?			
▪ continuing soil erosion/silt runoff from construction operations?			
▪ delivery of unsafe water due to poor O&M treatment			

Screening Questions	Yes	No	Remarks
processes (especially MUD accumulations in filters) and inadequate chlorination due to lack of adequate monitoring of chlorine residuals in distribution systems?			
<ul style="list-style-type: none"> ▪ delivery of water to distribution system, which is corrosive due to inadequate attention to feeding of corrective chemicals? 			
<ul style="list-style-type: none"> ▪ accidental leakage of chlorine gas? 			
<ul style="list-style-type: none"> ▪ excessive abstraction of water affecting downstream water users? 			
<ul style="list-style-type: none"> ▪ competing uses of water? 			
<ul style="list-style-type: none"> ▪ increased sewage flow due to increased water supply 			
<ul style="list-style-type: none"> ▪ increased volume of sullage (wastewater from cooking and washing) and sludge from wastewater treatment plant 			
<ul style="list-style-type: none"> ▪ large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)? 			
<ul style="list-style-type: none"> ▪ social conflicts if workers from other regions or countries are hired? 			
<ul style="list-style-type: none"> ▪ risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during operation and construction? 			
<ul style="list-style-type: none"> ▪ community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning? 			

ANNEX C
Rapid Environmental Assessment (REA) Checklist –Sewage Treatment

Instructions:

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

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

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

Country/Project Title

Subproject:

Sector Division:

Screening Questions	Ye s	No	Remarks
B. Project Siting Is the project area...			
▪ Densely populated?			
▪ Heavy with development activities?			
▪ Adjacent to or within any environmentally sensitive areas?			
• Cultural heritage site			
• Protected Area			
• Wetland			
• Mangrove			
• Estuarine			
• Buffer zone of protected area			
• Special area for protecting biodiversity			
• Bay			

Screening Questions	Ye s	No	Remarks
A. Potential Environmental Impacts Will the Project cause...			
▪ impairment of historical/cultural monuments/areas and loss/damage to these sites?			
▪ interference with other utilities and blocking of access to buildings; nuisance to neighboring areas due to noise, smell, and influx of insects, rodents, etc.?			
▪ dislocation or involuntary resettlement of people?			
▪ disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?			
▪ impairment of downstream water quality due to inadequate sewage treatment or release of untreated sewage?			
▪ overflows and flooding of neighboring properties with raw sewage?			
▪ environmental pollution due to inadequate sludge disposal or industrial waste discharges illegally disposed in sewers?			
▪ noise and vibration due to blasting and other civil works?			
▪ risks and vulnerabilities related to occupational health and safety due to physical, chemical, and biological hazards during project construction and operation?			
▪ discharge of hazardous materials into sewers, resulting in damage to sewer system and danger to workers?			
▪ inadequate buffer zone around pumping and treatment plants to alleviate noise and other possible nuisances, and protect facilities?			
▪ road blocking and temporary flooding due to land excavation during the rainy season?			

Screening Questions	Ye s	No	Remarks
▪ noise and dust from construction activities?			
▪ traffic disturbances due to construction material transport and wastes?			
▪ temporary silt runoff due to construction?			
▪ hazards to public health due to overflow flooding, and groundwater pollution due to failure of sewerage system?			
▪ deterioration of water quality due to inadequate sludge disposal or direct discharge of untreated sewage water?			
▪ contamination of surface and ground waters due to sludge disposal on land?			
▪ health and safety hazards to workers from toxic gases and hazardous materials which maybe contained in confined areas, sewage flow and exposure to pathogens in untreated sewage and unstabilized sludge?			
▪ large population increase during project construction and operation that causes increased burden on social infrastructure (such as sanitation system)?			
▪ social conflicts between construction workers from other areas and community workers?			
▪ risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during construction and operation?			
▪ community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?			

Preliminary Climate Risk Screening Checklist as Extracted from the REA Checklist

Country/Project Title:

Sector:

Subsector:

Division/Department:

Screening Questions		Score	Remarks ⁴
Location and Design of project	Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides?		
	Would the project design (e.g. the clearance for bridges) need to consider any hydro-meteorological parameters (e.g., sea-level, peak river flow, reliable water level, peak wind speed etc)?		
Materials and Maintenance	Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity, and hydro-meteorological parameters) affect the selection of project inputs over the life of project outputs (e.g. construction material)?		
	Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)?		
Performance of project outputs	Would weather/climate conditions, and related extreme events likely affect the performance (e.g. annual power production) of project output(s) (e.g. hydro-power generation facilities) throughout their design life time?		

Options for answers and corresponding score are provided below:

Response	Score
Not Likely	0
Likely	1
Very Likely	2

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result to a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response, will be categorized as high risk project.

Result of Initial Screening (Low, Medium, High): _____

Other

Comments: _____

⁴ If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.

Prepared by: _____

Environments, Hazards and Climate Changes

Environment	Natural Hazards and Climate Change
Arid/Semi-arid and desert environments	Low erratic rainfall of up to 500 mm rainfall per annum with periodic droughts and high rainfall variability. Low vegetative cover. Resilient ecosystems & complex pastoral and systems, but medium certainty that 10–20% of drylands degraded; 10-30% projected decrease in water availability in next 40 years; projected increase in drought duration and severity under climate change. Increased mobilization of sand dunes and other soils as vegetation cover declines; likely overall decrease in agricultural productivity, with rain-fed agriculture yield reduced by 30% or more by 2020. Earthquakes and other geophysical hazards may also occur in these environments.
Humid and sub-humid plains, foothills and hill country	More than 500 mm precipitation/yr. Resilient ecosystems & complex human pastoral and cropping systems. 10-30% projected decrease in water availability in next 40 years; projected increase in droughts, heatwaves and floods; increased erosion of loess-mantled landscapes by wind and water; increased gully erosion; landslides likely on steeper slopes. Likely overall decrease in agricultural productivity & compromised food production from variability, with rain-fed agriculture yield reduced by 30% or more by 2020. Increased incidence of forest and agriculture-based insect infestations. Earthquakes and other geophysical hazards may also occur in these environments.
River valleys/deltas and estuaries and other low-lying coastal areas	River basins, deltas and estuaries in low-lying areas are vulnerable to riverine floods, storm surges associated with tropical cyclones/typhoons and sea level rise; natural (and human-induced) subsidence resulting from sediment compaction and ground water extraction; liquefaction of soft sediments as result of earthquake ground shaking. Tsunami possible/likely on some coasts. Lowland agri-business and subsistence farming in these regions at significant risk.
Small islands	Small islands generally have land areas of less than 10,000km ² in area, though Papua New Guinea and Timor with much larger land areas are commonly included in lists of small island developing states. Low-lying islands are especially vulnerable to storm surge, tsunami and sea-level rise and, frequently, coastal erosion, with coral reefs threatened by ocean warming in some areas. Sea level rise is likely to threaten the limited ground water resources. High islands often experience high rainfall intensities, frequent landslides and tectonic environments in which landslides and earthquakes are not uncommon with (occasional) volcanic eruptions. Small islands may have low adaptive capacity and high adaptation costs relative to GDP.
Mountain ecosystems	Accelerated glacial melting, rockfalls/landslides and glacial lake outburst floods, leading to increased debris flows, river bank erosion and floods and more extensive outwash plains and, possibly, more frequent wind erosion in intermontane valleys. Enhanced snow melt and fluctuating stream flows may produce seasonal floods and droughts. Melting of permafrost in some environments. Faunal and floral species migration. Earthquakes, landslides and other geophysical hazards may also occur in these environments.
Volcanic environments	Recently active volcanoes (erupted in last 10,000 years – see www.volcano.si.edu). Often fertile soils with intensive agriculture and landslides on steep slopes. Subject to earthquakes and volcanic eruptions including pyroclastic flows and mudflows/lahars and/or gas emissions and occasionally widespread ashfall.

ANNEX D
Outline of an ADB IEE
(ADB-SARD Safeguard Network – IEE Template)

Executive Summary

1. Introduction
2. Policy and Legislative Framework
3. Analysis of Alternatives
4. Proposed Description
 - 4.1 The Study Area
 - 4.2 Description of Site and Surroundings
 - 4.3 The Proposal
5. Assessment of Environmental Impacts and Safeguards
 - 5.1 Existing Environment
 - 5.1.1 Landforms, Geology and Soils
 - 5.1.2 Climatic Condition
 - 5.1.3 Water Quality
 - 5.1.4 Air Quality
 - 5.1.5 Acoustic Environment
 - 5.1.6 Biodiversity
 - 5.1.7 Physical and Cultural Heritage
 - 5.1.8 Socio-economic Conditions
 - 5.2 Impacts and Mitigation Measures
 - 5.2.1 Erosion Hazards
 - 5.2.1.1 Mitigation Measures
 - 5.2.2 Impacts on Water Quality
 - 5.2.2.1 Mitigation Measures
 - 5.2.3 Impacts on Air Quality
 - 5.2.3.1 Mitigation Measures
 - 5.2.4 Noise and Vibration Impacts
 - 5.2.4.1 Mitigation Measures
 - 5.2.5 Impacts on Flora and Fauna
 - 5.2.5.1 Mitigation Measures
 - 5.2.6 Impacts on Physical Cultural Resources
 - 5.2.6.1 Mitigation Measures
 - 5.2.7 Impact due to Waste Generation
 - 5.2.8 Impacts on Occupational and Community Health and Safety
 - 5.2.9 Greenhouse Gas Emissions (GHG)
 - 5.2.10 Cumulative Impacts
6. Information Disclosure, Consultation and Participation
7. Grievance Redress Mechanism
8. Environmental Management
9. Conclusion and Recommendations

ANNEX E
Proposed Format for Attendance Sheet and Notes of Consultation

(Subproject Title)
 Third Small Town Water Supply and Sanitation Sector Project
 ADB Loan No. XXXX

Attendance Sheet

Date: _____
 Venue/Location: _____
 Consulted Group: _____
 Consulting Group: _____

No.	Name	Address	Age	Gender		Head of HH		Ethnicity	Representation				
				M	F	Y	N		Resident	Business Owner	Youth	Other *	
1													
2													
3													
4													
..													

* Examples: Municipality, VDC, Ward Council, NGO, school, church, Women's Group, other civil society group, etc.

(Subproject Title)
 Third Small Town Water Supply and Sanitation Sector Project
 ADB Loan No. XXXX

Notes of Consultations

Date: _____
 Venue/Location: _____
 Consulted Group: _____
 Consulting Group: _____
 No. of Participants Total: _____
 Female: _____
 Male: _____

Discussion, Responses, Outcomes:

No.	Name	Gender	Question, Response, Outcome
1			
2			
3			
4			
...			

Annex F. Sample Grievance Redress Form
(To be available in Nepalese and English)

The _____ Project welcomes complaints, suggestions, queries and comments regarding project implementation. We encourage persons with grievance to provide their name and contact information to enable us to get in touch with you for clarification and feedback. Should you choose to include your personal details but want that information to remain confidential, please inform us by writing/typing ***(CONFIDENTIAL)*** above your name. Thank you.

Date		Place of registration			
Contact Information/Personal Details					
Name		Gender	* Male * Female	Age	
Home Address					
Place					
Phone no.					
E-mail					
Complaint/Suggestion/Comment/Question Please provide the details (who, what, where and how) of your grievance below:					
If included as attachment/note/letter, please tick here:					
How do you want us to reach you for feedback or update on your comment/grievance?					

FOR OFFICIAL USE ONLY

Registered by: (Name of Official registering grievance)	
Mode of communication: Note/Letter E-mail Verbal/Telephonic	
Reviewed by: (Names/Positions of Official(s) reviewing grievance)	
Action Taken:	
Whether Action Taken Disclosed:	Yes No
Means of Disclosure:	

ANNEX G

Sample Semi-Annual Environmental Monitoring Report Template

This template must be included as an appendix in the EIA/IEE that will be prepared for the project. It can be adapted to the specific project as necessary.

I. INTRODUCTION

- Overall project description and objectives
- Description of sub-projects
- Environmental category of the sub-projects
- Details of site personnel and/or consultants responsible for environmental monitoring
- Overall project and sub-project progress and status

No.	Sub-Project Name	Status of Sub-Project				List of Works	Progress of Works
		Design	Pre-Construction	Construction	Operational		
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

II. COMPLIANCE STATUS WITH NATIONAL/STATE/LOCAL STATUTORY ENVIRONMENTAL REQUIREMENTS

No.	Sub-Project Name	Statutory Environmental Requirements	Status of Compliance	Action Required

III. COMPLIANCE STATUS WITH ENVIRONMENTAL LOAN COVENANTS

No. (List schedule and paragraph number of Loan Agreement)	Covenant	Status of Compliance	Action Required

IV. COMPLIANCE STATUS WITH THE ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN

- Provide the monitoring results as per the parameters outlined in the EMP. Append supporting documents where applicable, including Environmental Site Inspection Reports.
- There should be Reporting on the following items which can be incorporated in the checklist of routine Environmental Site Inspection Report followed with a summary in the semi-annual Report send to ADB. Visual assessment and review of relevant site documentation during routine site inspection needs to note and record the following:
 - What are the dust suppression techniques followed for site and if any dust was noted to escape the site boundaries;
 - If muddy water was escaping site boundaries or muddy tracks were seen on adjacent roads;
 - adequacy of type of erosion and sediment control measures installed on site, condition of erosion and sediment control measures including if these were intact following heavy rain;

- Are their designated areas for concrete works, and refueling;
- Are their spill kits on site and if there are site procedure for handling emergencies;
- Is there any chemical stored on site and what is the storage condition?
- Is there any dewatering activities if yes, where is the water being discharged;
- How are the stockpiles being managed;
- How is solid and liquid waste being handled on site;
- Review of the complaint management system;
- Checking if there are any activities being under taken out of working hours and how that is being managed.

o **Summary Monitoring Table**

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring
Design Phase						
Pre-Construction Phase						
Construction Phase						
Operational Phase						

Site No.	Date of Sampling	Site Location	Parameters (Government Standards)					
			pH	Conductivity ($\mu\text{S}/\text{cm}$)	BO D (mg/L)	TSS (mg/L)	TN (mg/L)	TP (mg/L)

Noise Quality Results

Site No.	Date of Testing	Site Location	LA _{eq} (dBA) (Government Standard)	
			Day Time	Night Time

Site No.	Date of Testing	Site Location	LA _{eq} (dBA) (Government Standard)	
			Day Time	Night Time

VII. SUMMARY OF KEY ISSUES AND REMEDIAL ACTIONS

- Summary of follow up time-bound actions to be taken within a set timeframe.

Appendixes

- Photos
- Summary of consultations
- Copies of environmental clearances and permits
- Sample of environmental site inspection Report
- Other

SAMPLE ENVIRONMENTAL SITE INSPECTION REPORT

Project Name
Contract Number

NAME: _____ DATE: _____

TITLE: _____ DMA: _____

LOCATION: _____ GROUP: _____

WEATHER CONDITION:

INITIAL SITE CONDITION:

CONCLUDING SITE CONDITION:

Satisfactory _____ Unsatisfactory _____ Incident _____ Resolved _____
Unresolved _____

INCIDENT:
Nature of incident:

Intervention Steps:

Incident Issues

Resolution

Project Activity Stage	Survey	
	Design	
	Implementation	
	Pre-Commissioning	
	Guarantee Period	

Inspection

Emissions	Waste Minimization
Air Quality	Reuse and Recycling
Noise pollution	Dust and Litter Control
Hazardous Substances	Trees and Vegetation
Site Restored to Original Condition	Yes No <input type="checkbox"/> <input type="checkbox"/>

Signature

Sign off

Name Name
Position Position

Annex H
Draft Outline Terms of Reference for PMO Environmental Safeguard Specialist

1. This ToR is for the national environmental safeguard specialist that will be engaged as one of the individual consultants to support the Project Management Office (PMO). to a 12-months input spread over five-year implementation period.

2. The Environmental Safeguard Specialist will provide technical assistance and support to the Project Management Office (PMO) in: (i) ensuring compliance of subsequent subprojects to the EARF; and carrying out PMO's responsibilities in EMP implementation. The Environmental Safeguard Specialist shall ensure that while performing his/her tasks, capacity development in environmental management is carried out. Capacity development shall be highly focused in training the PMO, particularly its Environmental Safeguard Officer (PMO-ESO) and the RPMOS's Environmental Safeguard Assistant (RPMOS-ESA). Training shall be highly "hands-on", allowing learning while implementing the EARF and EMPs. His/her responsibilities include, but not limited to, the following:

Prior to construction

- (i) Assess the capacity of the PMO and RPMOS in environmental assessment, management, monitoring and reporting and recommend additional measures for capacity development.
- (ii) Provide training lectures on subjects relevant to the EARF and EMP as well as environmental awareness.
- (iii) Review and update the EARF, as necessary.
- (iv) Assist the PMO-ESO in the compliance with ADB and Government's environmental safeguard requirements.
- (v) Supervise the update of IEEs/EMPs based on detailed designs, and that new IEEs/EMPs are prepared in accordance with the EARF and subproject selection criteria related to safeguards
- (vi) Ensure IEEs/EMPs are included in bidding documents and civil works contracts;
- (vii) Reviewing/evaluating Contractor's EMPs if fully responsive to the SPS-compliant EMPs prior to submission to the ADB for approval.
- (viii) Enhance, where necessary, the existing system of consultations, monitoring and inspection and reporting by the PMO.
- (ix) Together with the DSC-ESS and Contractor's environmental supervisor, conduct course for the training of contractors preparing them on EMP implementation, environmental monitoring requirements related to mitigation measures; environmental monitoring reporting and taking immediate actions to remedy unexpected adverse impacts or ineffective mitigation measures found during the course of implementation.

During construction and operation

- (i) Support the PMO in monitoring the EMP implementation of all subprojects and preparing and submitting semi-annual environmental monitoring reports to ADB.
- (ii) Together with the PMO-ESO, review the results of the environmental monitoring and recommend investigations and corrective actions, as necessary.
- (iii) Conduct visits to subproject sites to provide guidance, as necessary, on corrective actions.
- (iv) Assess the implementation of the grievance redress mechanism and recommend improvements.

During the entire engagement period

- (i) Review draft monthly and semi-annual environmental monitoring reports (EMRs) prepared by the PMO-ESO. Together with the PMO-ESO, finalize EMRs, i.e., monthly EMR for input to the PMO's monthly progress report and semi-annual EMR for submission to the ADB.
- (ii) Recommend measures to ensure effective EARF and EMP compliance/implementation, as necessary.
- (iii) Prepare the necessary report that will be required from him/her, e.g. progress report on his/her technical assistance.
- (iv) Perform other tasks that are relevant to his/her position but are not mentioned above.

3. The Environmental Safeguard Specialist will meet the following minimum qualification requirements: (i) at least a Master's degree in environmental science/engineering/ planning or equivalent; (ii) at least 10 years of professional experience in environmental impact assessment and in managing the environmental performance including environmental monitoring, of donor-financed urban infrastructure projects in Nepal; and (iii) a good command of written and spoken English and experienced in preparing reports in English and Nepalese.