Environmental Assessment and Review Framework

May 2017

NEP: Regional Urban Development Project (RUDP)

Prepared by Ministry of Urban Development (MoUD), Government of Nepal for the Asian Development Bank.

CURRENCY EQUIVALENTS

(as of January 2017)

Currency Unit	=	Nepalese Rupee (NPR)
NRp1.00	=	$ 0.00930
$1.00	=	NPR 107.52600

ABBREVIATIONS

ADB	–	Asian Development Bank
EARF	–	environmental assessment and review framework
EPA	–	Environmental Protection Act
EPR	–	Environmental Protection Rules
EIA	–	environmental impact assessment
EMP	–	environmental management plan
ETP	–	effluent treatment plant
GRC	–	Grievance Redressal Cell
GRM	–	Grievance Redress Mechanism
IEE	–	initial environmental examination
GON	–	Government of Nepal
MOPE	–	Ministry of Population and Environment
DSC	–	design and supervision consultants
MOUD	–	Ministry of Urban Development
O&M	–	operations and maintenance
PCO	–	project coordination office
PPTA	–	project preparatory technical assistance
REA	–	rapid environmental assessment
RP	–	resettlement plan
SPS	–	Safeguard Policy Statement
ToR	–	terms of reference

NOTES

(i) In this report, "$" refers to US dollars.

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I. INTRODUCTION

A. Overview

1. The Regional Urban Development Project (RUDP) will improve resilience and delivery of urban services in eight municipalities in the southern Terai region of Nepal bordering India, including four municipalities from the less developed Far Western Region (FWR).[1] The project will support municipal infrastructure investments, urban planning and institutional strengthening to improve quality, sustainability, economic growth and competitiveness.

2. RUDP includes 4 non-Far Western Region (FWR) municipalities of Biratnagar Sub-metropolitan City (population 235,000), Birgunj Sub-metropolitan City (population 240,000), Nepalgunj Sub-metropolitan City (population 175,000), and Siddharthanagar (population 73,000) in the eastern, central, midwestern and western regions respectively, and where current ADB-financed projects are at an advanced stage of completion. Through these projects, implementation capacity has been developed, liveability and resilience have increased substantially, and efforts to strengthen the project municipalities are showing results in terms of improving own-source revenue, amongst others. These four 'non-FWR' municipalities remain strategic for the Nepal's socio-economic development. The majority of Nepal's trade flows through Biratnagar, Birgunj and Siddharthanagar. Nepalgunj is the leading industrial and business hub of the Midwestern Terai.

3. RUDP also includes a cluster of 4 FWR municipalities: Attariya (population 90,000), Bheemdatt (population 125,000); Dhangadhi Sub-metropolitan City (population 173,000); and Jhalari Pipaladi (population 45,000). These municipalities are less developed than non-FWR municipalities, but pace of growth is rapid and they are located within 400 km of major Indian cities of Delhi and Lucknow.

4. The Ministry of Urban Development will be the executing agency and the participating municipalities are the implementing agencies.

5. **Impact and Outcome.** The project is aligned with the following impacts: sustainable, inclusive, and resilient urban areas developed; and balanced and prosperous sub-national urban system achieved.[2] The project will have the following outcome: quality, sustainability, and disaster resilience of urban services, and competitiveness in eight municipalities of the Terai region improved.[3]

6. **Outputs.** The outputs of the project are:

(i) Output 1: Urban infrastructure in 8 municipalities constructed or rehabilitated with climate-resilient and sustainable designs

7. **Drainage, sewerage and roads constructed or upgraded.** The project will support to construct or rehabilitate 200 km of storm water drainage, 20 km of sewerage network,[4] and 240

[1] The project preparation was supported by *Technical Assistance for the Far Western Region Urban Development Project.* Manila (TA-8817*)* approved in 2014 and *Supplementary Technical Assistance for the Far Western Region Urban Development Project* (TA-8817) approved in 2015.

[2] Government of Nepal. 2016. *National Urban Development Strategy*. Kathmandu.

[3] The design and monitoring framework is in Appendix 1.

[4] Wastewater treatment plants are being constructed in Biratangar and Birgunj under ongoing Loan 2650-NEP: Secondary Towns Integrated Urban Environment Improvement Project.

km of urban roads with urban design features. Future increase in the rainfall intensities will be taken into account as required in pending detailed designs of drainage systems to strengthen urban resilience to climate change.

8. **Solid waste management system improved.** In four municipalities (FWR municipalities), RUDP will support to improve solid waste management (SWM) by adopting an integrated approach, reviewing and improving the entire system from segregation and collection, through reduce, reuse and recycle (the 3Rs), to transportation and final disposal at the sanitary landfill including resource recovery facilities. RUDP will support to construct key infrastructure, particularly sanitary landfill site, transfer station (if required), access road to the landfill site and procurement of equipment, transfer trucks and machines. RUDP will also support to design an integrated SWM system including design of sanitary landfill site for Biratnagar Sub-Metropolitan city and surrounding municipalities. The possibility of private sector participation in SWM services, including collection and landfill operation will be explored through incorporating management services of about 3 years in the civil works contract. This is to ensure effective and efficient operation of the system. SWM systems in Birgunj, Nepalgunj and Sidharthanagar are already supported through previous projects.

9. The SWM subproject scope will also include remediation of existing dumpsites and fecal sludge management. Key outputs will include four municipal sanitary landfills and resource recovery centers with septage treatment facilities constructed (Attariya, Bheemdatt, Dhangadhi, and Jhalari-Pipaladi).

10. Salient subprojects under output 1 include improving the main access road from Siddharthnagar to its new international airport; expanding wastewater service coverage in Biratnagar; increasing capacity of storm water drainage system to strengthen urban resilience, and improving sustainability of drainage system through improvement of municipal SWM systems.

(ii) Output 2: Municipal capacity strengthened

11. RUDP will strengthen municipalities to provide and sustain quality services for all, including the poor and marginalized through the following initiatives.

12. **Other municipal infrastructure improved.** The project will support to improve municipal administration services by constructing municipal office buildings of Attariya and Jhalari-Pipaladi. The buildings will be constructed following energy-efficient and disaster resilient standards.

13. **Performance-based socioeconomic development program (PBSDP) in FWR municipalities.** The project will provide a PBSDP grant against achieving a set of performance milestones to incentivize improvement in the municipalities' governance, financial and operational performance. The project will ensure that at least 30% of the PBSDP grant is spent on socioeconomic infrastructure and GESI-related activities. The grant would be used for small community infrastructure, capacity building, communication activities, or revenue-generating infrastructure. Each municipality will be supported by the institutional development consultant. Project coordination office (PCO) will prepare detailed guidelines for planning, implementation and reporting of the PBSDP.

14. The other targets under this output are: (i) urban development plans and planning and building bylaws with disaster risk resilience and inclusive accessibility and safety features adopted through municipal council decision in FWR municipalities; (ii) O&M plan prepared and reflected in annual budget of project municipalities; (iii geographic information systems operational with 80%

house numbering in core area; (iv) computerized property tax system installed in Attariya and Biratnagar with 70% of property records encoded; and (v) improved municipal organizational structure including a social development section approved by municipal councils of Attariya and Jhalari-Pipaladi.

(iii) Output 3: Urban planning and project preparation capacity improved

15. The project will support the Department of Urban Development and Building Construction (DUDBC) and municipalities to close the infrastructure gap by preparing detailed project reports (DPRs), and an investment pipeline. The project development facility will address the lead time of at least two years in Nepal's urban sector to reach the procurement stage by developing a shelf of projects.[5] The project will (i) ensure project development facility guidelines are adopted; (ii) prepare DPR for a multi-sector, subregional investment program, and (iii) prepare at least two other DPRs for SWM, drainage, roads, water supply and/or sanitation subsectors.

B. Purpose of EARF

16. ADB's Safeguard Policy Statement (SPS, 2009) requires the preparation of an Environmental Assessment and Review Framework (EARF). The EARF prepared for the RUDP project will provide guidance on safeguard screening, assessment, institutional arrangements, and processes to be followed for components of the overall project, where design takes place after ADB Board approval, and for impact mitigation planning in the event unanticipated environmental impacts arise during implementation. The subproject selection will be in accordance with the environmental project selection criteria as outlined in this EARF. The executing agency will agree with ADB on screening and categorization, environmental assessment, preparation and implementation, monitoring, and updating existing safeguard plans for the subprojects to facilitate compliance with the requirements specified in ADB Safeguard Policy Statement (SPS, 2009) and government rules and laws. The initial environmental examination reports (IEEs) prepared as part of the project preparation study outlined mitigation measures for some minor potential negative environmental impacts, and monitoring plans for both construction and post-project maintenance phases.

17. This EARF (i) describes the project and its components; (ii) explains the general anticipated environmental impacts and mitigation measures for the subprojects, which will be financed under the project after ADB Board approval; (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) assesses the capability of the project proponents to implement national laws and ADB's requirements, and identifies needs for capacity building; (v) specifies implementation procedures, institutional arrangements, and capacity development requirements; and (vi) specifies monitoring and reporting requirements.

18. The EARF ensures systematic assessment process for all subprojects, in the entirety of their project cycle.

[5] See Section G of the PAM for more details on the management of the project bank facility; and Appendix 6 of the PAM for a summary of the project bank guidelines and project selection criteria (accessible from the list of linked documents in Appendix 2).

C. Environmental Categorization

19. The scope of the RUDP financing includes the following infrastructure categories: (i) roads and drains, (ii) water supply,[6] (iii) solid waste management, (iv) sanitation infrastructure and; (v) public (municipal) buildings.

20. The subprojects under RUDP financing will seek to mainly scale up the subprojects under IUDP, or follow similar approach. Four draft IEEs were prepared for representative infrastructure categories[7] and confirmed that no significant environmental impacts are expected because the subprojects are small in scale with very limited impacts. Subproject sites are located outside sensitive areas, and any impacts during construction and operation can be avoided and/or mitigated through proper design and high-quality construction and operations and maintenance (O&M) practices. Thus RUDP financing is expected to be category B for environmental safeguards as per ADB SPS. No potential category A subprojects will be taken up under RUDP financing. [8]

II. ASSESSMENT OF LEGAL FRAMEWORK AND INSTITUTIONAL CAPACITY

A. Environmental Legislation

21. Under the project, the implementation of all subprojects will be governed by the environmental acts, rules, policies, and regulations of the Government of Nepal and the Nepal Constitution. These regulations impose restrictions on the activities to minimize/mitigate likely impacts on the environment. Many of these are cross-sectoral and several of them are directly related to environmental issues. Additionally, the subprojects will comply with the ADB Safeguards Policy Statement (SPS) 2009.
22.

23. The main legislations and procedures to follow are:

(i) Environment Protection Act, 2053 (1997)

(ii) Environmental Protection rules, 2054 (1997); this documents lists, in its Schedule 2, the types of projects which require an IEE. The following are relevant in the context of the sub projects:

(a) Improvement, upgrading and reconstruction of national highways and feeder roads;

(b) Supply of drinking water to a population ranging from two thousand to twenty thousand;

(c) Waste Management activities to be undertaken with the objective of providing services to a population ranging between two thousand and ten thousand;

(d) Filling of land with one hundred to one thousand tons of waste a year; (landfills of more than 1000 t per year would require an EIA);

[6] The large civil works packages will not cover water supply; but the PBSEDP may include small-scale community water supply interventions.

[7] IEEs prepared for (i) roads and drainage, and (ii) solid waste management.

[8] Category A subprojects are deemed to potentially cause significant adverse environmental impacts that are irreversible, diverse or unprecedented. Category A may also be triggered if subproject will be (i) located within or adjacent to ecologically-sensitive areas such as such as legally-protected areas (environmental and cultural), reserved forests, wetlands, internationally- or nationally-recognized habitats; or (ii) has potential to impact biodiversity and natural resources.

(e) Selecting, picking, disposing, and recycling waste through chemical, mechanical or biological techniques in an area up to two hectares;
(f) Activities relating to compost plants in an area ranging between one to five hectares;
(g) Operations of sewerage schemes;
(h) Clearing of national forests covering up to one hectare in the hills and five hectares in the Terai; and
(i) Schedule 2, the list of projects requiring an EIA, mentions projects to be implemented in "Flood prone and other dangerous areas"; it is therefore recommended, especially in the case of larger schemes (the largest being waste disposal sites, where flood risks are an issue), to clarify this question with the competent authorities in an early stage of project preparation.

(iii) National Environmental Impact Assessment Guidelines, 1993[9].

24. For the subproject's environmental assessment process, other applicable requirements may be:

(i) Solid Waste Management Act, 2011
(ii) Water Resources Act, 1992
(iii) Forest Act, 2049–1993
(iv) Land Acquisition Act, 2034–1978
(v) Land Reform Act 2021–1964
(vi) Lands Act 2021–1964
(vii) Solid Waste (Management and Resources Mobilisation) rules, 2009
(viii) Water Resources Rules, 1993
(ix) Forest Rules, 1994

25. The Environmental Protection Rules also define the procedure to be followed in an environmental assessment.

26. Implementation of all subprojects will be governed by the environmental acts, rules, policies, and regulations of the Government of Nepal (Table 1). These regulations impose restrictions on the activities to minimize/mitigate likely impacts on the environment. Many of these are cross-sectoral and several of them are directly related to environmental issues. Additionally, the subprojects will comply with the ADB Safeguards Policy Statement (SPS) 2009.

[9] Nepal is in the process of enacting a revised set of EIA guidelines. These revised guidelines will be applicable once they are notified and becomes official.

Table 1: Applicable Government of Nepal Environmental Legislations (National Laws, Policies, Acts, Regulations, Standards and Guidelines)

Environmental Acts, Regulations and Guidelines	Description of Requirements
1. Constitution of Nepal 2072BS (2015AD)	Constitution of Nepal mandates Environmental Protection as state policy. The State shall give priority to the protection of the environment, and also to the prevention to its further damage due to physical development activities by increasing the awareness of the general public about environmental cleanliness, and the State shall also make arrangements for the special protection of the environment and the rare wildlife. Provision shall be made for the protection of the forest, vegetation and biodiversity, its sustainable use and for equitable distribution of the benefit derived from it.
2. Aquatic Animals Protection Act 2018BS (1961AD) and first amendment, 1998	This act provides legislative protection of the habitats of aquatic species. Section 3 of the AAPA renders punishable any party introducing poisonous, noxious or explosive materials into a water source, or destroying any dam, bridge or water system with the intent of capturing or killing aquatic life. However, no agency has been designated the responsibility for administering and enforcing the AAPA.
3. Batabaraniya Nirdesika (Nepal, MLD), 2057 BS (2000AD)	The directive is focused in the practical implementation of small rural infrastructures through the minimization of environmental impacts. This directive includes the simple methods of environmental management in the different phases of the project cycle. More emphasis is given to prevention rather than cure. So, the recommendations for the mitigation measures are provided only when it is necessary.
4. Child labor (Prohibition and Regularization) Act, 2001 AD	Main legal expedient to prohibit engaging children in factories, mines or similar risky activities and to make necessary provisions with regard to their health, security, services and facilities while engaging them in other activities. Under the Section 3 of the Act, child having not attained the age of 14 years is strictly prohibited to be engaged in works as a laborer. Similarly under Section 4, engagement of child in works as a laborer against his/her will by way of persuasion, misrepresentation or by subjecting his/her to any influence or fear or threat or coercion or by any other means is prohibited. Under Section 6, in case any Enterprise has to engage a child in works, an approval has to be obtained from the concerned labor office or any authority or official prescribed by that office and form the father, mother or guardian of the child.
5. Electricity Act, 1993	The clause 24 of the electricity act 1993 states about the environment which reads No Substantial Adverse Effect be made on environment. Further it states, while carrying out electricity generation, transmission or distribution, it shall be carried out in such a manner that no substantial adverse effect be made on environment by way of soil erosion, flood, landslide, air pollution etc.
6. Environment Protection Act, 2053 BS (1997 AD)	Any development project, before implementation, to pass through environmental assessment, which may be either IEE or an EIA depending upon the location, type and size of the projects.
7. Environment Protection Rules, 2054 BS (1997 AD) (Amendment, 1999)	Obliges the proponent to inform the public on the contents of the proposal in order to ensure the participation of stakeholders.

Environmental Acts, Regulations and Guidelines	Description of Requirements
8. Forest Act, 2049 BS (1993AD)	Requires decision makers to take account of all forest values, including environmental services and biodiversity, not just the production of timber and other commodities.
9. Forest Rules, 2051 BS (199AD)	Elaborates legal measures for the conservation of forests and wildlife.
10. Labor Act, 1991 AD	It emphasizes on occupational health and safety of workers thereby providing necessary safety wares and adopting necessary precautionary measures against potentially hazardous machines/equipment. It stipulates to make arrangements such as removal of waste accumulated during production process and prevention of dust, fume, vapor and other waste materials, which adversely affect the health of workers. The provisions related to environment in labor law can be summarized as: • Spells about the provision for a healthy, safe and secure environment for workers. • Prescribes provisions for solid waste management and control noise pollution in the working areas, Imposes mandatory provision that only Nepal citizens can be employed on permanent basis in any enterprises, permission must be sought from the Labor Department to employ non-Nepali specialists on contract basis.
11. Land Acquisition Act, 2034 BS (1978AD)	Government can acquire land at any place in any quantity by giving compensation pursuant to the act for any public purposes or for operation of any development project initiated by government institutions.
12. Local Self Governance Act , 2055 BS (1999AD) and Rules, 2056BS (2000AD)	Empowers the local bodies for the conservation of soil, forest and other natural resources and implements environmental conservation activities.
13. Local Self Governance Regulations, 2000	This regulation empowers the local bodies for the conservation of soil, forest and other natural resources and implements environmental conservation activities
14. National EIA Guidelines, 1993	The guidelines provide guidance to project proponent on integrating environmental mitigation measures, particularly on the management of quarries, borrow pits, stockpiling of materials and spoil disposal, operation of the work camps,
15. Public Roads Act, 1974 AD	The major provisions of the Public Roads Act, 1974 are: • Prescribes rules for planned road construction; regulating road width and boundaries, within which no houses can be built; and • Maintains road environment through plantation along public roads. GoN agencies and public needs prior approval from Department of Roads to carry out work on roads and road boundaries.
16. Soil and Water Resource Conservation Act, 2039 BS (1939 AD)	This act is enacted to manage the watersheds of Nepal. Section 3 empowers the government to declare any area as a protected watershed area. Section 4 provides that a watershed conservation officer has the authority to implement the following works in protected watershed areas
17. Solid Waste Management Act, 2011	This Act outlines the duties of local government to take action to control haphazard waste generation, disposal or collection and has provisions for various punitive measures against those engaged in activities detrimental to the intentions of the Act.

Environmental Acts, Regulations and Guidelines	Description of Requirements
	Special features of this act are as follow: • Hazardous waste, medical waste, chemical waste or industrial waste must be managed by the person/institution responsible for producing/generating it. • Local body shall only manage the processed hazardous waste/medical waste/chemical waste by levying fees. • It shall be duty of every person to reduce the production of solid waste. Further it will be the duty of person/institution to make arrangement for biodegradable waste within its boundary and discharge the remaining waste. • Promotion of source separation of waste. • Empowers local body the right to set collection point for systematic collection of solid waste. • Transportation of solid waste: Only prescribed vehicle shall be used and only segregated waste shall be collected. • Adaptation of reduce, reuse and recycle principle. • Provision for the waste management by the private sector upon receiving of license form the local body. • Provision for charging of service fee by the local body for the solid waste management services to the institution/concerned person or body. • Various punishment/penalties who violates this act
18. Solid Waste Management Rules, 2013	Solid Waste Management Rules has provided authority to local bodies for the segregation, transportation and disposal of solid waste as well as operation of sanitary landfill site. Local bodies may also empower the company, organization and agency, producing solid wastes, for segregating, reducing the solid wastes at its source, reuse and recycling use solid wastes and mobilize community and non-governmental organization for creating awareness for the management of the solid waste. Local bodies have also the authority to determine service charge for solid waste management.
19. Three Years Interim Development Plan, GON, 207-2073BS (2017-2019AD)	The Plan focuses on the need for setting up national environmental standards with strategy of internalizing environmental management into the development programs. The Plan has also realized to carryout Strategic Environmental Assessment (SEA) with the long term policy of promoting environmental governance. The Plan emphasizes on the local participation in environmental conservation, as envisaged in the Local Self Governance Act, 2055, through the local bodies, make them responsible and capable to manage local natural resources.
20. Water Resources Act, 1992 & Water Resources Regulation, 2000	Water Resource Act is an umbrella act governing water resource management. It declares the order of priority of water use; vests ownership of water in the state; prohibits water pollution; and provides for the formation of Water User Association and system of licensing. The Regulation sets out the procedure to register a WUA and to obtain a license and sets out the rights and obligations of WUA and license holders.
21. Environmental guidelines published by MOPE 2006	The guideline provides clear directions about the process of conducting EIA. This guideline makes EIA in Nepal legally mandatory and contains process for ensuring public involvement during the preparation

Environmental Acts, Regulations and Guidelines	Description of Requirements
	of EIA report. It calls for information regarding identification of physical, biological, socio-economic and cultural impacts. Impacts ranking method are also suggested in this guideline. It stresses the inclusion of mitigation measures to avoid, minimize and mitigate adverse impacts and maximize beneficial impacts resulting from the development project and monitoring & environmental auditing in the EIA report. Its revision in 1997 calls for ensuring local people's participation, collection of relevant information, identifying major issues of public concerns, evaluating them and establishing priorities for EIA study. The Environmental Guidelines published by MoPE (2006) contains the following components: • Methods for screening of the projects requiring an application of Environmental Assessment Scoping, impact identification and prediction, report review, monitoring and evaluation and impact auditing; • Methods for ensuring public participation during the preparation of the EIA report, including the need for clear documentation of the impact mitigation measures in the EIA report; • Provisions for identifying socio-economic-cultural, biological, and physical impacts and prescription of mitigation measures to avoid, eliminate and/or minimize adverse effects and to augment beneficial impacts resulting from the project implementation; and emphasis on the adoption of monitoring, evaluation and environmental auditing frameworks in the EIA report.
22. Building Act 2055BS	Building Act, 2055BS has the necessary provisions for the regulation of building construction works in order to protect building against earthquake, fire and other natural calamities, to the extent possible. It has the provisions relating to Design and Approval of design/map of building, which states that "Any person, body or government body shall, in making a building, build it in consonance with the standards set forth in the building code. In so making a building, the building shall be built under the supervision of a designer or his/her representative, engineer or architect whose rank is at least the same as that of the designer, engineer or architect who has certified the map and design of that building."
23. Waste Water Management Policy 2006	Government of Nepal is currently drafting a policy on Wastewater management (Draft Wastewater Management Policy 2006) to develop policy guidelines for planning, development, operation and management. Financing and delineation of role and responsibilities of different stakeholders in wastewater management. The proposed primary objectives of the policy are: a) improving sanitary condition by ensuring compliance to the wastewater standards, b) reducing morbidity and mortality rates with appropriate wastewater management, c) facilitating construction and management of storm and sanitary sewerage systems, d) improving sanitary condition of local streams, rivers, lakes and ponds and other water bodies, e) establishing coordination and integrated approach among the stakeholders for planning, construction, operation, maintenance and management of sewerage system, f) establishing partnership between the government and private sector for promotion of appropriate technologies for wastewater disposal and management and financing, and g) developing mechanism for knowledge dissemination and awareness building among the stakeholders and beneficiaries.

Environmental Acts, Regulations and Guidelines	Description of Requirements
	The Policy restricts disposal of wastewater into nature or open space without treatment to a safer level.
24. Nepal National Building Code 2005	The national Building Code of Nepal was endorsed after cabinet decision in 2060/4/12 which deals primarily with matters relating to the strength of buildings, site considerations safety during construction and fire hazards, construction materials etc. The code believes in sincere code of ethics of the personnel involved in designing to implementation phase of construction activities so as to achieve a meaningful improvement in construction in Nepal.
25. National Drinking Water Supply 2006	The Nepal Drinking Water Quality Standards and Guidelines (including standard limits, guidelines for the required frequency for water quality monitoring, and the process and schedule for measuring the standards in active use in the country) were established in 2006

B. Government of Nepal Environmental Assessment Procedures

27. **Environmental Guidelines (2006) published by Ministry of Population and Environment.** This guideline makes environmental impact assessment (EIA) in Nepal legally mandatory and contains process for ensuring public involvement during the preparation of EIA report. It calls for information regarding identification of physical, biological, socio-economic and cultural impacts. Impacts ranking method also suggested in this guideline. It stresses the inclusion of mitigation measures to avoid, minimize and mitigate adverse impacts and maximize beneficial impacts resulting from the development project and Monitoring & environmental auditing in the EIA report.

28. The Environmental Guidelines contains the following components:

(i) Methods for screening of the projects requiring an application of Environmental Assessment Scoping, impact identification and prediction, report review, monitoring and evaluation and impact auditing;

(ii) Methods for ensuring public participation during the preparation of the EIA report, including the need for clear documentation of the impact mitigation measures in the EIA report;

(iii) Provisions for identifying socio-economic-cultural, biological, and physical impacts and prescription of mitigation measures to avoid, eliminate and/or minimize adverse effects and to augment beneficial impacts resulting from the project implementation; and

(iv) Emphasis on the adoption of monitoring, evaluation and environmental auditing frameworks in the EIA report.

Table 2: Environmental Classification of Proposed Subprojects per Government of Nepal Environmental Guidelines (2006)

Subproject	Component	Key Activities	Environment Classification
1. City road improvement	Road provisions (include road resurfacing, roadside footpath, roadside drains, road signs, road/pavement markings, intersection improvement, or high mast lighting)	re-construction and extension of road (feeder road, local road)	Cat B IEE to be prepared
2. Drainage improvement	Primary network (includes domestic connections or primary drains)	Engineering works Engineering works	Cat B IEE to be prepared
	Secondary network (includes secondary drains)		
	Tertiary network (includes main drains and drainage outfalls)		
3. Municipal Building / Public Building	Construction of public buildings	No similar facility	Cat B IEE to be prepared
4. Water supply	Source augmentation (includes tube wells, surface water intake, overhead or ground reservoir, pumps and pump house, water treatment	Engineering works	Cat B IEE to be prepared

Subproject	Component	Key Activities	Environment Classification
	plant [WTP] or chlorination facility)		
	Water transmission (includes pumping main, overhead reservoir, or pumps and pump houses)	Water, power and gas distribution line laying/ relaying/extension.	Cat B IEE to be prepared
	Network improvements (include ring main, distribution/ carrier mains, bulk valves and flow meter, household connections or household meters)		
5. Solid waste management	Community storage bins	No similar facility	Cat B IEE to be prepared
	Secondary transfer station		
	Waste disposal (includes sanitary landfill, composting site, or access road)	Land-filling by industrial, household and commercial wastes	

Table 3: Comparison between ADB and GoN Environmental Procedures

Project Stage	ADB Procedure	GoN Procedure
Subproject identification/ categorization	Subproject selection is in line with the EARF subproject selection criteria. REA checklist is completed and project categorization (A/B/C) carried out at the earliest stage of project preparation, when sufficient information is available for this purpose. If any subproject is categorized as C, then no further work is required.	Refer to Schedules 1 & 2 of the EPR for the prescribed environmental assessment (IEE or EIA) to carry out for the proposed project. Preparation of schedules of work/ToR and determination of EIA / IEE scope. If proposed project requires an IEE 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.
Environmental assessment /project design	IEE is prepared/ updated in accordance with the EARF. The borrower/client will use qualified and experienced experts to prepare the environmental assessment and the EMP. EMP will be responsive to changes in project design, such as a major change in project location or route, or in technology, unforeseen events, and monitoring results. Provisions must be made for uncertainties in location and alignment of infrastructure and unanticipated impacts.	Conduct of IEE and preparation of IEE Report. 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). Submit 15 copies of the IEE/EIA Report along with the project proposal

	EMP is updated and made site-specific for each contract during the detailed engineering design. IEE or EIA as applicable, including an EMP, shall be submitted to ADB for review and clearance prior to issuance of tender/bidding documents.	and recommendation of the concerned VDC or Municipality to the CSA.
Project Stage	**ADB Procedure**	
	In case of changes in specific locations or alignments of any subproject facilities, please state instead that EMP will be updated and that environmental assessment will be carried out if changes in location and alignment are located outside the project area of influence.	
Consultation and participation	ADB requires project proponents to engage with communities, groups, or people affected by proposed projects, and with civil society. For category B Projects it is recommended that public consultation be carried out during the early stages of the executing agency process and throughout the project implementation to address any environmental issues that affect the local communities, NGOs, governments, and other interested parties. ADB requires meaningful consultation, which is defined 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	The IEE report to incorporate the opinions & suggestions of stakeholders on potential impacts from proposed project's implementation on the environment.

	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. This is required of all projects.	
Disclosure of information	The borrower/client will submit to ADB the following documents for disclosure on ADB's website: (i) the final EIA/IEE; (ii) a new or updated EIA/IEE and corrective action plan prepared during project implementation, if any; and (iii) the environmental monitoring reports. The executing agency will provide relevant environmental information in a timely manner, in an accessible place and in a form and language(s) understandable to affected people and other stakeholders. For illiterate people, other suitable communication methods will be used.	The IEE report is posted 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.
Approval/clearance	The executing agency, after review of IEE, will forward this to ADB to review and clear prior to approval and issuance of tender documents. To ensure that contractors appropriately implement the agreed measures, the borrower/client will include the EMP in bidding documents and civil works contracts.	If review reveals project implementation to have no substantial adverse impact on the environment, grant approval within 21 days from receipt of Report.
Implementation	The construction contractor should develop an Environmental Mitigation Execution Plan (EMEP) based on the EMP and cleared by the PID and DSC.	Implement approved IEE/EIA Report and any terms and conditions given with the approval.

Implementation	EMP implementation as per contract documents. Contractors are to submit monthly EMP implementation status reports to DSC.DSC to submit quarterly monitoring reports to PID. PID to submit semi-annual reports to ADB.	Monitor and evaluate impact of project implementation. When necessary, issue directives to the Proponent to institute environmental protection measures.
Completion	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.	Conduct an environmental audit after two years of project commissioning / operation.

Note: ADB = Asian Development Bank, DSC = Design and Supervision Consultants, EARF = Environmental Assessment and Review Framework, EIA = Environmental Impact Assessment, EMP = Environmental Management Plan, IEE = initial environmental examination, NGO = nongovernmental organization, PID = Project Implementation Directorate, REA = Rapid Environmental Assessment, EPR – Environment Protection Rules, VDC – Village Development Committee

C. International Environmental Agreements

29. Nepal is party to the following international convention that may apply to this project, especially in selection and screening of subprojects under restricted/sensitive areas.

Table 3: International Agreements and Applicability to RUDP

Agreement	Requirements for the Project
1. Ramsar Convention on Wetlands of International Importance, 1971. The Convention on Wetlands of International Importance, called the Ramsar Convention, is an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. According to the Ramsar list of Wetlands of International Importance, there are 10 designated wetlands in Nepal which are required to be protected.	There are 10 Ramsar Sites in Nepal however they are not located within or adjacent to the any of the subproject sites. If in the future any of the activities are undertaken in the proximity of Ramsar wetlands, it shall follow the guidelines of the convention (The Ramsar Convention Handbooks for the wise use of wetlands, 4th ed. (2010), (http://www.ramsar.org/cda/en/ramsar-pubshandbooks/main/ramsar/1-30-33_4000_0__)
2. Convention on the Transboundary Movements of Hazardous Wastes and Their Disposal, 1989 To protect human health and the environment against the adverse effects of hazardous wastes. This aims at (i) reduction of hazardous waste generation, promotion of environmentally sound management (ii) restriction of transboundary movements, and (iii) a regulatory system for transboundary movements.	Municipal waste / hazardous waste; sludge /rejects generated from the municipalities may fall in hazardous waste category. They will be managed at the landfill sites and will be disposed within the country, and therefore will not attract this convention.

Agreement	Requirements for the Project
3. Convention Concerning the Protection of the World Cultural and Natural Heritage (Paris 1972)	This Convention defines and provides for the conservation of the world`s heritage by listing the natural and cultural sites whose value should be preserved. Not applicable for identified subprojects. Site selection for the succeeding subprojects can refer to the existing list, if available, to avoid impacts in areas with cultural and natural heritage value.
4. Convention on International Trade in Endangered Species of Wild Fauna and Flora (Washington 1973)–also known as CITES was signed on 20 November 1981.	This Convention provides a framework for addressing the overharvesting and exploitation patterns that threaten species of flora and fauna. Under the Convention, the governments agree to restrict or regulate trade in species that are threatened by unsustainable patterns. Not applicable for subprojects. The succeeding subprojects will ensure that the same will not cause any harvesting and exploitation of wild flora and fauna during construction and operation.
5. Convention on Biological Diversity (1992)	This provides for a framework for biodiversity and requires signatories to develop a National Biodiversity Strategy and Action Plan. Not applicable for subprojects. The succeeding subprojects will refer to the applicable Biodiversity Strategy and Action Plan in selecting the project sites and that any replacement to cleared vegetation resulting from the project will be consistent with the objectives and priorities of the Action Plan.
6. United Nations Framework Convention on Climate Change (UNFCCC), 1993	The UNFCC is an international environmental treaty with the main objective to stabilize greenhouse gas concentrations in the atmosphere at a level that will prevent dangerous human interference with the climate system. Nepal signed the UNFCC on 22 April 2016 and ratified it on 5 October 2016. The project will ensure that all construction activities will not significantly increase the GHG emissions and ensure that design of all infrastructure are resilient climate change impacts

D. Institutional Capacity

30. The executing and implementing agencies are responsible for preparation of EIAs/ IEEs and monitoring of safeguards issues of the subprojects. The executing agency will also be responsible for providing support and guidance to municipalities concerning performance criteria and municipality development planning.

31. The executing agency has successfully ensured environmental management and monitoring under ongoing locally and foreign funded infrastructure improvement projects in Nepal. However, the municipalities require assistance in implementing environmental management and monitoring. Presently the institutional capacity of the participating municipalities is minimal and

requires capacity building measures (i) for a better understanding of the project-related environmental issues; and (ii) to strengthen their role in implementation of mitigation measures and subsequent monitoring. A number of design and supervision consultants (DSC) will be engaged under RUDP and help the executing and implementing agencies, and municipality staffs to conduct impact assessments, carry out environmental monitoring, and implement the EMPs. DSCs will make recommendations for staffing and budget related to environmental safeguards compliance.

III. ANTICIPATED ENVIRONMENTAL IMPACTS

32. Preliminary indicative list of proposed subprojects have been identified (Appendix 7) and environmental impacts during design, pre-construction, construction, and operation has been reviewed and assessed for each type of proposed subproject based on the draft IEEs prepared and similar urban projects. During each subproject implementation, impacts on the physical environment such as water, air, soil, and noise; on the biological environment, like flora and fauna; and on the socioeconomic environment will be carefully assessed by the project environmental specialists.

A. Water Supply

33. Only a small percentage of households (HHs) are presently connected to piped water supply system, while the majority of HHs get their water from other sources, mostly dug wells and tube wells. Since these in general use groundwater from near surface aquifers, and given the situation with respect to waste and wastewater management, there is a high risk of water contamination in these shallow aquifers. A very large part, if not almost all, of these drinking water sources have therefore to be considered as unsafe. Provision of a piped system with treated water from deeper aquifers will improve this situation. For this reason, drinking water supply systems are proposed in all the four municipalities.

34. **Components.** Drinking Water supply systems to be built under the project would consist of the following main parts:

(i) Boreholes reaching to a depth of up to 100m; these boreholes can be located at a certain distance to the drinking water plant and are connected to it by an underground pipeline. Boreholes and pumps require the construction of a small building, but land requirement is minimal. Pumping depends on a reliable electricity supply.

(ii) Drinking water plant containing pumping station, water treatment plant and overhead water storage tank in the same compound would also be an office building, a water quality testing laboratory and other facilities as may be required. Land for these facilities will have to be acquired. Water treatment in general consists of chlorination before the water is fed into the distribution system.

(iii) Distribution network will comprise piping with a total length of around 50km, bringing water to the compounds or houses to be served. Each such connection will be equipped with a water meter.

B. Waste Water

35. There is no common wastewater treatment system in place in any of the four municipalities. Most houses are equipped with septic tanks and soak pits. The septic tanks, when full, are emptied by private operators, and the untreated sludge is sold to farmers as fertilizer or is otherwise disposed of, without treatment. Many septic tanks overflow, and often the soak pits are either not present or do not work properly, leading to seepage of the effluent into open drains

or rivers. Domestic wastewater is a major source of surface water contamination, and it can also lead to the contamination of near-surface drinking water sources. This represents a major environmental and public health risk. An improvement of water supply will lead to an increase in the amount of domestic waste water generated which will require enhanced management.

36. **Components.** Two types of interventions are proposed, namely on-site improvement and the construction of small bore sewerage and DEWATS.

(i) On-site improvement would consist in the construction of septage (septic tanks sludge) treatment plants. Septic tanks would be emptied by means of sludge vacuum tankers. The treatment plants could produce biogas and compost, both of which could be sold to local consumers.

(ii) Small bore sewerage would be built in areas where soak pits do not work properly or are not feasible due to, for example, high ground water table and/or frequent flooding. The small bore sewers would collect the overflow effluent from septic tanks and lead them to simple treatment sites (lagoons, reed beds) before discharge into a river. Ideally, waste water from these systems would be treated in DEWATS, small decentralised effluent treatment plants.

C. Solid Waste Management

37. None of the 4 municipalities presently has a functioning solid waste collection and disposal system; mainly, there are no solid waste treatment and disposal sites. Presently, solid waste is disposed of in unsuitable locations, often along water courses. During high flow conditions, a considerable part of this waste is then carried downstream. While this removes waste from the site, it is obviously not a solution to the problem. Littering and uncontrolled waste disposal also leads to public health problems. There is no organised waste separation and recycling; however, there is an informal sector doing this, by collecting material like cardboard, glass and PET bottles.

38. **Components.** The subproject proposes to install integrated waste processing sites (IWPS), comprising facilities for waste separation, composting of organic waste, recycling facilities and disposal sites for waste material that cannot be used in any other way. An integration of the composting with septage treatment would be an option, for transforming organic waste into compost and possibly producing biogas.

D. Roads and Drainage

39. Many roads in the municipalities are in bad condition and require refurbishing on an immediate basis. Only a small part of them is provided with blacktop, drainage, if at all existing, is often deficient, and footpaths often are not in place. With increasing amount of traffic, this is creating problems of increasing intensity (safety of vehicles and pedestrians; partial flooding of roads; dust in the dry season, mud in the rainy season). Seasonal flooding of roads is common; drainage is often not in place. Many drainage channels are clogged by mud and solid waste.

40. **Components.** The proposed subprojects will improve roads in all four municipalities. This would mainly be an upgrading of existing roads, (width of lanes according to importance of the road; lateral drainage and footpaths, potentially street lighting in some cases). Some of the roads are proposed not only for improvement, but also for at least partial realignment (straightening of "meandering" roads), which means at least in part a construction of a new road

E. Municipal Buildings and Community Infrastructure

41. **Components.** The project proposes assistance to municipalities for a series of different sub-projects. Main items identified to be supported under this heading are the following:

(i) Municipal buildings; Bus parks, for improving public transport services sites with a potential for tourism development.; and

(ii) Community Infrastructure allocation is for assisting poor households in providing improved basic services such as on-site water supply, sanitation, drainage or access.

42. As the subprojects will be of small scale and often involve improvement or rehabilitation of the existing system and facilities, it is anticipated that impacts will be temporary and of short duration. In such cases, mitigation measures-i.e., control of air and dust pollution, checking of water and noise pollution, and protection of biological environment-can address adverse impacts. Other measures, such as preparation and implementation of traffic management plans during pipe-laying, will also be done in coordination with the consultant teams, local police, contractors, and the public. Occupational and community health and safety measures and other health and hygienic conditions, including careful handling of public utilities along with social aspects, will be considered, and impacts and mitigation measures elaborated on in the EMPs.

43. Anticipated environmental impacts for the assessed subprojects are provided in the IEE reports. For subsequent subprojects to be funded by the project, anticipated impacts during design, construction, and operation are as given in Table 4 below. Generic potential impacts are presented in Appendix 3.

Table 4: Main Scheme Types and Anticipated Impacts

Scheme	Expected impacts	Comments
1. Drinking water supply • boreholes • processing and storage plant • distribution net	Will have beneficial effects by providing good quality drinking water. Main concerns: • water quality (risk of arsenic contaminated water in the area) • land needed for plant and boreholes • potential impact during construction, e.g. of the distribution grid: damage to land and/or crops	Negative impacts are expected to be minor and easy to be mitigated. Category B projects, IEE required. The concerns mentioned here have to be addressed, mainly concerning water quality (monitoring required) and impacts on land or assets (compensation required).
2. Wastewater treatment • on-site (septage treatment plants) • sewers and DEWATs	Will have beneficial effects on the environment by reducing the risk of water and soil contamination (public health problem). Main concerns: • land required for septage treatment plants and possibly for treatment ponds • quality of output (treated waste water, compost, biogas) • risk of flooding of sites	Septage treatment plants are most likely to be categorised as B projects, IEE required. Sewers and DEWATs are small local structures with very little if any negative impact, Category C. Still, any impacts, as e.g. land requirement for treatment ponds, will have to be addressed according to safeguards principles. It needs to be ensured that no potential risks exist relating to design, operation and maintenance of DEWATS
3. Solid waste management	Will have overall beneficial effects by bringing a solution to the existing waste management problems.	Category B projects, IEE required.

Scheme	Expected impacts	Comments
• Solid waste disposal sites (sanitary landfill) • Transfer stations • Possibly associated structures (waste separation facility, composting, recycling).	(no sufficient collection of waste, unsuitable waste disposal leading to contamination of land and water and to public health problems). Main concerns: • land required for waste disposal sites • No segregation leading to uncontrolled disposal of hazardous and bio-medical waste • risk of flooding (particularly in low lying areas) • risk of contaminating surface and ground water by seepage from disposal sites • permanently closing of site once it is full.	Of special concern, given the situation of the project area, is the flood risk and improper segregation. This will have to be addressed during detailed planning, and suitable structural measures to be taken for waste segregation and flood protection. Likewise, drainage and treatment of drainage water is an issue. • De-commissioning of landfill site / Landfill site to be covered with impervious layer to prevent seepage, and then with topsoil. Site can then be used for other purposes, but may not be suitable for construction of living quarters.
4. Road upgrading • widening existing roads • blacktopping • drainage • footpaths along roads • in specific cases possible realignment of road	Will improve the situation in settlement by providing more space for traffic, drainage, increased safety for pedestrians (footpaths), and reduction of problems caused by dust and mud. Main concerns: • land acquisition for widening or realigning roads (if any) • reclaiming of existing, but not used ROW: conflicts with encroachers • impacts during construction	Category B projects, IEE required; small local interventions probably C. Land will have to be acquired according to rules. If squatters or other land users without a title will be affected, compensation will have to be provided according to ADB safeguards principles. Construction will have to be carried out with the aim of minimising nuisances. Any temporary occupation of land, and any damage to land, assets or structures caused by construction activities, will have to be compensated.
5. Municipal Buildings and Community infrastructure • municipal buildings • other smaller interventions (e.g. contributing to improvement of sites with a potential for tourism) • Bus Parks	Municipal buildings and other small interventions will improve the situation for the municipality, and will have very little if any negative impacts. Negative impacts can be: • land requirements • noise due to increased traffic • need for upgrading or new construction of access roads	Municipal buildings and other smaller interventions: Category B. Bus parks Category B, IEE required. In case road construction or upgrading is required, this will have to be addressed as under No. 4 above.

IV. ENVIRONMENTAL ASSESSMENT FOR SUBPROJECTS AND/OR COMPONENTS

A. Environmental Guidelines for Project Selection

44. In order to strengthen urban climate resilience, urban drainage designs will accommodate additional flow caused by more intense rainfall, and key facilities such as water treatment plants, landfill sites, and production tube-wells will be built with freeboard above the highest recorded flood level.

45. The following criteria will be used for excluding subproject sites which might have significant negative environmental impacts:

(i) ecologically sensitive area such as legally-protected areas (internationally- or nationally), reserved forests, wetlands, areas for biodiversity conservation, etc.; and

(ii) encroachment on cultural features like places of worship, cultural heritage sites, graves/cemeteries, historical monuments, etc. (no such encroachments are envisaged).

46. The following criteria will be used for selecting landfill sites in the subproject towns. Criteria for SWM landfill site:

(i) Land area and volume should be sufficient enough to provide landfill capacity so that the projected need can be fulfilled for future expansion requirements.

(ii) The landfill site should not be at locations where suitable buffer zones between landfill site and population are not available.

(iii) Low lying areas need to be avoided as much as possible.

(iv) The landfill area having steep gradient (where stability of slope could be problematic) should not be selected.

(v) The water level in ground water table should be sufficient below the base of any excavation to enable landfill development.

(vi) The area having significant biodiversity and ecological sensitivity should be avoided.

(vii) Public & private irrigation water supply wells should be well away from the boundaries of landfill site because these supply wells will be at risk of contamination.

(viii) Landfill area should not be very close to significant water bodies (water courses or dams). There will be the risk of contamination of water bodies, which can be hazardous for aquatic life.

(ix) No major power transmission or other infrastructure like sewers, water supply lines should be crossing through landfill developmental area.

(x) No residential development should be near the boundaries of landfill site. Landscaping and protective shelf should be included in the design so that to minimize the visibility of operations.

(xi) Unstable areas that have significant seismic risk which could cause destruction of berms are not recommended for landfill site.

(xii) There should not be fault lines and significantly fractured geological structure. These fault lines can allow the unpredictable movement of gas within 500 meters of perimeter of proposed landfill development.

47. Guidelines for project selection in Table 5 provide further guidance to avoid or minimize adverse impacts during the identification and finalization of subprojects.

Table 5: Environmental Criteria for Subproject Selection

Environmental Selection Guidelines	Remarks
Overall selection guideline (applicable to all components)	
i. Comply with all requirements of relevant national and local laws, rules, and guidelines.	See Section II of this EARF
ii. Avoid/minimize where possible locations in protected areas, including notified reserved forests or biodiversity conservation hotspots (wetlands, national reserves, forest reserves, and sanctuaries).	Approval from concerned authority if unavoidable
iii. Avoid possible locations that will result in destruction/disturbance to historical and cultural places/values.	Provide for the use of "chance find" procedures in the EMP that include a pre-approved management and conservation approach for materials that may be discovered during project implementation.
iv. Avoid tree-cutting where possible. Retain mature roadside trees which are important/valuable or historically significant. If any trees have to be removed, plant twenty-five new trees for every one that is lost.	Approval from Forest Department
v. Ensure all planning and design interventions and decisions are made in consultation with local communities and include women. Reflect inputs from public consultation and disclosure for site selection.	All consultations should be documented and concerns expressed by public addressed in IEEs.
vi. Synchronize all road improvement and pipe laying works (to extent possible) to minimize disturbance and optimize use of resources (e.g., water pipes laid prior to road improvements).	Coordinate planning of works with municipality.
Water Supply	
i. Utilize water sources at sustainable levels of abstraction only (i.e. without significant reductions in the quantity or quality of the source overall).	See Section II of this EARF
ii. Avoid using water sources that may be polluted by upstream users.	
iii. Avoid water-use conflicts by not abstracting water that is used for other purposes (e.g. irrigation).	Obtain No Objection Certificate (NOC) from Irrigation Department and/or Nepal Water Authority.
iv. Locate all new facilities/buildings at sites where there is low risk of flooding or other hazards that might impair functioning of, or present a risk of damage to water treatment plants, tanks/reservoirs, or their environs.	Flood statistics data of the project area needs to be reviewed. Location restriction may be reviewed depending on site availability, and flood or other hazards control planning.
v. Avoid all usage of pipes that are manufactured from asbestos concrete, and avoid disturbance to existing asbestos concrete pipes (i.e. keep in the ground)	
vi. Ensure water to be supplied to consumers will meet national drinking water standards at all times.	
vii. Include measures to address additional sewage/domestic wastewater due to improved/new water supply system.	
Wastewater treatment	

Environmental Selection Guidelines	Remarks
i. Ensure sanitation facilities are provided with electric power and water supply. Ensure that water and waste disposal in constructed facilities are designed to national standards.	
ii. Ensure no immediate drinking water intakes downstream of discharge point of effluent from sanitation facilities	Include design measures and consider relocating existing deep tube wells.
iii. Locate sanitation facilities (public toilets and latrines) and septage/sludge treatment plants preferably (a) 20 m from any source of water supply; (b) 30 m from drainage lines and (c) 100 m to a designated waterway.	Distance restriction may be reviewed depending on the technology adopted for the sanitation facilities and treatment of septage, site plant availability, and buffer zone planning.
iv. Locate septage/sludge treatment plants preferably 50 m from any inhabited areas, in locations where no urban expansion is expected in the next 20 years, so that people are not affected by odor or other nuisance from the septage treatment plant.	Distance restriction may be reviewed depending on the technology adopted for the treatment of wastewater, site plant availability, and buffer zone planning.
v. Locate at sites septage/sludge treatment plant where there is a suitable means of disposal for the treated wastewater effluent and bio-solids.	Include design measures and follow guidelines to ensure the safe disposal of bio-solids without causing environmental hazards, and if possible to promote its safe and beneficial use as an agricultural fertilizer. Any wastewater and bio-solids reuse shall be to improve soil properties and sustain soil fertility and avoid any contamination risks.
Solid Waste Management	
i. Ensure small (secondary) transfer stations are not located within 30 m of residences, schools, places of worship (such as churches, temples or mosques), and historical and cultural places.	Special design measures to be adopted if this cannot be adhered to.
ii. Ensure all new landfills and secondary transfer stations are not constructed in areas where the groundwater table is less than 2 meters below ground level.	Special design measures to be adopted if this cannot be adhered to. e.g leachate barriers / liners
iii. Locate all new landfills at least 250 m from habitation, sensitive receptors, shops, or any other premises used by people, thus establishing a buffer zone to reduce the effects of noise, dust, and visual appearance of the site, and travel of leachate into any water body.	Distance restriction may be reviewed depending on site availability, buffer zone planning, and leachate technology.
iv. Locate all new facilities/buildings at sites where there is low risk of flooding or other hazards that might impair functioning of, or present a risk of damage to the facilities, or their environs.	Flood data of the project area needs to be reviewed. Location restriction may be reviewed depending on site availability, and flood or other hazards control planning.
v. Ensure no new landfills are constructed within or near water supply wells, and at least 500 m of any groundwater wells.	Locational clearance from Department of Environment needed.
vi. Ensure a buffer zone is provided around the landfill with the distance agreed upon with the regulatory agencies	
vii. Ensure designs and operations of new landfills are done as per norms of modern sanitary facilities and to include all essential elements	Landfills to include the following: liner system to prevent leachate, leachate collection system and control facility, gas vent system, final cover

Environmental Selection Guidelines	Remarks
necessary to prevent environmental pollution and to ensure safe handling of waste during construction and operation.	system, surface water drainage system, environmental monitoring system for air, water, soil, odour, and gas. Operations and maintenance manual (O&M) shall include closure and post-closure plan.
Roads Improvement	
i. Include the provision of new or improved storm water drainage to remove the increased runoff caused by increasing the road surface area	
ii. Include tree planting alongside roads to provide a natural barrier to noise and visual impacts, and include additional man-made barriers where suitable for public safety.	
Drainage improvement	
i. Outfalls should be to suitable drainage areas (canals, etc.) and avoid flooding to adjacent private lands.	
ii. Include measures to ensure the safe disposal of canal dredge (e.g., to dumpsite or landfill) without causing an environmental hazard.	
iii. Include provision for installation of regulator to control inflow/ outflow through drain to prevent backflow of water through drain (e.g., due to high water level at downstream discharge point, such as khal/ river)	
iv. Include measures to avoid pollution of downstream water body due to disposal of polluted water from drain	Do not allow direct connection to drain from sanitation facilities and/or waste water with high organic load. Strictly follow the effluent discharge standard of DOE and consider introduction of small scale treatment of polluted drain water before disposal (if needed)
Municipal Buildings and Community Infrastructures	
i. Ensure Municipal Building are provided with potable water supply and sanitation facilities combined with improvements in wastewater and drainage to deal with the increased discharge of domestic wastewater. Ensure that water and waste disposal in constructed buildings are designed to comply with the national standards.	
ii. Ensure adequate provisions (including fire/emergency exits) for fire safety in accordance with National Building Code	
iii. Provide provision of traffic circulation/traffic management or provision of parking area for the increased traffic	
iv. Introduce provision of solar system for part of electric supply and promote energy efficient bulbs for contribution to carbon reduction	
v. Introduce provision of rooftop rainwater harvesting system for proper storm water management or in case of drinking water scarcity	

B. Environmental Assessment Procedures for Projects

1. Screening and Classification/Categorization

48. As soon as sufficient information on a subproject is available, the DSC environment officer will conduct screening to determine the works' environmental category by completing ADB's rapid environmental assessment (REA) checklists in Appendix 4[10] and submitting this for review to the project coordination office (PCO), which will determine if the component would require environmental assessment and/or environmental clearance as per national requirements. If required, PCO will contact MoPE for necessary endorsement and issuance of terms of reference for the environmental impact assessment study.

49. PCO will submit completed REA checklist to ADB for review and confirmation of the category of the subproject. To ensure that the project meets ADB's environmental safeguard requirements, as stipulated in the SPS 2009, projects will be reviewed, and the level of environmental assessment required (EIA/IEE) determined. It is anticipated that most eligible projects will fall under either category B or C, as projects will be of small scale and often involve improvement or rehabilitation of the existing system/facilities. While category C projects will not require an environmental assessment, environmental implications will be reviewed.

2. Preparation of Environmental Assessment Report

50. Environmental assessment documents prepared under the project will, to the extent possible, meet both ADB and Government of Nepal requirements in order to streamline the environmental procedures required by both ADB and government.

51. For projects with some adverse environmental impacts, but which are expected to be less significant than those of category A projects, an IEE is required. Appendix 1 of ADB's SPS, 2009 provides the specific outlines and contents to be followed while preparing IEEs. Appendix 5 provides the outline of an ADB IEE report. Also, the sample IEEs prepared during project preparation provide a good sample which can be followed for preparation of environmental assessments in subsequent subprojects.

52. Issues regarding natural and critical habitats will be covered in the IEE report. In case of subprojects located within these areas, a review of management plans and consultation with concerned management staff, local communities, and key stakeholders will be undertaken. Pollution prevention for conservation of resources, particularly technology for management of process wastes and occupational and community health and safety, will be addressed. The EIA/IEE will also reflect meaningful consultation and disclosure process with a provision for grievance redress mechanism.

53. ADB requires that an EMP must be developed as part of the IEE. The EMP will outline specific mitigation measures, environmental monitoring requirements, and related institutional arrangements, including budget requirements for implementation. Where impacts and risks cannot be avoided or prevented, mitigation measures and actions will be identified so that the subproject is designed, constructed, and operated in compliance with applicable laws and regulations, and meets the requirements specified in the EMP. The level of detail and complexity of the EMP and the priority of the identified measures and actions will be commensurate with the

[10] REA forms are for the following subproject categories: (i) road improvement, (ii) drainage improvement, (iii) Municipal/community building, (iv) solid waste management, and (v) improved water supply.

subproject's impacts and risks. Key considerations include mitigation of potential adverse impacts to the level of "no significant harm to third parties," the "polluter pays" principle, the precautionary approach, and adaptive management. A template for environmental management process and monitoring plan is provided in Appendix 5 (outline of an ADB IEE report) as a guide for preparing a robust EMP.

54. If some residual impacts are likely to remain significant after mitigation, the EMP will also include appropriate compensatory measures (offset) that aim to ensure that the project does not cause significant net degradation to the environment. Such measures may relate, for instance, to conservation of habitat and biodiversity, preservation of ambient conditions, and greenhouse gas emissions. Monetary compensation in lieu of offset is acceptable in exceptional circumstances, provided that the compensation is used to provide environmental benefits of the same nature and is commensurate with the project's residual impact.

55. All IEEs will be conducted and EMPs prepared prior to the award of construction contracts. The bid documents will include the requirement to incorporate necessary resources to implement the EMP. The EMP will form part of the contract document, and, if required, will need to be further updated during the construction phase of a subproject.

3. Environmental Audit of Existing Facilities

56. For subprojects involving facilities and/or business activities that already exist or are under construction, the executing and implementing agencies will undertake an environment audit, including on-site assessment, to identify past or present concerns related to impacts on the environment. The objective of the compliance audit is to determine whether actions were in accordance with ADB's safeguard principles and requirements for borrowers/clients, and to identify and plan appropriate measures to address outstanding compliance issues. Where noncompliance is identified, a corrective action plan agreed on by ADB and the implementing agencies will be prepared. The plan will define necessary remedial actions, the budget for such actions, and the time frame for resolution of noncompliance. The audit report (including corrective action plan, if any) will be made available to the public in accordance with the information disclosure requirements of ADB SPS, 2009. If a project involves an upgrade or expansion of existing facilities that has potential impacts on the environment, the requirements for environmental assessments and planning specified in ADB SPS, 2009 will apply in addition to compliance audit.

4. Pollution Prevention and Control Technologies

57. During the design, construction, and operation of the project the PCO and PIUs will apply pollution prevention and control technologies and practices consistent with international good practice, as reflected in internationally recognized standards such as the World Bank Group's Environment, Health and Safety Guidelines.[11] These standards contain performance levels and measures that are normally acceptable and applicable to projects. When Government of Nepal regulations differ from these levels and measures, the PCO and PIUs will achieve whichever is more stringent. If less stringent levels or measures are appropriate in view of specific project circumstances, the PCO and PIUs will provide full and detailed justification for any proposed alternatives that are consistent with the requirements presented in ADB SPS, 2009.

[11] WBG/IFC EHS Guidelines. http://www.ifc.org/ehsguidelines.

Table 6: Applicable WHO Ambient Air Quality Guidelines

Pollutant	Averaging Time	Air Quality Guideline Value (ug/m^3)
Particulate Matter (PM)		
PM $_{2.5}$	1 year	10
	24 hours (99^{th} percentile)	25
PM $_{10}$	1 year	20
	24 hours (99^{th} percentile)	50
Ozone, O3	8 hours, daily maximum	100
Nitrogen dioxide, NO_2	1 year	40
	1 hour	200
Sulfur dioxide, SO2	24 hours	20
	10 minutes	500

Table 7: World Bank Group's Noise Level Guidelines[a]

	One Hour LAeq (dBA)	
Receptor	**Daytime 07:00 - 22:00**	**Nighttime 22:00 - 07:00**
Residential; institutional; educational[b]	55	45
Industrial, commercial	70	70

[a] Guidelines values are for noise levels measured out of doors.
Source: *Guidelines for Community Noise*, World Health Organization (WHO), 1999.
[b] For acceptable indoor noise levels for residential, institutional, and educational settings refer to WHO (1999).
*** Noise monitoring should be carried out using a Type 1 or 2 sound level meters meeting all appropriate IEC standards.
Source: *Guidelines for Community Noise*, World Health Organization (WHO), 1999.

C. Review of Environmental Assessment Reports

58. IEEs will be reviewed initially by PCO. In case an environmental clearance is required, the IEEs are to be forwarded to the MoPE for approval.

59. RUDPADB will review draft final IEE reports ofsubprojects of each subsector (water supply, road, drainage etc.) and No new subproject potentially classified as category A will be undertaken.

60. For subproject processing, the steps to be followed are shown in Table 8. It is the responsibility of the executing and implementing agencies to ensure subprojects are consistent with the legal framework, whether national or municipal/local. Compliance is required in all stages of the project, including design, construction, and operation and maintenance. Stricter requirements apply in case the result of ADB's classification is different from that of the GON.

Table 8: Environmental Procedures for Project Processing

Project Stage	EARF Procedure	Government of Nepal Procedure
Subproject identification	REA checklist	Categorization according to schedule and general/specific conditions as per GON requirements.
	Categorization (/B/C): PCO to review the REA checklists and reconfirm the categorization	
Detailed design	Preparation of IEE	DOE to issue scoping and terms of

Project Stage	EARF Procedure	Government of Nepal Procedure
	Updating of sample IEEs based on detailed design.	reference (TOR) for the EIA/IEE
	For projects involving facilities and/or business activities that already exist or are under construction, the borrower/client will undertake an environment and/or social compliance audit, including on-site assessment, to identify past or present concerns related to impacts on the environment, and involuntary resettlement. Where non-compliance is identified, a corrective action plan agreed on by ADB and the borrower/client will be prepared.[12]	Preparation of draft EIA/IEE as per TOR
	Public consultation will be carried out in a manner commensurate with the impacts of affected communities. The consultation process and its results are to be documented and reflected in the IEE.	To confirm if there is a mention of public consultation and disclosure as per GON for the proposed subprojects. Given the importance attached to these issues by ADB, it is likely that activities conducted to comply with ADB policy may satisfy GON requirements.
	Disclosure: For category B: Disclosure on ADB's website of the final IEE; updated IEEs and corrective action plans; and environmental monitoring reports. In addition, for all categories, environmental information will be in an accessible place and in a form or language understandable to affected people and other stakeholders. For illiterate people, other suitable communication methods will be used.	
Detailed design	Mitigation measures specified in IEE study incorporated in project design	Mitigation measures specified in EIA/IEE study incorporated in project design
	Identify and incorporate environmental mitigation and monitoring measures (including the EMP) into bid/contract documents	
Appraisal	EMP and other environmental covenants are incorporated into the facility framework agreement, loan/project	

[12] The plan will define necessary remedial actions, the budget for such actions, and the period for resolution of noncompliance. The audit report (including corrective action plan, if any) will be made available to the public in accordance with the information disclosure requirements of Safeguard Requirements 1–3.

Project Stage	EARF Procedure	Government of Nepal Procedure
	agreement, and project administration manual (PAM)	
Approval	ADB will review draft final reports of: (i) IEEs for the subprojects of each subsector (Water supply, road, drainage etc.); and (ii) No new subproject classified as category A will be undertaken.	Determination of environment application. Within XX days, XXX days; GON will issue the clearance certificate, or will reject the application, giving reasons for its decision.
Contract award	Obtain necessary environmental clearances, consents, and no-objection certificates (NOCs) prior to contract award. Implementation of EMP, including monitoring plans based on IEE findings to be incorporated into civil works contracts.	On receipt of the final clearance, the proponent is permitted to undertake land preparation and install machinery and construction may begin.
Implementation	Submission of semi-annual monitoring report to ADB, including corrective action plan where non-compliance is identified	Post-environmental clearance monitoring: There may be requirement for post clearance monitoring or reporting stipulated by GON as a condition of approval.

V. CONSULTATION, INFORMATION DISCLOSURE AND GRIEVANCE REDRESS MECHANISM

A. Public Consultation and Information Disclosure

61. Meaningful stakeholder consultation and participation is part of the project preparation and implementation strategy. A consultation and participation program has been prepared for the project, and will be implemented with the assistance of consultants. By addressing stakeholder needs, there is greater awareness of the benefits and "ownership" of the project among stakeholders, which in turn contribute to sustainability.

62. Consultation, participation, and disclosure will ensure that information is provided and feedback on proposed project design is sought early, right from the project preparation phase, so that the views/preferences of stakeholders, including potential beneficiaries and affected people, can be adequately considered in project design, and continue at each stage of project preparation, processing, and implementation.

63. Project-affected persons (APs) will be consulted at various stages in the project cycle to ensure: (i) incorporation of views/concerns of APs on compensation/resettlement assistance and environmental impacts and mitigation measures; (ii) inclusion of vulnerable groups in project benefits; (iii) identification of help required by APs during rehabilitation, if any; and (iv) avoidance of potential conflicts for smooth project implementation. It will also provide adequate opportunities for consultation and participation to all stakeholders and inclusion of the poor, vulnerable, marginalized, and project-affected persons in the project process. Relevant information about any major changes to project scope will be shared with beneficiaries, affected persons, vulnerable groups, and other stakeholders.

64. A variety of approaches will be adopted. At minimum, stakeholders will be consulted regarding the scope of the environmental and social impact study before work commences, and they will be informed of the likely impacts of the project and proposed mitigation once the draft

EIA/IEE and resettlement plan reports are prepared. The reports will record the views of stakeholders and indicate how these have been taken into account in project development. Consultations will be held with a special focus on vulnerable groups.

65. The key stakeholders to be consulted during project preparation, EMP implementation, and project implementation include:

(i) beneficiaries;
(ii) elected representatives, community leaders, religious leaders, and representatives of community-based organizations;
(iii) local NGOs;
(iv) local government and relevant government agency representatives, including local authorities responsible for land acquisition, protection, and conservation of forests and environment, archaeological sites, religious sites, and other relevant government departments;
(v) residents, shopkeepers, and business people who live and work alongside the roads where pipes will be laid, and near sites where facilities will be built; custodians and users of socially and culturally important buildings;
(vi) PCO staff and consultants; and
(vii) ADB and the Government of Nepal.

B. Information Disclosure

66. Information is disclosed through public consultation and making relevant documents available in public locations. The following documents will be submitted to ADB for disclosure on its website:

(i)
(ii) For category B projects:
  (a) final IEE;
  (b) a new or updated IEE and corrective action plan prepared during project implementation, if any; and
  (c) environmental monitoring reports.

67. MoUD will send written endorsement to ADB for disclosing these documents on ADB's website. MoUD will also provide relevant safeguards information in a timely manner, in an accessible place and in a form and languages understandable to affected people and other stakeholders. For illiterate people, other suitable communication methods will be used.

C. Grievance Redress Mechanism

68. A project-specific grievance redress mechanism (GRM) will be established to receive, evaluate, and facilitate the resolution of AP's concerns, complaints, and grievances about the social and environmental performance at the level 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.

69. **Common GRM.** A common GRM will be in place for social, environmental, or any other grievances related to the project; the resettlement plans (RPs) and IEEs will follow the GRM described below, which is developed in consultation with key stakeholders. The GRM will provide an accessible and trusted platform for receiving and facilitating resolution of affected persons'

grievances related to the project. The multi-tier GRM for the project is outlined below, each tier having time-bound schedules and with responsible persons identified to address grievances and seek appropriate persons' advice at each stage, as required.

70. Affected persons (APs) will have the flexibility of conveying grievances/suggestions by dropping grievance redress/suggestion forms in complaints/suggestion boxes Installed by project municipalities, or through telephone hotlines at accessible locations, by e-mail, by post, or by writing in a complaint's register in municipal offices. Appendix 6 has the sample grievance registration form. Careful documentation of the name of the complainant, date of receipt of the complaint, address/contact details of the person, location of the problem area, and how the problem was resolved will be undertaken. The project coordination office (PCO) safeguard officer will have the overall responsibility for timely grievance redressal on environmental and social safeguards issues and for registration of grievances, related disclosure, and communication with the aggrieved party through the PIU designated safeguard focal person.

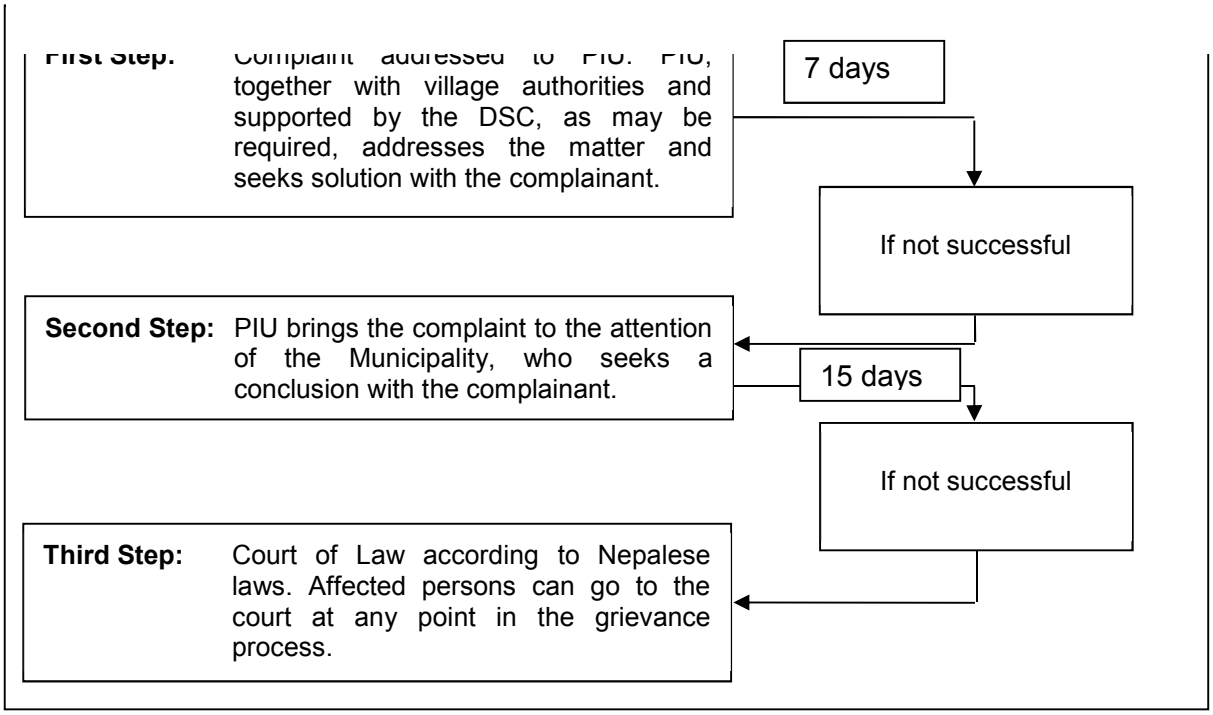
71. PIU will be the main responsible body for handling grievances. For this reason, PIU will appoint one Grievance Officer in charge of receiving, handling, and documenting all cases. PIU, supported by the DSC as may be required, will also be responsible for informing the affected population on their rights to grievance and the mechanisms to be followed.

72. Once an affected person submits a grievance, PIU, after registering the complaint, will seek in a first step to find a solution and come to an agreement with the complainant. Depending on the nature of the complaint, this may also involve the contractor, DSC or other involved parties. The contractors and PIU grievance officer can immediately resolve on-site in consultation with each other, and will be required to do so within 7 days of receipt of a complaint/grievance.

73. If a solution cannot be found, PIU will report the case to the municipality. Municipality will appoint an arbitration board to hear and settle the case. The arbitration board will attempt to resolve the complaint/grievance within 15 days. The PIU grievance officer will be responsible to see through the process of redressal of each grievance.

74. If again a solution cannot be reached, or if the parties do not agree with the decision of the arbitration board, each party can take the case to court according to applicable legislation. The court verdict will be final and binding for all parties.

Figure 1: Grievance Redress Mechanism



75. **Recordkeeping.** Records of all grievances received, including contact details of complainant, date the complaint was received, nature of grievance, agreed corrective actions and the date these were effected and final outcome will be kept by PIU. The number of grievances recorded and resolved and the outcomes will be displayed/disclosed in the PCO office, municipal office, and on the web, as well as reported in monitoring reports submitted to ADB on a semi-annual basis.

76. **Periodic review and documentation of lessons learned**. The PCO safeguard officer will periodically review the functioning of the GRM in each municipality and record information on the effectiveness of the mechanism, especially on the project's ability to prevent and address grievances.

77. **Costs.** All costs involved in resolving the complaints (meetings, consultations, communication and reporting/information dissemination) will be borne by the concerned PIU at municipal level; while costs related to escalated grievances and overall GRM administration will be met by the PCO. Cost estimates for grievance redress are included in resettlement cost estimates.

VI. INSTITUTIONAL ARRANGEMENT AND RESPONSIBILITIES

78. **Executing and implementing agencies.** The Ministry of Urban Development (MoUD) having prior experience in managing urban and water supply projects financed by ADB, will be the executing agency of the overall project. The participating municipalities will be the implementing agencies.

A. Safeguard Implementation Arrangement

79. **Project coordination unit.** A PCO has been established for the overall management of the ongoing IUDP project and the same will function for the proposed RUDP financing. The PCO is headed by Project Director (PD) supported by officials including two Deputy Project Director's and other project managers. The PCO receives support from the PMSC and DSC established under the IUDP. PMSC and DSC will be providing support to the PCO for the RUDP in the same fashion. While there is no designated environmental safeguards officer in the PCO, The Deputy Project Director's and the Project Director are regularly apprised of the safeguards management by the PMSC and DSC. Key tasks and responsibilities of the PCO relating to safeguard (environment) are as follows:

(i) confirm existing IEEs/EMPs are updated based on detailed designs, and that new IEEs/EMPs are prepared in accordance with the EARF and subproject selection criteria related to safeguards;
   (a) confirm whether IEEs/EMPs are included in bidding documents and civil works contracts;
   (b) provide oversight on environmental management aspects of subprojects and ensure EMPs are implemented by project implementation unit (PIU) and contractors;
   (c) establish a system to monitor environmental safeguards of the project, including monitoring the indicators set out in the monitoring plan of the EMP;
   (d) facilitate and confirm overall compliance with all government rules and regulations regarding site and environmental clearances, as well as any other environmental requirements (e.g., location clearance certificates, environmental clearance certificates, etc.), as relevant;
   (e) supervise and provide guidance to the PIUs to properly carry out the environmental monitoring and assessments as per the EARF;
   (f) review, monitor, and evaluate the effectiveness with which the EMPs are implemented, and recommend necessary corrective actions to be taken as necessary;
   (g) consolidate monthly environmental monitoring reports from PIUs and submit semi-annual monitoring reports to ADB;
   (h) ensure timely disclosure of final IEEs/EMPs in locations and form accessible to the public; and
   (i) address any grievances brought about through the grievance redress mechanism in a timely manner.

80. **Project implementation unit.** The participating municipalities will establish a PIU within the municipal structure. The PIUs will (i) be responsible for land acquisition if any; (ii) take necessary action for obtaining rights of way if required; (iii) plan, implement and monitor public relations activities, gender mainstreaming initiatives and community participation activities at municipal level; (iv) disseminate information related to the project to the public and media; (v) ensure compliance with loan covenants concerning safeguards measures; and (vi) facilitate implementation of safeguards plans. The PIUs will each designate a safeguard focal person[13] and will receive assistance from the assigned DSC to:

[13] It is recommended that existing municipality senior officer (executive engineer) will also work as responsible safeguard officer in addition to his/her regular responsibilities within the municipality.

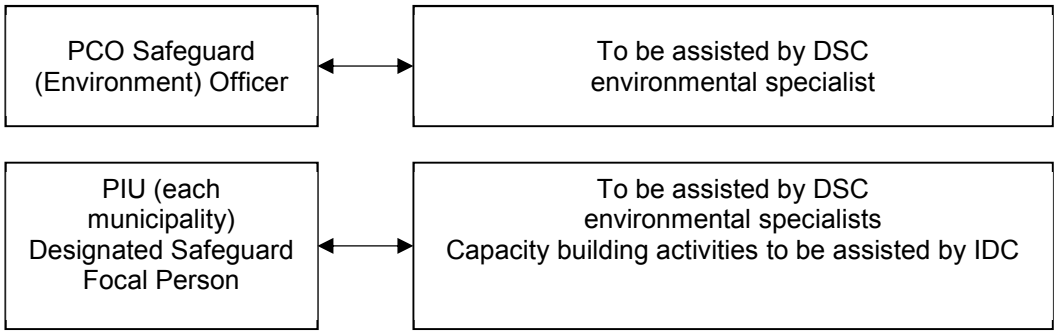
(i) update IEEs/EMPs during detailed design stage and prepare new IEEs/EMPs in accordance with the EARF;
(ii) conduct environmental compliance audit of existing facilities as per Item F, Appendix 6 of ADB SPS, 2009;
(iii) include IEEs/EMPs in bidding documents and civil works contracts;
(iv) comply with all government rules and regulations;
(v) take necessary action for obtaining rights of way;
(vi) oversee implementation of EMPs, including environmental monitoring by contractors;
(vii) take corrective actions when necessary to ensure no environmental impacts;
(viii) submit monthly environmental monitoring reports to PCO;
(ix) conduct continuous public consultation and awareness;
(x) address any grievances brought about through the Grievance Redress Mechanism in a timely manner as per the IEEs; and
(xi) organize an induction course for the training of contractors preparing them on EMP implementation, environmental monitoring requirements related to mitigation measures; and taking immediate actions to remedy unexpected adverse impacts or ineffective mitigation measures found during the course of implementation.

81. **Design and Supervision Consultants (DSC).** DSC will be engaged to work closely with and advise the PCO, to be involved in project supervision including monitoring during construction phase. The DSC will have environmental specialist(s), but not limited to:

(i) work under the general supervision of the team leader and deputy team leader;
(ii) review the environmental guidelines and requirement of the government of nepal and adb's sps, 2009, environmental subproject selection guidelines and earf and guide the implementation of future subprojects;
(iii) provide technical support to the pco and pius including review and update of earf and guidelines for specific type of subprojects and assist in preparing terms of reference for environmental assessment;
(iv) assist and guide the piu's and contractor's environmental officers to provide support to environmental management functions including updating subproject iees in respect to emp;
(v) assist in preparing iees and assist in monitoring impact and mitigation measures associated with subprojects;
(vi) assist pius working in the steps for preparing the iee and eia, capacity building and training, preparation of guidelines and procedure and subproject specific guidance;
(vii) provide support and guidance in undertaking environmental monitoring by pius;
(viii) support pco in submitting semi-annual environmental monitoring reports to adb;
(ix) facilitate in grievance redress and corrective actions;
(x) train piu officials regarding environmental requirement and issues; and
(xi) perform any other task assigned by the team leader, deputy team leader and the project director.

82. **Civil works contracts and contractors.** EMPs are to be included in bidding and contract documents and verified by the PIUs and PCO. The contractor will be required to designate an environmental supervisor to (i) coordinate with DSC on updating the IEE/EMP based on detailed designs, and (ii) ensure implementation of EMP during civil works. Contractors are to carry out all environmental mitigation and monitoring measures outlined in their contract.

Figure 2: Safeguards Implementation Arrangement



B. Institutional Capacity Development Program for the Implementation of EMP

83. The DSC environmental specialists will be responsible for trainings on environmental awareness and management in accordance with both ADB and government requirements. Specific modules customized for the available skill set will be devised after assessing the capabilities of the target participants and the requirements of the project. Typical modules would be as follows: (i) sensitization; (ii) introduction to environment and environmental considerations in city roads and drainage, solid waste management and water supply 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. The proposed training project along with the frequency of sessions is presented in Table 9.

Table 9: Proposed Institutional Capacity Building Training Program

Description	Contents	Schedule	Participants
Pre-construction stage			
Orientation workshop	Module 1 – Orientation • ADB Safeguards Policy Statement • Government of Nepal Environmental Laws and Regulations Module 2 – Environmental Assessment Process • ADB environmental process, identification of impacts and mitigation measures, formulation of an environmental management plan (EMP), implementation, and monitoring requirements • Review of environmental assessment report to comply with ADB requirements	1 day	MoUD and PIUs officials involved in the project implementation

Description	Contents	Schedule	Participants
	• Incorporation of EMP into the project design and contracts		
Construction stage			
Orientation program/ workshop for contractors and supervisory staff	• Roles and responsibilities of officials/contractors/ consultants towards protection of environment • Environmental issues during construction • Implementation of EMP • Monitoring of EMP implementation • Reporting requirements	1 day	PCO PIUs Contractors
Experiences and best practices sharing	• Experiences on EMP implementation – issues and challenges • Best practices followed	1 day on a regular period to be determined by PMU, PIUs, and PMSC	PCO PIUs Contractors

C. Staffing Requirement and Budget

84. Costs required for implementing the EARF will cover the following activities:
(i) updating IEE, preparing and submitting reports and public consultation and disclosure;
(ii) application for environmental clearances; and
(iii) implementation of EMP, environmental monitoring program and long-term surveys.

85. For budgeting purposes, it is assumed that all new subprojects will be classified by ADB as category B (requiring IEE), and that the report will be deemed satisfactory by DOE. Some subprojects may require a simpler environmental review, but this is discounted for budgeting purposes. MOUD will aim to produce a single document that is acceptable to both ADB and GON to avoid duplication of effort, and the documents produced by the PPTA will be used as a guide.

86. Each of the IEEs prepared to date involved approximately 2 weeks of effort by an experienced environmental specialist conducting the following activities: (i) site visit to assess environmental conditions and potential impacts of the scheme; (ii) liaison with the city corporation and others to obtain any environmental/social data that might be available locally (e.g. population figures, designated sites, etc.); (iii) consultation with the local community to inform them about the scheme and identify their views and concerns; (iv) assessment of impacts and development of mitigation; and (v) desk study and report preparation.

87. The infrastructure involved in each scheme is generally straightforward and will take between 3 and 9 months to build. Environmental monitoring during construction will also be straightforward and will involve periodic site observations and interviews with workers and others, plus checks of reports and other documents. This will be conducted by DSC environment specialists under supervision of PCO.

88. The cost of mitigation measures and surveys during construction stage will be incorporated into the contractor's costs, which will be binding on him for implementation. The surveys will be conducted by the contractors.

89. The operation phase mitigation measures are again of good operating practices, which will be the responsibility of the PIUs. All monitoring during the operation and maintenance (O&M) phase will be conducted by MOUD and PIUs; therefore, there are no additional costs.

90. The indicative costs of EARF implementation are shown in Table 10.

Table 10: Indicative Cost of EARF Implementation

Particulars	Stages	Unit	Total Number	Rate (Nepalese Rupee)	Cost (Nepali Rupee)	Cost covered by
A. Consultants Costs						
1. DSC national environmental specialist (1 person)	Responsible for environmental safeguards of the project	person months (spread over entire project implementation period)	18 person months	200,000 per person month	3,600,000	Remuneration and budget for travel covered in the DSC contract
B. Mitigation Measures						
1. Pre-construction phase						
- Air quality monitoring	Pre-construction	Per Municipality	3	250,000	750,000	Civil works contract
- Noise level monitoring	Pre-construction	Per Municipality	3	150,000	450,000	Civil works contract
- Inventory of trees	Pre-construction	Per municipality		175,000	175,000	Remuneration and budget for travel covered in the DSC contract as part of update of IEE during detailed design and preparation of IEEs for ensuing subprojects
2. Construction phase						
- Compensatory plantation measures	Construction	Per tree	To be confirmed during detailed design	3,000		Civil works contract
- Air quality monitoring	Construction	Per location	5	250,000	1,250,000	Civil works contract
- Noise levels monitoring	Construction	Per location	5	150,000	750,000	Civil works contract

Particulars	Stages	Unit	Total Number	Rate (Nepalese Rupee)	Cost (Nepali Rupee)	Cost covered by
3. O&M phase						
- Leachate monitoring (SWM subprojects)	O&M	lump sum per year (to be updated during detailed design stage as per clearance and O&M manual)	3	400,000	1,200,000	Municipality
- Compost quality monitoring (SWM subprojects)	O&M	lump sum per year (to be updated during detailed design stage as per clearance and O&M manual)	3	200,000	600,000	Municipality
- Water quality monitoring	O&M	lump sum per year (to be updated during detailed design stage as per clearance and O&M manual)	3	250,000	750,000	Municipality
C. Capacity Building						
1. Orientation workshop for officials involved in the project implementation on ADB Safeguards Policy Statement, Government of Nepal environmental laws and regulations, and environmental assessment process; **2.** Induction course contractors, preparing them on EMP implementation and	Module 1 – immediately upon engagement of the DSC environmental specialists Module 2 – prior to award of civil works contracts Module 3 –	lump sum 1 times 3 times 1 times		Module 1 Module 2 Module 3	500,000 750,000 300,000	Covered under DSC contract

Particulars	Stages	Unit	Total Number	Rate (Nepalese Rupee)	Cost (Nepali Rupee)	Cost covered by
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 **3.** Lessons learned information sharing						
D. Administrative Costs						
1. Legislation, permits, and agreements	Permit for excavation, tree-cutting permits, etc.	Lump sum			1,000,000	These consents are to be obtained by contractor at his own expense.
	Environmental assessment and environmental clearances Obtaining right of way clearances with related national agencies.	Lump sum			1,500,000	MOUD cost for municipal infrastructures
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	500,000	500,000	Covered under DSC contract
2. GRM implementation	Costs involved in resolving complaints		Lump sum	1,000,000	1,000,000	PCO cost

Particulars	Stages	Unit	Total Number	Rate (Nepalese Rupee)	Cost (Nepali Rupee)	Cost covered by
	(meetings, consultations, communication, and reporting/information dissemination)					
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

91. PCO will monitor and measure the progress of EMP implementation. The monitoring activities will correspond with the project's risks and impacts, and will be identified in the IEEs for the subprojects. In addition to recording information on the work and deviation of work components from original scope PCO, PIUs, and DSC will undertake site inspections and document review to verify compliance with the EMP and progress toward the final outcome. DPD on behalf of PCO will work as the focal person to communicate with ADB regarding safeguard issues including environment.

92. DSC will submit monthly monitoring and implementation reports to PCO, who will take follow-up actions, if necessary. PCO will submit semi-annual monitoring reports to ADB. The suggested monitoring report format is in Appendix 7. Subproject budgets will reflect the costs of monitoring and reporting requirements. For subprojects 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.

93. For subprojects likely to have significant adverse environmental impacts, MOUD will retain qualified and experienced external experts to verify its monitoring information. MOUD 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 MOUD.

94. ADB will review project performance against the MOUD 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.

APPENDIX 1 : RELEVANT ENVIRONMENTAL QUALITY STANDARDS

Table A1.1: Ambient Air Quality Standards

Parameter	Averaging Period	Nepal Standards[1] (µg/m³)	WHO Air quality Guidelines	
			Global Update[2] 2005 (µg/m³)	2nd Edition[3] 2000 (µg/m³)
TSP	Annual 24 h	- 230	- -	- -
PM_{10}	Annual 24 h	- 120	20 50	- -
PM_{25}	1 year 24 h	- -	10 25	- -
SO_2	Annual 24 h 10 minutes	50 0 -	- 20 500	- - -
NO_2	1 year 24 h 1 h	40 80 -	40 - 200	- - -
CO	8 h 15 minutes	10,000 100,000	-	10.000 100,000
Pb	1 year	0.5	-	0.5
Benzene	1 year	20	-	-

[1] National Air Quality Standards for Nepal, 2003. Source: Environment Satistics of Nepal 2011. Government of Nepal, National Planning Commission Secretariat, Central Bureau of Statistics, Kathmandu.
[2] *Environmental, Health and Safety General Gudielines 2007*, IFC, World Bank Group
[3] *Air Quality Guidelines for Europe Second Edition*, 2000, WHO Regional Office for Europe, Copenhagen

Table A1.2: Noise Level Standards

Receptor / Source	National Noise Standard Guidelines 2012 (dB)		WHO Guideline Values for Noise Level Measured Out of Doors (1 h 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		-	

Source: WHO: *Guidelines for Community Noise*, 1999.

Table A1.2: Drinking Water Quality Standards

Group	Parameter	Unit	Nepal[1]	WHO[2]
Physical	Turbidity	NTU	5 (10)	-
	pH		6.5-8.5	-
	Colour	TCU	5 (15)	-
	Taste and odour	-	not objectionable	
	TDS	mg/l	1000	-
	Electrical conductivity	µS/cm	1500	-
Chemical	Iron	mg/l	0.3	-
	Manganese	mg/l	0.2	-
	Arsenic	mg/l	0.55	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	-
	Chloride	mg/l	250	-
	Sulphate	mg/l	250	-
	Nitrate	mg/l	50	50
	Copper	mg/l	1	2
	Total hardness	mg/l	500	-
	Calcium	mg/l	200	-
	Zinc	mg/l	3	-
	Mercury	mg/l	0.001	0.006
	Aluminium	mg/l	0.2	-
	Residual chlorine	mg/l	0.1-0.2	5
Bacteriological	E. coli	MPN/100 ml	0	not detectable in any sample
	Total coliform	MPN/100 ml	0 in 95% of samples	

[1] *National Drinking Water Quality Standards*. 2006.
[2] *WHO Guidelines for Drinking Water Quality, 4th Edition*, 2011.

Table A1.4: Tolerance Limits for Wastewater to be Discharged into Inland Surface Waters from Combined Wastewater Treatment Plants

Parameter	Unit	Tolerance limit
TSS	mg/l	50
Particle size of suspended solids		Shall pass 850 µ sieve
pH		5.5 - 9.0
BOD5 and 20°C	mg/l	50
Oil and grease	mg/l	10
Phenolic compounds	mg/l	1
Cyanide	mg/l	0.2
Sulphides (as s)	mg/l	2
Radioactive materials Alpha emitters Beta emitters	 c/ml c/ml	 10^{-7} 10^{-8}
Insecticides		absent
Total residual chlorine	mg/l	1
Fluorides (as F)	mg/l	2
Arsenic	mg/l	0.2
Cadmium	mg/l	2
Chromium (as Cr^{+6})	mg/l	0.1

Parameter	Unit	Tolerance limit
Copper	mg/l	3
Lead	mg/l	0.1
Mercury	mg/l	0.01
Nickel	mg/l	8
Selenium	mg/l	0.05
Zinc	mg/l	5
Ammoniacal nitorgen	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

APPENDIX 2: ANTICIPATED ENVIRONMENTAL IMPACTS DUE TO PROJECT IMPLEMENTATION

Impact Field	Anticipated Impact on the Environment
Design phase	
Environmental clearances	Environmental clearances, consents, and permits are required (Section II of the EARF) in order to implement the project. If not pursued on time, this can delay the project. Necessary environmental clearances and permits have to be obtained and must follow the guidelines issued by the authorities.
Construction phase	
Air quality	Emissions from construction vehicles, equipment, and machinery used for excavation and construction, resulting in dust and increase in concentration of vehicle-related pollutants such as carbon monoxide, sulfur oxides, particulate matter, nitrous oxides, and hydrocarbons
Surface water quality	Mobilization of settled silt materials, runoff from stockpiled materials, and chemical contamination from fuels and lubricants during construction works can contaminate downstream surface water quality. Contamination of water bodies during rehabilitation of existing sanitation systems or landfills
Groundwater quality	Contamination of groundwater during rehabilitation of existing sanitation systems or landfills
Noise levels	Increase in noise level due to earth moving and excavation equipment and the transportation of equipment, materials, and people. Operation of heavy equipment and machines in the nighttime can cause nuisance to the surrounding environment/ people.
Ecological resources	Felling of the trees affects terrestrial ecological balance, excavation/restoration of drainage canal/khal, construction in water body, construction in low land (in case of solid waste landfill) may affect ecological resources, construction of camp, labor shed, material shed in or near bush or grass land may destroy ecological resources,
Sources of materials	Extraction of materials can disrupt natural land contours and vegetation, resulting in accelerated erosion, disturbance in natural drainage patterns, ponding and waterlogging, and water pollution.
Existing infrastructure, facilities, and utilities	Telephone lines, electric poles and wires, and water pipes (old) existing within right-of-way (RoW) require shifting without disruption to services. Health risk due to closure of existing water supply, such as community tanks, water stations, and privately-owned small water pipes
Construction work camps, hot mix plants, stockpile areas, storage areas, and disposal areas	Locations may cause encroachment/impact either directly or indirectly on adjacent environments. It may also include impacts on the people who might lose their homes or livelihoods due to the project activities. Temporary air and noise pollution from machine operation, and water pollution from storage and use of fuels, oils, solvents, and lubricants. This may cause conflict with residents and problem of waste disposal and disruptions to residents.
Construction waste	Excavation works, cleaning of drainages, and trenching will produce additional amounts of waste soil. Accumulation of debris waste materials and stockpiling can cause environmental visual pollution.
Social and cultural resources	Sites of social/cultural importance (schools, hospitals, religious places, tourism sites) may be disturbed by noise, dust, vibration, and impeded access. Ground disturbance can uncover and damage archaeological and historical remains.
Landscape and aesthetics	Solid wastes as well as excess construction materials create unacceptable aesthetic conditions.
Traffic	Traffic flow will be disrupted if routes for delivery of construction materials and temporary blockages during construction activities are not planned and coordinated.

Impact Field	Anticipated Impact on the Environment
Accessibility	Traffic problems and conflicts in RoW. Repeated trenching may disturb roads, people, and businesses.
Income	Impede the access of residents and customers to nearby shops. Shops may lose business temporarily.
Occupational health and safety	Occupational hazards can arise during construction (e.g., trenching, falling objects, etc.).
Community health and safety	Community hazards can arise during construction (e.g., open trenches, air quality, noise, falling objects, etc.). Trenching on concrete roads using pneumatic drills will cause noise and air pollution. Traffic accidents and vehicle collision with pedestrians during material and waste transportation
Post-construction phase	
Clean-up operations, restoration and rehabilitation	Impacts on social or sensitive receptors when post-construction requirements are not undertaken, e.g. proper closure of camp, disposal of solid waste, and restoration of land after project construction.
Operation and maintenance phase	
Environmental clearance certificate renewal	For orange and red category projects, the ECC must be renewed every year, for which the fee is 25% of the original application.
General maintenance	Maintenance activities may cause disturbance to sensitive receptors, dust, and increase in noise level.
Economic development	Impediments to residents and businesses during routine maintenance
Biodiversity fauna and flora	The proposed development is situated within an existing built-up area where the wastewater infrastructures already exist. No areas of ecological diversity occur within the project location. Due to the nature and locality of the project, there is unlikely to be any significant impacts on biodiversity within the area during maintenance works. The use of fertilizers and herbicides in maintenance of newly planted trees, landscape and vegetation may affect the environment.
Health and safety	Danger of operations and maintenance-related injuries Safety of workers and public must be ensured. Poor waste management practices and unhygienic conditions at the improved facilities can breed diseases. Standing water due to inadequate storm water drainage systems and inadequate waste management practices pose a health hazard by providing breeding grounds for disease vectors such as mosquitoes, flies, and rats.
Solid waste	Solid waste residuals that may be generated during operations and maintenance activities. Sludge will be generated from water treatment plants. Bio solids will be generated from septage treatment plants.
Hazardous chemicals	Water treatment involves the use of chemicals for coagulation, disinfection, and water conditioning.

APPENDIX 3: RAPID ENVIRONMENTAL ASSESSMENT CHECKLISTS

1. Roads Improvement Rapid Environmental Assessment (REA) Checklist

Instructions:
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.

Subproject Title: _____

Screening Questions	Yes	No	Remarks
A. Project Siting Is the project area adjacent to or within any of the following environmentally sensitive areas?			
▪ Cultural heritage site			
▪ Protected Area			
▪ Wetland			
▪ Mangrove			
▪ Estuarine			
▪ Buffer zone of protected area			
▪ Special area for protecting biodiversity			
B. Potential Environmental Impacts Will the Project cause…			
▪ encroachment on historical/cultural areas; disfiguration of landscape by road embankments, cuts, fills, and quarries?			
▪ encroachment on precious ecology (e.g. sensitive or protected areas)?			
▪ alteration of surface water hydrology of waterways crossed by roads, resulting in increased sediment in streams affected by increased soil erosion at construction site?			
▪ deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals used in construction?			
▪ increased local air pollution due to rock crushing, cutting and filling works, and chemicals from asphalt processing?			
▪ risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation during project construction and operation?			
▪ noise and vibration due to blasting and other civil works?			
▪ dislocation or involuntary resettlement of people?			

Screening Questions	Yes	No	Remarks
▪ disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?			
▪ other social concerns relating to inconveniences in living conditions in the project areas that may trigger cases of upper respiratory problems and stress?			
▪ hazardous driving conditions where construction interferes with pre-existing roads?			
▪ poor sanitation and solid waste disposal in construction camps and work sites, and possible transmission of communicable diseases (such as STI's and HIV/AIDS) from workers to local populations?			
▪ creation of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents?			
▪ accident risks associated with increased vehicular traffic, leading to accidental spills of toxic materials?			
▪ increased noise and air pollution resulting from traffic volume?			
▪ increased risk of water pollution from oil, grease and fuel spills, and other materials from vehicles using the road?			
▪ social conflicts if workers from other regions or countries are hired?			
▪ large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?			
▪ 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 causes, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning.			

A Checklist for Preliminary Climate Risk Screening

Screening Questions		Score	Remarks[1]
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 hydro-meteorological parameters likely 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: _____
Prepared by: _____
Designation: _____

[1] 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.

Date: _____

2. Urban Development Subproject - REA Checklist

Instructions: 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. To be used for the following subprojects (checklist to be accomplished separately):		
[ ] Drainage Subproject	[ ] Street lighting Improvement Subproject	[ ] Market Development Subproject
[ ] Community Center/Auditorium Subproject		

Subproject Title: _____

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…			
▪ impacts on the sustainability of associated sanitation and solid waste disposal systems and their interactions with other urban services.			
▪ deterioration of surrounding environmental conditions due to rapid urban population growth, commercial and industrial activity, and increased waste generation to the point that both manmade and natural systems are overloaded and the capacities to manage these systems are overwhelmed?			
▪ degradation of land and ecosystems (e.g. loss of wetlands and wild lands, coastal zones, watersheds and forests)?			
▪ dislocation or involuntary resettlement of people?			
▪ disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable group?			

Screening Questions	Yes	No	Remarks
▪ degradation of cultural property, and loss of cultural heritage and tourism revenues?			
▪ occupation of low-lying lands, floodplains and steep hillsides by squatters and low-income groups, and their exposure to increased health hazards and risks due to pollutive industries?			
▪ water resource problems (e.g. depletion/degradation of available water supply, deterioration for surface and ground water quality , and pollution of receiving waters?			
▪ air pollution due to urban emissions?			
▪ risks and vulnerabilities related to occupational health and safety due to physical, chemical and biological hazards during project construction and operation?			
▪ road blocking and temporary flooding due to land excavation during rainy season?			
▪ 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 ambient, household and occupational pollution, thermal inversion, and smog formation?			
▪ water depletion and/or degradation?			
▪ overpaying of ground water, leading to land subsidence, lowered ground water table, and salinization?			
▪ contamination of surface and ground waters due to improper waste disposal?			
▪ pollution of receiving waters resulting in amenity losses, fisheries and marine resource depletion, and health problems?			
▪ large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?			
▪ social conflicts if workers from other regions or countries are hired?			
▪ 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?			
▪ 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			

Screening Questions	Yes	No	Remarks
injury to the community throughout project construction, operation and decommissioning?			

A Checklist for Preliminary Climate Risk Screening

Screening Questions		Score	Remarks[1]
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 hydro-meteorological parameters likely 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: _____

[1] 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: _____
Designation: _____
Date: _____

3. Solid Waste Management Subproject - REA Checklist

Instructions:
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.

Subproject Title: _____

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…			
▪ impacts associated with transport of wastes to the disposal site or treatment facility			
▪ impairment of historical/cultural monuments/areas and loss/damage to these sites?			
▪ degradation of aesthetic and property value loss?			
▪ nuisance to neighboring areas due to foul odor 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?			
▪ risks and vulnerabilities related occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?			

Screening Questions	Yes	No	Remarks
▪ public health hazards from odor, smoke from fire, and diseases transmitted by flies, insects, birds and rats?			
▪ deterioration of water quality as a result of contamination of receiving waters by leacheate from land disposal system?			
▪ contamination of ground and/or surface water by leach ate from land disposal system?			
▪ land use conflicts?			
▪ pollution of surface and ground water from leach ate coming from sanitary landfill sites or methane gas produced from decomposition of solid wastes in the absence of air, which could enter the aquifer or escape through soil fissures at places far from the landfill site?			
▪ inadequate buffer zone around landfill site to alleviate nuisances?			
▪ road blocking and/or increased traffic during construction of facilities?			
▪ noise and dust from construction activities?			
▪ temporary silt runoff due to construction?			
▪ hazards to public health due to inadequate management of landfill site caused by inadequate institutional and financial capabilities for the management of the landfill operation?			
▪ emission of potentially toxic volatile organics from land disposal site?			
▪ surface and ground water pollution from leach ate and methane gas migration?			
▪ loss of deep-rooted vegetation (e.g. tress) from landfill gas?			
▪ explosion of toxic response from accumulated landfill gas in buildings?			
▪ contamination of air quality from incineration?			
▪ public health hazards from odor, smoke from fire, and diseases transmitted by flies, rodents, insects and birds, etc.?			
▪ health and safety hazards to workers from toxic gases and hazardous materials in the site?			
▪ large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?			
▪ social conflicts if workers from other regions or countries are hired?			
▪ risks to community health and safety due to the transport, storage, and use and/or disposal of			

Screening Questions	Yes	No	Remarks
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 (e.g., landfill or incinerator) 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?			

A Checklist for Preliminary Climate Risk Screening

Screening Questions		Score	Remarks[2]
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 hydro-meteorological parameters likely 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

[2] 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.

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: _____

Prepared by: _____
Designation: _____
Date: _____

4. Water Supply - REA Checklist

Instructions:
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.

Subproject Title: _____

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 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?			

Screening Questions	Yes	No	Remarks
▪ 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 processes (especially mud accumulations in filters) and inadequate chlorination due to lack of adequate monitoring of chlorine residuals in distribution systems?			
▪ delivery of water to distribution system, which is corrosive due to inadequate attention to feeding of corrective chemicals?			
▪ accidental leakage of chlorine gas?			
▪ excessive abstraction of water affecting downstream water users?			
▪ competing uses of water?			
▪ increased sewage flow due to increased water supply?			
▪ increased volume of sullage (wastewater from cooking and washing) and sludge from wastewater treatment plant?			
▪ large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?			

Screening Questions	Yes	No	Remarks
▪ social conflicts if workers from other regions or countries are hired?			
▪ 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?			
▪ 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?			

A Checklist for Preliminary Climate Risk Screening

Screening Questions		Score	Remarks[3]
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 hydro-meteorological parameters likely 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

[3] 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.

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: _____

Prepared by: _____
Designation: _____
Date: _____

5. Sanitation and Sewage Treatment - REA Checklist

Instructions:
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.

Subproject Title: _____

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…			
▪ 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?			

Screening Questions	Yes	No	Remarks
▪ 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?			
▪ 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 may be 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			

Screening Questions	Yes	No	Remarks
result in injury to the community throughout project construction, operation and decommissioning?			

A Checklist for Preliminary Climate Risk Screening

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 hydro-meteorological parameters likely 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.

[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.

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

Other Comments: _____

Prepared by: _____
Designation: _____
Date: _____

APPENDIX 4: OUTLINE OF AN ADB ENVIRONMENTAL IMPACT ASSESSMENT (EIA) OR INITIAL ENVIRONMENTAL EXAMINATION (IEE) REPORT

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

APPENDIX 5: SAMPLE GRIEVANCE REGISTRATION FORM
(To be available in Nepali 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 officials reviewing grievance)	
Action taken:	
Whether action taken disclosed:	Yes No
Means of disclosure:	

APPENDIX 6: SAMPLE SEMI-ANNUAL ENVIRONMENTAL MONITORING REPORT TEMPLATE

I. INTRODUCTION

- Overall project description and objectives
- Environmental category as per ADB Safeguard Policy Statement, 2009
- Environmental category of each subproject as per national laws and regulations
- Project Safeguards Team

Name	Designation/Office	Email Address	Contact Number	Roles
1. PMU				
2. PIUs				
3. Consultants				

- Overall project and sub-project progress and status
- Description of subprojects (package-wise) and status of implementation (preliminary, detailed design, on-going construction, completed, and/or O&M stage)

Package Number	Components/List of Works	Contract Status (specify if under bidding or contract awarded)	Status of Implementation (Preliminary Design/Detailed Design/On-going Construction/Completed/O&M)[1]	If On-going Construction	
				%Physical Progress	Expected Completion Date

[1] If on-going construction, include %physical progress and expected date of completion.

II. COMPLIANCE STATUS WITH NATIONAL/STATE/LOCAL STATUTORY ENVIRONMENTAL REQUIREMENTS[2]

Package No.	Subproject Name	Statutory Environmental Requirements[3]	Status of Compliance[4]	Validity if obtained	Action Required	Specific Conditions that will require environmental monitoring as per Environment Clearance, Consent/Permit to Establish[5]

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 PLAN (REFER TO EMP TABLES IN APPROVED IEE/S)

- Confirm if IEE/s require contractors to submit site-specific EMP/construction EMPs. If not, describe the methodology of monitoring each package under implementation.

Package-wise IEE Documentation Status

Package Number	Final IEE based on Detailed Design				Site-specific EMP (or Construction EMP) approved by Project Director? (Yes/No)	Remarks
	Not yet due (detailed design not yet completed)	Submitted to ADB (Provide Date of Submission)	Disclosed on project website (Provide Link)	Final IEE provided to Contractor/s (Yes/No)		

- For each package, provide name/s and contact details of contractor/s' nodal person/s for environmental safeguards.

Package-wise Contractor/s' Nodal Persons for Environmental Safeguards

[2] All statutory clearance/s, no-objection certificates, permit/s, etc. should be obtained prior to award of contract/s. Attach as appendix all clearance obtained during the reporting period. If already reported, specify in the "remarks" column.

[3] Specify (environmental clearance? Permit/consent to establish? Forest clearance? Etc.)

[4] Specify if obtained, submitted and awaiting approval, application not yet submitted

[5] Example: Environmental Clearance requires ambient air quality monitoring; and Forest Clearance/Tree-cutting Permit requires 2 trees for every tree, etc.

Package Name	Contractor	Nodal Person	Email Address	Contact Number

- With reference to approved EMP/site-specific EMP/construction EMP, complete the table below

Summary of Environmental Monitoring Activities (for the Reporting Period)[6]

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						

[6] Attach Laboratory Results and Sampling Map/Locations.

Overall Compliance with CEMP/ EMP

No.	Sub-Project Name	EMP/ CEMP Part of Contract Documents (Y/N)	CEMP/ EMP Being Implemented (Y/N)	Status of Implementation (Excellent/ Satisfactory/ Partially Satisfactory/ Below Satisfactory)	Action Proposed and Additional Measures Required

V. APPROACH AND METHODOLOGY FOR ENVIRONMENTAL MONITORING OF THE PROJECT

- Briefly describe the approach and methodology used for environmental monitoring of each sub-project.

VI. MONITORING OF ENVIRONMENTAL IMPACTS ON PROJECT SURROUNDINGS (AMBIENT AIR, WATER QUALITY AND NOISE LEVELS)

- Discuss the general condition of surroundings at the project site, with consideration of the following, whichever are applicable:

  (i) Confirm if any dust was noted to escape the site boundaries and identify dust suppression techniques followed for site/s;
  (ii) Identify if muddy water is escaping site boundaries or if muddy tracks are seen on adjacent roads.
  (iii) Identify type of erosion and sediment control measures installed on site/s, condition of erosion and sediment control measures including if these are intact following heavy rain.
  (iv) Identify designated areas for concrete works, chemical storage, construction materials, and refueling. Attach photographs of each area in the Appendix.
  (v) Confirm spill kits on site and site procedure for handling emergencies.
  (vi) Identify any chemical stored on site and provide information on storage condition. Attach photograph.
  (vii) Describe management of stockpiles (construction materials, excavated soils, spoils, etc.). Provide photographs.
  (viii) Describe management of solid and liquid wastes on-site (quantity generated, transport, storage and disposal). Provide photographs.
  (ix) Provide information on barricades, signages, and on-site boards. Provide photographs in the Appendix.
  (x) Indicate if there are any activities being under taken out of working hours and how that is being managed.

- Briefly discuss the basis for environmental parameters monitoring.
- Indicate type of environmental parameters to be monitored and identify the location.
- Indicate the method of monitoring and equipment used.
- Provide monitoring results and an analysis of results in relation to baseline data and statutory requirements.

As a minimum the results should be presented as per the tables below.

Air Quality Results

Site No.	Date of Testing	Site Location	Parameters (Government Standards)		
			PM10 µg/m3	SO2 µg/m3	NO2 µg/m3

Site No.	Date of Testing	Site Location	Parameters (Monitoring Results)		
			PM10 µg/m3	SO2 µg/m3	NO2 µg/m3

Water Quality Results

Site No.	Date of Sampling	Site Location	Parameters (Government Standards)					
			pH	Conductivity µS/cm	BOD mg/L	TSS mg/L	TN mg/L	TP mg/L

Site No.	Date of Sampling	Site Location	Parameters (Monitoring Results)					
			pH	Conductivity µS/cm	BOD 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) (Monitoring Results)	
			Day Time	Night Time

VII. GRIEVANCE REDRESS MECHANISM

- Provide information on establishment of grievance redress mechanism and capacity of grievance redress committee to address project-related issues/complaints. Include as appendix Notification of the GRM (town-wise if applicable).

VIII. COMPLAINTS RECEIVED DURING THE REPORTING PERIOD

- Provide information on number, nature, and resolution of complaints received during reporting period. Attach records as per GRM in the approved IEE. Identify safeguards team member/s involved in the GRM process. Attach minutes of meetings (ensure English translation is provided).

IX. SUMMARY OF KEY ISSUES AND REMEDIAL ACTIONS

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

X. APPENDIXES

- Photos
- Summary of consultations
- Copies of environmental clearances and permits
- Sample of environmental site inspection report
- all supporting documents including **signed** monthly environmental site inspection reports prepared by consultants and/or contractors
- Others

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 ☐

Signature
_____

Sign off

_____	_____
Name	**Name**
Position	**Position**

Appendix 7

Regional Urban Development Project (RUDP)

Indicative List of Proposed Subprojects

Municipality	Sewerage	Storm water Drainage	Roads Improvement	Municipal Solid Waste Management	Municipal Building / Offices
Attariya		✓	✓	✓	✓
Dhanagadhi		✓	✓	✓	
Nepalganj		✓	✓		
Siddharthnagar		✓	✓		
Bhimdatt		✓	✓	✓	
Biratnagar	✓	✓	✓		
Birganj		✓	✓		
Jhalari Pipaldi		✓	✓	✓	✓