Project Readiness Financing
Project Administration Manual

Project Number: 54166-001
Loan Number: 6045
March 2022

India: Nagaland Urban Infrastructure Development Project

CONTENTS

Project Administration Manual for Project Readiness Financing Facility: Purpose and Process

The project administration manual (PAM) for the project readiness financing (PRF) facility is an abridged version of the regular PAM of the Asian Development Bank (ADB) and describes the essential administrative and management requirements to implement the PRF facility following the policies and procedures of the government and ADB. The PAM should include references to all available templates and instructions either by linking to relevant URLs or directly incorporating them in the PAM.

The executing agency–the Government of Nagaland (GON) acting through the Urban Development Department (UDD) and the implementing agency– the Directorate of Urban Development (DUD) are wholly responsible for the implementation of ADB-financed PRF activities, as agreed between the borrower, the GON acting through UDD, and ADB, and following the policies and procedures of the government and ADB. ADB staff is responsible for supporting implementation, including compliance by the UDD of Government of Nagaland, of their obligations and responsibilities for PRF project implementation following ADB's policies and procedures.

In the event of any discrepancy or contradiction between the PAM and the PRF loan agreement, the provisions of the PRF loan agreement will prevail.

After ADB's approval of the PRF proposal, changes in implementation arrangements are subject to agreement and approval pursuant to relevant government and ADB administrative procedures (including the Project Administration Instructions) and upon such approval, they will be subsequently incorporated in this PAM.

ABBREVIATIONS

ADB	–	Asian Development Bank
APFS	–	audited project financial statement
DEA	–	Department of Economic Affairs
DPR	–	detailed project report
DUD	–	Directorate of Urban Development
FMA	–	financial management assessment
GOI	–	Government of India
GON	–	Government of Nagaland
PAM	–	project administration manual
PDMC	–	project design and management consultants
PFS	–	project financial statement
PMU	–	project management unit
PRF	–	project readiness financing
SOE	–	statement of expenditure
TOR	–	terms of reference
UDD	–	Urban Development Department

I. IMPLEMENTATION PLAN

A. Overall Implementation Plan

1. Table 1 presents the overall implementation plan for the project readiness financing (PRF) project and records key implementation, including project management activities (on quarterly basis), which will be updated annually and submitted to ADB with updated contract and disbursement projections for the following year.

Table 1: Implementation Plan over PRF Project Tenure

Activities	Advance Action		PRF				PRF				PRF		
	2021		2022				2023				2024		
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
PRF Approval													
A. Implementation													
Consultant Selection (Firm)													
Advertisement													
Selection													
Contract Award													
Consultant Selection (Individual)													
Advertisement													
Selection													
Contract Award													
Sector strategy and investment plans													
Feasibility studies and detailed engineering designs													
Feasibility studies													
Detailed engineering designs													
Institutional capacity building													
Preparation for Documents for Ensuing Loan													
B. Management Activities													
PRF negotiations													
ADB Board Approval													
PRF Signing													
PRF effectiveness													
Submission of QPRs													
Submission of APFS													
Projected date of ensuing loan													

ADB = Asian Development Bank, APFS = audited project financial statement, PRF = project readiness financing, Q = quarter, QPR = quarterly progress report.
Source: Asian Development Bank.

II. PROJECT MANAGEMENT ARRANGEMENTS

A. Project Implementation Organizations: Roles and Responsibilities

Table 2: Roles and Responsibilities of Key Stakeholders

PRF Project Implementation/ Organizations	Management Roles and Responsibilities
A. Project Steering Committee	A multi-department steering committee chaired by the Chief Secretary, Government of Nagaland (GON) is established as oversight body with senior officers from the Departments of Finance, Planning & Coordination, Urban Development and Municipal Administration, Public Health Engineering, the UDD. The committee will facilitate interdepartmental coordination and cooperation within government; and provide overall strategic and policy guidance.
B. Executing Agency: Government of Nagaland (GON) acting through Urban Development Department (UDD)	• Establish an empowered committee under the chairmanship of administrative head of UDD; with representations from Finance, and Planning & Coordination departments to monitor and oversee the implementation of the project. • Ensure coordination with Department of Economic Affairs, Ministry of Finance, Government of India (GOI) for project related activities and to ensure adequate allocation of annual budget to the project. • Be the focal point at execution level for communication with all stakeholders, including ADB, facilitation coordination for all stakeholder consultations, and be the signatory to all key documents including withdrawal applications and audit reports for submission to the GON and the GOI on PRF activities; • Liaise with ADB to address any issues during detailed engineering design/procurement/institutional development works of consulting firm under PRF activities. • Ensure that DUD timely submits quarterly progress reports and annual project financial statement to ADB. • Conduct review, obtain necessary government approvals for sub-projects and approve detailed engineering designs/any other design works and resource/effort/cost estimates, including detailed project reports (DPRs).
C. Implementing Agency Directorate of Urban Development (DUD)	• Appoint a Project Director dedicated for the PRF and establish a project management unit at the DUD, which is adequately staffed and acceptable to ADB. • Facilitate improved project readiness by preparing (through a consulting firm and individual consultants), detailed engineering designs, DPRs for subprojects, procurement, safeguards and other documentations required to access financing from ADB; • Prepare through consulting firm and recommend to the UDD for approval of detailed engineering designs/any other design works, DPRs, procurement and safeguards documentation, and institutional strengthening and capacity building requirements and programs on training/workshops/ seminars/ conferences etc., including necessary coordination with all stakeholders;

PRF Project Implementation/ Organizations	Management Roles and Responsibilities
	• Process bills for services contract. Conduct periodic review of the work progress under PRF project and submit agreed progress/ project reports to the steering committee, GON, GOI, and ADB. • Maintain separate project records, prepare project financial statements in accordance with financial reporting framework which shall be audited by an independent auditor using relevant audit standard framework as application and submitted the audited project financial statements to ADB within six months of close of revenant fiscal year. • Submit annual audited entity financial statements to ADB within 1 month of approval by the relevant authority at TIDCL not later than 12 months from close of relevant fiscal year. • Take appropriate steps to maintain financial management rating "on-track" at all times during execution of the PRF. • Disclosure of information related to the project to the public through government website(s). Facilitate in ensuring compliance with conditions of loan agreement under PRF, GOI, GON, and ADB guidelines, procedures, and policies. • Ensure compliance with ADB Safeguard Policy Statement 2009, the environmental and social due diligence frameworks and reports indigenous people's frameworks, etc. as required, for each of the proposed subprojects.
D. Asian Development Bank	• Facilitate the UDD and DUD on procurement processing for consultants' selection under PRF. • Provide guidance to the UDD on PRF implementation. • Conduct periodic review of the PRF and disclose related information as per ADB's Access to Information Policy.

ADB = Asian Development Bank, DPR = detailed project report, DUD = Directorate of Urban Development, GOI = Government of India, GON = Government of Nagaland, PRF = project readiness financing, UDD = Urban Development Department.

Source: Asian Development Bank.

B. Key Persons Involved in Implementation

2. The key persons involved in the implementation of PRF are as follows:

Executing Agency

Government of Nagaland acting through Urban Development Department	Officer's Name: I. Himato Zhimomi Position: Principal Secretary, UDD Telephone No.: +91-94360-61415 E-mail address: secyudd@gmail.com Office Address: Nagaland Civil Secretariat, Kohima, Nagaland. PIN-797001

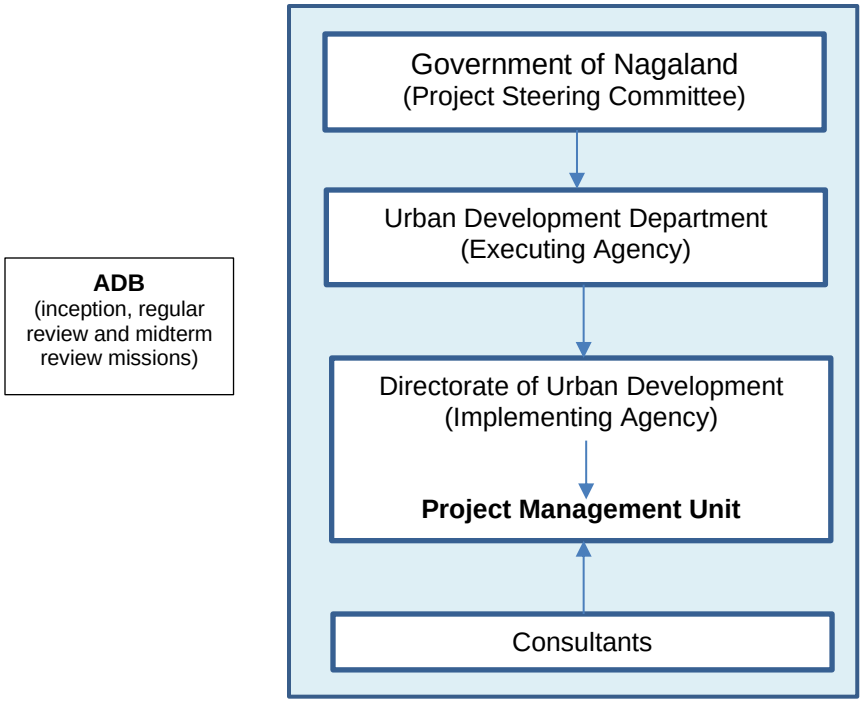
Implementing Agency

Directorate of Urban Development	Officer's Name: S. Takatuba Aier Position: Director, Urban Development Telephone No.: +91-94360-03908 E-mail address: directorud.nld@gmail.com Office Address: Directorate of Urban Development,

	Below Civil Secretariat, Assembly Road, Kohima, Nagaland. PIN-797001
Asian Development Bank	
Indian Resident Mission	Staff Name: Takeo Konishi Position: Country Director Telephone No.: +91-11-2410-7200 E-mail address: tkonishi@adb.org
Mission Leader	Staff Name: Ashok Srivastava Position: Senior Project Officer (Urban) Telephone No: 91-11-2410-7200 E-mail address: asrivastava@adb.org

C. Project Organization Structure

Figure 1: Project Organization Structure



ADB = Asian Development Bank.
Source: Asian Development Bank.

III. COSTS AND FINANCING

A. Key Assumptions

3. The project is estimated to cost $2.50 million. The government has requested a regular loan of $2.0 million from ADB's ordinary capital resources to help finance project preparation and design activities. The State of Nagaland will finance the equivalent of $0.50 million for taxes and duties, PMU operating costs and interest during implementation. Taxes and duties are estimated to be $0.34 million and will be financed from GON by cash contribution. ADB will finance the expenditures in relation to consulting services, capacity building, and consultant operating costs. Project costs may be revised during midterm review missions.

4. The loan will have a 15-year term, including a grace period of 3 years; an interest rate determined in accordance with ADB's Flexible Loan Product and other terms and conditions set forth in the draft Loan Agreement and Project Agreement. The method of repayment will be a straight-line amortization.

5. The PRF loan will be used for preparing ensuing project in urban sector. The project readiness loan will be refinanced under the ensuing loan. The refinancing date is the expected date of effectiveness of the ensuing Loan Agreement and Project Agreement and will generally be adjusted to coincide with the actual effectiveness date of the ensuing Loan Agreement and Project Agreement.

6. The following key assumptions underpin the cost estimates and financing plan:

(i) Exchange rate: INR 74.40 = $1.00 (as of 4 January 2022).
(ii) Price contingencies are based on expected cumulative inflation over the implementation period are as follows:

Table 3: Escalation Rates for Price Contingency Calculation

Item	2022	2023	2024	Annual Average
Foreign rate of price inflation	1.7%	3.4%	5.2%	1.7%
Domestic rate of price inflation	4.8%	9.3%	13.3%	4.4%

(iii) In-kind contributions cannot be easily measured and have not been quantified.

B. Allocation and Withdrawal of Loan Proceeds

7. The PRF will finance consulting services only, including allocations for workshops and training, studies, field surveys, contingencies and other reimbursable expenses. Local indirect taxes and duties will be financed from the government resources.

Table 4: Allocation and Withdrawal of PRF Loan Proceeds

Number	Category	Total Amount Allocated for ADB Financing ($)	Basis for Withdrawal from the Loan Account
1.	Consulting Services	2,000,000	100% of total expenditure[1]
	Total	**2,000,000**	

ADB = Asian Development Bank, PRF = project readiness financing.
Note:
1. Excluding taxes and duties imposed within the territory of Borrower.
Source: Asian Development Bank.

C. Detailed Cost Estimates by Expenditure Category and Financier

Table 5: Detailed Cost Estimates by Expenditure Category and Financier ($ million)[1]

Item		ADB OCR		GON		Total Cost[2]	
		Amount	% of Category	Amount	% of Category	Amount	Taxes and Duties
A.	**Consulting Services**						
1	Sector strategy and investment plans prepared	0.14	81.09%	0.03	18.91%	0.17	0.03
2	Feasibility study, detailed engineering designs, and due diligence of priority subprojects completed	1.24	81.09%	0.29	18.91%	1.53	0.23
3	Institutional capacity strengthened	0.41	81.09%	0.09	18.91%	0.50	0.08
	Subtotal (A)	**1.79**	**81.09%**	**0.42**	**18.91%**	**2.20**	**0.34**
B.	**Contingencies[3]**	0.21	81.09%	0.05	18.91%	0.26	-
C.	**Financing Charges[4]**	-	0.0%	0.03	100.0%	0.03	-
Total Project Cost (A+B+C)		**2.00**	**80.00%**	**0.50**	**20.00%**	**2.50**	**0.34**
% Total Project Cost			**80%**		**20%**	**100%**	

ADB = Asian Development Bank, GON = Government of Nagaland, OCR = ordinary capital resources.

Notes:
1. Numbers may not sum precisely because of rounding.
2. Includes taxes and duties of $0.34 million to be financed from government resources by cash contribution.
3. Physical contingencies computed at 6.5% for consulting services. Price contingencies computed in the range of 1.7%–1.8% on foreign exchange costs and in the range of 4.0%–4.8% on local currency costs; and includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.
4. Includes Interest during implementation for the ordinary capital resources (OCR) loan, computed at the 3-year United States dollar fixed swap rate plus an effective contractual spread of 0.5%. Commitment charges are not applicable on the loan.

Source: Asian Development Bank.

D. Detailed Cost Estimates by Year

Table 6: Detailed Cost Estimates by Year
($ million)[1]

	Item	Total	2022	2023	2024
A.	**Consulting Services[2]**				
1	Sector strategy and investment plans prepared	0.17	0.17	-	-
2	Feasibility study, detailed engineering designs, and due diligence of priority subprojects completed	1.53	0.31	0.92	0.31
3	Institutional capacity strengthened	0.50	0.16	0.28	0.06
	Total Base Cost	**2.20**	**0.56**	**1.23**	**2.19**
B.	**Contingencies[3]**	0.26	0.07	0.15	0.04
C.	**Financing Charges[4]**	0.03	0.00	0.01	0.02
	Total Project Cost (A+B+C)	**2.50**	**0.71**	**1.36**	**0.43**
	% Total Project Cost	**100.0%**	**28.4%**	**54.4%**	**17.2%**

Notes:
1. Numbers may not sum precisely because of rounding.
2. Includes taxes and duties of $0.34 million to be financed from government resources by cash contribution.
3. Physical contingencies computed at 6.5% for consulting services. Price contingencies computed in the range of 1.7%–1.8% on foreign exchange costs and in the range of 4.0%–4.8% on local currency costs; and includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.
4. Includes Interest during implementation for the ordinary capital resources (OCR) loan, computed at the 3-year United States dollar fixed swap rate plus an effective contractual spread of 0.5%. Commitment charges are not applicable on the loan.

Source: Asian Development Bank.

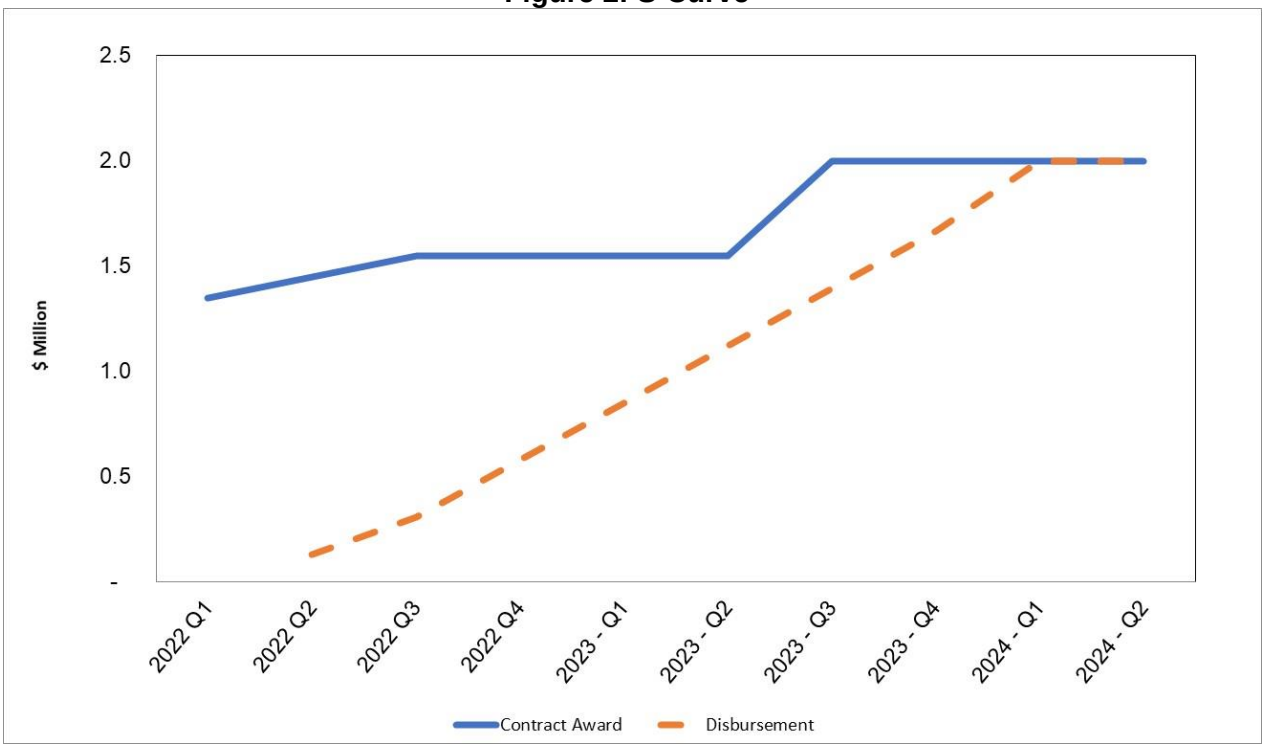
E. Contract and Disbursement S-Curve

Table 7: Contract Awards and Disbursement[1]

Year	Contract Awards (in $million)					Disbursements (in $million)				
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total
2022	1.35	0.10	0.10	-	1.55	-	0.13	0.18	0.27	0.58
2023	-	-	0.45	-	0.45	0.27	0.27	0.27	0.27	1.09
2024	-	-	-	-	-	0.33	-	-	-	0.33
	Total Contract Awards				**2.00**	**Total Disbursements**				**2.00**

Q = quarter.
Notes:
1. Numbers may not sum precisely because of rounding.
Source: Asian Development Bank.

Figure 2: S-Curve



Q = quarter.

IV. FINANCIAL MANAGEMENT

A. Financial Management Assessment

8. The Financial Management Assessment (FMA) was conducted in August 2021 in accordance with ADB's Guidelines for Financial Management Assessment, and related technical guidance notes.[1] The FMA considered the financial management (FM) capacity of Urban Development Department (UDD), the executing agency and of Directorate of Urban Development (DUD), the implementing agency (IA). The FMA reviewed funds flow arrangements, governance, staffing, budgeting, internal control procedures, overall accounting, financial information and

[1] ADB.2015. *Financial Management Assessment: Financial Management Technical Guidance Note*. Manila.

reporting system, and internal and external auditing arrangements The purpose of the FMA is to ensure that adequate FM arrangements are in place for the proposed project.

9. The UDD has prior experience of executing two tranches of ADB assisted projects.[2] For executing the proposed PRF facility a project management unit (PMU) has been established in DUD. The PMU will manage the requisite fund flow arrangements and ensure reporting of financial information as per ADB stipulations with respect to the PRF project. The proposed project is a state of Nagaland sponsored project where fund-flow will be simpler as against the previous centrally sponsored ADB loans. The authority proposes to draw experienced resources from other departments who have prior knowledge in externally aided project. The UDD and DUD are in the process of strengthening their FM arrangements including procedures for making payments, financial reporting, and auditing financial statements and shall be submitting withdrawal applications for disbursements. PMU will be directly responsible for funds that will directly flow into the project through state budget appropriations without any intervention of any other departments of central government. A reputed external firm of chartered accountants will be engaged to establish the internal audit function. With respect to independent audits, in case delays are anticipated from Accountant General (Audit), Nagaland office for audit work, UDD and DUD can expedite the external audit reporting process by appointing private auditors. In view of a new PMU established, training to familiarize the staff who are mostly deputed from other departments on ADB's financial management matters including disbursement operations will be relatively easy. Suitable accounting policies on audited project financial statements (APFS) will be drafted and approved by the PMU with ADB staff support before its first submission to ADB. Additionally, a senior level accountant with adequate experience will be assigned in the initial stages at the PMU assuming responsibility to oversee overall FM of the PRF facility. To strengthen the information system flow electronically, a tally accounting software will be installed which can be customized per project needs. Considering the risk factors identified for the size of PRF loan with subject to mitigation arrangements during implementation period, the overall FM risk is assessed as Moderate.

B. RISK ANALYSIS

10. The summary of financial management and internal control risks and proposed mitigating measures is presented in Table 8 below. UDD/ DUD/ PMU shall implement the project, following applicable policies and procedures of the GON and ADB.

Table 8: Financial Management and Internal Control Risk Assessment and Mitigation Plan

Nature of Risk	Risk Assessment	Risk Description	Mitigation Measures or Action Plan	Timeframe and Responsibility
Inherent Risks				
Country specific risks (state level)	M	Financial management information system of GON is mainly dependent on manual procedures with multi-layered approval procedures leading to delays in budget	Nagaland is a concessional state where externally assisted project fundings through GOI are on 90:10 basis. With respect to state sponsored projects, budget allocations are expected to be smooth as compared to centrally	Annual basis by UDD/ DUD/ PMU.

[2] Government of India (GOI) centrally sponsored loan(s) 2528-IND and 2834-IND, were implemented by State Investment Program Management and Implementation Units under the North Eastern Region Capital Cities Development Investment Program tranche 1 and 2 respectively.

Nature of Risk	Risk Assessment	Risk Description	Mitigation Measures or Action Plan	Timeframe and Responsibility
		utilization for central level projects. There are considerable delays in fund releases, non-submission of accounts on time leading to non-compliances with State financial rules.	sponsored projects due to close proximity and possibility for coordination between state finance department and project authorities in the State. ADB review missions during execution stage will further monitor eventualities of budget allocations, if any. Actions to strengthen internal audit function, and timely conduct of external audits have been agreed with GON.	
Entity-specific risks	M	GON through UDD has the prior experience in executing ADB loan which were multi-state centrally sponsored. In the PRF, a new PMU formed under UDD has no prior experience in implementing externally aided projects which may lead to oversight and challenges on overall governance during project implementation.	The proposed PRF is state sponsored project without involvement of central government budget utilization. The project specific PMU established will be staffed by experienced officials from the State Government on deputation basis. Adequate training and support will be provided in project management, financial management and ADB policies and procedures.	Annual basis by UDD/ DUD/ PMU/ ADB.
Project specific risks	S	The financial regulations followed by UDD do not provide any detailed procedural guidance, which may compromise the integrity of financial and accounting controls. The new deputed staff are not adequately familiar in ADB FM Policies and procedures. This may lead to untimely detection and resolution of financial management issues.	A financial management manual duly supported with standard operating procedures will be developed to address project specific issues on budget allocations, segregation of duties, reporting and monitoring etc. Apart from strengthening internal control measures, ADB will provide regular training (capacity building programs) for PMU staff on ADB procedures, guidelines, and requirements covering FM reporting aspects.	Annual basis by UDD/ DUD/ PMU/ ADB.
Overall Inherent Risk	**M**			
Control Risks				
Funds flow	S	There are considerable delays on release of funds for payment to	• With respect to the PRF for meeting payment to consultants pre-financing	Annual basis by UDD/ DUD/ PMU.

Nature of Risk	Risk Assessment	Risk Description	Mitigation Measures or Action Plan	Timeframe and Responsibility
		contractors due to multilayered approval processes. Delays in releasing budget for the project would affect the overall timelines of the project.	through state allocation budget will be ensured by UDD and DUD. Apart from maintaining separate project records separate bank account for the project before loan negotiations will be ensured. UDD will disburse funds to DUD for the project on a quarterly basis based on the actual fund requirements. Reimbursement procedure will be used mainly to disburse the loan proceeds. • Annual budgetary provisions will be ensured upon for seamless flow of funds into the project.	
Staffing and capacity	S	Absence of dedicated financial management staff at PMU may lead to a sub-optimal or neglect of financial management function resulting in delays and non-compliance in ADB financial management reporting.	• A senior level government official having finance background and experience will be assigned at the PMU with overall responsibility to oversee financial management function. • The senior official at the PMU will be further supplemented with a professionally qualified accountant from PRF Loan to support and advise the senior government official on ADB's FM requirements (maintain separate project records, prepare PFS, auditing etc.) • To help timely detection and resolution of FM issues, time to time trainings with guidance from ADB FM staff will be provided during project execution on ADB FM and disbursement procedures to develop knowledge on ADB policies and procedures.	Within 3 months of PRF loan effectiveness ADB and UDD.
Accounting	S	Preparation of project financial statements for the PRF may not be	• Separate project records are maintained and updated with	Immediate and continuous by PMU.

Nature of Risk	Risk Assessment	Risk Description	Mitigation Measures or Action Plan	Timeframe and Responsibility
		complete and in a manner required by ADB.	accounting transactions on immediate basis. • Consultants to ensure submission of complete project financial statements to the selected auditor within 3 months of the end of the fiscal year and the APFS will be submitted to ADB within 6 months from the end of the fiscal year. The APFS will ensure compliance with TOR agreed with CAG of India. • FM procedures established during the proposed PRF will be supplemented into the ensuing project with specific chapters on FM to ensure ADB requirements are understood.	Continuous by the PMU. Within no later than 18 months of the effectiveness of the PRF Loan by PMU.
Accounting policies and procedures	M	The existing capacity of UDD/ DUD may be inadequate to ensure that separate books and records are maintained for all expenditures incurred on the project and necessary financial reports are prepared as required by ADB and submitted on time.	• Familiarization with all ADB compliance matters at all levels, including adequate understanding of accounting policies and FM matters shall be ensured and provided. • ADB FM team will review the draft accounting policies prior to first submission of APFS. • Training calendar to include specific hand-hold training sessions for adoption of suitable accounting policies as relevant to the PRF and finalize draft accounting policies prior to submission of first APFS of PRF. • To help the EA in ensuing project, a procedures manual on project specific actions for guidance to PMU FM staff that will be developed will include specific section on accounting policies and procedures.	Before finalization of first APFS for the PRF. All trainings from ADB to be ensured within 3 months of loan effectiveness. Within no later than 18 months of effectiveness of the PRF loan by UDD/DUD/ PMU.

Nature of Risk	Risk Assessment	Risk Description	Mitigation Measures or Action Plan	Timeframe and Responsibility
Internal audit	M	There is no internal audit function in DUD or UDD. Absence of internal audit may hamper the effective internal control monitoring. PRF being smaller in size absence of a full-fledged IA function is not a serious concern. However, IA for the ensuing project could prove critical.	• Engage a reputed external chartered accountant firm during implementation phase of PRF with its coverage and frequency in commensuration with the present PRF operations and which can be easily scaled up at the time of execution of ensuing project. TOR is at Appendix 3. The function established shall be continuous which will be useful in the ensuing project.	Within 180 days of loan effectiveness by UDD/ DUD/ PMU.
External audit	S	The submission of audit reports on ADB assisted projects are usually delayed. For on-going loans, ADB's financial reporting requirements remained largely non-complied for lack of required audit opinions by the auditors.	• Correspond with local state level, State Accountant General office for inclusion of ADB project into their annual audit plan. In case delays from State Accountant General (Audit) office is anticipated, engage a private empanelled chartered accountant firm who is independent to audit the project accounts using TOR in Appendix- 4, after obtaining a prior no objection clearance from ADB. • With the consultant support and capacity of the PMU enhanced, annual draft PFS will be prepared and available for auditor within 3 months after the end of the fiscal year so that final audit report is submitted to ADB within 6 months of the close of fiscal year. • To engage reputable audit firms for issuing good quality audit reports including a management letter- PMU to ensure sufficient budgetary allocations are available. The external audit will be conducted based on the agreed terms of reference	Finalize auditor within 60 days after loan effectiveness of the PRF project by DUD/ PMU. PMU to share first completed draft PFS with ADB 15 days prior to submission.

Nature of Risk	Risk Assessment	Risk Description	Mitigation Measures or Action Plan	Timeframe and Responsibility
			between ADB and CAG of India.	
Information systems monitoring and Reporting	M	Accounts are maintained in manual set of books. In the absence of automated systems - completeness, accuracy and reliability of financial information and their reporting is impaired. Further this may cause significant delays in the preparation of desired project financial statements. Risk of loss of data integrity is also high. UDD has no set mechanisms for periodic reporting and reconciliation therefore data completeness, accuracy and integrity cannot be ensured in the entirety.	• To overcome manual processing of accounts, the PRF will adopt tally accounting software to meet its day-to-day business data processing needs and to support and record accounting information related to project transactions. • Adjustment in the tally will be made to ensure expenditure categories used in the financial reports are consistent with expenditure category used in PAM (consultancy only on PRF). • Establish mechanisms in tally to reconcile project accounts with ADB disbursement records. • UDD, through its PMU and with the support of consultants for project management, will prepare and submit quarterly project progress reports to ADB within 30 days after the end of each quarter, with details on the status of loan utilization, counterpart funds, contract award, and disbursements, using the template of quarterly project progress report included in Appendix 5**.**	On continuous basis during PRF project period by UDD/ DUD/ PMU.
Overall Control Risk	**M**			
Overall Risk	**M**			

ADB = Asian Development Bank, APFS = audited project financial statement, CAG = Comptroller and Auditor General, DUD = Department of Urban Development, FM = financial management, GOI = Government of India, GON = Government of Nagaland, M = moderate, PAM = project administration manual, PFS = project financial statement, PMU = project management unit, PRF = project readiness financing, S = substantial, TOR = terms of reference, UDD = Urban Development Department.
Source: Asian Development Bank.

C. Disbursement

11. The DUD will disburse the project readiness financing loan proceeds following the ADB *Loan Disbursement Handbook* (2017, as amended from time to time), and detailed arrangements agreed between the government and ADB. Online training for project staff on disbursement policies and procedures is available.[3] Project staff is encouraged to avail of this training to help ensure efficient disbursement and fiduciary control.

12. **Disbursement Procedures.** Given the substantial risks on FM, the PRF will generally follow reimbursement method of disbursements using full documentation method. Based on improvement of FM capacity statement at the PMU, the project may use statement of expenditure (SOE) procedures, requiring no submission of supporting documents to claim disbursements from ADB.[4] In case SOE procedure for reimbursement of eligible expenditures are used, SOE ceiling of US$100,000 shall be used on individual payments without taking into account ADB's share of expenditure. Supporting documents and records for the expenditures claimed under the SOE procedures (if used) should be maintained and made readily available for review by ADB's disbursement and review missions or upon ADB's request for submission of supporting documents on a sampling basis and for carrying out independent audits by independent project auditors.

13. ADB's advance fund procedure or direct payment procedures are not envisaged unless financial resources are found inadequate to meet project expenditure needs. These procedures are subject to approval by the borrower.

14. The PMU established at the DUD will be led by a Project Director who will be the authorized signatory for withdrawal applications. The PMU will include qualified accountants who will be responsible for: (i) collecting supporting documents; (ii) preparing the withdrawal applications for signature by the Project Director; and (iii) uploading the draft withdrawal applications on ADB's Client Portal for Disbursements[5] system to Controller of Aid Accounts and Audit[6] for finalization and approval.

15. Before submitting the first withdrawal application, the government should submit to ADB sufficient evidence of the authority of the person who will sign the withdrawal applications on behalf of the government, together with the authenticated specimen signatures of each authorized person. The minimum value per withdrawal application is stipulated in ADB's *Loan Disbursement Handbook*. Individual payments below such amount should be paid by the DUD; and subsequently claimed from ADB through reimbursement, unless otherwise accepted by ADB. The borrower should ensure sufficient category and contract balances before requesting disbursements. Use of ADB's Client Portal for Disbursements system is for submission of withdrawal applications to ADB and will be considered mandatory.

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[3] Disbursement eLearning. http://wpqr4.adb.org/disbursement_elearning.

[4] ADB may approve the SOE procedure based on an assessment of adequate administrative and accounting capacity of DUD taking into account quality submission of withdrawal applications and appropriate auditing arrangements as stipulated in ADB project agreement. Technical inputs will be sought from INRM Disbursement and FM units on the disbursement and financial management areas, respectively. Use of advance fund procedure will be subject to the PMU's confirmed FM capacity to manage the funds.

[5] ADB's Client Portal for Disbursements system facilitates online submission of withdrawal applications to ADB, resulting in faster disbursement. The forms to be completed by the borrower are available at ADB. Guide to the Client Portal for Disbursements.

[6] Aid Accounts and Audit Division, Department of Economic Affairs, Government of India.

16. No further disbursements will be made from the PRF account upon refinancing under an ensuing loan. The PRF loan amount and accrued financing charges are paid out under the PRF cost category of the ensuing loan that will refinance the PRF loan. Provided the following costs are eligible expenditures, the ensuing loan will finance (i) costs incurred under PRF that have not yet been paid from the PRF account by the refinancing date, (ii) costs for activities initiated under PRF and continuing beyond the refinancing date, and (iii) costs incurred during PRF implementation but ineligible under PRF.

D. Accounting and Auditing

17. The DUD through its PMU will maintain separate PRF project accounts and records by funding sources and application with details of expenditures incurred on the PRF project. The PRF will primarily incur expenditure on consulting services. Separate bank accounts can be established to distinguish project related expenses and expenditures incurred on other activities of UDD/DUD. ADB expects audited financial statements for its project prepared in accordance with International Public Sector Accounting Standard (IPSAS) or accounting standards prescribed by nationally constituted professional accounting organization.[7] For simplicity the PRF will prepare ADB's project financial statements (PFS) using all relevant templates meant for entities following cash-based accounting system provided in the TOR of ADB assisted projects agreed with borrower, DEA and supreme audit institution, Comptroller and Auditor General (CAG) of India.

18. The audit report including scope of audit shall be as per terms defined under the TOR scope covering both ADB and counterpart share of expenditure incurred on the project. The auditor will use the audit report suggested template Annexure 13 of the TOR. Accordingly, the expected disclosures in the APFS will include at least the following:

(i) Statement of cash receipts (by financing source) and payments (by expenditure category) for the current reporting period, past reporting period, and cumulative to date.
(ii) SOE by category and financier for the year/period end.
(iii) Statement of disbursement, disclosing all funds claimed from ADB by disbursement method, total expenditure claimed for the current reporting period, past reporting period, and cumulative to date. The notes of the financial statements should include a detailed list of all withdrawal applications submitted to ADB, and the amounts paid by ADB as follows: (a) withdrawal application number; (b) the amount claimed and currency; (c) date submitted; and (d) disbursement method and the amount disbursed by ADB.
(iv) Notes on APFS disclosing significant accounting policies followed at the project including other relevant explanatory notes and explanations as appropriate.
(v) Statement of disbursements claimed under SOE procedures during reporting period by giving reference to withdrawal application numbers.
(vi) A statement of appropriation vs. actual expenditures. Any significant variances must be duly explained.
(vii) Expenditure by output/components for the current reporting period, past reporting period and cumulative to date.
(viii) Management assertion letter from project management issued to the auditor.

[7] India's professional accounting body is Institute of Chartered Accountants of India (ICAI) which provides overall guidance on preparation of financial statements under both cash based and accrual-based accounting system for urban local bodies and all other entities.

19. Auditor for the PFS shall be an independent auditor, which can be either from audit-office of Accountant General (A&E), Nagaland or any private independent chartered accountant having certificate of practice and registered with Institute of chartered accountant of India. Scope of audit shall be strictly in accordance with TOR document. Audit report issued shall be as per audit-report template provided in Annexure 13 of the TOR as guidance. Additionally, an auditor is required to issue a management letter on internal control deficiencies that have been identified during the audit process, if any. In case no internal control deficiencies have been found, a statement in auditor's letter head that "no deficiencies have been found" during the audit period will need to be issued. To facilitate timely-audit, DUD shall ensure draft PFS be ready within 90 days of close of the fiscal year during project-implementation. In case delays are anticipated to commence audit by the government auditor PMU may engage reputable private independent chartered accountants. For audit purposes PMU to initiate correspondence with Accountant General (A&E) within 15 days of loan effectiveness to include ADB PRF loan in their annual plan requesting them to communicate its planned timelines for conducting audit of the PRF project. In absence of any responses within 15 days of initiating correspondence, PMU to initiate alternate selection process for an external private independent auditor. The action for engagement of external private independent auditor is to be completed within 60 days of loan effectiveness. The auditor's opinion in report shall be in English with complete documents comprising an audit report and APFS shall be submitted to ADB within 6 months of close of fiscal year.

20. GON shall enable ADB, upon ADB's request, to discuss the PFS with their auditors appointed by the state or DUD, and shall authorize and require any representative of such auditors to participate in any such discussions requested by ADB. This is provided that such discussions shall be conducted on in presence of an authorized officer of the state having sufficient understanding on audit and accounting related matters, unless the state shall otherwise agree.

21. ADB has made the GON, UDD and DUD aware on ADB's approach to delayed submission of APFS and the requirements for satisfactory and acceptable quality of the APFS.[8] ADB reserves the right to require a change in the auditor (in a manner consistent with the constitution of the borrower) or for additional support to be provided to the auditor, if the audits required are not conducted in a manner satisfactory to ADB or if the audits are substantially delayed. ADB reserves the right to verify the financial accounts to confirm that its policies and procedures were followed when the share of ADB's financing was used.

E. Public Disclosure

22. ADB's Access to Information Policy 2018 will guide the public disclosure of the audited project financial statements, including the auditor's opinion on the project financial statements.[9] After the review, ADB will disclose the audited project financial statements and the opinion of the

[8] ADB's approach and procedures regarding delayed submission of audited project financial statements:
(i) When ADB does not receive the audited project financial statements by the due date, ADB will write to the executing agency to inform it that (a) the audit documents are overdue; and (b) if they are not received within the next 6 months, requests for new contract awards and disbursement such as new replenishment of advance accounts, processing of new reimbursement, and issuance of new commitment letters will not be processed.
(ii) When ADB does not receive the audited project financial statements within 6 months after the due date, ADB will withhold processing of requests for new contract awards and disbursement such as new replenishment of advance accounts, processing of new reimbursement, and issuance of new commitment letters. ADB will inform the executing agency (a) of ADB's actions and (b) that the loan may be suspended if the audit documents are not received within the next 6 months.
(iii) When ADB does not receive the audited project financial statements within 12 months after the due date, ADB may suspend the loan.

[9] Access to Information Policy: https://www.adb.org/documents/access-information-policy.

auditors on the project financial statements no later than 14 days of ADB's confirmation of their acceptability by posting them on its website. The management letter, additional auditor's opinion, or any audit qualifications in APFS will not be disclosed.[10]

V. PROCUREMENT AND CONSULTING SERVICES

23. The procurement risk is classified as category B as there is no pilot testing activity being financed under this PRF loan. However, as part of the procurement arrangement assessment exercise, the agency's preliminary procurement assessment was conducted in July 2021. Based on the assessment findings, it has been observed that the UDD was executing urban projects in Nagaland as a part of ADB-funded North Eastern Region Capital Cities Development Investment Program. Although DUD does not have any prior experience of working with ADB or any other multilateral development banks, DUD is carrying out procurement of consultants and other services for projects funded by state/ central government. DUD has established processes of procurement.[11] DUD has already initiated the recruitment of consultants in accordance with ADB guidelines. Upon approval of advance contracting under the proposed PRF by ADB, the DUD is efficiently conducting recruitment of consulting firm following ADB's Procurement Policy, 2017 and Procurement Regulations, 2017 (as amended from time to time), which demonstrate adequate capacity of the implementing agency to recruit consulting services. The consultants recruited under PRF will further support the UDD and enhance their procurement capacity to meet ADB's procurement requirements.[12] If required, ADB will consider providing training for procurement capacity building to DUD staff.

A. Advance Contracting and Retroactive Financing

24. All advance contracting will follow ADB Procurement Policy, 2017 and Procurement Regulations, 2017 (as amended from time to time) and its associated staff instructions. The issuance of consulting services recruitment notice under advance contracting will be subject to ADB approval. ADB has advised the borrower, the UDD, GON and DUD that approval of advance contracting does not commit ADB to finance the PRF.

25. **Advance contracting.** Advance contracting is requested for procurement of consulting services. The various steps would include preparation of RFP and technical and financial evaluation of consulting firm for the project, design and management consultants (PDMC) and four (4) individual consultants.

26. **Retroactive financing.** Withdrawals from the loan account may be made to finance eligible expenditures incurred under the PRF before the effective date, but not earlier than 12 months before the date of the loan agreement for this PRF, in connection with items to be retroactively financed, subject to a maximum amount equivalent to 20% of the loan amount.

[10] Such information generally falls under public communications policy exceptions to disclosure (ADB. 2011. *Public Communications Policy 2011: Disclosure and Exchange of Information*. Manila [para. 97(iv–v]).

[11] Loan No's 2528-IND and 2834-IND: North Eastern Region Capital Cities Development Investment Program (Project-1 and 2).

[12] ADB Procurement Policy–Goods, Works, Nonconsulting and Consulting Services (2017, as amended from time to time); Procurement Regulations for ADB Borrowers–Goods, Works, Nonconsulting and Consulting Services (2017, as amended from time to time); accompanying Guidance Note(s) on Procurement (June 2018, as amended from time to time); latest applicable standard bidding document(s)–SBD(s); etc.

B. Procurement of Consulting Services

27. A consulting firm and four (4) individual consultants will be recruited under the PRF. DUD is in the process of selecting the consulting firm for the PDMC following the ADB Procurement Regulations for Goods, Works and Consulting Services (2017, as amended from time to time) and its associated staff instructions. The PDMC consulting firm will be procured on quality- and cost-based selection method with quality-cost ratio of 90:10, to ensure high quality of technical outputs under PRF.

C. Procurement of Goods and Civil Works

28. Procurement of goods and civil works/ pilot-testing is not envisaged under the proposed PRF.

D. Procurement Plan

29. The procurement plan is at Appendix 1.

E. Consultant's Terms of Reference

30. The TOR for expected outputs of the consulting services package (PDMC consulting firm) recruited by the implementing agency has been agreed with ADB. PDMC will prepare a sector strategy and city investment plans; assist UDD and DUD in identifying subprojects; preparation of feasibility studies and detailed project reports; undertaking project procurement risk assessment and preparation of Strategic Procurement Plan, Contract Management Plans, safeguards and gender documents, bidding documents, etc.; carry-out institutional reviews, outline requisite reform actions and scope of institutional strengthening component to ensure sustainability of assets, institutional strengthening and capacity building activities, etc.; and also support improving the readiness for ensuing project in line with ADB guidelines. The duration of assignment for the PDMC consulting firm would be 24 months with 115 person-months inputs of national key experts and 303 person-months inputs of national support staff. PDMC is expected to be mobilized from January 2022 (will be further confirmed during contract negotiation process). Individual experts will be deployed to support in technical, financial and safeguards aspects. The terms of reference for all consulting services are at Appendix 2.

VI. SAFEGUARDS

31. The geography of State of Nagaland is mainly characterized as mountainous terrain and forest zones, and it is likely that some sections of the selected projects may be in the vicinity of restricted/forest areas. However, the project will avoid subprojects in, or close to, national parks, wildlife sanctuaries, or any other environmentally sensitive areas. The environmental impacts under the selected subprojects may not be major and are expected to be minimized to an acceptable level through mitigation measures. The safeguard category of ensuing project is expected to be B for environment, which will be firmed-up during PRF implementation.

32. The safeguard category of ensuing project is expected to be B for involuntary resettlement, (to be firmed-up during PRF implementation), as the sub-projects are less likely to require requiring significant resettlement and land acquisition. Resettlement plans will be prepared by the consulting firm and will be in line with engineering designs prepared under the PRF project. The Indigenous People's category is expected to be C as sub-projects are likely in urban/peri-urban area so no impact on Indigenous Peoples is envisaged (to be firmed-up during PRF

implementation). A grievance redress mechanism would be established at the PMU for complaints arising due to PRF activities if any.

33. **Gender Equality and Social Inclusion (GESI).** GESI issues and corresponding actions will be identified during PRF implementation and will be included in the ensuing project, Gender categorization of the ensuing project will be finalized by the gender specialists during project due diligence and project preparation, when information on the exact nature and extent of sub projects/works and proposed actions/measures is available.

34. **Prohibited investment activities.** Pursuant to ADB's Safeguard Policy Statement (2009), ADB funds may not be applied to the activities described on the ADB Prohibited Investment Activities List set forth in Appendix 5 of the Safeguard Policy Statement.

VII. PERFORMANCE MONITORING

A. Monitoring

35. **Project readiness financing project performance monitoring.** The UDD will monitor PRF project performance semiannually and provide consolidated reports to ADB. These reports will include: (i) each activity's progress measured against the implementation schedule; (ii) key implementation issues and solutions; (iii) an updated implementation plan. To ensure PRF project continue to be both viable and sustainable, the UDD should adequately review PRF project financial statements and the associated auditor's report. In the event that an ensuring loan is not approved, the UDD will submit a project completion report to represent the performance of completed PRF, to ADB within 6 months of physical completion of PRF project.[13]

36. **Compliance monitoring.** The UDD will monitor compliance of loan covenants, including that relating to policy, legal, financial, economic, environmental, and others and ensure compliance with loan covenants and assurances. All non-compliance issues, if any, will be updated in quarterly progress reports together with remedial actions. ADB review missions will also monitor the status of compliance with loan covenants and raise the noncompliance issues with the UDD and agree on remedial action.

B. Reporting

37. The UDD will provide ADB with:

(i) quarterly progress reports on the PRF project in a format consistent with ADB's project performance reporting system;
(ii) reports prepared by the consultants under the PRF project;
(iii) consolidated annual reports, including (a) progress achieved by output measured against the performance targets, (b) key implementation issues and solutions, and (c) an updated implementation plan for the next 12 months;[14] and
(iv) PRF project accounts, and auditors' report thereon.

[13] ADB. 2018. Project Completion Report for Sovereign Operations. *Project Administration Instructions*. PAI 6.07A. Manila.

[14] The regional departments will present the performance of the completed PRF in the project completion report of the ensuing loan.

VIII. ANTICORRUPTION POLICY

38. The Government of India, the GON, the UDD and the DUD are advised of ADB's Anticorruption Policy (1998, as amended to date). Consistent with its commitment to good governance, accountability, and transparency, implementation of the project shall adhere to ADB's Anticorruption Policy. ADB reserves the right to investigate, directly or through its agents, any violations of the Anticorruption Policy relating to the PRF project following ADB's Integrity Principles and Guidelines.[15] In this regard, investigation of government officials, if any, would be requested by ADB to be undertaken by the government. All contracts financed by ADB will include provisions specifying ADB's right to audit and examine the records and accounts of the executing agency and all PRF project contractors, suppliers, consultants, and other service providers. This includes the examination of project outputs, assets, and all other information that may be considered relevant for audit or inspection by ADB regardless of project completion, termination, or cancellation. Firms or individuals on ADB's anticorruption debarment list are ineligible to participate in activities that are financed, supported, or administered by ADB; and may not be awarded any contracts under the PRF project.[16] To support these efforts, relevant provisions of ADB's Anticorruption Policy are included in the project readiness loan agreement and any bidding documents under the PRF project.

IX. ACCOUNTABILITY MECHANISM

39. People who are, or may in the future be, adversely affected by the PRF project may submit complaints to ADB's Accountability Mechanism. The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted PRF projects can voice and seek a resolution for their problems, as well as report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the Accountability Mechanism, affected people should make an effort in good faith to solve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, should they approach the Accountability Mechanism.[17]

X. RECORD OF CHANGES TO THE PROJECT ADMINISTRATION MANUAL

40. All revisions and/or updates during implementation of project readiness loan should be retained in this section to provide a chronological history of changes to implemented arrangements recorded in the project administration manual, including a revision to contract awards and disbursement S-curves.

[15] ADB. 2015. *Integrity Principles and Guidelines (2015)*. Manila.
[16] ADB. Anticorruption and Integrity.
[17] ADB. Accountability Mechanism.

Appendix 1

Procurement Plan

Basic Data

Project Name: Nagaland Urban Infrastructure Development Project		
Project Number: 54166-001	**Approval Number:**	
Country: India	**Executing Agency:** Government of Nagaland acting through its Urban Development Department	
Project Procurement Classification: Category B	**Implementing Agency:** Directorate of Urban Development	
Project Procurement Risk:		
Project Financing Amount: US$ 2,500,000 **ADB Financing:** US$ 2,000,000 **CoFinancing (ADB Administered):** **Non-ADB Financing:** US$ 500,000	**Project Closing Date:** 28 February 2025	
Date of First Procurement Plan: 15 Jul 2021	**Date of this Procurement Plan**: 15 Jul 2021	
Procurement Plan Duration (in months): 18	**Advance Contracting:** Yes	**e-GP:** No

A. Methods, Review and Procurement Plan

Except as the Asian Development Bank (ADB) may otherwise agree, the following methods shall apply to procurement of goods, works, and consulting services.

Consulting Services	
Method	**Comments**
Quality- and Cost-Based Selection for Consulting Firm	Prior review (FTP 90:10)
Competitive for Individual Consultant Selection	Prior Review

B. Lists of Active Procurement Packages (Contracts)

The following table lists goods, works, and consulting services contracts for which the procurement activity is either ongoing or expected to commence within the procurement plan duration.

Goods and Works

Package Number	General Description	Estimated Value (in US$)	Procurement Method	Review	Bidding Procedure	Advertisement Date (quarter/year)	Comments

Consulting Services

Package Number	General Description	Estimated Value (in US$)	Selection Method	Review	Type of Proposal	Advertisement Date (quarter/year)	Comments
PRF-NGL/DUD/ PDMC-01	PDMC consulting firm	1,589,000	QCBS	Prior	FTP	Q3 / 2021	Type: Firm Assignment: National Quality-Cost Ratio: 90:10 Advance Contracting: Yes
PRF-NGL/DUD/ IC-01	Urban Development Expert (Project Manager)	146,400	Individual Consultant Selection	Prior		Q4 / 2021	Type: Individual Assignment: National Expertise:

							Urban Development Advance Contracting: Yes
PRF-NGL/DUD/IC-02	Environment Safeguards Expert	53,100	Individual Consultant Selection	Prior		Q2 / 2022	Type: Individual Assignment: National Expertise: Environment Safeguards Advance Contracting: Yes
PRF-NGL/DUD/IC-03	Social Safeguards Expert	53,100	Individual Consultant Selection	Prior		Q2 / 2022	Type: Individual Assignment: National Expertise: Social Safeguards Advance Contracting: Yes
PRF-NGL/DUD/IC-04	Financial Management Expert	54,800	Individual Consultant Selection	Prior		Q1 / 2022	Type: Individual Assignment: National Expertise: Financial Management Advance Contracting: Yes

C. List of Indicative Packages (Contracts) Required Under the Project

The following table lists goods, works, and consulting services contracts for which procurement activity is expected to commence beyond the procurement plan duration and over the life of the project (i.e., those expected beyond the current procurement plan duration).

Goods and Works

Package Number	General Description	Estimated Value (in US$)	Procurement Method	Review	Bidding Procedure	Comments

Consulting Services						
Package Number	**General Description**	**Estimated Value (in US$)**	**Selection Method**	**Review**	**Type of Proposal**	**Comments**

Appendix 2

TERMS OF REFERENCE FOR PROJECT DESIGN AND MANAGEMENT CONSULTANT (PDMC)

I. PURPOSE AND OBJECTIVES

1. The Government of Nagaland (GoN), has applied for financial assistance through the Department of Economic Affairs, Ministry of Finance, Government of India (hereinafter referred as the Borrower) under the project readiness financing (PRF) facility from the Asian Development Bank–ADB (the "Bank") in the form of a "loan" toward the cost of "India: Improving Readiness of Infrastructure Development Projects in Nagaland" (hereinafter referred as PRF Project)The purpose of the PRF loan is to prepare investment ready integrated infrastructure projects for urban sector components in district headquarter towns (DHTs) in Nagaland. The main outcome under the PRF would be:

(i) preparation of urban strategy for integrated infrastructure development in 12 DHTs;[18]

(ii) improved readiness of prioritized projects in the identified urban areas(amongst 12 DHTs, covering key economic/border trade centers), leading to increased external/donor investments in infrastructure projects; and

(iii) faster and more efficient development of infrastructure projects, better management of infrastructure assets, and strengthened capacity of urban development, municipal affairs, and public health engineering agencies to deliver urban infrastructure services.

2. The key objectives towards preparation of investment-ready infrastructure projects through PRF are:

(i) integrated urban vision/ policy, strategic planning, and prioritization of subprojects;

(ii) facilitate improved project readiness, through feasibility studies, detailed project reports (DPRs), and other project preparation activities; and

(iii) strengthen institutional capacity of relevant GoN agencies, to plan, develop, implement, and manage projects and sustainability of investments.

3. The consultants recruited under the PRF, in close coordination with Urban Development Department (UDD), Government of Nagaland, and Directorate of Urban Development (DUD), including Directorate of Municipal Affairs (DMA) and Public Health Engineering Department (PHED), and ADB, will support delivery of following PRF loan outputs:

(a) **Output 1: Sector strategy and city investment plans prepared.** Output 1 will be delivered through:

  (i) supporting improved urban infrastructure plans by preparing and/or strengthening urban strategy, city investment plans and action plans for integrated development of infrastructure in 12 DHTs;

  (ii) developing a prioritization matrix with multiple indicators to assess and prioritize the infrastructure components under urban sector; and

  (iii) phasing investments in prioritized urban areas for the ensuing subproject(s).

(b) **Output 2: Feasibility study, detailed engineering designs, and due diligence of priority subprojects completed.**Output 2 will be achieved by:

[18] The 12 DHTs are: (i) Kohima (also State Capital); (ii) Dimapur; (iii) Mokokchung; (iv) Wokha; (v) Tuensang; (vi) Zunheboto; (vii) Mon; (viii) Phek; (ix) Peren; (x) Kiphire; (xi) Longleng; and (xii) Noklak.

(i) undertaking necessary feasibility studies and detailed engineering design tasks for the preparation of detailed project reports;[19]

(ii) conducting due diligence to cover the technical, economic, financial, environmental and social safeguard, gender equality and social inclusiveness, impact of coronavirus disease (COVID-19), and climate change and disaster risk aspects of the priority subprojects;[20]and

(iii) undertaking project procurement risk/ capacity assessment, strategic procurement study (including contract management support requirement assessed, and contract management plans prepared) to identify contract packaging with suitable contract modalities, procurement plans, and bid documents; and supporting the bidding process.[21]

(c) **Output 3: Institutional capacity developed.** Output 3 will be delivered by:

(i) carrying out an institutional and organizational review to determine the project pre-implementation capacity building activities for the executing and implementing agencies of the ensuing project(s) in areas such as safeguards, procurement, gender equality and social inclusion, financial management, and contract management;

(ii) establishing institutional mechanisms and processes for undertaking investment-ready infrastructure projects;

(iii) reviewing institutional and financial capacities for planning, implementation and operation and maintenance practices in both the state level institutions as well as at the urban local body level;

(iv) review municipal finance and financial management status at the ULB level;

(v) prepare strategy for institutional and financial strengthening, including augmenting own source revenue through tax and non-tax reforms at the ULB level, keeping in view the socio-political scenario in the state (short-term/ medium-term/ long-term); and

(vi) suggest governance performance requirements/ framework in terms of outlining requisite reform actions and the scope of the institutional strengthening component for the ensuing project(s) to ensure the sustainability of assets.

II. BACKGROUND AND RATIONALE

4. The state of Nagaland is located in northeastern India. The majority of the people in Nagaland depend on agriculture for their livelihood, as evident from Census of India, 2011 that out of the 76% of main workers, 60% are engaged in agrarian occupation, with just over 1% working in household industries. The primary sector is characterized with low productivity, and implies that the ability of this sector to absorb the educated unemployed is limited. The Nagaland Vision 2030 (prepared in 2015–2016) adopts the approach "to focus on the comparative and competitive advantage of the state, where presently the agricultural sector is identified to have the main potential. Simultaneously, enabling environments have to be created so that industrialization and urbanization take place in the mid- term context, fully utilizing its rich natural resources as also its advantageous geographical location for vibrant trade and commerce to emerge. These processes have to be accompanied by focused development, upgradation and maintenance of infrastructure: physical, social and financial, so that the true economic potentials

[19] The detailed project reports will meet the national standards, codes, and/or best practices include detailed cost estimates, good for construction drawings, and necessary supporting documentation in formats accepted by ADB for each selected subproject.

[20] This will include due diligence of detailed project reports prepared by the Government of Nagaland.

[21] Procurement Risk Framework–Guidance Note on Procurement (June 2018, as amended from time to time); Strategic Procurement Planning–Guidance Note on Procurement (June 2018, as amended from time to time); Contract Management–Guidance Note on Procurement (June 2018, as amended from time to time); relevant and latest applicable SBD(s) (with required addendum wording for HS COVID-19 Plan) and related user guide(s), and RFQ/ SRFP issued by ADB; etc.

of Nagaland are realized in the next fifteen years. The state has potential in terms of developing tourism-based service sector however the enabling infrastructure need to be in place which is lacking at present.

5. A high rate of literacy at nearly 80% in Nagaland (Census, 2011) is an encouraging factor towards the possibility of strengthening of economic potential not only through development of secondary and tertiary/ service sectors, but as well from support to primary sector, to achieve balanced development, both in urban and rural areas.[22] Further, the state has also recorded a high decadal growth rate of 66.57% in urban population as compared to the average national decadal growth rate of 31.80% (Census, 2011); with 28.86% of the state's population being urban, as compared to national average of 31.14% of degree of urbanisation.[23] Presently, the urban population is spread across 39 notified towns. However, the urbanisation pattern is somewhat skewed as the urban growth is concentrated in few key towns such as Dimapur and Kohima, and Dimapur and Kohima districts have higher percentage of urban population compared to the state's average. Overall, in Nagaland, the towns and cities are confronted by significant long-term challenges such as the abnormal demographic change, climate change, lack of basic amenities including shortage of housing, and lack of economic activities such as industries. Further, apart from Dimapur, most of the towns in Nagaland have development areas that are landslide-prone, and are reported to get severely affected by landslides during monsoon period; and poor state of urban roads with stormwater drainage is another related major area of concern in Nagaland that severely affects urban areas.

6. Many towns in Nagaland are in a stage of transition from rural to urban without possessing the requisite urban attributes. The Handbook on Urban Statistics, 2019, states "access to basic amenities like, safe drinking water, electricity, septic tank or flush and toilet facilities, are the major determinants of quality of urbanisation." While, Nagaland is reported one of the few top-ranking states for household access to electricity in urban areas, the inadequacy remains in the state–for households having access to safe and tap/ piped drinking water and septic tanks or flush/ toilets, and also for households having bathing facility within the premises, having drainage facility, and with presence of water at the place of handwashing.

7. Presently there are 39 notified urban local bodies (ULBs) in the state. Off these, 12 towns are DHTs, of which Kohima is also the state's administrative capital, while Dimapur, the largest city, is the commercial capital of the state. Besides the UDD, other departments such as PHED and Public Works Department (Roads and Bridges)–PWD (R&B), look after important urban infrastructure and services, such as water supply and urban roads; while, the UDD is responsible for urban roads, slum development projects, housing and also implementation of major urban development missions funded by national and state government.[24] Further, a key feature of urban areas in Nagaland is the separate administration of village councils located within the urban areas.[25]Thus, while in general, there is a need to have a coordinated effort between departments for proper development in urban areas; specifically, in the context of village councils located within urban areas, it calls for identification and demarcation of service area perimeter, which shall include all urban/ municipal and village councils as per the present urban agglomeration limits.

8. There has been substantial deficit in maintenance of urban services, with the focus still mainly being in Kohima and Dimapur in terms of execution of projects for urban service delivery.

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[22]Nagaland Vision 2030, by Government of Nagaland. [Economic potential: (i) primary sector–such as commercial-isation of crops to marketing to agri-businesses/agro-processing industries, and which will help ease the pressure on urban areas to create employment avenues to absorb both urban and rural educated as activities in rural areas become more lucrative; (ii) secondary sector–minerals/manufacturing/construction; (iii) and tertiary/modern service sectors, such as, finance and communication, and including education, health care, sports infrastructure, and tourism.]

[23]Handbook of Urban Statistics, 2019, by Ministry of Housing and Urban Affairs (MOHUA), Government of India.

[24] Water supply services are developed and operated, including revenue billing and collection by State Public Health Engineering Department (PHED) headed by a Chief Engineer.

[25] For example, the oldest part of Kohima is the gated village administered by Kohima Village Council. Similarly, the area where the State Secretariat is located is said to be a part of Kohima village and does not form part of Kohima municipal area.

Several reasons that could be attributed to are: (i) weak institutional capacity of the ULBs with absence of elected representative and engineering staffs (including the unavailability of skilled manpower); (ii) multiplicity of institutions in urban service delivery with very limited function carried out by the ULB (mostly waste management) and the municipal structure is relatively new (The Nagaland Municipal Act is enacted in the year 2001, and amended in 2006); (iii) conflict between tribal practices and municipal governance with complex legal and socio-political issues in Sixth Schedule Areas; (iv) the investment requirements for any infrastructure project in the state are relatively higher due to various factors like, difficult geographical terrain (mountainous), the unavailability of construction materials in the hilly region of Nagaland, and the unavailability of skilled manpower; (v) the financial status of the ULBs, which is dependent mainly on the grants and transfers from the state and central government funds, while the absence of property related tax and non-tax revenues in urban areas is affecting the cost recovery for operation and maintenance for urban basic services and user charges in most towns are limited to only water supply that is collected by PHED; etc.

9. Presently, the resource mobilization from own source is limited for the state and like other northeastern states, economy of Nagaland depends mainly on the central assistance. Although, several projects have been/are being undertaken under programs of Government of India like, SMART Cities Mission, Atal Mission for Rejuvenation and Urban Transformation (AMRUT), other urban development schemes, and ADB-assisted projects (since 2009), the infrastructure services in Nagaland still remain inadequate. The progress of Swachh Bharat Mission - Urban in Nagaland was also reported low in terms of community/ public toilets to be constructed, open defecation free status, and solid waste management (against wards with 100% door-to-door collection and 100% source segregation, and as percentage of total waste processing). Thus, there is a pressing need for investments to improve key infrastructure services like, water supply, wastewater/ septage or faecal sludge management[26], stormwater drainage and landslip protection works, solid waste management, urban roads/ footpaths/ footsteps[27], as a perquisite for exploring the full potential for an enhanced economic growth and balanced development in urban and urbanisable areas, including in key economic growth centers and/or border trade centers/ gateways, if any, in Nagaland.

10. This PRF for the Government of Nagaland would be supported and implemented through the procurement of a proposed consulting services package, herein after referred to as “project design and management consultant (PDMC)” that would be financed under the PRF loan during the estimated three (3) years of duration for PRF in 2021–2024. The duration of assignment for the PDMC would be 24 months (presently envisaged). The PDMC consulting firm is tentatively expected to be mobilized from January 2022, and will be further confirmed during contract negotiation process. The PDMC consulting firm is to be recruited to support GoN in delivering the above-stated three outputs in integrated urban sector of Nagaland. Figure 1 illustrates the indicative flow chart of the work process for PDMC assignment.

11. For the proposed PDMC consulting services package, a qualified and experienced national consulting firm is proposed to be procured on quality- and cost-based selection (QCBS) method with quality-cost ratio of 90:10, to ensure high quality of technical outputs by following the ADB Procurement Policy: Goods, Works, Non-consulting and Consulting Services (2017, as amended from time to time) and Procurement Regulations for ADB Borrowers: Goods, Works, Non-consulting and Consulting Services (2017, as amended from time to time); and the ADB Guidance Note on Procurement–Consulting Services Administered by ADB Borrowers (June 2018, as amended from time to time).

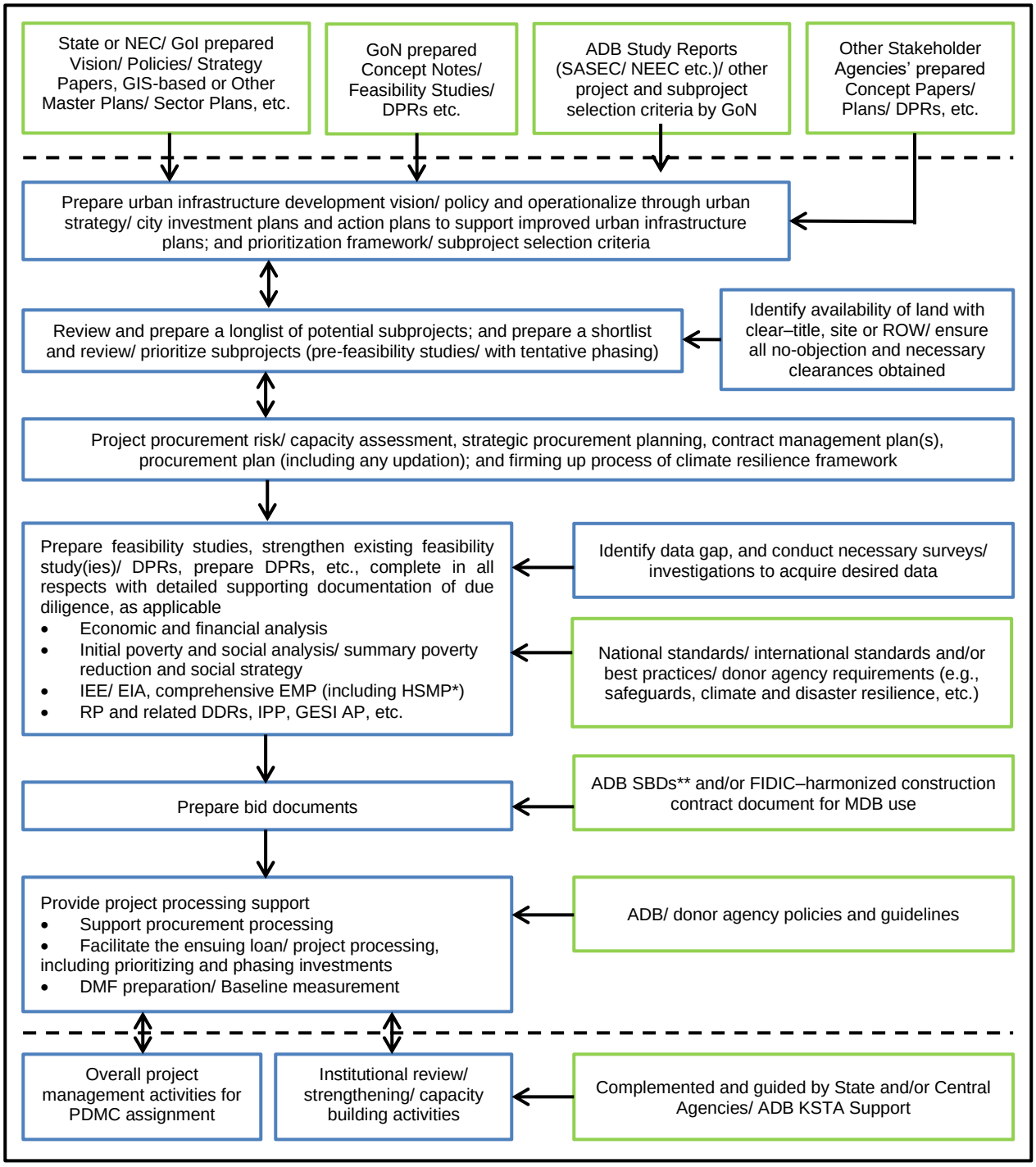
12. The PDMC will work in close coordination with the designated personnel of the following stakeholders for the consulting activities/tasks:

- executing agency (EA)–UDD, GoN, and implementing agency (IA)–DUD;

[26] Faecal sludge management is already in implementation in Kohima,
[27] Footsteps are immediate necessity to be ensured, considering hill region living conditions.

- a project management unit (PMU) is established under DUD, with Director UD as the Project Director. The PMU is constituted with members from DUD for overall urban component, and for water supply components; including any designated sector-specific project working groups formed under UDD or PMU (DUD);
- other stakeholder authorities from DHTs/ULBs/ Village Councils (VCs) etc., as applicable;
- any existing consultants, proposed/procurement-in-pipeline consulting firm(s) and/or individual consultants as sector experts, appointed by the state separately, related to the integrated urban sector works either through government funds or under the PRF;
- central agencies–North Eastern Council (NEC), Ministry of Development of North Eastern Region (MDONER), Ministry of Housing and Urban Affairs (MOHUA), etc., of Government of India (GoI), as applicable; and
- Asian Development Bank (ADB) designated staff and TA consultants/TA consulting firm at Project Development Unit, India Resident Mission.

Figure 1: Indicative Flow Chart of Work Process for PDMC Assignment



* Updated as site-specific health and safety management plan (SSHSMP) with site-specific health and safety COVID-19 plan (HS COVID-19 Plan).** Addendum wording for HS COVID-19 Plan.

ADB = Asian Development Bank, DDR = due diligence report, DMF = design and monitoring framework, DPR = detailed project report, EIA = environmental impact assessment, EMP = environmental management plan, FIDIC = International Federation of Consulting Engineers, GESI AP = gender and social inclusion action plan, GIS = geographic information system, GoI = Government of India, GoN = Government of Nagaland, HSMP = health and safety management plan, IEE = initial environmental examination, IPP = Indigenous Peoples plan, KSTA = knowledge support technical assistance, MDB = multilateral development bank, NEC = North Eastern Council, NEEC = North East Economic Corridor, PDMC = project design and management consultant, PRF = project

readiness financing, ROW = right of way, RP = resettlement plan, SASEC = South Asia Subregional Economic Cooperation, SBD= standard bidding document.

Sectoral Project Components for PDMC assignment

13. The sectoral project components identified for coverage are:

(i) **Water for all:** Safe, continuous and pressurised and metered drinking water supply services;

(ii) **Wastewater/ septage management:** Wastewater collection and treatment systems, and toward septage management based on a strategy plan for suitability of wastewater/ septage management systems, including any environment-friendly onsite-integrated/ cluster-based wastewater/ septage treatment systems, as feasible;

(iii) **Urban roads integrated with stormwater drainage and landslip protection works:** These integrated works would include:

- improving transport connectivity among urban centres and upgrading internal all-weather roads within the planning area of each town, including utility shifting/replacement/rehabilitation/upgradation;
- removing the traffic bottlenecks, junction/ intersection improvements, traffic management, signage/pavement markings, and management of parking places;
- roadside covered drains/ storm sewers; integrated with any land/ slope stabilization and landslip protection works, flood protection, etc., with any integration with retention ponds as natural filtration sinks, etc.;
- upgrading streetscape design, that makes provision for pedestrian pathways/ footpaths, road/street furniture, landscaping, street lighting/ landscape lighting, and management of urban water bodies (duly integrated as green and blue corridor continuum with the intent of development of linked open space systems/innovative use of urban open spaces with green–blue environment linkages), including those interventions that facilitate any prioritized market improvements/trade facilitation centre improvements in border towns, etc.; and
- separate stair-based access pathways/ footsteps for pedestrian use in hilly area habitation that connect to approach roads, as applicable; and

(iv) **Solid waste management.** This would cover aspects of municipal solid waste–collection, transfer and transportation, waste diversion/ resource recovery, treatment and disposal systems with/ without waste-to-energy recovery.

III. SCOPE OF SERVICES

14. In broad terms, the scope of services/key activities of PDMC assignment comprises of the following:

(i) assist the EA and IA in overall management of the PRF work and facilitate in stakeholder consultations;[1]

[1]The intent of stakeholder consultations is to gather unique perspectives and values of each stakeholder group, which would help planners, designers, and managers, to create city investments that are more relevant, in demand, and transformative, and contribute towards making cities more livable and resilient, with implementation over short-term/ medium-term/ long-term development strategies. It also provides opportunity to communicate early, garner public

(ii) prepare geographic information system (a mapping/database software), i.e., GIS-based base maps for project towns and/or prioritized sub-project work components (site locations/ alignments) amongst10 DHTs (excluding Kohima and Dimapur, but including any updation of such existing base maps as required) with utility mapping (including alongside urban roads, storm water drainage and landslip protection measures, water supply assets, community-based sanitation facilities, solid waste management community assets, etc.);

(iii) review any existing information of state-/region-/sector-level vision, policy and/or strategy papers, master plans, sector plans, etc., including any existing list of identified subprojects as available to: (a) strengthen urban vision/policy/ plans, and prepare urban strategy, city investment plans and action plans in the urban sector for 12 DHTs corresponding to a planning horizon; (b) prepare a prioritization framework based on multi-variant parameters, along with arriving at subproject selection criteria; and (c) arrive at a longlist of potential subprojects in consultation with the Client, and based on urban strategy prepared, prioritization framework and subproject selection criteria, pre-feasibility study, availability of land with clear–title, site/right-of-way, and no-objection/necessary clearances, prepare a shortlist of prioritized potential subprojects (i.e. prioritized subproject towns/subproject work components), under integrated infrastructure development in the urban sector;[2]

(iv) for relevant prioritized subprojects conduct feasibility studies, and/or prepare conceptual design, etc.(as appropriate), prior to preparation of DPRs;

(v) undertake a rapid climate risk assessment using the preliminary climate (and disaster) risk screening checklist for prioritized subprojects to establish the climate resiliency of the improved urban infrastructure plans and feasibility studies, particularly site selection and designs; and as required based on risk-level assessed, undertake detailed climate risk and adaptation assessment or CRA (*formerly climate resilient and vulnerability assessment or CRVA*), prepare climate resilience framework with risk avoidance/ minimization and climate mitigation and/or adaptation measures for adoption in detailed engineering designs/ climate proofing projects, and report compliance of climate resilience measures in such designs, through “disaster-secure engineering,” “structural norms/ non-structural measures,” etc., incorporated at subproject/project-level.[3]Review for future proofing of investments against vulnerability risks from climate change and communicable disease/epidemics like, coronavirus disease (COVID-19) pandemic, wherein (a) the Consultants shall make a high-level review of the proposed investments and recommend resilience measures against vulnerability

support through trust- and consensus-building, and often to avoid project delays. Ultimately, it would contribute to enhanced community awareness to maximize project impact, and to secure strong commitment from–municipal governments to reform, users to pay for quality services to be delivered and sustained. Further for open access to infrastructure services, this is best achieved through meaningful consultation and inclusive decision-making with affected communities throughout the project life-cycle, with a view to securing non-discriminatory access to users.

[2] Any existing outputs like, GIS-based base maps (for Kohima and Dimapur)/plans/database and potential planning proposals with broad cost estimates and investment phasing, etc., as available, would be provided by the government as an input to PDMC assignment. Also, ADB has undertaken a separate North East Economic Corridor (NEEC) Study that would be made available to the consulting firm. Any data gaps, if observed by the PMU (DUD) etc., and PDMC, which is required to undertake the PRF Project (apart from these master plans/studies and from any other government vision, policy and/or strategy papers, master plans, sector plans, study reports, etc., with regards to integrated infrastructure development sectors as available), the PDMC consulting firm’s scope of services includes any such necessary efforts to be duly made to facilitate satisfactory completion of the PDMC assignment and PRF Project.

[3]ADB. 2014. *Climate Risk Management in ADB Projects*. Manila; ADB. 2020. *Principles of Climate Risk Management for Climate Proofing Projects*. ADB Sustainable Development Working Paper Series No. 69, July 2020. Manila; etc.

from climate risks/ climate change impacts and disaster risks, and communicable disease/epidemic or pandemic; and (b) such review shall essentially include the disruptions and resultant loss of business from risks of climate change like, continuous droughts, rapid floods, extremely high temperature, and long lockdown and social distancing needs arising from pandemic, improved emergency services and healthcare infrastructure/ medical facility linkages to meet eventualities of pandemics, monitoring systems for surveillance of people and business affected by pandemics, and temporary compensation measures for loss of revenue. Collect and review data of gender-differentiated climate change and disaster impacts, when arriving at climate resilient framework, while ensuring that infrastructure should also be resilient against human made risks;[4]

(vi) undertake necessary surveys/investigations towards preparing detailed engineering design/any other design for each sub-project component, and create a database/ information repository and conduct stakeholder consultations;

(vii) undertake necessary surveys and investigations for social, poverty and gender analyses, assessment of gender equality and social inclusion (GESI) aspects, and design of GESI action plan (GESI AP)required for project preparation and design activities, duly including in its advice/ recommendations for the potential EWCDT–elderly, women, children, differently-abled, and transgender facilities, and other gender and socially inclusive approaches that can be incorporated in the design of the ensuing project;[5]

(viii) prepare comprehensive DPRs, strengthen/integrate existing DPR work components as part of comprehensive DPRs, and bid documents complete in all respects with bid-level drawings to arrive at investment ready subprojects, and good for construction drawings to arrive at investment ready subprojects; including due diligences of detailed economic and financial analysis, comprehensive environmental management plan (EMP, including health and safety management plan–HSMP[6]), initial environmental examination (IEE)/environmental impact assessment (EIA), initial poverty and social analysis/summary poverty reduction and social strategy (SPRSS), resettlement plan (RP)documentation and related due diligence reports (DDRs)/Indigenous Peoples plan (IPP), GESI AP, etc.; adopt innovation and technology use in planning and design for integrated urban development, including potential resource reuse; and/or other such documentation as may be required to access ADB/ donor funding[7], duly incorporating national standards/ benchmarks, and/or international standards and best practices in planning and design, as feasible[8], for a subproject context;

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[4]ADB. 2016.*Guidelines for Climate Proofing Investment in the Water Sector: Water Supply and Sanitation*. Manila; ADB. 2015. *Economic Analysis of Climate-Proofing Investment Projects.*Manila; ADB. 2011. *Guidelines for Climate Proofing Investment in the Transport Sector: Road Infrastructure Projects*. Manila; etc.

[5]ADB. 2012. *Handbook on Poverty and Social Analysis: A Working Document*. Manila; ADB. 2012. *Guidelines for Gender Mainstreaming Categories of ADB Projects*. Manila; etc.

[6]HSMP updated as site-specific health and safety management plan (SSHSMP), which takes into account COVID-19 related health and safety risks (i.e., with HS COVID-19 Plan) should be developed in accordance with the Borrower's policy, legislation and regulatory requirements onCOVID-19 prevention and control, and should be approved by the Employer prior to mobilization of site work, with information to ADB. In the absence thereof, the HS COVID-19 Plan should be updated in accordance with international good practice guidelines [ADB Sustainable Development and Climate Change Department (SDCC)Good Practice Advisory Note: *Protecting the Safety and Wellbeing of Workers and Communities from COVID-19 Risks in ADB-funded Projects*, 21 July 2020, as amended from time to time].

[7] All reports shall be prepared in ADB accepted formats and shall comply with the ADB approval requirements.

[8] The intent is to arrive at innovative interventions/ solutions through a comprehensive DPR that adopts (i) smart growth principles complemented by diversity/ equity/ inclusion and gender mainstreaming in planning, while considering

(ix) undertake project procurement risk/ capacity assessment, strategic procurement planning (SPP) study (including identifying contract management support required, during SPP workshop), and assist EA/ IA in preparation of contract management plan(s), preparation of procurement strategy, preparation/ updation of procurement plan, and support in bid process management, bid evaluation and procurement processing for selection of Contractors for subproject contract packages;

(x) assist in investment planning, financial due diligence and financial management planning; and PRF implementation planning along with project performance monitoring system, including prioritizing and phasing investments finally based on the progress on reforms implementation in relevant institutions/ ULBs w.r.t. the prioritized urban areas identified for ensuing infrastructure investment project;

(xi) conduct a review of institutions for the purpose of institutional strengthening and capacity building:

- compile past and ongoing institutional and financial reform initiatives and their achievements in the integrated urban sector–both at the state level as well as at the ULB level, under GoI/ multilateral funding institution–MFI funding in the state;
- carrying out the sector analysis, review of institutions related to infrastructure development sectors for various functions (a) policy, plan, strategy; (b) development and maintenance of infrastructure; (c) operation and maintenance (O&M); (d) monitoring; and (e) financing, issues, possible options and recommendations for an institutional framework, outline requisite reform actions(like, domestic or municipal resource mobilization, e.g., basic instruments like, GIS-based land and any property tax registration systems, examine the possibility for rollout of property tax, land use planning, and building regulations) in the urban strategic studies and at project preparation stage, including synergies with XV Finance Commission report recommendations, and initiatives for institutional strengthening, based on best practices in other States;
- establish institutional mechanism in place and processes for investment ready infrastructure projects;
- review of public finance, budgetary allocation and expenditure, to assess the borrowing capacity;
- review institutional/ organization structure of UDD/ DUD/ DMA, PHED, ULB level, etc. in the infrastructure development sector and identify measures for introducing institutional reforms, capacity building and strengthening organizational effectiveness for relevant government agencies to plan, develop, implement, and manage projects, as well as sustainability of investments;
- review cost recovery mechanisms/ own source revenue generation, municipal governance structure (municipal cadre system/ staffing pattern/

gender equality and social inclusion aspects/ gender-responsive design features; and (ii) are–environment-friendly (adopts in design–low impact development/ green infrastructure/ resource conservation principles etc.), accessible (adopts in design–universal access/ barrier free-friendly built-environment concepts/ planning and implementation of vision zero strategy, etc.), climate resilient (including climate proofing of existing infrastructure), economically viable/ financially sound and ensures operational sustainability of assets as envisaged considering subproject life-cycle period, etc.

skill-set), governance performance requirements, etc., and arrive at reform measures to enhance urban governance/ infrastructure service delivery;[9]

- prepare an institutional capacity development plan with necessary knowledge support materials for concerned stakeholder authorities; and during the PDMC assignment, initiate the institutional strengthening/capacity building process by organizing and conducting few necessary/priority program sessions on training/workshops/seminars/conferences, etc., in coordination with PMU(DUD), including undertaking any on-the job training sessions (the detailed implementation of the institutional strengthening/capacity building programs outlined under the PDMC assignment would be undertaken through the ensuing loan/project);
- develop comprehensive feedback mechanism for training participants for experience, to be recorded, monitored, appraised and evaluated; including development of knowledge materials and knowledge database/repository for the infrastructure development sector in Nagaland; and
- explore for use of technology/ innovation in infrastructure service delivery, including considering impacts of COVID-19 pandemic;[10]

(xii) facilitation support to EA/ IA on securing funding from ADB and other financial resources, ensuing loan/project processing, along with developing design and monitoring framework (DMF), including related baseline measurement;[11] and

(xiii) any other handholding consulting services/ tasks typically required in implementation of integrated cross-sector infrastructure development projects.

15. The PDMC consulting firm will establish its office in Kohima to execute and manage the said consulting services contract. However, the mobilization of the required staff of PDMC consulting firm will be discussed and agreed upon at the stage of contract negotiation process, and would require approval of the Client before actual mobilization. In addition:

(i) Due to the outbreak of COVID-19, the commencement and completion dates and other implementation arrangements for this assignment are to be considered as indicative only. The final dates and implementation arrangements will be agreed with the first-ranked firm at contract negotiations taking into consideration the prevailing situation with COVID-19 at that time.

(ii) The consultant should follow Health and Safety Measures as below (equally applicable for non-consulting services):

- For their own health and safety, the consultant(s) should follow the regulations and guidance on COVID-19 health and safety prevention and controls issued by the Client's government, or international good practices in the absence of national provisions.

[9]The intent is not only the strengthening of urban service delivery, and financial and operational sustainability through policy measures; but also, to explore to strengthen the accountability and transparency of the government, including through greater cooperation and coordination with civil society/ private sector participation and users of public services–for enhanced cost recovery collections and targeted compliances. Sound infrastructure governance over the life-cycle of the project is a key factor to ensure long-term cost-effectiveness, accountability, transparency, and integrity of infrastructure investment.

[10]Advanced technologies are an important component for new and existing assets and can help to improve data availability, to monitor infrastructure use, performance, and safety.

[11]ADB. 2020. *Guidelines for Preparing a Design and Monitoring Framework*. Manila.

- The Client/ Firm must, where possible, replace field inputs requiring travel and attendance of meetings with video and teleconferencing. Consultants who are required to visit the project site should be briefed on the approved site-specific health and safety management plan (which should be updated to include COVID-19 specific elements) prior to entering the site and comply with the provisions of it.
- The consultant is responsible for their own health and safety in relation to the consulting services assignment and shall comply with the country specific requirements and regulations in relation to COVID-19.

16. The PDMC shall execute the consulting assignment by following broad chronological order as below:

(i) first (a) conduct the institutional assessment and prepare comprehensive development framework, along with strengthened infrastructure vision/policy/ strategy/ plans to be followed by identification of investment projects for DPR preparation, prepare city investment plans and action plans to support improved urban infrastructure plans; and (b) complete the preparation of prioritization matrix/subproject selection criteria in consultation with and approval of PMU (DUD) and ADB, and identify a long list of potential subprojects, and undertake pre-feasibility studies, and arrive at a list of prioritized subprojects/ work components in consultation with the Client and present the same for facilitating decision-making by the government;

(ii) for prioritized potential subprojects, undertake:(a) the feasibility studies/conceptual design, etc. (as appropriate); and (b) detailed engineering design stage of work, to prepare comprehensive DPR along with the respective bid document, complete in all respects, with procurement processing and procurement management support duly provided before the completion of PRF period; and

(iii) while, the consulting work of conducting institutional reviews, necessary institutional strengthening and capacity building activities, overall project management services for the PDMC assignment, etc., and necessary activities for facilitating PMU (DUD)for the ensuing loan/project processing, would continue concurrently during the period of assignment under the PRF.

Detailed Tasks of PDMC Assignment

17. The detailed tasks of PDMC consulting firm include, but would not be limited to the following:

Project Preparation and Design Tasks

(i) undertake overall project management activities, including identifying stakeholders and conducting all stakeholder consultations (at state-/regional-/central agencies-level, including any of their existing/proposed consulting firms/individual consultants; ADB-level, including ADB TA consultants/TA consulting firm; and with public-at-large/project affected persons/ excluded and vulnerable groups, etc.) to understand various perspectives and generate preliminary planning and design inputs/ validate draft proposed interventions and/or planning and design outputs;

(ii) undertake review of any existing information of state-/region-/sector-level vision, policy and/or strategy papers, master plans, sector plans, etc., including any prior identified and prepared subprojects to: (a) strength the infrastructure vision/ policy/

plans, prepare urban strategy, and draw-out a clear and holistic rationale on investment planning proposals that also correspond to a planning horizon and prepare city investment plans and action plans (*updated as an iterative process through the assignment*) to support improved urban infrastructure plans for 12 DHTs; (b) prepare prioritization framework based on multi-variant parameters/subproject evaluation criteria; (c) identify/review a longlist of potential subprojects in consultation with Client; and (d) undertake pre-feasibility studies, identify availability of clear land parcels (title, site and/or right-of-way) along with all no-objection and necessary clearances obtained; and (e) based on strategy prepared, prioritization framework and subproject selection criteria, pre-feasibility study, etc., as stated-above, prepare a shortlist of prioritized potential subprojects (i.e. prioritized subproject towns/subproject work components)—under integrated infrastructure development sectors and as a consolidated milestone/ deliverable, prior to undertaking the detailed engineering design stage of work with feasibility studies/ preparation of the DPRs/bid documents, etc.;

(iii) conduct feasibility studies/conceptual design, etc. (as appropriate) for prioritized potential subprojects, prior to preparation of DPRs for finalized list of prioritized subprojects, including identification of any data gaps from any existing information made available by the GoN through PMU (DUD), including DMA and PHED, concerned stakeholder agencies, information arranged through ADB, etc., and undertake efforts to acquire data to bridge any such data gap through undertaking necessary surveys, investigations and studies, if any, that is required for satisfactory completion of project preparatory and design activities under PRF, and which would be useful for subsequent implementation through the ensuing loan(s)/project(s);

(iv) undertake climate risk and adaptation assessment, study/research on technologies, innovative solutions and national/international best practices, etc., and prepare climate resilience framework for adoption of climate resilience measures in detailed engineering design of DPRs, etc. under the PRF, at subproject/project-level, including climate proofing of any existing infrastructure, as felt required, towards building climate and disaster resilience;

(v) review, and ensure that all the available surveys and data collected are correct (amend, if required) and meets the national/international best practices of methods of surveying and data collection;

(vi) undertake field surveys (site reconnaissance surveys, topographical surveys, geotechnical investigations, including any hydrological/ hydraulic and geological surveys as felt required, and any other engineering/demand/socio-economic/inventory of loss/willingness-to-pay surveys, etc.) and studies to establish a firm basis for design and planning of subproject components. The PDMC may need to hire surveyors based on the nature and scale of surveys that will be required. PDMC shall take prior approval of the terms of reference (TOR) and budget for surveys/investigations/ studies, whether conducted in-house or through third party for this PDMC assignment under PRF;

(vii) prepare GIS-based base maps for work components of project towns and/or prioritized subproject work components (site locations/ alignments) amongst the 10 DHTs (excluding Kohima and Dimapur wherein existing GIS-based base maps would be used, but including any updation of such existing base maps required);

(viii) wherever required, prepare/update inventory and geo-referencing using GIS-based mapping of all utilities, e.g. networks/ assets of–water supply systems,

stormwater drainage systems and landslip protection works, wastewater/septage management facilities, electrical poles/cables/transformers/ sub-stations, street-/ landscape- or pedestrian use-lighting, telecommunication cabling/wireless transmission towers/ facilities, gas pipeline, and other utility networks, if any; and prepare recommendations and detailed designs for utility placement either through unified ducting or separate dry and wet utilities' ducting options, as feasible, and whether affecting or affected by the subproject work components under proposed investments in the ensuing project(s);

(ix) undertake due diligence w.r.t. the detailed engineering design/any other design work recommended for finalized list of prioritized subprojects;[12]

(x) strengthen/integrate any existing concepts, detailed engineering designs/any other designs and DPRs developed by the Client/concerned stakeholder authorities for any earlier identified subprojects under integrated infrastructure development sectors, to ensure the designs are prepared according to the national standards/international standards or best practices (whether the design prepared is at the stage of concept-/and/or at DPR stage), including service delivery towards meeting national benchmarks/service-level agreements (SLAs), and duly incorporating the aspects or factors of resilience to climate risks/ climate change impacts and disaster risks (as per national standards/international standards or best practices, including ADB's South Asia Department framework and practice, etc.).[13] Also, follow provisions made in the PRF project administration manual (PAM), and in any other governing/guidance documents of ADB, including those approved by ADB for the PRF Project;

(xi) for the finalized list of prioritized subprojects:

- finalize the detailed engineering designs/any other design works, technical specifications, item rate analyses, detailed schedule of quantities and cost estimates in the DPRs that meet all the prescribed national standards/international best practices, including service delivery towards meeting national benchmarks/SLAs, and duly incorporate any recommended risk avoidance/minimization measures, and adaptation and/or mitigation measures to address factors for resilience to climate risks/ climate change impacts and disaster risks, not only for new infrastructure to be built, but also for enhancing resilience of or "climate proofing" the existing infrastructure; and
- in addition, the detailed engineering designs/any other design works should be prepared: (i) using integrated urban planning approach that adopts smart growth planning principles, considers aspects of diversity/ equity/ inclusion and is complemented by gender mainstreaming in planning and decision-making/ GESI aspects/ gender-responsive design features in

[12]Due diligence will cover economic, financial, social and environmental safeguards, technical, etc., aspects of the prioritized subprojects for ensuing loan(s)/project(s).Further, it includesproviding support to strengthen/ integrate existing DPRs prepared by the government, when finalizing the comprehensive DPRs.

[13]For example, may refer for integrated/ holistic planning to the Urban and Regional Development Plans Formulation and Implementation (URDPFI) Guidelines, 2014, Ministry of Urban Development (MOUD), Government of India (GOI); Handbook of Service Level Benchmarking, 2008, MOUD, GOI; Codes/ Manuals/ Guidelines/ Advisory Notes (as applicable) of Bureau of Indian Standards (BIS) and its National Building Code (NBC), Indian Roads Congress (IRC), and Central Public Health and Environmental Engineering Organisation (CPHEEO) under MOUD, GOI; Atal Mission for Rejuvenation and Urban Transformation (AMRUT) Guidelines, June 2015, MOUD, GOI, etc. [Note: Erstwhile MOUD is now known as Ministry of Housing and Urban Affairs (MOHUA)]; ADB. 2014. *Climate Risk Management in ADB Projects*. Manila; etc.

integrated urban sector, while keeping in mind the future needs, potential impacts of such proposed investments in physical development terms–both on the direction of urban growth of a town/city and on the surrounding landuse(s) of subproject sites in terms of "environmental protection-economic development-equity and social justice," viable new technologies–for enhancing efficiency of service delivery and effective coverage;[14] (ii) adopting nature-based solutions or low-impact development/green infrastructure principles integrated with or without waste to energy recovery systems for any planning and design work outputs compatible with natural ecosystems/ bio-diversity, such as bio-digesters/ bio-swales or bio-retention ponds, constructed wetlands, etc., including any urban water body conservation/ beautification as part of innovative use of urban open spaces and to facilitate ground water recharge, etc., as feasible towards eco-system based adaptation and facilitating in generation of green jobs;[15] and (iii) ensuring universal access towards achieving a barrier-free built-environment, gender-sensitive urban design promoted by crime prevention through environmental design–CPTED, etc., while adopting planning and implementation of vision zero strategy for progressive improvement in safety of physical access and commuting on urban roads, etc., which would apart from saved lives due to increased road safety, facilitate in achieving better economic use of development resources and enhanced human productivity as well;

(xii) identify the utilities to be replaced/removed/rehabilitated/upgraded, and prepare a detailed implementation plan with necessary cost estimates, for prioritized subproject sites;

(xiii) undertake due diligences of economic and financial analysis of subprojects/projects, and provide a comparison with the economic internal rate of return (EIRR) and financial internal rate of return (FIRR) done at the time of appraisal, including any impacts of midstream changes during the PRF period for

[14]ADB. 2021. *Creating Livable Asian Cities*. Manila. [Women's participation in governance, politics, and decision-making helps improve the equitable and inclusive allocation and targeting of resources, and drives urban resilience. Promoting gender mainstreaming to improve gender equality, therefore, should be an important goal for urban planners, i.e., in integrated urban sector. Mainstreaming gender into urban planning and decision-making means ensuring that the different needs and interests of all groups are taken into account in all aspects of planning and development of a city by both public and private sectors. These groups include men and women, boys and girls, young and elderly, differently-abled people, and people of different sexual orientation and gender identities.]; and ADB. 2018. *Strategy 2030: Achieving a Prosperous, Inclusive, Resilient, and Sustainable Asia and the Pacific*. Manila, along with the accompanying Operational Plans for Priority (2019) strategized therein.

[15]ADB. 2021. *Creating Livable Asian Cities*. Manila. [Nature-based solutions (NBS) can improve landuse, enhance biodiversity; improve, air, water, and micro-climate; reduce noise; and help build resilience to flooding and other natural disasters. They generally enhance resilience and contribute to public health. NBS are usually implemented in tandem with conventional infrastructure and are used to enhance them. These solutions are known as hybrid solutions. Adopting the total asset management approach can provide a pathway for integrating these aspects into city development strategies and asset management plans, adding to the resilience of the city's infrastructure and its population. Green infrastructure uses natural processes and elements such as, combination of vegetation, soils, gravel, and rocks to manage water, temperature, and air quality to create healthier, resilient, and aesthetical urban environments for the well-being of populations.] Green jobs include jobs that reduce waste and pollution, and benefit the environment, while paying decent wages and benefits that can support a family; and green jobs are normally considered in the industry of waste recycling or recovery/ composting with or without waste-to-energy recovery systems, landfills/ incineration/ plasma gasification or vitrification plant integrated with waste-to-energy recovery systems, wastewater/ septage management based on biotreatment principles of bioremediation and/or phytoremediation integrated with or without waste-to-energy recovery systems, stormwater management based on natural filtration principles, public transit, green building industry, industry for renewable energy and energy efficiency, etc.

reviewing/ updating financial analysis and evaluation/ financial management assessment, including preparation of a project Financial Management Manual (including procedures manual on project specific actions to be developed for implementation by the EA in the ensuing project) for the ensuing project and assess capacity of the EA/ IA's IT systems for accounting and reporting of project activities; while ensuring that financial analysis be consistent with ADB technical guidance note on Financial Analysis and Evaluation, and be consistent with project and entity financial analysis, with due consideration to project and entity risks. For financial management assessment, identify the risks and actions proposed in the earlier financial analysis and evaluation/ financial management assessment, and then review if the EA/ IA has implemented the actions to ascertain the responsiveness of the EA/ IA and accordingly update;[16]

(xiv) prepare and submit bid-level working drawings for use at bidding process stage of work; and good for construction drawings before the end of PRF period and prior to any commencement of construction works of the ensuing loan/ project;

Project Safeguard Related Tasks

(xv) undertake environmental and social safeguard studies (including but not limited to IEE/ EIA, as applicable); comprehensive EMP (including HSMP as in footnote 25) as part of bid documents; RP documentation and related DDRs/ IPP, GESI AP, due diligence reports prior to commencement of construction works, etc.) for the proposed investments, as per state/national/international/ donor agency requirements. In case of livelihood impacts, the resettlement plan will include initiatives to conduct a needs assessment for livelihood regeneration measures.[17]All of these project documents prepared by the Consultant shall be in the prescribed ADB formats, and meeting ADB approval requirements. Measures will be included in the contracting documents to encourage hiring of local population during implementation. In consultation with various stakeholders, support Client in setting-up of a communication strategy and a grievance redress mechanism (GRM) at EA-/ IA-level to redress all concerns related to the PRF, and which could be continued for the ensuing loan/project;[18]

(xvi) establish an effective monitoring and reporting system based on sex-disaggregated data (including beneficiary data, and which comply with privacy considerations) to be recorded as collected through public consultations and obtained from Client implementation team, field staff, contractors and other stakeholder authorities, on people who participated in training, including on trainers who will provide community hygiene promotion/ sanitation awareness/ effective-behavioural change communication training and awareness to build women's

[16]ADB. 2019. *Financial Analysis and Evaluation: Technical Guidance Note*. Manila; ADB. 2017. *Guidelines for the Economic Analysis of Projects*. Manila; ADB. 2015. *Financial Management Assessment: Financial Management Technical Guidance Note*. Manila; ADB. 2014. Preparing and Presenting Cost Estimates for Projects and Programs Financed by the ADB: *Financial Management Technical Guidance Note*. Manila; ADB. 2008. *Financial Due Diligence: A Methodology Note*. Manila; etc.

[17]ADB. 2009. *Safeguard Policy Statement (Policy Paper, June 2009)*. Manila.

[18]Grievance is defined as any comments/suggestions, non-contentious questions/clarifications regarding the project, issues/concerns that resulted to non-performance of obligations of any of the parties involved in project processes including safeguards. The grievance redress mechanism (GRM) is anchored on the five principles of: (i) transparency; (ii) social inclusiveness; (iii) being simple and accessible;(iv) having anonymity and security; and (v) institutional capacity building to guide in facilitating and resolving concerns and grievances. PDMC to facilitate the PMU to issue notifications to establish respective grievance redressal committees (GRCs) at various levels [town-/ PMU (DUD)-/state-level) with details of composition, process of grievance redress to be followed, and time limit for grievance redress at each level.

resilience to climate change and disaster impacts and environmental degradation through greater access to technology and innovation/ diversified livelihoods/ finance or micro-finance or other financial safety nets/ dedicated crisis-responding social assistance systems, etc., on women and/or people from marginalised/ excluded and vulnerable groups employed-in or job-/ entrepreneurship-/ business-opportunities (including, green jobs/ green businesses, food-for-work opportunities, etc.) for them in integrated urban sector, including skill development for semi-skilled/ skilled job types, upskilling, and business skills, on spatial planning-relevant infrastructure-public space improvements made/ benefits extended to women/ children/ elderly/ differently-abled, etc. for access to infrastructure and services/ safe mobility/ accessible child and elderly care services, etc., through GESI AP implementation progress during the PRF implementation and also during ensuing project(s) implementation (as per indicators and targets set at outcome and output levels in DMF prepared) so as to be informed with result achievement-levels against measured baseline data in the project completion report(s) as well, whenever due;

Procurement Related Tasks

(xvii) undertake (a) project procurement risk/ capacity assessment; and (b) strategic procurement planning (SPP) study, conduct SPP Workshop and discuss/ assess contract management support required and prepare Contract Management Plan(s) during pre-contract award stage for finalized subproject contract packages for the ensuing project (proportional to complexity, risk, and value of the contract; and due consideration to whether large subprojects have an individual Contract Management Plan and/or one Contract Management Plan can cover a group of similar contract packages of a similar size for smaller contract packages, etc.), arrive at procurement strategy in SPP Study, and submit SPP Report and resultant Procurement Plan prepared in consultation with the Client and ADB. The Procurement Plan prepared in ADB format (including any subsequent review/ updation of the same, as felt required during PRF implementation) for the identified subproject contract packages as prioritized for implementation by Client would illustrate appropriate details of suitable contract modalities, such as contract package name/ description/ estimated value, procurement method, review mechanism [prior review/post review (sampling)], bidding procedure, etc., and would be developed based on the procurement strategy arrived at in SPP Study, different contracting options that recommend most appropriate contracting modality(ies) in structured consultation with the Client and ADB, duly based on the scope of work components for each subproject, and taking into account the institutional capacities of PMU (DUD), including PHED, and concerned stakeholder authorities to undertake procurement of investment-ready subprojects;

(xviii) prepare draft bid documents for the individual contract packages identified in the Procurement Plan as per latest appropriate standard bidding document (SBD with required addendum wording for HS COVID-19 Plan)and related user guide, and request for quotation (RFQ)/ standard request for proposal (SRFP)issued by ADB for works, goods and plant, non-consulting/ consulting services' contracts and finalize the bid documents or proposal as per comments received. Support the Client in procurement processing and procurement management, including but not limited to support in the preparation/ any elaboration of the technical and price bid evaluation reports, of contracts for selection of Contractors for subproject contract packages. This support would also include facilitating Client towards the prior review process of ADB on the draft bidding documents or proposal, together with

a description of the advertising procedures to be followed for the bidding and the draft IFB for each type of contract (works, goods and plant, non-consulting and consulting services) and/or towards the post review (sampling) process of ADB, as stipulated in the Procurement Plan, i.e., complete support from IFB to the contract signing stage for each awarded contract package. Ensure bid documents/ contracts to comply with measures as set out in the IEE/ EIA (as applicable), EMP, and RP (to the extent they may cause impacts to affected people) as well as corrective action plans;

(xix) ensure that draft/finalized bid documents shall include technical specifications, bid-level working drawings (watermarked “for tender purpose only”), bill of quantities (BOQs), comprehensive EMP[including HSMP updated as site-specific health and safety management plan (SSHSMP) with site-specific health and safety COVID-19 plan (HS COVID-19 Plan)]/ GESI AP or any other documents required by the ADB, including performance targets specified as per subproject component’s sectoral national standards/benchmarks and/or international standards/best practices context applicability and as decided by the government;

(xx) assist Client for administrative/management approvals (such as management approvals/administrative sanctions/technical sanctions)by the oversight body project steering committee (PSC)/empowered committee (EC)/ UDD/PMU (DUD)/ DMA/ PHED, etc., as applicable, for starting the procurement process. All procurement under the PRF will follow ADB Procurement Policy: Goods, Works, Non-consulting and Consulting Services (2017, as amended from time to time); Procurement Regulations for ADB Borrowers: Goods, Works, Non-consulting and Consulting Services (2017, as amended from time to time), and the accompanying ADB Guidance Notes on Procurement (June 2018, as amended from time to time); and latest appropriate SBD (with required addendum wording for HS COVID-19 Plan)and related user guide, and RFQ/ SRFP issued by ADB for each type of contract (works, goods and plant, and non-consulting/ consulting services), as applicable;

(xxi) develop/adopt a quality management system towards implementation of PRF Project and prepare a detailed quality assurance plan (QAP)/quality management plan (QMP) for all field studies, including all necessary surveys/investigations, studies, analyses, design and documentation activities, etc., and such draft detailed QAP/QMP document must be discussed and finalized with Client/concerned stakeholder authorities immediately upon the award of the Contract and submit it as part of the inception report; and prepare/review over time for any modification, a quality assurance and quality control (QAQC) manual under PRF Project for adoption during subproject contract execution in the ensuing loan/ project;

Institutional Strengthening Related Tasks

(xxii) conduct a review of institutional/ organization structure, recommend improvements in institutional processes and procedures and/or institutional reforms required, if any, in consultation with PMU (DUD)/ DMA/ PHED, and prepare institutional review report; assess capacity strengthening requirements, including training needs assessment, and prepare institutional strengthening/ capacity building plan and relevant programs/training modules/; and initiate institutional strengthening/capacity building process for relevant government agencies/other stakeholders during PRF period through few necessary/ priority program sessions

for training/workshops/seminars/conferences etc., including on-the-job training sessions. The areas to be assessed under the institutional study broadly cover:

- conduct a review of institutional and financial capacities of institutions involved in planning, implementation, O&M, and service delivery aspects both at the state level institutions (UDD, DUD, DMA, PHED, etc.) as well as at the ULB level in terms of administrative control, presence at district level/state level, jurisdiction, borrowing capacity, staff strength, operational practices, mapping of institutions for service delivery at the town/ULB level revenue generation/ cost recovery mechanisms, private sector participation, assess and understand institutional issues/ challenges/ training needs;
- compile past and ongoing institutional and financial reform initiatives and their achievements in the urban sector–both at the state level as well as at the ULB level, under GoI/ multilateral funding institution–MFI funding in the state;
- review of financial management system in the ULBs in terms of method of accounting, preparation of financial statements, analysis of income, expenditure statement, sources of revenue (tax and non-tax), availability of accounting staff, status of audit, preparation of asset register, analysis of revenue/capital account, share of tax/non-tax revenues, share of establishment and O&M in revenue expenditure, status of computerisation of accounts, accounting process, etc.;
- detailed analysis of the property tax system, if any present in the ULBs, including method of property taxation, rate of taxation, total number of properties in the town and number of properties assessed, average property tax per property, average assessed value, demand collection balance statement for last five years, GIS mapping of property status, status of self-assessment, property tax zone, etc.;
- detailed analysis of user charge management system, including review of user charge policy (if available), rate of user charge (category wise), demand collection balance statement for last five years (for each user charge),user charge collected by the ULB, PHED UDD, DUD, DMA, etc., cost recovery from user charge against each service, availability of online payment system, etc.;
- human resource management for each ULB in terms of its organisational structure, status of municipal cadre, department-wise staff position, permanent/contractual staff, qualification, skill gap, etc., shall be covered in the report. A training need assessment study to be carried for each ULB and relevant line departments;
- status of e-Governance initiative and availability of municipal services online in each ULB;
- review of management, O&M, including reliability of financial and operational information, effectiveness of operations and efficiency of service delivery, etc., including addressing the need to promote public service quality standards with increased attention on marginalized/ excluded and vulnerable sectors such as, urban poor, women and children, elderly, differently-abled persons, transgender, and Indigenous Peoples;

- establish service level benchmarking for the ULBs as per MoHUA guidelines;
- prepare strategy for institutional and financial strengthening at the ULB level keeping in view the socio-political scenario in the state (short-term/ medium-term/ long-term) for financing, resources, possible options and recommendations for an institutional framework, outline requisite reforms and initiatives for institutional strengthening component covering improvement of financial management in ULBs, improvement of revenue base for ULBs to reduce dependency on GoN, tax and non-tax revenue restructuring, introduction and rationalization of user charge, improvement of human resource management in ULBs, preparation of a road map for e-Governance implementation for the ULBs/services;
- prepare a capacity building report for ULB staffs and stakeholder departments based on the training need assessment study;
- suggest enabling policy reforms for infrastructure development sector, for proactive public and/or private-sector engagement in infrastructure development at upstream stage to O&M at downstream stage;
- suggest governance performance requirements/ framework in terms of outlining requisite reform actions like domestic or municipal resource mobilization (both tax and non-tax), including by use of instruments like GIS-based land and property tax registration systems, land use planning, and building regulations in the urban strategic studies and project preparation, including synergies with XV Finance Commission report recommendations, and the scope of the institutional strengthening component for the ensuing project(s) to ensure the sustainability of assets;
- develop monitoring mechanisms and processes for data measurement/ stronger monitoring (including with safeguards monitoring reports)/appraisal/evaluation; including recommendations with user requirement specifications for a suitable monitoring/ feedback/complaint- or any defect-tracking-diagnosis-escalation management-resolution system that could be implemented through any ensuing loan(s)/project(s) to enhance infrastructure service delivery experience of end-users either as utility consumers and/or as commuters;[19]
- ensure effective, efficient and economical use of resources addressing to advance infrastructure governance/ financial sustainability of cities through appropriate recommendations for municipal expenditure and revenue management (i.e., considerations for allocation efficiencies, technical approaches, fiscal strategies, revenue impact, planning and design effectiveness, instrument opportunities, value capture financing–VCF, etc.), and in improving service delivery potentially towards meeting national infrastructure development sector benchmarks/ SLAs—that contribute towards increased service coverage/ accessibility, supported by performance appraisal and evaluation towards proper upstream planning/

[19]This is to strengthen governance and management capacity to ensure the environmental soundness of projects, to effectively manage involuntary resettlement, to ensure Indigenous Peoples benefit from project(s), and for increased ability towards–operational optimization and supervision, timely maintenance/ complaint redressal/ restoring service, improving efficiency of public service delivery, and contributing to enhanced asset sustainability.

project formulation or structuring to improve efficiency and sustainability of investments, considering the impact of COVID-19 pandemic;[20]

- ensure achieving the strategic/operational objectives and key results-measured through service level national infrastructure development sector benchmarks/standards and key performance indicators during the ensuing loan/project implementation; and
- skills development, with potential for involvement of private sector/ nongovernment organizations/ community-based organizations in certain infrastructure services (e.g., septage management service, solid waste recycling, etc.);
- establish institutional mechanism in place and processes for investment ready infrastructure projects:
    - identification of capacity gaps and areas that may require improvement, and plan/recommendations for–institutional strengthening/capacity building that would facilitate ability to plan, develop, implement, and manage infrastructure investment projects, as well as the ability to develop, and effectively and efficiently operate and manage infrastructure assets;
    - review of procurement management system; and
    - review status/ability of safeguarding assets;
- review of public finance, budgetary allocation and expenditure, to assess the borrowing capacity;
    - administration and financial management system;
    - internal control processes; and
    - fund flow mechanism;

(xxiii) develop comprehensive feedback mechanism for training participants, as well as end-user experience, to be recorded, monitored, appraised and evaluated; including development of knowledge materials and knowledge database/ repository for the integrated infrastructure development sector in Nagaland;

(xxiv) explore possible synergy with integrated command and control centre–ICCC under Smart Cities Mission/ incident command system–ICS at district- or state-level with existing or proposed disaster management plan(s), supported by information technology–IT-enabled/ information and communication technology–ICT-based solutions—for effective communication and access to emergency rescue and relief services (including, medical facilities/ health-care services, testing centers or laboratories, containment-/ quarantine-/ isolation-facilities, etc.)/ town or municipal

[20]ADB. 2021. *Creating Livable Asian Cities*. Manila. [Ch.4, Financial Innovation.]; and ADB. 2021. *Supporting Quality Infrastructure in Developing Asia*. Manila. [Efficiency, accessibility, and sustainability are key in operationalizing quality infrastructure investment–QII. Efficiency requires a project selection process maximizing social and economic benefits. Infrastructure governance covers the entire life-cycle of assets, but the most resource-intensive activities are typically planning and decision-making. If not properly anticipated in project design, social and environmental issues can cause infrastructure-related conflict, often resulting in substantial delays and costs. Quality infrastructure requires expertise and knowledge in a range of areas across the institution to address complex and cross-cutting governance and development challenges, and to develop integrated solutions. Technology can also improve infrastructure governance. The adoption of innovative technology could close the financing gap, and promote sustainable and inclusive growth. When spending more on infrastructure, also need to consider how to spend smarter and better to obtain the most value for money. QII will not only help in "building back better" after COVID-19, but also contribute to achieving economic efficiencies, closing the infrastructure gap, and promoting sustainable growth.]

infrastructure monitoring-utilization-management during any disaster or pandemic (such as, COVID-19) etc.;

(xxv) prepare a Project Performance Monitoring System (PPMS to be established within four-months of consulting firm's mobilization)at PMU (DUD)for Benefit Monitoring and Evaluation (BME) on a project by basis that shall include baseline data and targets/ performance measures/ performance indicators agreed upon with the Client. This BME shall provide descriptions and procedures for BME data to be collected before, during and after project implementation:

- the Consultant shall include a separate chapter on PPMS in the main volume of feasibility studies and DPRs or shall submit a separate report on PPMS at respective stages outlining the collection of required base line data (before and after implementation of project) like, inventory and conditions of physical infrastructure, socio-economic data (e.g. poverty, education, health services, employment, connectivity, trade/ business, transportation, agriculture, industry, etc.), environmental condition data, etc., as necessary;
- all the above-mentioned baseline data have to be collected before (existing conditions) by the PDMC at project preparation and design stage; and after implementation of project (improved conditions) for each subproject by the construction supervision consultants; and
- considering all the aspects as mentioned above, the Consultants have to prepare a comprehensive PPMS report to be utilized by the Client for Project Performance Monitoring and Evaluation purposes;

(xxvi) set-up a financial management system (FMS), integrated with PPMS, and build institutional capacity based on Financial Management Manual prepared for the ensuing project and based on the assessed capacity gaps of the EA/ IA's IT systems for accounting and reporting of project activities;

(xxvii) facilitate Client in documentation management and retaining all documentation with respect to each contract where prior review/post review (sampling) is required [to be maintained by the Client for at least one (1)-year after the PRF closing date]. This documentation generally includes the bid proposals, the original signed contract, the evaluation report (including the analysis of the respective bids or proposals), and recommendations for award, for examination by ADB or by its consultants;

(xxviii) facilitate Client in the ensuing loan/project processing stage of work by undertaking as needed financial management assessment, due diligences of economic and financial analyses, project financial management manual, project procurement risk/ capacity assessment, environmental assessment and review framework, initial poverty and social analysis/SPRSS assessment, RP documentation and related DDRs/ IPP, GESI AP, and assessment for resilience to climate risks/ climate change impacts and disaster risks, including developing a DMF and undertaking baseline data measurement, as per relevant ADB–guidelines/accepted formats and meeting ADB approval requirements, and including prioritizing and phasing investments in the identified urban areas for ensuing infrastructure investment project;

(xxix) facilitate Client in preparing terms of reference for third party supervision and quality audit consultant–SQAC; and

(xxx) provide any other specialist services requested by Client during the PRF period at mutually agreed conditions, which may be required in implementation of cross-sector infrastructure development projects.

Note: All project documents prepared by the Consultant shall be in the prescribed ADB formats, and meeting ADB approval requirements.

While undertaking the specific tasks for "detailed engineering design" stage of work under the PRF Project, the PDMC firm shall *inter alia*, consider the following aspects:

A. Urban Infrastructure (Water Supply System, Wastewater/Septage Management, Stormwater Drainage System and Landslip Protection Works, and Solid Waste Management)

The objective is to improve water supply, wastewater/septage management, stormwater drainage and landslip protection, and solid waste management services in the project towns and/or prioritized subprojects covered under the PRF in the State of Nagaland, in order to meet both the present and future demand requirements, duly considering impacts of pandemics such as COVID-19 and resultant need for robust planning for deep uncertainty for following infrastructure services: (i) water supply services, within the context of delivering continuous pressurized and sustainable water supply services that ensure inclusive access, i.e. *water for all*; (ii) wastewater/septage management; (iii) Stormwater drainage system(with landslip protection works, where applicable); and (iv) solid waste management, with all these services extended to full coverage of resident population. This is envisaged to entail:

(a) the improvement, rehabilitation of existing facilities and/or construction of new facilities to ensure the adequacy of water supply and other services commensurate with the projected demand requirements from existing and potential customers, including the poorer section of the community currently not serviced in integrated urban sector;

(b) the organizational improvement and restructuring of management and organization structure for optimal efficiency in delivering the services to all existing and potential consumers in the most cost-effective manner;

(c) the maximum possible outsourcing of operations and maintenance services to efficiently deliver the improvements in (a) and (b) above; and

(d) the PRF Project will contribute to environmentally balanced and sustainable urban development in the identified priority towns, in line with balanced regional economic development and sustainability. The development model shall integrate and take account of the natural resources and terrain with urban planning, design and construction, and service requirements. The underlying principles shall include:

i. water-sensitive urban design (WSUD), so that the urban infrastructure is planned, designed and constructed with the water cycle of the urban catchment/watershed in mind, to help sustainable management of the water environment;

ii. North-Eastern regional perspective, so that the planning and development of each urban centre is integrated with its local, regional and economic growth in international border trade, and the shared use of its resources and infrastructure services;

iii. integrated urban water management (IUWM);

iv. low-impact development/green infrastructure principles, as feasible; and

v. factors or measures for resilience to climate risks/ climate change impacts and disaster risks embedded in design, towards building climate and disaster resilience, including understandings obtained through wastewater-based epidemiology–WBE and to meet provisions for adequate or potentially higher - water, sanitation and health–WASH requirements to be addressed during pandemics, whether as centralized or decentralised solutions (as appropriate) for investment that address “new normal” or be integral to “next normal” conditions.

The specific tasks contained in the detailed scope of work are intended to serve as minimum requirements for the Consultant to undertake the project study/review and design work for the assignment. Additional tasks that add to a greater understanding of key issues may be addressed, as appropriate. To implement the objectives of the proposed assignment, the work of “detailed engineering design” stage for prioritized subproject towns/ work components under integrated urban infrastructure development should be organized under the following tasks:

Task-1: Survey of Project Towns

(a) **Defining the Boundary of Planning Area.** In consultation with the UDD/ DUD/ ULB, the PDMC will identify the geographic boundary of the municipal administration area, including the potential future growth area and the drainage outfall area outside the municipal boundary to be covered in the project. The municipal boundary area of each of the project towns along with that of development authority boundary, if any, taluk and district should be coded using GIS. Any landuse map/ GIS-based maps available with PMU (DUD)will form the baseline for the PDMC’s integrated planning purposes. For each project town, where GIS-based base maps/ landuse maps to refer is not available, PDMC will prepare the GIS-based base map by digitization of any existing city-level/ area-level maps and/or land parcel/ plot layout map(s) overlayed with open-source earth observation imagery of appropriate resolution and/or scaled mapping output(s) of a physical/ topographical survey for the site location(s)/ alignment(s) of prioritized subproject town(s)/ work component(s), using Consultant’s own ArcGIS or QGIS.[21]

(b) **Collect present infrastructure and service data.** Conduct a reconnaissance survey; articulate and accurately identify conditions in the existing water supply, wastewater/septage management, stormwater drainage and landslip protection works, and solid waste management infrastructure and services will provide an effective base from which to define the direction for overall improvements; and evaluate alternative development scenarios. The following surveys will help to identify the infrastructure augmentation and service delivery enhancement needs of residents of respective prioritized subproject towns, as applicable:

i. review of existing plans and demographic data: The Consultant should obtain and review the existing plans as available related to: (i) land use planning; (ii) water supply; (iii) wastewater/septage management; (iii) stormwater drainage an landslip protection works; and (iv) solid waste management-related improvements;

ii. data on socio-economic characteristics, property ownership, growth

[21]QGIS (previously known as Quantum GIS) is a free and open-source cross-platform desktop geographic information system (GIS) application that supports viewing, editing, and analysis of geospatial data.

character, special characteristics like, international border trade, connectivity, power availability, natural gas availability, etc.;

iii. infrastructure inventory: The Consultant will prepare a detailed inventory of existing infrastructure. This shall include details of:

Water Supply System

- water resources available/ source augmentation needs, raw and treated water quality, treatment plants, iron removal plants, storage(overhead/ underground) and pumping systems, metering, and inventory of loss;
- water network details with approximate age profile, type and class of pipes laid;
- service connections and service levels;
- current O&M organization, staffing, maintenance data for at least two (2)-calendar years;
- financial data comprising of annual capital and O&M budgets, current expenditure trend, prevailing tariffs, revenue billing and collection details;
- list of ongoing capital and maintenance works (plan and non-plan); and
- any other available information relevant to the study shall be compiled from primary and secondary sources and site visits. Any inconsistency or deficiency in the information shall be noted. The PDMC should compile and integrate the existing water supply infrastructure database into the GIS-based base map of respective prioritized subproject towns or subproject site location/ alignment.

Wastewater/Septage Management

- coverage of individual toilets and details of community and public toilets;
- current practice of treatment of wastewater–sewage treatment plants, leach pits, septic tanks, direct discharge into open drains, water bodies etc.;
- available facilities and methodology for desilting of leach-pits or septic tanks, both public and private;
- current method of treatment, if any, and disposal arrangements for septage;
- prevailing policies like, scheduled desludging/emptying policies and standard operating procedures/management models (e.g., performance-linked annuity model of private sector participation/ non-government organisation/ civil society that operates at a certain collection frequency, etc.) for septage management, if any, considered as best practices; and tariffs for public and private suction tanks or tractor trolleys and trucks based on collection and conveyance capacities, with break-up of labour for desilting, transport and disposal costs; any incentives, etc.;
- details of existing septage treatment plants, if any;
- current O&M organization, staffing, maintenance data for at least

two (2)-calendar years;

- financial data comprising of annual capital and O&M budgets, current expenditure trend, any taxes collected as part of any property tax or other cess, etc., as the case may be towards wastewater or septage collection/conveyance/treatment/disposal, including revenue billing and collection details;
- list of ongoing capital and maintenance works (plan and non-plan); and
- any other available information relevant to the study shall be compiled from primary and secondary sources and site visits. Any inconsistency or deficiency in the information shall be noted. The PDMC should compile and integrate the existing wastewater/septage management-related infrastructure database into the GIS-based base map of respective prioritized subproject towns or subproject site location/ alignment.

Stormwater Drainage System and Landslip Protection Works

- details of existing collection network, outfalls and pumping systems, if any;
- details of existing holding tanks/retention ponds/reservoirs, etc., either local community owned or government owned belonging to irrigation department/district administration/municipal body, including landslip protection works alongside roads/ habitation areas;
- service levels as available in regard to coverage during past two(2)-calendar years; including details of water logging frequency and incidents during the past decade, i.e., (10)-calendar years or longer duration, as feasible based on data available, or at least during the past two(2)-calendar years;
- current maintenance organization, staffing, maintenance data for at least two (2)-calendar years;
- any prevailing policies or practices in adoption, both for public or private/with any incentives, like on mandating or encouraging integrated onsite stormwater drainage management/water conservation though rainwater harvesting tanks (at surface/ underground/above ground), adoption of low-impact development/ green infrastructure principles in design, integrated roadside stormwater drainage systems (conventional/environment-friendly) of adequate capacities, etc.;
- financial data comprising of annual capital and O&M budgets, current expenditure trend, prevailing taxes either as part of any property tax or cess, etc., as the case may be for stormwater drainage management, including revenue billing and collection details;
- list of ongoing capital and maintenance works (plan and non-plan); and
- any other available information relevant to the study shall be compiled from primary and secondary sources and site visits. Any

inconsistency or deficiency in the information shall be noted. The PDMC should compile and integrate the existing stormwater drainage infrastructure and landslip protection works database into the GIS-based base map of respective subproject towns or subproject site location/ alignment.

Solid Waste Management

- coverage of municipal community waste bins in habitation areas (including those in employment zones/ commercial areas/ open spaces/ thoroughfares, etc.), handcarts/ wheel barrows and/or tricycles with waste bins, tools/ equipment/ personnel protective equipment (PPE) or gears for municipal solid waste (MSW) collection; and solid waste collection vehicles with bins (smaller-capacity)/ collection and conveyance trucks (large-capacity) with transportation frequency/ trips per day/ waste load per trip per vehicle, etc., and street cleaning vehicles (including street sweeping frequency and efficacy, solid waste traps on stormwater drains/ storm sewers, streams, etc.);
- distribution of waste transfer stations and/or waste storage depots for temporary storage till the waste is transported, if any, along with waste compression or compaction or bailing equipment under public utility and/or private facilities–with/ without material resource center (e.g., material recovery facility and/or material recycling facility for reuse/ onward treatment and disposal through processing/ decentralized processing/ co-processing);
- current levels of waste generation (by waste generating source/ landuse zone) and average waste generated per capita, town-level waste characteristics (bio-degradable or compostable/ non-bio-degradable/ combustible/ inert waste with percentage of waste item types)/ chemical characteristics on dry-weight basis/ waste composition, and waste diversion rate in respective towns;
- current methods of treatment and disposal and their details–a dumping ground/ ordinary landfill site or a scientifically-laid sanitary landfill site (present waste composition as disposed in landfill, including residual solid waste disposal through landfill), incinerator, mechanical compost plant, vermi-compost plant, etc., with/ without integration to waste-to-energy recovery mechanisms, including any critical problems/ issues, such as any existing landfill not prepared scientifically/ lining issues/ leachate contamination to soil and/or water resource, land availability/ any regional issues, etc.;
- current practice of solid waste collection–whether door-to-door collection and/or from community waste bins, collection frequency, etc.;
- service levels as available in regard to solid waste management;
- prevailing policies and practices, like, waste segregation-at-source, adoption of principles of waste hierarchy–avoid or refuse/ reduce/ reuse/ repurpose/ recycle or recover/ treat/ dispose, and waste diversion, if any, considered as best practices, use of technology/ existing technical capacities; and user fee and/or tipping fee paid to

any concessionaire, for municipal waste management collection, transport, treatment, and disposal costs; any other overall solid waste management costs such as for staff/ land/ building/ transportation/ processing/ treatment/ disposal, etc.; any incentives, etc., for life-cycle cost assessment;

- current municipal organization, overall staffing, conservancy staff and equipment deployment, operational/ maintenance data for solid waste management component for at least two (2)-calendar years;
- financial data comprising of annual capital and O&M budgets, current expenditure trend, any taxes collected as part of any property tax or other cess as the case may be towards solid waste management–collection/ conveyance/ treatment/ disposal, including billing and revenue collection details, expenditure on public awareness sessions/ Swachhta Abhiyaans, etc.;
- list of ongoing capital and maintenance works (plan and non-plan) on municipal solid waste management; and
- any other available information relevant to the study shall be compiled from primary and secondary sources and site visits. Any inconsistency or deficiency in the information shall be noted. The PDMC should compile and integrate the existing solid waste management-related infrastructure database (both public and private) into the GIS-based base map of respective prioritized subproject towns or subproject site location.

(c) **Strategy Planning.** Based on the above data collection and urban strategy prepared or strengthened for project towns–support improved urban infrastructure plans; and based on the prioritization framework/ subproject selection criteria and pre-feasibility studies conducted, arrive at the list of prioritized subproject towns/ subproject work components, prior to undertaking the detailed engineering design stage of work–of feasibility studies/ preparation of the DPRs/ preparation of bid documents, etc.

(d) **Confirming critical topographical survey data.** The GIS-based base maps made available by Client would cover the municipal area of Kohima and Dimapur towns (i.e., except for remaining 10DHTs) with geo-referenced coordinates and ground elevations. However, the PDMC shall undertake validation/verification of all critical elevations adopted in the hydraulic design of relevant infrastructure components. The Consultant shall also undertake topographical and block levelling surveys of all infrastructure components under prioritized subprojects covering: (i) water supply facilities, such as water source, intake/ diversion weir, transmission mains and distribution networks, water treatment plants, pumping stations, balancing reservoirs, etc.; (ii) wastewater/septage management facilities, such as coverage of toilets, disposal arrangements like leach pits, septic tanks, etc., including existing methods of septage collection, conveyance, treatment and disposal; (iii) existing stormwater drainage facilities, identifying blackspots with frequent water logging incidents including outfall arrangements, landslide-prone/ landslip areas; and (iv) solid waste management methods and facilities, for collection, transfer and transportation, waste diversion/ resource recovery/ recycling facility, treatment and disposal; which may fall outside the municipal boundary and may not have been covered by the existing GIS-based base maps. Such coverage shall be ensured in the base maps prepared/ updated by the PDMC

for project towns and/or respective prioritized subproject towns/ subproject work components.

The PDMC is to become familiar with the hydraulic drainage model it intends to use for its data requirements. The hydraulic model will require the physical features of the project towns to be documented in a manner suitable to the models. A comprehensive detailed field survey tied to a common benchmark is required. This includes a cadastral map of each project town and/or subproject site location/ alignment with enough spot levels to be able to draw contour lines at 5 m intervals across the project town and/or 1 m intervals along prioritized subproject site location/ alignment, as applicable.

Maps and benchmarks of the study area are to be collected from the Survey of India (SOI map of 1:50,000 scale). Where available, existing aerial survey/ satellite imagery are also to be collected from appropriate sources. Local planning area maps are to be collected from PMU (DUD) along with any relevant data from respective project town's municipal authorities and from agencies, like DMA. PHED, etc., as the case may be. A reconnaissance survey is to be undertaken to verify the collected data and to confirm the topographic details. Total Station Survey is to be used to capture surface levels and the physical details of structures in the affected areas of subproject site location(s)/ alignment(s)within respective project towns. The data is to be collected and digitized into the Consultant's own ArcGIS or QGIS. The data is to be verified by field survey/ ground truthing survey resulting in a cadastral and/or topographic map/plan of each project town and/or prioritized subproject site location/ alignment. All structures likely to impact on the water supply, wastewater/septage management, stormwater drainage and landslip protection works, and solid waste management systems under the prioritized subprojects are to be identified.

A final set of maps/plans must be prepared displaying the above information, including surveyed surface levels, the proposed water supply system, wastewater/septage management, stormwater drainage and landslip protection works, and solid waste management systems, and all zonal service areas. The maps to the scale of 1:1000 should contain surface level contours at 5 m intervals across the project town and/or maps to the scale of 1:200 should contain surface level contours 1 m intervals along prioritized subproject site location/ alignment, as applicable.

(e) **Geo-Technical Surveys/Investigations.** The Consultant shall organize and undertake standard geo-technical surveys to investigate and determine the soil strata, foundation requirements, sub-surface water levels, trench cutting requirements, etc., for the prioritized subprojects; and the number of samples shall be in accordance to relevant Indian national standards. For the purpose of bidding, the number of locations for geo-technical surveys shall be a minimum of fifteen (15)-sites per project town and shall cover, the water and wastewater/septage treatment plant sites, and solid waste treatment and disposal sites, all pumping stations and waste transfer stations, reservoirs, etc., and at least 5-sites per project town for covering the transmission and distribution systems, and drainage.

(f) **Geographic Information System.** The PDMC is required to prepare/ develop/ update a project town specific and/or prioritized subproject site location(s)/ alignment(s)-specific GIS-baseline maps/plans using the Consultant's own ArcGIS or QGIS. The PDMC must engage an expert in GIS practice for this part of the consulting services. The GIS-based outputs will, in effect, become a repository of much of the data collected by the Consultants. All the collected spatial data, or

spatially-related data, must be geo-referenced using the standard spatial referencing system. In addition, and as applicable, the data must also be referenced to a common benchmark for each project town. If necessary, these benchmarks are to be established. The data that is to be collected and loaded into the GIS-database, is all that data required by the project/ subproject.

Task-2: Water Supply Improvements

(a) **Planning and Design Scope.** Considerable effort is expected to be expended in developing town-specific, water supply improvement plans based on any existing water supply master plans that, when designed and constructed, will lead to the sustained delivery of continuous pressurized water services that meet social and environmental expectations. This part of scope of study will be undertaken in several stages, and as far as is practical, these stages are expected to run in parallel:

- Stage-1 of Source Identification Report: The content of Source Identification Report shall consist of the guidelines provided at Section 3.2 of CPHEEO Manual;[22]
- Stage-2 of Pre-Feasibility Report: The content of Pre-Feasibility Report shall confirm to the guidelines provided in Section 3.3 of CPHEEO Manual; and
- Stage-3 of Detailed Project Report: The content of Feasibility Report shall consist of the guidelines provided at Section 3.4 of CPHEEO Manual.

The study is to place emphasis on the practical operation of the planned water supply system. It is not enough to plan conventional normative piped water network systems, which often result in substantial variations during implementation due to topographical needs, onsite obstructions, land availability and restricted work sites and geo-technical issues. Practical influences include the hydraulic requirements, the topography, the town layouts, road networks, the density of property development, the location of the water extraction point, intake/ diversion weirs, water treatment plant, reservoirs, etc., and maintainability of the assets. Factors such as population size, topography, groundwater level as well as the locations of pumping stations and the treatment plant must be considered. In addition to capacity augmentation of drinking water infrastructure facilities, there is a significant need for investments in retrofitting the existing infrastructure to cover the backlog maintenance. The study is expected to address each of these and how they impacted the design and operation of the planned water system.

These terms of reference for water supply subsector include a planning methodology, which is to be followed by the PDMC. The degree of success of the planned water system will reflect the experience and the detailed attention that is to be carefully applied to each aspect of the system, as outlined in these terms of reference. The Consultant shall employ a concerted effort to develop an integrated water management solution, which is resilient to climate changes and delivers services in an optimum manner to provide an effective, efficient, and sustainable service in these North-Eastern region’s small-sized towns/border towns.

The technical specifications for undertaking the planning and design for water supply systems shall confirm to the Indian national standards and are summarized

[22]Section numbers refer to respective sections in the CPHEEO, Manual on Water Supply and Treatment, 1990.

in Annexure 1.

(b) **Water Supply Infrastructure Design.** Prepare the design of the selected water supply component of prioritized subproject towns, including intakes, intake/ diversion weirs, desilting tanks, transmission and distribution systems (new/ replacement), water treatment plants, pumping stations, reservoirs (overhead/ underground), water supply zones, metering, etc. As part of this, the Consultant will:

i. review the current design/service parameters, suggest any changes it considers appropriate, and conduct hydraulic analyses of proposed system designs, to determine their compliance with the agreed parameters;

ii. undertake the assessment of water needs, available resources, and the capacity of existing systems, and advise on any improvements necessary to achieve and sustain the agreed design and service standards. This may include source and system augmentation, rehabilitation and extension, etc.;

iii. identify suitable water sources (surface water and groundwater), confirm quality and quantity of water available;

iv. design of intakes and/or infiltration galleries to maximize their efficiency, and minimize the effects of siltation, climate change impacts and their maintenance requirements;

v. design the water treatment systems duly evaluating latest technologies most appropriate for the local needs, institutional capacity, environment, sustainability, and operation and maintenance capacities, etc.;

vi. design water transmission main including pipe trenching, laying, thrust blocks, pressure testing, access for cleaning/repair (including air/scour, flow control, pressure regulating valves), pumping, power supply, water quality monitoring;

vii. design the water distribution systems including pipe trenching, laying, pressure testing, access for cleaning/repair (including air/scour valves), pumping, power supply, water quality monitoring, fire-fighting capacity, household/communal water points or stand posts, household collection and storage capacity;

viii. design various instrumentation systems for effective and efficient supervisory control, data acquisition–SCADA and monitoring of asset and operational performance, service delivery monitoring and sustainable maintenance management;

ix. plan for road cutting and restoration (making good the same at each road crust-layer levels with proper compaction, and maintaining the same road surface level as before, as a best practice) and managing the excavated soils and all related social and environmental safeguards, and shifting of utilities, removal of construction debris, and permits for undertaking various works;

x. prepare the detailed engineering designs, bid-level working drawings, and good for construction drawings for the proposed works;

xi. assess requirements for effective, efficient, and sustainable operations and maintenance of the assets created (preventive and routine maintenance), including all commercial service requirements like, meter reading, billing, revenue collection, customer contact management, etc., with all necessary

needs of staffing, transport, administration, consumables, etc., complete in all respects;

xii. while designing and adopting particular technology, consideration should be given for the life-cycle costs of the proposed systems, the financial and technical capacities of the respective local bodies to operate and maintain proposed system;

xiii. incorporate successful regional, national and international experiences in water supply systems and strategies in comparable situations (from technical perspective, the State of Nagaland is located in the Himalayan region/North-Eastern region of India), especially in the field of water demand management to optimize the system, water resource(s) and equitable water use;

xiv. prepare the required technical specifications, bills of quantities (BOQs), cost estimates, and bid documents (complete in all respects, following ADB accepted formats and meeting ADB approval requirements);

xv. be available for technical support to Client and PHED to undertake field visits, etc., during implementation, if required.

xvi. as required, assist Client in bid process management, including evaluation of bids;

xvii. provide on-the-job training and mentoring to the designated PHED Engineers on the design and procurement of water supply subproject component, use of relevant software, suitable technologies, etc.; and

xviii. conduct any other tasks needed for successful completion of the water supply subsector's consulting services' objectives.

(c) **Hydraulic Modelling.** The PDMC shall undertake hydraulic modelling of the water pumping transmission, pumping, storage (overhead/ underground), and distribution network. The purpose of the hydraulic modelling is to determine the required diameters of water pipelines for the design flows, and to also determine the performance of the pipes laid at peak flows. The performance of entire pumping, storage, and distribution system shall be demonstrated on an extended period simulation for at least 72 hours of continuous flow regime.

[**Note:**Maps and plans are expected to be produced along with the reports for all sectoral/ subsector outputs under the PDMC assignment. Among other things these maps (standalone layers and composite layered/ overlaid outputs) and plans must be produced from the Consultant's own ArcGIS or QGIS and must show the longitudinal sections of all transmission and distribution pipelines, layouts of treatment plants and zone wise distribution systems etc., complete in all respects. These GIS-maps and database output editable files prepared/ updated by the Consultant will be transferred to the Client's own GIS-mapping and database system as part of the PDMC assignment.]

Task-3: Wastewater/Septage Management

(a) **Planning and Design Scope.** The scope of this component comprises firstly, preparation of a wastewater/septage management plan for developing a sustainable system of septage management with septage collection, conveyance, treatment and safe disposal among the towns. Considerable effort is expected to be expended in developing such septage management plans that, when designed, procured and constructed, will lead to the sustained delivery of septage

management services that meet social and environmental expectations. In that sense, the outcome can forma model for other towns in the North-Eastern region.

A second stage of this project will be the detailed engineering design, which would also result in arriving at parameters/guidelines/manual to be considered during subsequent construction of the planned wastewater/septage management interventions and special emphasis will be placed on: (i) the quality of construction; and (ii) the ongoing operations and maintenance of the constructed assets as well as procured goods (equipment, vehicles, etc.). To the extent possible this consultancy is to reflect these two-future components in their design, bid documents, and other supporting documentation.

This part of scope of study will be undertaken in several stages as follows. As far as is practical these stages are expected to run in parallel:

- Stage 1: GIS Establishment Report
- Stage 2: Identification Report
- Stage 3: Pre-Feasibility Report
- Stage 4: Feasibility Report.

The study is to place emphasis on the practical operation of the planned wastewater/septage management interventions. Practical influences include the hydraulic and biological loads, the topography, the town layouts, road networks, the density of property development, the location of the septage treatment plant and maintainability of the septage management assets. Factors such as population size, topography, groundwater level as well as the locations of any pumping stations and the septage treatment plant must be considered.

The study is expected to address each of these and how they impacted the design and operation of the planned wastewater/septage management interventions.

These terms of reference include a planning methodology which is to be followed. The degree of success of the planned wastewater/septage management interventions will reflect the experience and the detailed attention that is to be carefully applied to each aspect of the septage management system as outlined in these terms of reference. This is not just a conventional detailed project report but a concerted effort to develop a model wastewater/ septage management system where different wastewater/septage collection and treatment systems are used in an optimum manner to provide an effective, efficient and sustainable solution for these urban towns/ rural settlements, as applicable.

(b) **Wastewater/Septage Management Service[23].** The wastewater/septage is to be collected, transferred and treated before disposal. The two options for the wastewater/ septage collection under septage management are:

(i) Individual Septic Tank

Septic tank systems that are properly planned, designed, sited, installed, operated and maintained can collection and on-site primary treatment. Wastewater can be collected from household toilets or public/community toilets. However, systems that are sited in densities that exceed the

[23]Guidelines for Decentralized Wastewater Management, December 2012, MOUD, GoI; Advisory Note on Septage Urban Management in India, January 2013, under National Urban Sanitation Policy: Towards City Wide Sanitation, MOUD, GoI; National Policy on Faecal Sludge and Septage Management (FSSM), February 2017, MOUD, GoI; Septage Management: A Practitioner's Guide, 2017, MOUD, GoI and Centre for Science and Environment, New Delhi; Decentralized Wastewater and Fecal Sludge Management: Case Studies from India, Asian Development Bank Institute (ADBI) Case Study No. 2020-4 (September), Tokyo; etc.

treatment capacity of the local soils and systems that are poorly designed, installed, operated or maintained will cause problems have adverse health impacts. Such circumstances are not permitted.

Septic tanks treat sewage to primary standard and produce sludge and effluent. The sludge is regularly removed by being pumped to a tanker. The effluent can be disposed onsite by discharging it to a soak pit; or by discharging it to a separate common effluent piped network (if permitted). The effluent may not be discharged to a street gutter.

Where individual septic tank is being considered it is necessary to determine the percolation rate for the soils in the vicinity of the septic tanks, and using the area of land of each property, determine the property's ability to continuously accept the effluent. If the ground beneath the property cannot continuously accept the effluent at a sufficient rate to avoid water logging, then the option of on-site disposal of the effluent is not permitted.

Septic tanks are to be designed in accordance with CPHEEO Manual.[24] Package septic tanks may be proposed.

(ii) Communal Septic Tank

A communal septic tank is a large septic tank that receives wastewater flows from several properties. It is used where there is insufficient land for individual septic tanks. In other respects, the same arrangements that apply to individual septic tanks apply to communal septic tanks. One difference is that a communal septic tank is owned and operated by the municipal authority.

Other suitable options for septage management also to be studied in line with GoI, GoN policies and international best practices.

The next steps in the workflow for septage management post-a household's/user's access to toilet connected to a septic tank are as follows:

- Emptying and Transport: Desludging of septic tanks by suction machines and transportation by septage management vehicles to a Treatment Plant;
- Treatment: Treatment at centralized or decentralized treatment plants (these can be on-site integrated/cluster-based);
- Disposal/Reuse: Reuse of treated effluents for agricultural irrigation/ landscaping or other uses like, use by industrial estates or areas/ SEZ after their own onsite-tertiary treatment for reuse as industrial water demand management, or disposal at designated site; and reuse of residual sludge as fertilizer.

At no time are any solids or liquids resulting from the collection of wastewater/emptying of septage to be discharged into a drainage system, except where such a discharge is licenced by the appropriate environmental authority.

Efficient faecal sludge and septage management operation entails streamlining all processes and components along the 'sanitation value chain for on-site sanitation systems' during planning, design, implementation, operation and monitoring. Successful septage management operations need active coordination and participation among relevant stakeholders–DHTs/ULBs or VCs (as applicable),service providers, operators, ward councillors, residents/community

[24] Section 9.3.4 of CPHEEO Manual on Sewerage and Sewage Treatment Systems, Part A: Engineering, Third Edition, Revised and Updated, November 2013.

groups/ nongovernment organizations, other state government authorities, funding agencies, etc.

These terms of reference used the following nomenclature for wastewater:

- Blackwater: wastewater from toilets containing human excreta and faecal matter;
- Greywater: wastewater from surface cleaning, sinks, washing machines, and bathrooms; and
- Sewage: both blackwater and greywater combined.

While, the blackwater may be treated through septage management system (e.g., a septage treatment plant located remotely or an on-site integrated/cluster-based treatment system like, packaged treatment plans/bio-digesters); the greywater can be treated through a bio-remediation system/ phyto-remediation system with reed plant, and such treated grey water can be then discharged into stormwater drains/ storm sewers/ water bodies or reused for landscaping, etc.

The reports must refer to sectoral maps and plans and provide the rationale for the option selected, that supports the decision-making regarding the choice of septage management option.

(c) **Sanitation safe disposal arrangements.** The sub-tasks for arriving at solutions for sanitation safe disposal arrangements would be:

i. assess–(i) levels of water supply; (ii) existing sanitation arrangements and gaps in on-site sanitation facilities/arrangements; (iii) current practices of emptying faecal sludge; and (iv) likely volume of faecal sludge that may need to be emptied periodically, to propose a viable emptying frequency for faecal sludge from septic/holding tanks;

ii. sampling and analysis of faecal sludge from septic tanks (or holding tanks);

iii. quantification of wastewater and faecal sludge inflow into the river/low lying areas or other water bodies along with seasonal fluctuations;

iv. preparation of septage management intervention matrix and elaboration of determining/selection criteria, and clustering strategy, for provision of septage management intervention options and undertake an assessment to identify populations/areas that should be covered in a prioritized subproject town by each option or a combination of options, as applicable: (i) full scale application; (ii) partial scale application; and (iii) as a gap filling solution;

v. assess the adequacy of the capacities of the septage treatment plant (SeTP)/faecal sludge treatment plant (FSTP) based on the current wastewater and faecal sludge generation levels and considering the expected growth in the towns. The design period for the facilities may be in line with Indian national standards, unless strong justification for revision is demonstrated;

vi. evaluation of options for collection of wastewater and faecal sludge, with regard to technical feasibility, environmental and social impact, GESI aspects/ gender mainstreaming/gender sensitization, financial and economic viability, climate resiliency, etc.;

vii. assess, if SeTP and FSTP, are to be developed as separate facilities (co-located or separate sites) or whether facilities may be optimized to handle both wastewater and faecal sludge;

viii. review the institutional and regulatory framework for faecal sludge management in Nagaland State, with a focus on stopping overflow from septic tanks (or holding tanks) to public drains and/or river/other water bodies/low-lying areas, and/or roads; and propose a strategy and phased implementation plan (with indicative targets) in the project towns and/or prioritized subproject towns, outlining options and drawing on experience from similar contexts;

ix. identify the requirements of the Faecal Sludge Management System in terms of volume and frequency of emptying, number and type of vehicles, community collection tanks, etc.;

x. rapid evaluation of treatment technologies for SeTP/FSTP based on life-cycle cost analysis, land requirements, flexibility to loading variations, ease of modular implementation, and recommend the appropriate technology for SeTP/FSTP; and

xi. assessment of site suitability for SeTP/FSTP:

- define the parameters for assessing the suitability of the sites identified by respective DHTs/ULBs or VCs (as applicable) for development of the SeTP and/or FSTP, which may include factors impacting the overall design of wastewater services– conveyance/travel distance, any requirement for pumping, and other site-specific factors;
- rank the sites based on such assessment and prioritize them; assess the area of the land parcels required for development of the SeTP/FSTP within the sites identified;

xii. ensure in design that the septage treatment plant adopts appropriate technology for treating septage and the disposed sludge and wastewater after treatment shall strictly comply with the norms as per the relevant legislation. It shall be the responsibility of the licensed operator of the treatment plant to ensure the compliance with treatment and discharge norms, and the reuse of the treated waste shall be permitted as per the prevailing standards and norms. The treatment will ideally ensure the maximum reuse of the end residual product, including treated effluent and treated sludge within the standards and norms;

xiii. propose administrative/regulatory/technical/health and safety mechanisms for compliance by concerned authorities and licensed operators (private sector participation/ non-government organisation/ civil society) involved in the septage management process, including any penalties for non-compliance, to facilitate DHTs/ULBs or VCs (as applicable) in providing a septage service that is environmentally compliant and ensures operational sustainability (performance-linked annuity model/cost recovery from independent user charges or as added an amount or as an added percentage over water tariff based on “user pays” principle, sale of reusable end residual biosolids or products, etc.); and

xiv. prepare as part of O&M manual, the requirements for use on continuous basis on (i) database, reporting, and record keeping; (ii) public awareness and stakeholder arrangement; (iii) capacity building and training; (iv) helpline/helpdesk and grievance redressal; and (v) monitoring of service level benchmarks.

Task-4: Improving Overall Drainage Systems

(a) **Planning and Design Scope.** This part of study requires the calculation of the hydraulic loads followed by the hydraulic designs of the flooding and drainage systems for the prioritized subproject towns in the project. PDMC would prepare the stormwater drainage plan and detailed engineering design for identified stormwater drainage and landslip protection work components in the DPRs (including strengthening any existing DPRs) in necessary integration with the urban roads component of each subproject for roadside stormwater drainage systems (including any integration with water bodies) and landslip protection works, as part of support for the preparation of comprehensive DPRs, bid documents along with the necessary specifications and terms and conditions (technical/commercial) and bid-level working drawings for tender purposes, and for procurement processing support. Subsequently, the good for construction drawings would be prepared before the end of the assignment.

The respective flood control and drainage systems are to encompass the entire areas of the towns. Flood control options within the towns are to be examined while drainage waters are to be removed to outside of the town limits to suitable disposal points. Ponding of water within the towns is to be avoided. While the study is focussed on the respective towns, where appropriate the drainage catchments upstream of the towns may also need to be included in the calculation of flood flows.

The flood control and drainage studies first require the calculation of the hydraulic load using rainfall runoff computational techniques. This is followed by the hydraulic design of the drainage systems, again using computational techniques. Flood control systems means developing options to create floodway within the towns to channel flood waters though the respective towns while minimizing flood damage and the hazard to life. The flood waters may arrive at the respective towns from upstream catchments and/or be generated from within the towns (depending upon the times of concentration). Structures such as flood storages and retarding basins are only to be considered as a last resort and the main intent is to concentrate and remove flood waters by providing unimpeded routes.

Conventional drainage systems are also to be proposed in keeping with Indian national standards and guidelines. Drainage solutions are required which (i) eliminate pondage even during short rainfall durations and low intensities; (ii) are robust and will continue to function under a range of conditions and loadings; (iii) are easy and affordable to maintain; and finally (iv) add to the amenity of these towns. The potential reuse of the drainage water is outside of the scope of this project. However, the adoption of international best practices, like low impact development/green infrastructure principles that also contribute towards water conservation/groundwater recharge, etc., shall be duly explored, and based on the input data obtained from topographical and geo-technical surveys/hydrologic and hydraulic modelling/rainfall data, etc., the necessary interventions shall be planned and designed for such environmental-friendly stormwater drainage solutions, as feasible.

The study requires the diligent and expert assessment of the existing conditions and possible solutions for drainage system and landslip protection works. The hydrologic and hydraulic modelling required must be undertaken by people with considerable experience in these two disciplines, and the modelling must be overlaid with knowledge of local ambient conditions. For example, existing drainage systems are used as rubbish dumps and while not desirable, this practice

needs to be at least partially accommodated within the recommended solution in the shorter term, but needs to be remediated over the longer terms through necessary infrastructural provisions/awareness and incentive programs, etc. Recognition also needs to be given to the siltation of drainage systems that occurs over time and ongoing maintenance requirements. Similarly, based on inputs of topographical survey for slope conditions (including inputs recorded on site vegetation/ tree cover)and geo-technical investigations/ any geological surveys overlaid with hydrologic modelling for soil and surface/sub-surface waterflow conditions, rainfall intensity/ seasonal fluctuations, percolation rate–assess possible solutions for landslip protection works that involve engineering and bioengineering techniques, and may cover rigid and/or flexible structural elements for landslip protection and land/ slope stabilization.

Finally, the study also requires the identification of possible environmental and social impacts and associated mitigation measures of the proposed solutions. Typical technical specifications for planning and design of stormwater drainage systems are provided at Annexure 2.

(b) **Discussion Paper.** A number of references have been cited above. These references contain various planning and design criteria and evaluation options. A discussion paper is to be prepared which summarizes these references and the alternatives available and recommend a detailed solution methodology. The approach outlined in terms of reference is to form the base of the recommended solution methodology.

(c) **Planning and Investigations.** The Consultant is to become familiar with the recommended hydrologic model and hydraulic model and their respective data requirements and options. Both models require the physical features of the towns to be documented in a manner suitable to the models. In the case of the hydraulic model a comprehensive detailed field survey tied to a common benchmark is required. This includes roadside gutters, drainage channels, floodways (often roads), bridges and culverts, surface water holding structures (such as retarding basins) and barriers (such as levees and walls), and creeks /rivers/other water bodies.

A reconnaissance survey is to be undertaken to verify the collected data and to confirm drainage details. Total Station Survey is to be used to capture surface levels and the physical details of structure which influence the flow of water through the respective towns. Details of any existing underground drainage system are to be collected from the ULBs/district administration.

The data is to be collected and digitized into a GIS. The data is to be verified by field survey resulting in a cadastral and/or topographic map/ plan of each project town and/or prioritized subproject site location/ alignment. All structures which impede the passage of surface flows or areas where the passages of surface flows are choked resulting in impoundments are to be identified. Using this data, the existing drainage system and the surface levels are to be used to prepare a plan showing the flow of flood waters and drainage waters and an outline of the flooding and drainage pattern for the project town. Each project town is to be broken up into a number of sub-catchments as appropriate with the main drainage system forming the backbone to which all the sub-catchments drain. The data may be held in suitable spatial mapping software including a GIS system such as, Consultant's own ArcGIS or QGIS and layers from drawing software such as Auto-CAD.

A final set of plans to the scale of 1:1000 must be prepared displaying the above

information including surveyed surface levels, the drainage system, likely overland flow paths and sub-catchments. The maps should contain surface level contours at 5 m intervals across the project town and/or at 1 m intervals along the prioritized subproject site location/ alignment.

(d) **Concept Design.** The Consultant is to prepare a concept design for the flood control and town drainage. The following options must be examined:

Flood Control

i. The diversion of flood water around the town.
ii. The diversion of flood waters to nearby lakes, rivers and low-lying areas.
iii. The directing of floodwaters through the town along preferred floodways.
iv. The creation of floodways through the towns.
v. The regrading of roads and streets to enhance their hydraulic carrying capacity.
vi. Maximizing the use and enhancing the hydraulic capacity of existing drainage channels.
vii. The removal of floodway chokes.
viii. The use of existing open space to slow the velocity of the flood waters.
ix. The protection of vulnerable areas such as residential areas and economic weaker section–EWS/below poverty line–BPL areas.
x. Protection of the sewerage system to minimize flood water contamination.

Drainage

xi. The installation of an underground drainage system (options to be examined are the 1 in 1-year and 1 in 2-year events).
xii. The capture of surface runoff and its direction to the underground drainage network.
xiii. The use of underground storage to retard the captured runoff at strategic locations.
xiv. The gradient of the pipes to ensuring scouring velocity is maintained at all locations and small paper and plastic rubbish will also be flushed through.
xv. Secure access to the underground drainage system for maintenance purposes (all access chambers are to have lock down covers).
xvi. Trade off the whole of life-cycle cost of pumping with the depth of the pipelines (subject to maximum depth).
xvii. Maximum retention time in a wet well of four hours.
xviii. The water table level and the likely ingress of groundwater.

The concept plan is to be prepared and presented in the form of a report, plans and a PowerPoint slide deck to the Client. A one-day workshop on the concept plan is to be organized with key stakeholders and the plan presented for each prioritized subproject town. The workshop is to permit discussion on key aspects of the plan and the feedback is to be documented for subsequent inclusion in the plan, where appropriate.

(e) **Preliminary Design.** Following the approval of the concept plan a more detailed preliminary design is to be produced. The preliminary design should include a hydraulic design of the flood control system and the drainage systems using data from the rainfall runoff assessments and modelling. The preliminary design should

include plans showing the proposed flood control and drainage works, longitudinal sections of the floodways and drainage pipelines, details of surface and underground structures, details of proposed modifications to existing infrastructure including roadways, details of flood diversion works, flood control works or flood retarding works, details of drainage water capture, etc. The design criteria and design rainfall events should also be included. The preliminary design should permit the construction and operations and maintenance costs to be estimated to +/- 15%.

(f) **Performance Measures.** The three performance measures are:

i. Percentage of the town (by area) serviced by the drainage system: 100%;

ii. Number of reported drainage water ponding each year: 0; and

iii. The number of man-made flood choke points leading to an increase in flood levels: 0.

Task-5: Solid Waste Management

(a) **Secondary Data Study and Institutional Interventions.** This entails:

i. based on information obtained through varied stakeholder consultations and secondary data collected undertake assessment of current situation of municipal solid waste management in respective towns from technical/engineering and institutional-level administrative/management perspectives, identify field-level problems and issues pertaining to municipal solid waste management (both under public or private sector involvement), efforts already made by the State/stakeholder authorities, marketability and investor study for waste recovery/ recycle/ reuse, etc.;

ii. exploration of different affordable technological solutions, particularly in relation to plastic reuse and recycle, legacy waste management, decentralized but integrated waste system (material recovery facility and/or material recycling facility, etc.), specialized waste management requirements to handling of solid waste during extreme events (e.g., additional infectious medical waste during COVIOD-19 pandemic outbreak, etc.), including exploration of efficient and cost-effective waste segregation and collection systems based on secondary data review of the usability of technology vis-a vis technical capacity of municipal staff in respective towns in the state/region/India/subregion to implement, with special focus to be given on O&M of such solid waste management systems;

iii. based on secondary data review, undertake assessment of available technologies in India/region/state or subregion for plastic reuse and recycle, legacy waste management, decentralized but integrated solutions e.g., material recovery facility and/or material recycling facility toward waste diversion, waste treatment and disposal with/without waste-to-energy recovery at town-/ community-levels like, scientifically-laid landfill site, incinerator, mechanical composting/ vermi-composting/ biogas plant, plasma gasification or vitrification plant, etc., as feasible;

iv. collation of information on national/international best practices and sensitizing stakeholders in the State on best practices adopted in India/region or subregional context on collection, treatment and disposal, including on community participation in solid waste management;

v. preparation of an outline framework or municipal solid waste management (MSWM) plan for MSW management-related infrastructure needs, town-specific action plans (5-years, with mid-term review between 2nd and 3rdyear of short-term plan), and subproject-/ city-/ project-level investment plans for project towns and/or prioritized subprojects, for graded interventions in MSWM plan to be implemented over immediate/short term duration (2–5years), medium term duration (>5–20 years) and long-term duration (>20–30 years);

vi. collation of information and analysis of applicability of different institutional and regulatory mechanisms (administrative/financial/ technical, and legal aspects) adopted in India/region or subregion, and recommend as feasible, state-specific institutional strengthening requirements and impart knowledge on capacity building measures for solid waste management along with management information system, including for private sector participation and community participation;

(b) **Siting and Planning.** This would *inter alia* include, but not limited to:

i. Identification of suitable sites/locations for distribution of solid waste management infrastructure (improvements at existing facilities or proposals), especially the treatment/disposal sites considering the potential landuse suitability mapping analysis undertaken over the town-level base maps (e.g., for sanitary landfill considering various parameters like, river/lake or pond/wetland, flood plain, ground water table, water supply well, unstable zone (high slope/landslide- or landslip-prone/seismic fault zone), critical habitat area, buffer zone, airport, highway, habitation, public park, etc., along with due regulatory approval), etc.

ii. The number of sites and solid waste management equipment and vehicles required for investment, frequency of services, etc. would also be based on the projected population, development density, the land availability for landfill site/ waste treatment plant, waste transfer station and/or waste storage depot with/ without material recovery facility and/or material recycling facility, etc., current gap and proposed gap against the projected demand of population/employment/MSW service needs that is desired to be addressed; and necessary improvement requirements over the existing MSW service and for landfill sites as a scientifically-laid sanitary landfill site, etc.

iii. Further, to address impact of extreme events such as, COVID-19 pandemic outbreak, that has resulted in an additional infectious medical waste generation scenario, appropriate national/ international standards and/or best practices of such medical waste management, as they evolve from time to time, should be referred to for incorporation of planning and design provisions for MSW management.[25]

(c) **Detailed Engineering Design.** Based on the information obtained through varied stakeholder consultations, necessary surveys/analyses (i.e. various primary surveys/geo-technical and/or hydrological investigations, and secondary data collection and analyses), the PDMC shall as part of a comprehensive DPR for each prioritized subproject town/ subproject work components, undertake the detailed engineering design stage of work for the solid waste management component, duly

[25]ADB. 2020. *Managing Infectious Medical Waste during the COVID-19 Pandemic.* A Brief Note (Document Type: Brochures and Flyers). Manila.

meeting the provisions of The Nagaland Municipal Act, 2001 (Amendment appended: 4 of 2006) on sanitation conservancy and solid waste management; Municipal Solid Waste Management Manual, 2016, CPHEEO, MOUD, GoI; Solid Waste Management Rules, 2016/ Plastic Waste Management Rules, 2016/ Construction and Demolition Waste Management Rules, 2016, MOEF&CC, GoI; Bio-Medical Waste Management Rules, 2016; Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016, etc.(as amended from time to time),in consultation with State Pollution Control Board; and other international standards/best practices.

This with include as supporting documentation, the need for due consideration of design impacts, and the due diligence of–economic and financial analysis, including risk analysis, sensitivity analysis, cost-benefit analysis based on full life-cycle costs, etc., own source revenue generation for government/concessionaire, through MSWM tariff-/user fee or user charges-based revenues, conservancy tax of any property tax, sale of recovered/ recyclable materials and processed waste for reuse/ onward treatment or disposal, any incentives/ tipping fee, etc., financial operability/sustainability, impact on state finances and central budgetary support, etc.; meeting the assessment requirements for environment and social safeguards, and necessary integrated gender sensitization/ gender mainstreaming/ GESI aspects/ gender-responsive design features and climate resilience requirements; arriving at and integration for sustainable O&M requirements, including electrical requirements for any treatment plants/incinerators, and integration with other utilities (whether for functional purposes of such plants/incinerators with/ without waste-to-energy recovery systems), etc.

Undertake detailed cost estimation under comprehensive DPR for each prioritized subproject town, wherein the PDMC should add a contingency cost of 15% over the solid waste management component's detailed cost estimates, and prepare bid-level working drawings for tender purposes, and thereafter good for construction drawings.

(d) **Performance Measures.** The DPR for each subproject should target the performance of the solid waste management component to meet the national benchmarking of service indicators, either fully in the immediate/short-term of project implementation, as feasible, or to meet the benchmark over the medium-term/long-term of the planning horizon in a graded manner of desired improvements.

However, the planning and design requirements must target meeting at least the 100% benchmark in the immediate/short term of project implementation for (i) household level coverage of solid waste management services; and (ii) extent of segregation of municipal solid waste (e.g., segregation-at-source, etc.); while, say for the progressive achievement of 80% benchmark for (iii) extent of municipal solid waste recovered, could be targeted over the long-term period of the planning horizon; etc. Through the management information system, the performance of the solid waste management indicators would be regularly measured, monitored, appraised and evaluated for improvements of such quality metrics through implementation of performance improvement plans/proposals to enhance the system performance.

Task-6: Safeguard and GESI Action Plan

(a) **Environmental and Social Safeguards.** Prepare environmental and social

safeguard documents in accordance with ADB's Safeguard Policy Statement (SPS, 2009) and the country's legal requirements. Assess government policies, experiences, institutions, and the legal framework for environmental assessment, involuntary resettlement and Indigenous People to address any gaps with ADB's SPS. First update, as needed (a) environmental assessment and review framework; (b) resettlement framework; and (c) Indigenous Peoples planning framework, if applicable, developed specifically for the project; and then (d) IEE/ EIA; (e) land acquisition and resettlement plan/only RP documentation and related DDRs, and/or (f) IPP documentation, as appropriate for each subproject. The aspects (c) and (f) may be combined with aspects (b) and (e) respectively, if potential impacts on Indigenous Peoples are confined to impacts related to land acquisition and resettlement. All safeguard documents are to be conducted in meaningful consultation with project affected persons and communities, and documented as part of the safeguard documents.

(b) **Stakeholder Consultation.** The PDMC to conduct stakeholder consultations, including with local community(ies),and participatory planning exercises needs to be incorporated into the design of the subprojects. All proposed project design features, both hard and soft components, should be made in consultation with relevant stakeholders, including (but not limited to) the PMU (DUD),including DMA and PHED,PWD, ULBs/ VCs, etc., and adequate consultation with local beneficiaries and nongovernment organizations may be undertaken, when deemed appropriate.

(c) **Gender and Social Development.** The consultants will undertake/ update social and poverty analysis or assessments, and conduct gender analysis/ assess GESI aspects/ gender-responsive design features and design of GESI AP, including (i) identification of key issues to be addressed by the project, design and preparation of a town-specific GESI AP consistent with the project-level GESI AP; (ii) duly including in its advice/ recommendations, the potential EWCDT–elderly, women, children, differently-abled, and transgender facilities, and other gender and socially inclusive approaches that can be incorporated in the design of the ensuing project; and (iii) identification of resource needs for its implementation. Due diligence reports (DDRs) need to be prepared.

Task-7: Subproject Viability, Resiliency, Design and Monitoring Framework

(a) **Economic and Financial Analysis, and Climate Resilience.**

i. **City Investment Plan.** Review the current investment regime and propose a realistic investment program for the next ten (10) years (for required raw and treated water production, transmission, and distribution; wastewater/ septage management; stormwater drainage system and landslip protection work integrated with urban roads component; and solid waste management) taking into account the agreed projected demand assessment. This should include improvements (e.g., reduction of non-revenue water–NRW) to the system to increase existing supply capability, prior to major capital works to increase production capacity; decentralized wastewater/ septage management; integrated roadside stormwater drainage system and landslip protection works; and higher extent of municipal waste recovered.

The PDMC should investigate and propose realistic financing plan by leveraging possible sources of finance including future loan funding from ADB. In particular, the Consultant should consider the potential to meet the

O&M costs from internal cash generation from service revenues. As a policy, it shall be assumed that the cost of all property connections to achieve full coverage shall be capitalized and financed under Project CAPEX.

Accounting:

- Analyze the financial reports of current operations by UDD/ DUD, PHED,DMA/ municipal authorities, etc.;
- Identify and quantify all creditor liabilities, including debt;
- Document the inventory of physical assets and their value; and
- Compile a staff profile of current O&M staff.

ii. **Economic Analysis.**[26] Recommend to (in line with the principle of sustainable commercial operations) a pricing policy for water supply services. This would be done in conjunction with and in justification of the assessment of projected water demand. In particular, the PDMC would consider how these policies affect the poorer sections of the community currently not receiving service and recommend measures to enhance the quality and quantity of service to them.

The consultant shall review the current tariff level and tariff structure for water supply, and recommend a basic tariff structure; recommend an implementation schedule for cost recovery strategy; recommend a subsidy mechanism (if applicable); and recommended tariff level and financing mechanism. Similarly, undertake economic analysis for other above-stated infrastructure services in the project.

iii. **Financial Analysis.** Develop a long-term financial model for the water supply services. In particular, this would include the financing of and projected revenue from the proposed investment program.

This would include the utilization and estimation of forecast parameters (NRW, staffing numbers and ratio, organization structure and resources, unit operating costs, accounts receivables, etc.) using well run water supply and wastewater/septage management operations as the benchmark. The PDMC would present a fully developed financial model and forecast for the agreed city investment plan, to demonstrate the economic and financial viability of the recommended option. Similarly, undertake financial analysis for other above-stated infrastructure services in the project.

iv. **Climate Change and Disaster Resilience.** The proposed infrastructure investments will incorporate rapid economic, environmental, social and climate change diagnostics for each town, considering the factors for resilience to climate risks/ climate change impacts and disaster risks. This is envisaged to include, but not be limited to, the PDMC undertaking analyses of (i) the socio-economic context, including the town's geography, demography, urbanization processes and evolution, and existing master plans/development plans; (ii) primary economic growth drivers, including dominant economic activities and their evolution, the town's contribution to regional and national economic growth, including regional cross-border spillover effects, the business environment, and its overall competitiveness; (iii) competitiveness enablers of towns including

[26]ADB. 1999. *Guidelines for the Economic Analysis of Water Supply Projects*. Manila.

municipal management (institutions, policies/regulations, level of losses and enforcement), urban/regional planning, neighborhood development, economic development/trade facilitation infrastructure, land management, transportation systems/connectivity, urban infrastructure/utility service provision, open spaces, environmental resources/ historic preservation, and quality of urban spaces/public realm; (iv) identification and initial analysis of climate risks/ climate change impacts and disaster risks on existing assets, future growth areas, and vulnerable communities with specific focus on those poor; and (v) identification and initial analysis of risk avoidance/ minimization and adaptation and/or mitigation measures required, including climate proofing of existing infrastructure in infrastructure development sectors and service delivery. This study phase will result in undertaking climate risk and adaptation assessment or CRA (*formerly climate risk and vulnerability assessment or CRVA*) by the Consultant that will summarize the results of the initial assessment, prior to arriving at a suitable Climate Resilience Framework for continued adoption in planning, infrastructure design, construction, operation and maintenance, etc. at subproject/project-level, in the following manner:[27]

- To establish the climate resiliency of the improved urban infrastructure plans and feasibility studies to be undertaken, particularly site selection and designs, a rapid climate risk assessment using the preliminary climate (and disaster) risk screening checklist should be accomplished for each of the ensuing subprojects.
- Based on the outcome of the checklist assessment ('medium' or 'high' risk), an initial climate change assessment (CCA) will be prepared during the subproject preparation stage.
- Results and findings from the initial CCA will then be the basis of proposed climate change adaptation and/or mitigation plans, whose costs will determine the subproject's climate financing contribution.
- The initial CCA will undergo further modification, based on a more detailed CRA (*formerly CRVA*).

(b) **Detailed Project Report**. Consequent to approval of feasibility report/conceptual design report, the PDMC shall prepare a comprehensive detailed project report (DPR) for each town. The DPR is to contain the following, but not limited to:

i. ***Executive Summary.*** Summary of the salient features (water supply system, drainage features that influence wastewater/septage management and stormwater drainage along with landslip protection works, and solid waste management) of the town, the recommended solutions, any significant planning and design/implementation impediments, the cost, and any significant environmental and/or social issues.

ii. ***Introduction.*** The background to the project, the study methodology, the study criteria and parameter values, and a map of the study area showing relevant study features.

iii. ***Study Area.*** Features of the study area influencing the recommended solution, decisions and trade-offs made, possible planning and design/implementation impediments, and social and environmental areas of significance. A map showing the proposed infrastructure distribution

[27]ADB. 2014. *Climate Risk Management in ADB Projects*. Manila.

zones overlaid on a map of the town, including land use and habitation areas is to be included.

iv. ***Existing Situation.*** A description of (i) existing water supply system, problems being experienced (including prevailing service levels), and information on existing O&M organization, financial condition, cost-recovery mechanism, etc.; (ii) existing wastewater/septage management facilities, problems being experienced (including town-wide or local/ concerned settlement level), and information on current disposal arrangements/sites, locations of the discharge of domestic or non-domestic wastewater, including commercial/industrial discharges are to be identified; (iii) existing drainage and stormwater management, problems being experienced (including town-wide or local flooding and ponding), and information on any historical flooding or drainage events, including locations of the discharge of domestic or non-domestic wastewater/commercial and industrial discharges are to be identified; and (iv) solid waste management (town-wide through collection, transfer and transportation, waste diversion/ resource recovery, treatment and disposal); complete in all respects, and these must be included in the field reconnaissance, including integration within road right-of-way/any roadside utility provisions.

v. ***Proposed Project and Detailed Design.*** The project design shall include (i) source sustainability study, method of extraction, design of intakes, pumping systems, treatment process and all related general layout, and process and instrumentation design, hydraulic design, hydraulic flow diagrams, hydraulic model for pumping, storage, transmission and distribution systems for water supply services; (ii) strategy for managing the wastewater/ septage, offsite and onsite collection, transport, treatment and safe disposal of treated effluent, sludge and reuse potential, if any; (iii) a list of the rainfall data and its source and intensity-duration-frequency or IDF curves highlighting the design values, the flows for different rainfall events and the design values, proposed drainage patterns in plan form plus longitudinal cross-sections showing levels for sub-catchments and for the main drainage system, the features and measures of the roadside overland and underground proposed drainage systems, and locations where the flow/depth design criteria is exceeded for different rainfall events, including potential integration with water bodies; and (iv) municipal solid waste mechanisms for segregation-at-source, door-to-door and/or community-level collection, suitable sites for waste transfer stations/ resource recovery and/or recycling facilities, treatment interventions through scientifically laid sanitary landfill-mechanical or vermi composting-incinerator-plasma gasification or vitrification plant, etc. with/ without waste-to-energy recovery systems; including the necessary integration within road right-of-way/any roadside utility provisions.

vi. ***Environmental, Social, and Gender Issues.*** As required IEE/ EIA, RP and related DDRs/ IPP (as applicable), and a separate social impact assessment with gender analysis/ assessment of GESI aspects/ gender-responsive design features and GESI AP, (i) highlighting any areas of significance, which may require resolution before the project proceeds to the next stage; and (ii) duly including in its advice/ recommendations, the potential EWCDT–elderly, women, children, differently-abled, and

transgender facilities, and other gender and socially inclusive approaches have been incorporated in the design of the ensuing project.

vii. ***Cost Estimation and Implementation Schedule.*** The estimated capital and annual operating cost of the recommended solution is to be provided. Quality infrastructure investment should attain value for money, and remain affordable with respect to life-cycle costs, by taking into account the total cost over its life cycle (planning, design, finance, construction, O&M, and possible disposal), compared to the value of the asset, as well as its economic, environmental and social benefits.[28] A contingency of (i) 10% should be added to each estimate for water supply system; (ii) 30% should be added to each estimate for wastewater/septage management; (iii) 30% should be added to each estimate for stormwater drainage; and (iv) 15% should be added to each estimate for solid waste management. A detailed implementation schedule showing dependencies should be included.

viii. ***Recommendations.*** Any recommendations regarding the detailed design, construction or operations and maintenance of the recommended solution, especially those relating to physical (including climate resilience), environmental and/or social issues.

ix. ***Appendixes.***

- Appendix A – Design Criteria
- Appendix B – Drawings
- Appendix C – All relevant technical and survey data.

(c) **Design and Monitoring Framework.** As part of facilitating Client for the ensuing loan/project processing, the Consultants will develop a DMF at project-level outlining the impact, outcome, outputs, assumptions, risks and key activities with clear links to performance targets and indicators for each subproject, including support for baseline measurement.

Task-8: Final Report on Comprehensive DPR

Consolidating all the reports, the Consultant shall prepare the final report with an executive summary, implementation plan, and respective financial operating plans. The draft final report shall be delivered within 48-weeks (maximum typical duration available), and the final report after incorporating final comments from Client shall be submitted by end of 50th-week (maximum typical duration available), since commencement of each comprehensive DPR as per phasing of deliverables. The comprehensive DPR would cover the urban infrastructure sectoral component, as applicable, and duly integrated with urban roads sectoral component, for each prioritized subproject town.

The PDMC consulting firm shall submit a soft copy and 5 hard copies of each of the above reports. The Consultant should submit electronic copies of all database files developed as part of the project, including mapping and drawing files (SHP and DWG formats), data tables (XLSX). It is to be noted that all original design files for hydraulic models, mathematical analysis, Auto-CAD and GIS-baseline maps (complete layers/ database)/plans/drawings, shall be submitted in original formats in editable form and not in PDF. These final GIS-maps and database output editable files prepared/ updated by

[28]Infrastructure should be inclusive, enabling the economic participation and social inclusion of all. Economic and social impacts should be considered as an important component when assessing the quality of infrastructure investment, and should be managed systematically throughout the project life-cycle.

the Consultant will be transferred to the Client's own GIS-mapping and database system as part of the PDMC assignment.

Task-9: Preparation of Bid Documents and Procurement Processing Support. Apartment from overall procurement risk/ capacity assessment and strategic procurement planning, the PDMC would support the PMU (DUD) in preparation of bid documents (suitably as civil works, goods/ plants/ equipment, and any non-consulting/ consulting services contracts) for the above-stated urban infrastructure components, and undertaking procurement processing and procurement/ contract management for the prioritized subproject towns.

B. Urban Roads

Engineering Studies and Detailed Design of Urban Roads

The engineering studies and detailed design is divided into three parts:

(i) initial screening/pre-feasibility study of the tentative list of candidate roads/culverts/bridges and structures, as applicable;

(ii) feasibility studies of the shortlisted roads for final selection; and

(iii) detailed design for selected road, culvert/bridge and structure subproject components, as applicable.

The viability of the project shall be established taking into account the requirements with regard to rehabilitation, upgrading and improvement based on road/ highway design, pavement design, culvert/bridge design, protection works and other improvement and safety measures, as necessary, quantities of various items of works and cost estimates vis-à-vis the economic analysis within the given time frame. The DPR would inter-alia include detailed road/ highway design, design of pavement and overlay, drainage studies and design (including integration with any separate drainage studies), design of any protection works, design of slope stabilization works, design of culvert/bridges and cross drainage structures, road safety audits, quantities of various items, detailed working drawings, detailed cost estimates, economic and financial viability analyses, environmental and social feasibility, social and environmental action plans as appropriate and documents required for bidding for the project as per ADB Guidelines and latest appropriate SBDs (with required addendum wording for HS COVID-19 Plan); and refer related user guide, and RFQ/ SRFP for further clarity on preparation and evaluation of bid/ proposal document). Factors for resilience to climate risks/ climate change impacts and disaster risks such as, risk minimization/avoidance, adaptation and/or mitigation measures will be taken into consideration in the design of resilient all-weather roads and culverts/bridges, as applicable (as per national/international standards and/or best practices, including ADB's South Asia framework and practice).

The Consultants shall ensure detailed project preparation and design activities incorporating aspects of planning for universal access, value engineering, quality audit and safety audit requirement in design and implementation, including planning and implementation of vision zero strategy, gender-sensitive urban design by promoting crime prevention through environmental design–CPTED, etc. The stakeholder consultations shall also be duly strengthened adopting the aspects of diversity/ equity/ inclusion in arriving at/finalizing inputs to be considered for design and implementation. The sensitivity of project components would largely depend on location (e.g., rainfall, topography/gradient, soil conditions/ sub-surface drainage conditions, site vegetation,

etc.), traffic volume and stormwater drainage volume, system design and specifications, materials (including reuse of cleaned milled materials from existing road surfaces), safety plans and procedures, maintenance regime, and investments.

The Consultants will particularly take the following into account to design climate resilient all-weather roads and culverts/bridges and structures, as applicable:

i. Sites should be carefully selected with reference to existing local hazard maps or actual surveys.

ii. Factors for resilience to climate risks/ climate change impacts and disaster risks such as, risk minimization/avoidance, adaptation and/or mitigation measures will be taken into consideration in the design of climate resilient all-weather roads integrated with culverts/ bridges and other structures, through structural norms/non-structural measures.

iii. The urban roads' subproject components will be designed and executed as seismic resistant structure in accordance with relevant national standards, as applicable.

iv. The design and construction standards will be raised to appropriate level. The revised high flood levels of the rivers or the natural streams or drainage channels shall be considered, while designing facilities, as applicable. Geotechnical studies shall be undertaken and slope stabilization measures considered for landslide-prone zones/ landslip areas, wherever applicable.

v. Detailed engineering design for roads and culverts/bridges and structures will address slope instability problems and any shortages of good construction material and potential for reuse of cleaned material.

vi. Climate financing. i.e., climate mitigation and climate adaptation cost will be estimated.

vii. Chronic landslide-prone zones/ landslip areas, if any, will be identified and mapped, and design for suitable/ specialized technological solutions for slope stabilization and protection works will be provided.

Task-I: Initial screening of the tentative list of candidate Urban Roads' subproject components

The Consultant will undertake a review and screening of the tentative list of candidate urban roads (including separate stair-based access pathways/ footsteps for pedestrian use in hilly area habitation, as applicable) prepared by Client. The review and screening will be carried out through (i) review of all available reports and published information about the tentative list of candidate urban roads with any integrated culvert/bridge and structure subproject components, as felt required and the project influence area, including review of information in any existing master plans/development plans, transport master plans/comprehensive mobility plans, etc., prepared in the State and any existing DPRs for detailed design/implementation-level integration purposes with the urban roads' subproject components; (ii) reconnaissance survey in the field; and (iii) discussions with the officials of Client and concerned stakeholder authorities. The Consultant may devise a selection criterion to facilitate the preparation of a shortlist of candidate road and culvert/bridge and structure subproject components in consultation with Client and concerned stakeholder authorities. Urban roads' subproject components in, or close to, national parks, wildlife sanctuaries, or any other environmentally sensitive areas should be avoided. Urban roads' subproject components passing through populated areas requiring significant resettlement and land acquisition should also be avoided. Based on

the review and initial screening, the Consultant will finalize a shortlist of candidate urban roads (including separate stair-based access pathways/ footsteps for pedestrian use in hilly area habitation, as applicable), and culvert/bridge or structure subproject components in consultation with Client and concerned stakeholder authorities for taking up any feasibility study for the final selection of the urban roads. Prepare draft bid documents for any non-consulting/ consulting services, as felt required (e.g., request for quotation–RFQ for surveys/ investigations, etc.; request for proposal–RFP for supporting studies, etc.), and finalize them in consultation with Client and concerned stakeholder authorities (including following ADB accepted formats and meeting ADB prior approval requirements for draft bid documents, as applicable), and provide procurement processing and procurement/ contract management support.

Task-II: Feasibility Study for Shortlisted candidate Urban Roads' subproject components

If required, the Consultant will undertake a feasibility study for the shortlisted candidate urban road and culvert/bridge and structure subproject components, as applicable, for the final selection of the urban roads' subproject components.

The scope of services of any such feasibility study shall cover, but be not limited to, the following major tasks:

i. review of all available reports and published information about the project road including requirements to address climate risks/ climate change impacts and disaster risks, and the project influence area;
ii. detailed reconnaissance surveys and preliminary topographic surveys;
iii. road inventory and condition surveys;
iv. inventory of culverts/bridges and structures;
v. preliminary material and geotechnical investigation;
vi. identification of possible improvements in the existing alignment;
vii. preliminary traffic studies including traffic surveys and demand forecasting;
viii. preliminary environmental and social impact analyses;
ix. preliminary proposals and design for upgradation of roads integrated with culverts/bridges and other structures;
x. strip plan indicating the scheme for carriageway widening, location of all existing utility services (both over- and underground) and the scheme for their relocation/rehabilitation/upgradation, trees to be felled and planted, and land acquisition/resettlement requirements, and duly illustrating their existing streetscape elements;
xi. subproject component/project costing;
xii. economic and financial analyses;
xiii. criteria for selection of roads and pavement features for DPR; and
xiv. reports, documents and drawings.

The Consultants are to follow the relevant portions of this TOR for the Task-II Feasibility Study corresponding to the scope of services. The detailed scope of services and the methodology for achieving the detailed design objectives are described in Task-III below.

Task-III: Detailed design for selected Urban Roads' subproject components

The following sections describe the scope of services to be undertaken for the detailed design of the urban roads' subproject components.

The scope of services for detailed design shall cover, but not be limited to, the following major tasks:

(i) review of all available reports and published information about the candidate urban road and culvert/bridge and structure subproject components, as applicable, and the project influence area;

(ii) documentation on environmental, poverty and social impacts, including those related to cultural properties, Indigenous People natural habitats, involuntary resettlement, etc.;

(iii) undertake public consultation, including consultation with Communities located along the road, NGOs working in the area, other stakeholders and relevant government departments at different stages of assignment;

(iv) undertake detailed reconnaissance;

(v) identify possible improvements in the existing alignment;

(vi) review/conduct traffic studies including traffic surveys and axle load survey and demand forecasting, and pedestrian pathway audit;

(vii) undertake inventory and condition surveys for road, culvert/bridge, cross-drainage structures and stormwater drainage provisions;

(viii) carryout detailed topographical surveys using Total Station, GPS, etc.;

(ix) undertake pavement investigations;

(x) study sub-grade characteristics and strength: investigation of required sub-grade and sub-soil characteristics and strength for road and embankment design, and sub-soil investigation;

(xi) identify sources of construction materials, including any potential reuse of cleaned-up existing milled/ recovered material; and locations for disposal of excess excavated earth/debris generated from existing materials scrapped/excavated that cannot be reused, and needs to be discarded and disposed-off properly in an environment-friendly manner;

(xii) adopt approach of inclusive planning for universal access, and conduct road safety audit to identity areas of major concern, including black spots, any blind spots/traffic congestion stretches, and measures to be taken for improving detailed engineering design with respect to road safety, including safety of variety of non-motorized transport mode and their usage along with pedestrian circulation areas or movement pathways;

(xiii) prepare preliminary proposal for rehabilitation/widening, including shoulder composition, and cross-section details illustrating the proposed streetscape;

(xiv) undertake detailed design for rehabilitation/upgradation and widening of roads, including design for roads and culverts/bridges and structures to address requirement for potential disaster risks (slope stabilization in general, and particularly in landslide-prone zones/ landslip areas; seismic and other parameters like, cross-drainage requirements/ flood-prone areas, etc.); to be resilient to climate risks/ climate change impacts, with climate proofing of existing urban roads infrastructure; and to be available for all-weather operations;

(xv) ensure design of complete drainage system and disposal point for stormwater is integrated with the road/culvert/bridge and other structures, and any water bodies;

(xvi) identify the type and the design of intersections (including any railway crossings);

(xvii) carryout value analysis/value engineering, and subproject component/project costing duly incorporating cost of climate financing, i.e., address or consider factors for resilience to climate risks/ climate change impacts and disaster risks;

(xviii) undertake economic and financial analyses;

(xix) prepare strip plan indicating the scheme for carriageway widening, location of all existing utility services (both over- and underground) and the scheme for their relocation/rehabilitation/upgradation, trees to be felled and planted, and any land acquisition/resettlement requirements, and illustrating their proposed streetscape elements [e.g. street lighting, comprehensive range of signs or signages/pavement markings, junction/ intersection improvements, pedestrian pathways/ footpaths (including separate stair-based access pathways/ footsteps for pedestrian use in hilly area habitation, as applicable), road/street furniture, bus stop/transit shelter, etc.];

(xx) prepare DPR with detailed cost estimate, rate analysis (including analysis of rate method to be adopted for non-schedule items, and detailed bill of quantities, including safeguards monitoring and management cost estimate;

(xxi) prepare draft bid documents for execution of civil works (including, any goods/ equipment, etc.), and finalize them in consultation with Client and concerned stakeholder authorities (including following ADB accepted formats and meeting ADB prior approval requirements for draft bid documents, as applicable), and provide procurement processing and procurement/ contract management support;

(xxii) where required, prepare resettlement plans and related due diligence reports (DDRs) for the project affected people as per ADB–guidelines/accepted formats and Government of India Resettlement and Rehabilitation (R&R) Policy, and assess the land acquisition requirements; and undertake, as applicable, Indigenous Peoples Plan documentation and related DDRs; and

(xxiii) prepare initial environmental examination/environmental impact assessment (as applicable) and comprehensive environmental management plan.

While carrying out the field studies and investigations for planning and design, the information available in any existing master plans/development plans/comprehensive mobility plans, etc., being implemented or proposed for implementation in near future by various stakeholders like, the UDD/ PMU (DUD)/ DMA/ PHED, ULBs/ VCs, PWD (R&B), etc., shall be taken into account, including for any integration with such implementation elements. Such aspects, including the impacts on account of transportation-land use relationship shall be clearly brought out in the reports and drawings, to facilitate any further review and decision-making at the government level.

The details of the tasks to be undertaken are described in following paragraphs.

Standards and Codes of Practices

All activities related to field studies, design and documentation shall be done as per the latest guidelines/ toolkits/ circulars/ advisory notes of Ministry of Road Transport and Highways–MORTH, and MOHUA (*erstwhile* Ministry of Urban Development–MOUD), GoI; relevant publications of the Indian Roads Congress–IRC, Bureau of Indian Standards–BIS and its National Building Code of India (NBC 2016/ SP7:2016);etc., as applicable. For aspects not covered by IRC/ BIS, international standards such as, British and American Standards, and international best practices may be adopted. The consultants upon award

of the contract may reflect the same in the consulting firm's inception report to be submitted post-mobilization. For cost estimation purposes, the consultant will adopt–the Schedule of Rates of Nagaland PWD (R&B) along with rate analysis method and applicable cost index for different locations; the Central Public Works Department Specifications with Delhi Schedule of Rates along with rate analysis method; any other government or semi-government organization's schedule of rates along with rate analysis method as adopted by PWD (R&B) and/or as acceptable to the PMU (DUD); and market-based rates—in that order, especially for any items not available in the Schedule of Rates of Nagaland PWD (R&B).

Note: The Consultant shall ensure that the references made to all the relevant national standards/codes/manuals/guidelines and international standards/codes/manuals/ guidelines, etc., where applicable, is made to their latest application versions (i.e., as amended from time to time).

Quality Assurance Plan (QAP)

The Consultants shall have detailed Quality Assurance Plan (QAP) for all field studies including topographic surveys, traffic surveys, engineering surveys and investigations, analyses, design, and documentation activities. The draft detailed QAP document must be discussed and finalized with Client and concerned stakeholder authorities immediately upon the award of the Contract, and shall be submitted as part of the inception report.

Traffic Survey

The Consultants shall undertake necessary surveys for classified traffic volume count, origin-destination and commodity movement, characteristics axle loading, characteristics intersection volume count, speed-delay characteristics, pedestrian/animal crossing as per relevant IRC codes. The Consultants shall, immediately upon award of the work, submit to Client, proposals regarding the total number as well as the locations of the traffic survey stations as part of at each stage. Suitable maps and charts should accompany the proposals clearly indicating the rationale for selecting the location of survey stations. The methodology of collection and analysis of data, number and location of traffic survey stations shall be finalized in consultation with Client and concerned stakeholder authorities. In addition, undertake pedestrian pathway audit to plan for and strengthen/ rehabilitate pedestrian pathway or footpath, and/or separate stair-based access pathways/ footsteps for pedestrian use in hilly area habitation, as applicable.

Traffic Demand Estimates

The Consultants shall make traffic demand estimates and establish possible traffic growth rates in respect of all categories of vehicles, taking into account the past trends, annual population and real per capita growth rate, elasticity of transport demand in relation to income and estimated annual production increase. The methodology for traffic demand estimates shall be finalized by the Consultants in consultation with Client and concerned stakeholder authorities, including considering the due integration with transport-land use planning proposals (e.g. traffic impact analysis of any proposed surrounding greenfield or brownfield/ densification development projects, etc.) and forecast figures of projected population/employment/traffic generation as per any master plan/development plan exercise by government for respective ULBs and/or as per any regional planning proposals for urban areas managed by ULBs and rural areas managed by district authorities/VCs, as applicable. Overall traffic forecast, thus made shall form the basis for the design of each pavement type (including pedestrian pathway/ footpath, and/or

separate stair-based access pathways/ footsteps for pedestrian use in hilly area habitation, as applicable), bicycle lane, and other facilities/ancillary works.

Further considering the COVID-19 impact, demand for urban public transit during the pandemic has been suppressed and expected to remain below pre-COVID-19 levels if work-from-home and e-learning are sustained. The two key challenges would be tackling capacity challenges on public transport. Additional efforts would be required to reassure public transport users of safety precautions and demonstrate that public transport is clean and safe. Physically active transport, such as walking and cycling, is also a key strategy. Aside from promoting well-being and health, walking and cycling are far more environment-friendly options, contributing to enhanced air quality, lower CO_2emissions, and liveability of cities. Physically active transport modes tend to offer a higher switching opportunity during change conditions such as the pandemic, as they provide a cost-effective alternative to meet safe distancing requirements and relieve the burden on public transport.[29]

Engineering Surveys and Investigations

Reconnaissance and Alignment

The Consultants shall make an in-depth study of the available right-of-way (ROW), topographic maps, and other available relevant information collected by them concerning the existing alignment. The Consultants in coordination with the Client will arrange the required maps and the information needed by them from the potential sources, including any existing GIS-mapping database available with the government. The detailed ground reconnaissance may be taken up immediately after the study of maps and other data. The primary tasks to be accomplished during the reconnaissance surveys include:

(i) topographical features of the area;

(ii) typical physical features along the existing alignment within and outside ROW, i.e., land use pattern;

(iii) scheme for the widening of the existing road;

(iv) realignment requirements;

(v) preliminary identification of improvement requirements including treatments and measures needed for the cross-roads;

(vi) traffic pattern and preliminary identification of traffic homogenous links;

(vii) sections through congested areas;

(viii) inventory of major road infrastructure aspects, including land width, terrain, pavement type, carriageway type, culverts/bridges and structures (type, size and location), intersections (type, cross-road category, location), stormwater drains/ sewers, pedestrian pathways/ footpaths (includes separate stair-based access pathways/ footsteps for pedestrian use in hilly area habitation, as applicable), bicycle lane, street lighting, urban areas (location, extent), geologically sensitive areas, environmental features (including integration with surrounding open spaces that may generate traffic demand based on type of open spaces and their intended usage, existing streetscape planting/trees and any existence of linked open space systems/ green corridor continuum, etc.);

(ix) critical areas requiring detailed investigations;

(x) requirements for carrying out supplementary investigations;

[29]ADB. 2021. *Creating Livable Asian Cities*. Manila.

(xi) soil (textural classifications/infiltration capacities) and surface/sub-surface drainage conditions; and

(xii) type and extent of existing utility services along the alignment (within ROW).

The data derived from the reconnaissance surveys will be utilized for planning and programming the detailed surveys and investigations. All field studies including the traffic surveys should be taken up on the basis of information derived from the reconnaissance surveys.

Topographic Surveys

The basic objective of the preliminary topographic survey would be to capture the essential ground features along the alignment in order to consider improvements and for working out improvements, rehabilitation and upgrading costs. The detailed topographic surveys should be taken up after the completion of reconnaissance surveys. The field surveys shall be carried out using high precision instruments, i.e., Total Station, GPS, Auto level, LIDAR, etc., as per best practices.

Details of Utility Services and Other Physical Features

The Consultants shall collect details of all important physical features along the alignment. These features affect the project proposals and should normally include buildings and structures, monuments, burial grounds, cremation grounds, places of worship, railway lines, stream/river/canal, water mains, stormwater drains/ sewers, gas/oil pipelines, crossings, trees, plantations, utility services such as, electric and telephone lines (O/H & U/G) and poles, optical fibre cables (OFC), etc. The survey would cover the entire right-of-way of the road on the adequate allowance for possible shifting of the central lines at some of the intersection locations. The information collected during reconnaissance and field surveys shall be shown on a strip plan so that the proposed improvements can be appreciated and, utility removals of each type and tree cutting, etc., assessed and suitable actions can be initiated. Separate strip plan for each of the services involved shall be prepared for submission to the concerned agency.

Road Inventory Surveys with Pavement Features

Detailed road inventory surveys shall be carried out to collect details of all existing road and pavement features along the existing road sections. This includes roadside pedestrian pathway/ footpath, and separate stair-based access pathways/ footsteps for pedestrian use in hilly area habitation (as applicable), bicycle lane, etc.

Pavement Investigation

Pavement Composition

The data concerning the pavement composition may be already available with the Client on its own or through concerned stakeholder authorities. However, the Consultants shall make trial pits to ascertain the pavement composition.

Road and Pavement Condition Surveys

Field studies shall be carried out to collect road and pavement surface conditions. The data should generally cover: (i) pavement condition (surface distress type and extent); (ii) shoulder or pedestrian pathway/ footpath condition (as applicable, including that of separate stair-based access pathways/ footsteps for pedestrian use in hilly area habitation) or bicycle lane; (iii) embankment condition; and (iv) drainage condition. The

objective of the road and pavement condition surveys shall be to identify defects and sections with similar characteristics. All defects shall be systematically referenced, recorded and quantified for the purpose of determining the mode of rehabilitation. The pavement condition surveys shall be carried out using visual means supplemented by actual measurements and in accordance with the widely accepted methodology adapted to meet the study requirements. The shoulder or pedestrian pathway/ footpath or bicycle lane and embankment conditions shall be evaluated by visual means and the existence of distress modes (cuts, erosion marks, failure, drops) and extent (none, moderate, frequent and very frequent) of such distress manifestations would be recorded. For sections with severe distresses, additional investigations as appropriate shall be carried out to determine the cause of such distresses. The data obtained from the condition surveys should be analyzed and the road segments of more or less equal performance may be identified using the criteria given in IRC: 81-1997.

Pavement Roughness and Structural Strength

The roughness surveys, where required, shall be carried out using Bump Integrator or similar instrument. The methodology for the surveys shall be as per the widely used standard practices and would be finalized in consultation with Client/concerned stakeholder authorities.

The structural strength surveys for existing pavements, where required, should be carried out using Benkelman Beam Deflection technique in accordance with the CGRA procedure given in IRC:81-1997 (“Guidelines for Strengthening of Flexible Road Pavements Using Benkelman Beam Deflection Technique”). Axle Load surveys as per relevant IRC codes to be carried out.

Subgrade Characteristics and Strength

Based on the data derived from condition (surface condition, roughness) and structural strength surveys, the project road section should be divided into segments homogenous with respect to pavement condition and strength. The type of testing, frequency of test and the methodology should be finalized in consultation with the Client/ concerned stakeholder authorities.

Investigations for Culverts/Bridges and Structures

Inventory and Condition Survey of Culverts/Bridges and Structures

The Consultants shall make an inventory of all the structures (culverts, bridges, etc., as applicable) along the urban roads under the PRF. The Consultants shall inspect the existing structures and shall prepare a report about their condition.

Hydraulic and Hydrological Investigations

The Consultants shall collect information on high flood level (HFL), low water levels (LWL), discharge velocity, etc., from available past records, local inquiries and visible signs, if any, on the structural components and embankments. Local inquiries shall also be made with regard to the road sections getting overtopped during heavy rains. The Consultants shall make a desk study of available data on topography, storm duration, rainfall statistics, top soil characteristics, vegetation cover, etc., so as to assess the catchment areas and hydraulic parameters for all existing and proposed drainage provisions. The findings of the desk study would be further supplemented and augmented by a reconnaissance along the area. All-important hydrological features shall be noted during this field reconnaissance. Wherever required, for culverts/bridges and cross drainage structures having inadequate

waterway, history of overtopping/flooding and are proposed for reconstruction, the detailed hydrological and hydraulic studies shall be carried out.

Geo-technical Investigations and Sub-Soil Exploration

The Consultants shall carry out requisite geotechnical investigations and subsurface explorations for any proposed new culverts/bridges and/or culverts/bridges proposed for reconstruction etc., along high embankments and any other location as necessary for proper design of the works and conduct all relevant laboratory and field tests on soil and rock samples. The scheme for the boring's locations and the depth of boring shall be prepared by the Consultants and finalized in consultation with Client/concerned stakeholder authorities. The sub-soil exploration and testing should be carried out through the Geo-technical Consultants empanelled by the MORTH. The soil testing reports shall be in the format prescribed in relevant IRC Codes.

Material Investigations

The Consultants shall identify sources (including use of flyash/slag), quarry sites and borrow areas, undertake field and laboratory testing of the materials to determine their suitability for various components of the work and establish quality and quantity of various construction materials (including any potential of reuse of cleaned milled/ recovered material) and recommend their use on the basis of techno-economic principles. The Consultants shall prepare mass haul diagram for haulage purposes giving quarry charts indicating the location of selected borrow areas, quarries and the respective estimated quantities. It is to be ensured that no material shall be used from the right-of-way except by way of levelling the ground as required from the construction point of view, or for landscaping and planting of trees etc., or from the cutting of existing ground for obtaining the required formation levels.

Environmental restrictions, if any, and feasibility of availability of these sites to prospective civil works contractors, should be duly taken into account while selecting new quarry locations. The Consultants shall make suitable recommendations regarding making good the Borrow and Quarry Areas after the exploitation of materials for construction of works. The Material Investigation aspect shall include, preparation and testing of bituminous mixes for various layers and concrete mixes of different design mix grades using suitable materials (binders, aggregates, sand filler etc.) as identified during Material Investigation to conform to latest MORTH specification.

Road Safety Audit

Road safety audit shall be carried out for each candidate urban roads subproject component to identity areas of major concern, including black spots, any blind spots/ traffic congestion stretches, and measures to be taken for improving detailed engineering design with respect to road safety. The audit should be in line with the ADB's Road Safety Audit for Road Projects: An Operational Toolkit (2003) and other references or publications reflecting international best practices. The road safety audit includes pedestrian or pathway safety audit to be conducted. The data on accident statistics should be compiled and reported showing accident type and frequency so that black spots are identified along the project road section. The possible causes (such as poor geometric features, pavement condition, lack of–footpaths/access to safe pathways/bicycle lanes, refuge areas/other intersection features for safety, etc.) of accidents or accident-prone areas should be investigated into and suitable cost-effective remedial measures suggested for incorporation in design and implementation. In this context, the international best practice

of planning and implementation of “Vision Zero” strategy that reflects “Safe System” approach (originated in Sweden in 1990s) on road safety may be adopted for progressive improvement in safety of physical access and commuting on urban roads.[30]Apart from saved lives due to increased road safety, this would also facilitate in achieving better economic use of development resources and enhanced human productivity as well.

Detailed Design of Road and Pavements, Culverts/Bridges, and Structures

General

The Consultants shall carry out detailed designs duly considering the comprehensive requirements from the urban roads infrastructure sector perspective that will include the following, but not limited to:

(i) safe geometric design of road/highway segments, and design safer at-grade junctions or intersections/any grade-separated intersections, with appropriate level of service;

(ii) design of pavement for the widening and rehabilitation for the existing road, paved shoulders, carriageway improvements, medians/refuge areas, verges (as applicable);

(iii) design of culverts/bridges, and structures etc.;

(iv) alignment plans, longitudinal sections, and cross-sections (including those that illustrate the complete streetscape features);

(v) designs for road/street furniture, road safety, traffic control/calming/management features with necessary signs and pavement markings, pedestrian pathways/ footpaths (including separate stair-based access pathways or footsteps for pedestrian use in hilly area habitation, as applicable) and other roadside environment-friendly streetscape elements;

(vi) designs and drawings for service road (if applicable), tree planting/guide- or barrier-railing/fencing, traffic calming measures with necessary signs, street lighting, landscaping, etc., at locations where necessary/required in the streetscape;

(vii) integrated and resilient road and stormwater drainage design adopting low-impact development/green infrastructure principles, as feasible, including showing location of turnouts, out falling structures**;**

(viii) rehabilitation and repair plan with culverts/bridges and structures-related design and drawings;

(ix) design traffic amenities (Parking Areas, Weighing Station and Shelter/Rest Areas, etc.);

(x) design of other features to ensure overall that access, mobility, and safety is improved, without further increasing any congestion on the urban roads; and

(xi) bid-level drawings, and good for construction drawings for all subproject work components.

[30]ADB. 2021. *Creating Livable Asian Cities*. Manila. [“Vision Zero” which envisages a road system where there are no deaths or serious injuries. The principles underpinning the safe system approach acknowledge that people make mistakes. The blame for crash fatalities and injuries is shifted from road user behavior to a shared responsibility wherein the various elements of the road network should be fair to users who are always susceptible to making mistakes and prone to errors. Road safety should perhaps be better termed mobility safety as crash risks permeate across all modes including pedestrian and non-motorized transport. The concept of safer people zones in urban areas should be a priority and is an important concept toward achieving a better living environment.]

Design Standards

The Consultants shall evolve Design Standards and material specifications as part of the project study/ review, primarily based on IRC publications, MORTH/ MOHUA Circulars and relevant recommendations of the international standards. The Design Standards evolved for the project shall cover all aspects of detailed design, including the design of––geometric elements, pavement, culverts/bridges and structures, pedestrian pathways or footpaths/ footsteps, traffic safety and materials (including any potential of reuse of cleaned milled/ recovered material, if meeting applicable quality standards and specifications), etc.

Geometric Design

The detailed design for geometric elements shall cover, but not be limited to (i) horizontal alignment; (ii) longitudinal profile; (iii) cross-sectional elements; (iv) junctions/ intersections; and service roads (if applicable). The Consultants shall make detailed analysis of traffic flow and level of service for the existing road and workout the traffic flow capacity for the improved project road. The analysis should clearly establish the widening requirements with respect to the different horizon periods taking into account special problems such as road segments with isolated steep gradients.

In the case of closely spaced crossroads, the Consultant shall examine different options to reduce conflicts and furnish appropriate proposals for this purpose keeping in view the cost of improvement, impact on traffic movement and accessibility to cross roads. The drawings and cost estimate should include the provisions for realignments of the existing cross roads to allow such arrangements. The Consultant shall also prepare details for intersections taking into account the site conditions, turning movement characteristics, level of service, overall economy, and operational safety.

Pavement Design

The detailed design of pavement shall involve (i) strengthening of existing road pavement and design of the new pavement for the widening/additional lane(s), if the findings of the traffic studies and life-cycle costing analysis confirm the requirement for widening or reconstruction of the road; (ii) design of shoulders and/ or pedestrian pathways/ footpaths and separate footsteps or stairs-based access pathways for hilly area habitation use, and or bicycle lane that are connected with approach roads. The design of pavement shall primarily be based on IRC publications. However, the Consultants shall use the recommendations given in widely used international practices. The design of pavement shall be rigorous and shall make use of the latest national and international standards and/or practices. The design alternatives and the most appropriate design option suited to the conditions of State of Nagaland shall be established on life-cycle costing and techno-economic consideration.

For the design of pavement, each set of design input shall be decided on the basis of rigorous testing and evaluation of its suitability and relevance in respect of in-service performance of the pavement. The design methodology shall accompany the design proposals and shall clearly bring out the basic assumptions, values of the various design inputs, rationale behind the selection of the design inputs and the criteria for checking and control during the implementation of works. In other words, the design of pavement structure should take due account of the type, characteristics of materials used in the respective courses, variability of their properties and also the reliability of traffic

predictions. Furthermore, the methodology adopted for the design of pavement shall be complete with flow charts indicating the various steps in the design process, their interaction with one another and the input parameter required at each step.

For the design of overlays for the existing pavement, the strengthening requirement shall duly take into account the strength of the existing pavement vis-à-vis the remaining life. The overlay thickness requirements shall be worked out for each road segment homogenous with respect to condition, strength and sub-grade characteristics. Appropriate and most suited techniques of pavement design and rehabilitation should be duly considered. As an international best practice for design and construction: (i) the designed finished pavement level shall always be retained as prior to any resurfacing intervention(by milling existing layers, including reuse of cleaned materials post-such milling) so as to remain at prior level flush with the roadside gutter edge, unless deemed to be in need of change on critical review, at such a time of intervention; and (ii) ensure prior to road construction/ reconstruction scheduled activity that all the laying/ construction activity of various utility services located within the right-of-way of the urban roads like, *wet utilities* of water supply, wastewater/ sewerage, stormwater drain or storm sewer, and *dry utilities* of gas pipeline, cabling for electrical and communication networks, whether laid separately or as part of a unified utility duct, as best feasible is first completed (this is also important prior to any bituminous top layered resurfacing activity is undertaken to achieve the designed finished pavement level).

The pavement design task shall also cover working out the maintenance and strengthening requirements and periodicity and timing of such treatments. The maintenance requirements would be identified and evaluated for a period of 5 years after rehabilitation, together with the bill of quantities and the cost estimates.

Design of Embankments

The embankments design should provide for maximum utilization of locally available materials consistent with economy. The levels shall ensure that factors for resilience to climate risks/ climate change impact impacts and disaster risks are duly incorporated in design as risk avoidance/ minimization, and adaptation and/or mitigation measures.

Design of Culverts/Bridges and Structures

The Consultant shall prepare General Arrangement Drawing (GAD) and Alignment Plan showing the salient features of the new culverts/bridges and structures, as applicable, and proposed to be constructed/reconstructed along the urban road sections covered under the study and selected for the detailed engineering design stage work. These salient features such as, alignment, overall length, span arrangement, cross section, deck level, founding level, type of culverts/bridge components (superstructure, substructure, foundations, bearings, expansion joint, return walls, etc.), as applicable, shall be finalized based upon any hydrological/hydraulic and geotechnical studies, cost effectiveness and ease of construction. The GAD shall be supplemented by preliminary designs. In respect of span arrangement and type of culvert/bridge, a few alternatives with cost-benefit implications should be considered and the best alternative adopted. The Consultants shall also carry out the design and make suitable recommendations for protection works for culverts/bridges and drainage structures (as specifically applicable for urban roads), wherever it is felt required/found inadequate. The Consultants will prepare and submit related bid-level working drawings to support bidding process, and good for construction drawings as part of readiness of the ensuing project to the Client.

Subsequent to the approval of the subproject, the Consultant shall undertake detailed design for all components of the culverts/bridges and structures. The Consultant shall undertake detailed design for suitable/ technologically specialized slope stabilization and protection works (including retaining walls/ breast walls, etc., and including in landslide-prone zones/ landslip areas), and/or river/stream training works, wherever required.

Suitable repair/rehabilitation measures shall be suggested in respect of the existing structures as per IRC-SP:40 along with their specifications, drawings and cost estimate in the form of a report. The rehabilitation or reconstruction of the structures shall be suggested based on broad guidelines for rehabilitation and strengthening of existing bridges contained in IRC-SP:35 and IRC-SP:40.

Integrated Stormwater Drainage System

The requirement of urban roadside stormwater drainage system (open drains or preferably covered drains/storm sewers, etc.) and the integration of the same with proposed cross-drainage system and/or existing water retention ponds, and other urban water bodies, etc., including any integration with landslip protection works shall be worked out for the road sections under PRF Project. In addition to the roadside drainage system, the Consultants shall design the special drainage provisions for sections with super-elevated carriageways, high embankments and for road segments passing through cuts. The drainage provisions shall also be worked out for road segments passing through peri-urban areas/ rural settlements, as applicable in the project context. Where feasible, the stormwater management through adoption of natural filtration principles and low-impact development/green infrastructure principles, as feasible, should be considered for design interventions. The designed drainage system should show locations of turnouts/outfall points with details of outfall structures fitting into natural contours, any integration with retention ponds, and other water bodies, etc.

Traffic Safety Features, Road/Street Furniture and Road/ Pavement Markings

The Consultants shall design for urban roads, the suitable traffic safety features and road/street furniture including junction/ intersection improvements, traffic signals, signs (regulatory/warning signs and directional/guide/informational/monument or site-signage), pavement markings (traffic lane, bicycle lane, traffic island, crosswalks, bus bay/bus box, kerbs, etc.), overhead sign boards, crash barriers, additional fence over underpass lanes carrying significant traffic in case of over bridges/flyovers and over streams located at significant depths from road level in case of large culverts/bridges towards restricting any over-toppling/fall below, bollards, separator/guide railings, delineators, side-fence/ railings along stair-based access pathways or footsteps with adequate landing space/ rest-benches at regular intervals for pedestrian commute in hilly area habitation, etc. This includes other road/street furniture in pedestrian zones beyond kerb-side edges (e.g., rest-benches, waste bins, bicycle racks, pathway/ landscape lighting, etc.). The safety and security features of the road infrastructure integrated with its urban/peri-urban surroundings should also be designed considering innovative/best practice principles, e.g., complete streets, universal access design, planning and implementation of vision zero strategy, exploring retrofitting right-of-way spaces by any road diet interventions, gender-sensitive urban design promoted by crime prevention through environmental design–CPTED, etc., as feasible. The locations of these features shall be given in the reports and also shown in the drawings.

Miscellaneous Works

The Consultants shall suggest suitable sites for bus parking, enroute lay-byes in general and truck lay-byes in particular, parking areas and rest areas, and prepare suitable separate designs in this regard. The common facilities like petrol pump/gas filling station, vehicle parking, tyre repair, first-aid medical facilities, police post, café/restaurant, etc., should be included in the general layout in due integration with existing landuse proposals in master plans or from any integrated sector planning/local area planning/site planning perspective for implementation in future.

The Consultants shall prepare detailed traffic management plan (TMP) for the traffic management and safety, to be followed subsequently during the construction period.

Estimation of Quantities and Subproject Component/Project Costs

The Consultants shall prepare detailed estimates for quantities (considering designs and mass haul diagram) and subproject component/project cost for the entire project (civil works/goods, etc., contract package-wise), including the cost of environmental and social safeguards management proposed based on MORTH's Standard Data Book and market rate for the inputs or the local Schedule of Rates (applicable in State of Nagaland for locations corresponding to respective Circle/Jurisdiction of concerned stakeholder authorities), duly accounting the costs for climate change mitigation and adaptation measures considered in detailed engineering design. The estimation of quantities and costs would have to be worked out separately for each civil works/goods, etc., subproject contract package.

The Consultants shall make detailed analysis for computing the unit rates for the different items of works. The unit rate analysis shall duly take into account the various inputs and their basic rates, suggested location of plants and respective lead distances for mechanized construction. The unit rate for each item of works shall be worked out in terms of manpower, machinery and materials. The cost estimates shall be benchmarked with contracts with similar conditions in order to get a more realistic cost estimate.

Economic and Financial Analysis

The subproject will have clear economic rationale. The economic rationale includes an analysis of the market for the subproject's output and assesses its demand. The problem to be addressed by subproject components should be defined, together with identification of options for technical solutions.

The subproject will be cost effective. This usually involves a review of technical options available to address the identified problem and selecting the least cost option. Alternatively, economic efficiency may be demonstrated by the calculation of economic internal rate of return (EIRR) based on "with and without" subproject basis which will be equal to or higher than 9%. Similarly, financial internal rate of return (FIRR) needs to be arrived at. The EIRR and FIRR would be monitored and compared from the time of appraisal to the time when assessment of achievements is made subsequently during-/post-project implementation.

Poverty, Social and Gender

The Consultants will conduct poverty, social, and gender assessment for formulating and incorporating necessary components in the project design. Consultants will prepare the poverty and social assessment, and gender analysis/ GESI aspects/ gender-responsive

design features (integrated with climate resilience aspects) based on ADB's Technical Note on Social Analysis for Transport Projects (2008); Handbook on Poverty and Social Analysis: A Working Document (2012); Gender Toolkit: Transport (2013); Guidelines for Climate Proofing Investment in the Transport Sector: Road Infrastructure Projects (2011); etc. The assessment will cover issues related to participation, integrated gender-responsive/ GESI and climate resilience aspects, labor, affordability, sexually transmitted diseases or STI (including HIV), human trafficking, and other social risks. The assessment will recommend actions, mitigation plans, adaptation and/or other measures, as necessary; duly including in its advice/ recommendations, the potential EWCDT–elderly, women, children, differently-abled, and transgender facilities, and other gender and socially inclusive approaches that have been incorporated in the design of the ensuing project.

Safeguards – Environmental

The Consultants will collect environmental data, assess environmental impacts and propose mitigation measures in compliance with ADB's Safeguard Policy Statement (2009), and government guidelines, regulations, and policies. Urban roads subproject components in, or close to, national parks, wildlife sanctuaries, or any other environmentally sensitive areas shall be avoided. Consultants will prepare initial environmental examination, including comprehensive environmental management plans, as applicable, for the urban roads' subproject component integrated with culverts/bridges and other structures.

The Consultants will furnish any relevant information required for obtaining clearance from various state and central government agencies such as:

(i) If required, to assist Client and concerned stakeholder authorities in the submission of application and required documents for the Clearance of Reserved Forests to the Forest Departments, where necessary.

(ii) If required, to assist Client and concerned stakeholder authorities in the submission of forms and documents for obtaining Environmental Clearance for the subproject/project, where necessary.

(iii) Assistance to Client and concerned stakeholder authorities in submission for any other clearance requirements with respect to the environmental components relevant to the PRF.

Safeguards – Social

Social and environmental impacts will be assessed and mitigation measures proposed in compliance with ADB's Safeguard Policy Statement (2009), and government guidelines, regulations, and policies. Consultants will prepare relevant social safeguard planning documents which may include resettlement framework, resettlement plan (RP), land acquisition and resettlement related due diligence report (DDR), and Indigenous Peoples plan documentation, as applicable.

Procurement

While the town sizes in Nagaland being a north eastern State is small in area and population, the urban road segments are also likely to be of over relatively small stretches. The Contractors may face challenging site conditions and difficulties in sourcing and transporting construction materials, and will have limited working season to execute the works. As such, civil works/goods contract under these urban roads' subproject

components may attract only small to medium sized contractors from within the State and the nearby States. In the context of comprehensive DPRs along with bid documents to be prepared for prioritized subprojects, the Consultants will undertake assessment of the availability of suitable contractors and the contract packages will be formulated suitably. The Consultant's expert in the field of procurement will be required to have specific experience in: (i) addressing the procurement risks and challenges under similar conditions, including identifying any potential of reuse of cleaned milled/ recovered material and their specifications that meet quality standards; and (ii) have practical experiences in raising and attracting interests of qualified contractors for procurement under the Project, for example through road-show(s) and/or business opportunity seminar(s). The Consultants will provide procurement processing and procurement management support to the Client in bid evaluation and the award of civil works/goods contracts, and any consulting/ non-consulting services, and build the capacity of PMU (DUD) concerned stakeholder authorities on procurement in urban roads sector.

IV. OUTPUT AND REPORTING REQUIREMENTS

18. The assignment period for PDMC consulting services as stated above is 24 months (presently envisaged). The PDMC firm is tentatively expected to be mobilized by January 2022 and accordingly the consulting services is expected to complete by December 2023. The PDMC firm's inputs under the PRF will be discussed during the consulting services' inception phase after its mobilization. It is proposed that the PDMC will identify a list of prioritized subprojects and distribute them under different status levels of any complexities related to, for example, its techno-economic due diligence, safeguard requirements (environment and social) and gender-responsive/ GESI aspects, design readiness, etc., and be mutually agreed with the Client. The consulting firm would then arrive at an appropriate phasing of DPR/bid document deliverables for prioritized subprojects in consultation with the Client, grouped in two-phases (Phase 1 and Phase 2 deliverables, with their commencement dates), and an onward scheduling for procurement of subproject contract packages in the procurement plan based on the outcome/ procurement strategy arrived at under SPP Study Report. These priority list subprojects can then in a phased manner move to the stage of bidding process, upon completion of the phased priority list subprojects' detailed engineering design, and allied activities of necessary supporting documentation and bid documents-set complete in all respects, as required. The bidding process for such subprojects' contract packages to commence latest by the fourth quarter of 2022 or earlier, for start of issuance of invitation for bids (IFBs).

19. Under the PRF, the PDMC is envisaged to prepare one comprehensive DPR per prioritized subproject town (covering the components of water supply, wastewater/septage management, urban roads integrated with stormwater drainage system and landslip protection works, and solid waste management, as decided by the government) duly considering the required coverage/projected demand within the relevant UDD or DUD Notified Planning Area/Regional Planning Area boundaries, as decided by the government under integrated urban sector. In addition, the PDMC consulting firm by the end of PRF period should target support for completion of all the IFBs issued for identified and prioritized DHTs/ULBs or VCs (as applicable)/ and any border towns, and at least 50% of these contracts be ready for award to facilitate the PMU (DUD) to indicate adequate project readiness, towards undertaking preparation/onward processing for the ensuing loan/project.

20. The indicative stage-wise workflow is given in Table 1 (*not in any strict hierarchical order and subject to further modifications*):

Table 1: Indicative Stage-wise Workflow

S. No.	Stage of Work/Deliverable Type	Responsibility
1.	(a) Strengthen urban infrastructure vision/plans (b) Preparation of urban strategy, and city investment plans and action plans; and prioritization framework/subproject selection criteria [*updated as an iterative process*]	Approval of Urban Strategy, Investment Plan, and Action Plan: PMU (DUD) Approval of Prioritization Framework/ Subproject Selection Criteria: PMU (DUD) Facilitation: PMU (DUD)/ DMA/ PHED/ Stakeholder Authority/District Authority/ADB Primary task: PDMC
2.	Identification/review/finalization of potential subprojects under integrated urban sector	Facilitation: PMU (DUD)/DMA/ PHED/ Stakeholder Authority/District Authority/ADB Primary task: PDMC
3.	Reconnaissance survey, availability of land with clear–title, site/right-of-way, and all no-objection and necessary clearances for each subproject(including those from the Department of Water Resources, Government of Nagaland where required, from the environmental conservation/ any downstream impacts/ environmental safeguards compliance, etc., perspectives to protect water resources)	Facilitation: Stakeholder Authority/PMU (DUD)/ DMA/ PHED Primary task: PDMC
4.	Pre-feasibility study and prepare a list of prioritized districts/subproject towns/ subprojects, along with Phasing of Feasibility Studies/DPRs and Bid Documents based on above information [*Post the outcome of feasibility studies later, if and when required, the list of prioritized subprojects can be re-prioritized for onward applicable tasks.*]	Facilitation: PMU (DUD)/DMA/ PHED/ Stakeholder Authority/ADB Primary task: PDMC
5.	Undertaking a rapid climate risk assessment using the preliminary climate (and disaster) risk screening checklist, and as required based on risk-level assessed, undertaking detailed climate risk and adaptation assessment or CRA adopting ADB's CRA (*formerly CRVA*) Tool, and preparation of Climate Resilience Framework for onward guidance and to address climate risks/ climate change impacts and disaster risk resilience related aspects in detailed planning and infrastructure design (which would be useful during subsequent implementation, operation and maintenance processes as well), including recommended risk avoidance/minimization measures, adaptation and/or mitigation measures, etc., while duly mandating that "disaster-secure engineering," "structural norms/ non-structural measures," etc., for risk reduction are built into plans/designs from the very beginning for these PRF subprojects/projects for supporting urban resilience, including any "climate proofing" of existing infrastructure; and reporting compliance of climate resilience measures in	Facilitation: PMU (DUD)/DMA/ PHED/ Stakeholder Authority/ADB Primary task: PDMC

S. No.	Stage of Work/Deliverable Type	Responsibility
	such designs, etc., incorporated at subproject/project-level[31]	
6	Undertake Strategic Procurement Planning (SPP) Study, conduct SPP Workshop and discuss/ assess contract management support required and prepare Contract Management Plan(s)during pre-contract award stage for finalized subproject contract packages for the ensuing project (proportional to complexity, risk, and value of the contract; and due consideration to whether large subprojects have an individual Contract Management Plan and/or one Contract Management Plan can cover a group of similar contract packages of a similar size for smaller contract packages, etc.),arrive at Procurement Strategy in SPP Study, and submit SPP Report and resultant Procurement Plan prepared in consultation with the Client and ADB [*Review/ update Procurement Plan, as felt required during PRF implementation.*]	SPP Report review and approval: ADB Facilitation: PMU (DUD)/DMA/ PHED/ Stakeholder Authority/ ADB Primary task: PDMC
7.	Delineation of subproject site boundary/any alignment, topographical, geotechnical, hydrological and geological surveys (as felt required), and any other engineering/ demand/socio-economic/inventory of loss/willingness-to-pay surveys etc.	Facilitation: PMU (DUD)/ DMA/ PHED Survey task: PDMC
8.	Preparation of feasibility report/concept design, etc., as appropriate for each subproject* a. Feasibility study report/ conceptual design, etc., complete with draft due diligences documentation of economic and financial analyses, subproject categorization from environment, involuntary resettlement, and indigenous peoples impact perspectives, along with respective screening checklists for each categorization (e.g., rapid environment assessment–REA checklist, etc.), IEE, etc. b. Broad cost estimate c. Administrative Sanction for Commencement of DPR preparation based on the feasibility report/conceptual	Approval: PMU (DUD) Facilitation: PMU (DUD)/DMA/ PHED/ Stakeholder Authority Feasibility report/Conceptual design, etc. preparation task: PDMC Administrative Sanction: EC (as per sanctioned powers/ financial limit) Maximum time period for the Administrative Sanction: One-month

[31]ADB. 2016. *Enhancing Urban Climate Change Resilience: Seven Entry Points for Action*. Manila. [Infrastructure, such as water supply and sanitation, transport, and energy, is critical for the social, environmental, and economic sustainability of urban areas. Such infrastructure has a long design life, requires a long-term planning horizon and operation and maintenance commitments, and locks in investments for decades. Moreover, such infrastructure comprises large and diverse networks made up of many different interdependent components, crossing diverse geologic conditions, and interruption caused in any part may result in interrupting the performance of the entire system. Thus, it is important to plan such infrastructure in a robust manner to ensure that climate-related shocks and stresses are factored in the planning, design, construction, and maintenance processes associated with the infrastructure. Also, considering the importance of understanding the city as a *complex system*, the right data need to be inserted (entry point 1) into comprehensive urban resilience planning processes (entry point 2) to mainstream resilience into key urban infrastructure systems (entry point 3) through inclusive processes that engage a variety of stakeholders (entry points 4, 5, and 6) using appropriate finance (entry point 7) to enhance urban climate change resilience.]

S. No.	Stage of Work/Deliverable Type	Responsibility
	design, etc., with complete supporting analyses and document set, along with broad cost estimate	
9.	a. Preparation of Comprehensive DPR for each prioritized subproject town/ subproject work components, as applicable • Detailed Engineering Design • Detailed Cost Estimate • Drawings: bid-level working drawings first, and detailed good for construction drawings later • Draft DPR, and Final DPR	Facilitation: PMU (DUD)/DMA/ PHED/ Stakeholder Authority Comprehensive DPR preparation task: PDMC
	b. Technical Sanction of Final DPR	Technical Sanction: Authority designated by UDD/ PMU (DUD),GoN Facilitation: PMU (DUD)/DMA/ PHED/ Stakeholder Authority and PDMC Maximum time period for the Technical Sanction: Two-months
	c. All other supporting documents as part of complete document-set of Comprehensive DPR (updated, including for due diligences, where required, and complete in all respects) • Economic and financial analyses, subproject categorization from environment, involuntary resettlement, and indigenous peoples impact perspectives, along with respective screening checklists for each categorization (e.g., rapid environment assessment–REA checklist, etc.) • Bid documents complete in all respects, as applicable, with comprehensive EMP (including HSMP**), IEE/EIA, RP and related DDRs/ IPP, GESI AP, etc., as part of a complete DPR document set indicating investment readiness for each subproject	Prior review and approval for each subproject: ADB Facilitation: PMU (DUD)/DMA/ PHED/ Stakeholder Authority Public consultation, baseline measurement, any investigations/ surveys, and documentation task: PDMC
	d. Acceptance of Comprehensive DPR (including detailed estimated costs) for commencing the procurement process	Approval: PMU (DUD) Facilitation: PMU (DUD)/DMA/ PHED/ Stakeholder Authority Follow-up, technical clarification and support task: PDMC
10.	Procurement processing and procurement management support for each subproject a. Invitation for Bid b. Pre-bid meeting/queries/response preparation c. Bid openings (technical/price) d. Bid evaluation (technical/price) e. Bid evaluation reports (technical/price) f. Bid/ Performance Security validation	Final Procurement No Objection for Contract Package: ADB Bid Evaluation and Recommendation/ Approval: TERC constituted by PMU (DUD)/EC Facilitation: PMU (DUD)/DMA/ PHED/ ADB (TA Consultants

S. No.	Stage of Work/Deliverable Type	Responsibility
	g. Contract document set preparation for signing h. Any other procurement process documentation/draft and final correspondences support	and TA Consulting Firm as Observers, if sought) Primary Support: PDMC
11.	Institutional Review Report a. Mapping of Stakeholder agency(ies) involved in planning, design, implementation , O&M and service delivery b. Organizational structure of ULBs and stakeholder departments/ functional linkages within an organization and if between multiple agencies, as applicable, including process modelling covering systems, processes, and procedures c. Assessment of Financial Management system in the ULBs d. Service level benchmarking at each ULB level e. Human resource management in ULBs and stakeholder agencies. Municipal Cadre system/ Staffing pattern/ Skill set status f. Existing infrastructure service-related economic and financial conditions, tariff policy/structure and own source revenue generation/cost recovery mechanisms, municipal governance structure/government performance requirements, etc. (life-cycle costs, any metering, tariff/fare/user fee or user charges based on "user pays" principle, incentives/ subsidies/concessions, losses/non-revenue items, coverage of service, standard of service achieved in comparison with national standards/benchmarks and international best practices, issues/concerns, etc.) f. Recommendations for improvements/restructuring/ reforms, if any, etc., as felt required for organizational/municipal governance/O&M and sustainability of assets g. Workshops undertaken to present/discuss/validate/ obtain feedback on draft institutional review report findings and improvements/restructuring/reforms recommended, as felt required h. Finalize institutional review report for approval	Approval: PSC/ EC Facilitation: PMU (DUD)/DMA/ PHED/ Stakeholder Authority/ADB (Guidance and/or Output Review by Staff/TA Consultants and TA Consulting Firm as Observers, if sought) Primary review and report task: PDMC
12.	Institutional Strengthening/Capacity Development Plan with Programs identified for training/workshops/seminars/conferences, etc.	Facilitation: PMU (DUD)/DMA/ PHED/ Stakeholder Authority/ADB (Guidance and/or Output Review by Staff/ TA Consultants and TA Consulting Firm as Observers, if sought) Primary task: PDMC
13.	Initiate institution strengthening/capacity building process by preparing a Training Guidelines Plan, and organizing and conducting few necessary/priority program sessions on training/workshops/seminars/conferences, etc.	Staff Nomination and Facilitation: PMU (DUD)/DMA/ PHED/ Stakeholder Authority/ ADB (Guidance and/or Output Review by Staff/ TA Consultants

S. No.	Stage of Work/Deliverable Type	Responsibility
		and TA Consulting Firm as Observers, if sought) Primary task: PDMC
14.	Overall project management during the consulting assignment	Oversight Body: PSC Facilitation: PMU (DUD)/ DMA/ PHED/ Stakeholder Authority Primary task: PDMC
15.	Facilitation to Client in the ensuing loan/project processing stage of work by undertaking as needed financial management assessment, due diligences of economic and financial analyses, project financial management manual, project procurement risk/ capacity assessment, environmental assessment and review framework, initial poverty and social analysis/SPRSS assessment, Resettlement Plan and related due diligence reports/ Indigenous Peoples Plan, GESI AP, and assessment for resilience to climate risks/ climate change impacts and disaster risks, etc., including developing a DMF, as per relevant ADB–guidelines/accepted formats and meeting ADB approval requirements, including prioritizing and phasing investments in the identified urban areas for ensuing project(s) for investments in integrated urban sector	Oversight Body: PSC Facilitation: PMU (DUD)/ ADB (Guidance and/or Output Review by Staff/TA Consultants and TA Consulting Firm as Observers, if sought) Primary task: PDMC

* These stages of study work for prioritized subprojects in this consulting assignment pertain to feasibility studies/conceptual design, improved urban infrastructure plans, etc., as appropriate.

** Updated as site-specific health and safety management plan (SSHSMP)with site-specific health and safety COVID-19 plan (HS COVID-19 Plan).

ADB = Asian Development Bank, CRA = climate risk and adaptation assessment, CRVA = climate risk and vulnerability assessment, DDR = due diligence report, DMA = Directorate of Municipal Affairs, DMF = design and monitoring framework, DPR = detailed project report, DUD = Directorate of Urban Development, EC = Empowered Committee, EIA = environmental impact assessment, EMP = environmental management plan, GESI AP = gender and social inclusion action plan, GoN = Government of Nagaland, HSMP = health and safety management plan, IEE = initial environmental examination, IPP = Indigenous Peoples plan, O&M = operation and maintenance, PDMC = project design and management consultant, PHED = Public Health Engineering Department, PMU = project management unit, PSC = Project Steering Committee, RP = resettlement plan, SPRSS = summary poverty reduction and social strategy, TA = technical assistance, TAC = tender approval committee, TERC = tender evaluation and recommendation committee, UDD = Urban Development Department.

21. The PDMC consulting firm will report to the Project Director, PMU (DUD). For day-to-day basis of reporting, the PDMC team would report to Deputy Project Director-1for overall urban component, and Deputy Project Director-2 for water supply component, and coordinate with Nodal Officer under PMU (DUD),and/or any other designated representative from Client for execution of the consulting assignment. The Team Leader/Deputy Team Leader is responsible for delivery of all the work outputs and corresponding reports. The PDMC is required to submit following reports, as applicable, considering identified/ reviewed/ prioritized–subproject towns and/or subproject work components under integrated urban sector, to the Project Director, PMU (DUD). All reports should be submitted as required below (Table 2), in an electronic and hard copy format.

Table 2: Details of Milestones/Deliverables: Reports/Timing

Category	Milestones/Deliverables (Type of Report)	Timing	No. of Copies*
A. Project Management Services	PDMC Mobilization	Within 1-month of commencement of the consulting services	1
	Inception Report (including QAP/QMP)	**By the end of 1-month** of commencement of the consulting services	5
	Project Performance Monitoring System (PPMS), Financial Management System (FMS), and other measures	Established within 4-months of commencement of the consulting services	-
	Monthly Progress	Every month	5
	Quarterly Progress	Report every quarter/ annually (including as applicable, the GESI AP report, and update on safeguard monitoring as per monitoring reports with any updates on site-specific health and safety management plan covering HS COVID-19 Plan)	5
	Annual Report		5
	Final Report of PDMC Assignment with services and tasks undertaken/status of task accomplishment/learning for improvement/way forward	By the end of penultimate month prior to the completion of the PDMC assignment	5
	Non-Report Type Item: Handover of Procured Furniture and Furnishings, Computers/Equipment, Accessories, Unused consumables, etc., along with their original relevant document sets (e.g., procurement processing documents, warranty, insurance, O&M manuals, etc.), as applicable	Before completion of the PDMC assignment [Note: Such handover to be completed along with the submission of 5 (five)-signed Transmittal copies for record/ communication purposes for each Item-Set handed over to PMU (DUD).]	5
B. Planning and Detailed Engineering Design (with Detailed Project Reports–DPRs) and Procurement Processing Assistance for each Subproject	**I. Secondary Data Collection/Reconnaissance Survey/Preliminary Study**	**Immediate** after commencement of the consulting services	
	GIS-based Base Maps of the Study Area	**Within 8-weeks** of commencement of the consulting services	3
	Preliminary Report on infrastructure inventory and current status based on reconnaissance survey and secondary data collection, for: • water supply system • wastewater/ septage management	**Within 8-weeks** of commencement of the consulting services	3

Category	Milestones/Deliverables (Type of Report)	Timing	No. of Copies*
	• urban roads along with stormwater drainage system and landslip protection works • solid waste management		
	Urban Strategy, City Investment Plans and Action Plans, based on **Prioritization Framework/ Subproject Selection Criteria** and **Pre-feasibility Studies** the **List of Prioritized Subprojects and Phasing of Deliverables** arrived at as a consolidate milestone/ deliverable to commence Feasibility Study/ DPR-level Work/ Bid Documents Preparation *(Updated as an iterative process)*	**Within 20-weeks** of commencement of the consulting services[Finalization to be completed latest within 5-months of commencement of the consulting services]	5
	Rapid climate risk assessment using the preliminary climate (and disaster) risk screening checklist, and as required detailed Climate Risk and Adaptation Assessment (CRA) and **Climate Resilience Framework** with adaptation and/or mitigation measures to adopted at subproject/project-level	Initial due diligence by the end of Feasibility Studies/ Firmed-up during Phase-I DPRs [*Comprehensive Design Review Report to be submitted as stated, on periodic basis at sub-project/ project-level, as applicable*]	5
	Strategic Procurement Planning (SPP) Study, **SPP Workshop**, **Procurement Strategy**, and **SPP Report**; resultant **Procurement Plan** (prepare/review/update); and **Contract Management Plan(s)**	**SPP Study, SPP Workshop, Procurement Strategy, and SPP Report,** along with contract management support required, and resultant **Procurement Plan (first version):** SPP Study to begin in-parallel to inception activities, and all SPP Study tasks/ documents as stated-above be completed within **12-months**of commencement of the consulting services. **Procurement Plan to be thereafter reviewed/ updated** at appropriate timing in consultation with PMU (DUD) on a continuous basis of information made available w.r.t. firmed-up/ approved DPR(s), etc. **Contract Management Plan(s):**At appropriate timing in consultation with PMU (DUD)on a continuous basis as	5

Category	Milestones/Deliverables (Type of Report)	Timing	No. of Copies*
		DPR(s) get firmed-up/ approved, and completed latest before the end of PDMC assignment	
	II. Preparation of Comprehensive DPR of <u>each</u> Prioritized Subproject Town with subproject work components as applicable	**Concurrent activities** would commence in consultation with PMU (DUD) **from 21st-week onwards** of commencement of the consulting services. **[<u>Maximum typical duration</u> available for <u>each</u> DPR completion is 20-weeks from its scheduled commencement as per Phasing till Final DPR stage of work.]**	
	a. Detailed Surveys*(Primary and Engineering Surveys like, socio-economic survey/ inventory of loss survey/ willingness-to-pay survey/ topographical survey, etc.)* ***and Detailed Investigations at Feasibility Study/ DPR-level***	4-weeks for each subproject	5
	b. Infrastructure Design		
	Identification Report (water supply source, wastewater/septage management, and stormwater drainage system and landslip protection work locations; and identified road alignment/right-of-way/culvert and/or any approach for bridge locations in need widening/ strengthening/reconstruction, etc.)	6-weeks for each subproject	5
	Feasibility Report/Conceptual Design (including any revisions), etc., with draft due diligences documentation undertaken**	12-weeks for each subproject [For all prioritized subprojects to complete latest by 9 months from commencement of the consulting services]	5
	Draft DPR	**36-weeks**(*cumulative duration = 20 + 16 weeks*) [For all prioritized subprojects to complete latest by 16 months from commencement of the consulting services]	5
	Final DPR	**40-weeks**(*cumulative duration = 20 + 20 weeks*) [For all prioritized subprojects to complete latest by 18 months from commencement of the	5

Category	Milestones/Deliverables (Type of Report)	Timing	No. of Copies*
		consulting services]	
	c. Safeguard Documentation (as applicable) [Duly updated from Feasibility Report- to DPR-level of work]	*[Cumulative duration continued for each subproject]*	
	Initial Environmental Examination Report covering project proposals *(In case, if Environmental Impact Assessment is applicable, higher duration would be required)*	36-weeks	5
	Involuntary Settlement and Resettlement Plans	36-weeks	5
	Indigenous Peoples Plan	36-weeks	5
	GESI AP	36-weeks	5
	Due Diligence Report	36-weeks	5
	Design and Monitoring Frameworkrelated work w.r.t. each subproject and consolidation at project-level	Continuous [in consultation with PMU (DUD)]	5
	d. Procurement Support		
	Draft Bid Document	**42-weeks**[For all prioritized subprojects to complete latest by 19 months from commencement of the consulting services]	3
	Final Bid Document^	**44-weeks**[For all prioritized subprojects to complete latest by 20 months from commencement of the consulting services]	3
	Draft Final Report of each Subproject, with Implementation Plan and Financial Operating Plan	48-weeks	5
	Final Report of each Subproject, with Implementation Plan and Financial Operating Plan	50-weeks [after incorporating final comments from PMU (DUD)]	5
	Pre-Bid Process Support	At appropriate timing in consultation with PMU (DUD)on sequential basis once the procurement of first subproject bid is ready to commence	-
	Bid Evaluation Reports (Technical and Financial)		5
	Draft Letter of Acceptance		1
	Other Technical Documents		
	QAQC Manual	Within 12–18 months of	5

Category	Milestones/Deliverables (Type of Report)	Timing	No. of Copies*
	O&M Manual	consulting firm mobilization in consultation with PMU (DUD)	5
	Detailed good for construction drawings	Before the end of procurement processing support for each subproject/contract, and completed latest before the end of PDMC assignment	5
	Comprehensive Design Review Report on compliance of aspects of Climate and Disaster Resilience incorporated in detailed engineering design and DPR	Semi-annual (to be completed latest by 18-months from commencement of the consulting services)	5
C. Institutional Review/Strengthening/Capacity Building Requirements	Draft Institutional Review Report	5-months after commencement of the consulting services	5
	Final Institutional Review Report	6-months	5
	Draft Institutional Strengthening/ Capacity Development Plan	7-months	5
	Final Institutional Strengthening/ Capacity Development Plan	8-months	5
	Programs on Training/ Workshops/Seminars/ Conferences, etc., including Training Guidelines and Plan	At appropriate timing, in consultation with PMU (DUD)	5
	Organizing and conducting few necessary/priority Program Sessions on Training/Workshops/Seminars/Conferences, etc.	At appropriate timing, in consultation with PMU (DUD)	-
	Training Implementation and Evaluation Report, including compilation of Presented Documents/Proceedings of Workshops/Seminars/ Conferences etc.	Within 1-month after conducting training	5
	Project Financial Management Manual	15 months after commencement of the consulting services	5

* The consulting firm is required to submit soft copy of all the reports in editable formats.
**These stages of study work for prioritized subprojects in this consulting assignment pertain to feasibility studies/conceptual design, improved urban infrastructure plans, etc., as appropriate.
^ Inclusive of bid-level working drawings as well.

22. Few key milestones are summarized below (Table 3) for delivery of outputs. In conjunction with these timeframes, the acceptance of each monthly invoice by the Client will depend on the Client's acceptance of the quality of outputs or deliverables produced for which the consultant's time-inputs are attributed to in the respective monthly timesheet.

Table 3: Key Milestones Schedule

S. No.	Key Milestones	Reference Description	Due Date*
1	Inception Report	For overall PRF Project	1
2	**Urban Strategy and City Investment Plan (Final Report)**: Urban Strategy, City Investment Plans and Action Plans; based on Prioritization Framework/ Subproject Selection Criteria and Pre-feasibility Studies, and the List of Prioritized Subprojects and Phasing of Deliverables, including List of Feasibility Reports finalised[a]	Sector Analysis and Strategy Report under Output 1, including Prioritization of Subprojects and Phasing of Deliverables arrived at to commence sequentially the onward work of Feasibility Study/ DPR-level Work/ Bid Documents preparation	5
3	Final Institutional Review Report	For Output 3, including framework for urban sector projects, and after incorporation of comments	6
4	Final Institutional Strengthening/ Capacity Development Plan	For Output 3, including governance performance measures for urban sub-sectors, and after incorporation of comments	8
5	Feasibility Reports	For Output 2, to be completed for all prioritized subprojects with draft due diligences documentation undertaken and Feasibility Reports/ Conceptual Designs, Improved Urban Infrastructure Plans, etc., prepared, and to facilitate any revision in the list of prioritized subprojects for onward DPR preparation based on outcome of feasibility studies undertaken	9
6	**Workshop 1- for Phasing of Deliverables:** Review Operating Environment and Market Analysis under Strategic Procurement Planning (SPP) Study[b]	For Output 2, based on Market Analysis and including in conjunction with the outcome of Feasibility Reports, revise and finalise the List of DPRs to be prepared along with onward Phasing of Deliverables	9
7	**Climate Resilience Framework**: Based on rapid climate risk assessment using the preliminary climate (and disaster) risk screening checklist, and as required detailed Climate Risk and Adaptation Assessment (CRA)	For Output 2, initial climate resilience due diligence by the end of Feasibility Studies/ Firmed-up during Phased DPRs (first phase)	12
8	**Workshop 2- SPP Study Report:** Procurement Strategy, and SPP Report; and resultant Procurement Plan	For Output 2, including identification of contract management plan(s) required for prioritized subprojects	12
9	Draft DPR	For Output 2, DPRs (prepared in phases) amongst prioritized subprojects, with updated due diligences documentation	16

S. No.	Key Milestones	Reference Description	Due Date*
10	Final DPR	For Output 2, DPRs (finalised in phases) amongst prioritized subprojects and after incorporating the comments on Draft DPRs	18
11	Final Bid Document	For Output 2, after incorporating the comments for draft bid documents (prepared in phases), and including bid-level drawings and publication of respective invitation for bid.	20
12	Good for Construction Drawings - Final Version	For Output 2, GFC drawings (Final Version, as approved by Client) to be handed over before the completion of PDMC assignment after incorporating the comments for draft GFC drawings (prepared in phases)	23
13	All other documentation	For overall PRF Project, all other documentation such as, PPMS/ FMS for project monitoring and progress reporting, comprehensive design review report, procurement processing, support, contract management plans final report, ensuing loan processing support, etc. At the end of the contract.	23

DPR = detailed project report, FMS = financial management system, GFC = good for construction drawing, PDMC = project design and management consultant, PPMS = project performance monitoring system, PRF = project readiness financing.

* Due date in months from commencement of consulting services. The Client will make best efforts to provide comments on the submitted documents within appropriate time.

[a]The final value and number of Feasibility Reports will be finalised at this key milestone stage by the EA. The milestone payment related to Feasibility Reports at S. No. 5 (Table 3) will be paid on pro-rata basis of total project cost resulting from Feasibility Reports. For example, say 20 Feasibility Reports to be prepared resulting into total project cost of INR 1000 crores. Therefore, the payment due at the milestones for one Feasibility Report (say for project cost of INR 100 crore) will be calculated in the ratio of 100/1000.

[b]The final value and number of DPRs will be finalised at this key milestone stage by the EA, in conjunction with the outcome of Feasibility Reports. The milestone payment related to DPRs/ Bid Documents/Good for Construction Drawings at S. No. 9, 10, 11 and 12 (Table 3) will be paid on pro-rata basis of total project cost resulting from DPRs. For example, say 10 DPRs to be prepared resulting into total project cost of INR 500 crores. Therefore, the payment due at the milestones for one DPR (say for project cost of INR 100 crore) will be calculated in the ratio of 100/500.

23. The inception report shall cover the following major aspects:

(i) project appreciation;

(ii) detailed approach and methodology to meet the requirements of the TOR; including scheduling of various sub-activities to be carried out for completion of various stages of the work; stating out clearly their approach and methodology for project preparation and design activities after due inspection of the potentials subproject and collection/collation of necessary information;

(iii) summarise clearly wherever deviating from TOR and/or technical proposal with reasons and seeking for approvals.

(iv) task assignment and personnel deployment schedule to achieve key milestones/deliverables should be discussed and approved by the Client;

(v) work programme/ plan;

(vi) proforma for data collection/respective surveys, as applicable; and

(vii) draft design standards/ best practices, etc., as applicable.

24. The personnel deployment schedule accepted at inception report stage would be updated at key milestones of feasibility reports, DPRs, and bid documents, discussed and approved by the Client.

V. EXPERTS REQUIRED

25. For the PDMC consulting services under integrated urban sector, a total of 418 person-months, including 115 person-months of national key experts and 303 person-months of national support staff, would be required to be mobilized by the consulting firm as minimum inputs during the assignment under PRF loan for infrastructure development projects in Nagaland. The team composition of PDMC covering key experts and support staff, and their minimum person-month inputs is in Table 4.

Table 4: Team Composition for PDMC Consulting Firm

S. No.	Expertise	Positions	Input (Person-Months)	Input Requirements
A.	**National Key Experts**			
1	Urban Development Expert (Team Leader)	1	24	Full-Time
2	Urban Transport Expert (Deputy Team Leader)	1	12	Intermittent
3	Water Supply Expert	1	6	Intermittent
4	Wastewater/ Septage Management Expert	1	6	Intermittent
5	Stormwater Drainage Expert	1	8	Intermittent
6	Solid Waste Management Expert	1	6	Intermittent
7	Landslip Protection Expert	1	6	Intermittent
8	Climate and Disaster Resilience Expert	1	4	Intermittent
9	Municipal Reforms/ Institutional Governance Expert	1	8	Intermittent
10	Procurement Expert	1	8	Intermittent
11	Environment Safeguards Expert	1	6	Intermittent
12	Social Safeguards Expert	1	6	Intermittent
13	Gender Equality and Social Inclusion (GESI) Expert	1	3	Intermittent
14	Financial Management Expert	1	8	Intermittent
15	Economist	1	4	Intermittent
	Sub-Total	**15**	**115**	
B.	**National Support Staff[a]**			
1	Technical Coordinator	1	24	Full-Time
2	Design Engineer-Water Supply	1	6	Intermittent
3	Design Engineer-Wastewater/ Septage Management	1	6	Intermittent
4	Design Engineer-Stormwater Drainage	1	7	Intermittent
5	Design Engineer-Solid Waste Management	1	6	Intermittent
6	Design Engineer(s)-Urban Roads	2	14	Intermittent
7	Geotechnical Engineer	1	7	Intermittent

S. No.	Expertise	Positions	Input (Person-Months)	Input Requirements
8	Bridge Engineer	1	6	Intermittent
9	Architect-Urban Planner	1	6	Intermittent
10	Structural Engineer	1	7	Intermittent
11	Electro-Mechanical Engineer (Water/ Wastewater Systems)	1	8	Intermittent
12	Electrical Engineer (Power Systems/ Street Lighting)	1	8	Intermittent
13	Socio-Economic Surveyor	1	6	Intermittent
14	Geographic Information System (GIS) Analyst	1	6	Intermittent
15	GIS Operators	1	6	Intermittent
16	Quantity Surveyor(s)	2	12	Intermittent
17	Office Manager-cum-Accountant	1	24	Full-Time
18	ACAD Draughtsman	2	48	Full-Time
19	Data Processing and Reprographic Operator(s)	2	48	Full-Time
20	Office Assistant(s)	2	48	Full-Time
	Sub-Total	**25**	**303**	
	Grand Total	**40**	**418**	

[a]These experts will not be rated. Their deployment, however, will be subject to the Client's prior approval.

Table 5: Qualifications and Responsibilities of Key Experts

A.	National Key Experts
1.	**Urban Development Expert (Team Leader)**
	Qualifications: Preferably a Master's degree in Urban Planning/Urban Engineering/Development Studies/Civil Engineering/Public Health Engineering/ Management or equivalent, over a basic degree of Bachelor's from a recognized University in Civil Engineering or equivalent.
	Experience: Preferably 15 years' general experience as an Urban Development Expert; and 12 years' specific experience (including 8 years as Team Leader/Deputy Team Leader) in planning and design works on major integrated urban planning and development/urban infrastructure development projects. Work experience in external-aided/multilateral development bank (MDB) projects in integrated urban sector, is desirable. The candidate must have demonstrated ability to lead teams composed of national/international consultants, and create a strong working relationship with the Client. Excellent communication (written and oral) skills in English and strong inter-personal skills will be considered an asset.
	Responsibilities: The expert will have overall responsibility for the organization, conduct and delivery of the consultancy services and reporting to the Client. The national Team Leader will head the Consultants' Design team and will work directly to manage the project and will maintain liaison with the Client–PMU (DUD), including DMA and PHED, and concerned district authorities and ULBs/VCs, NEC/MDONER/MOHUA, etc., as felt required. Guide the Deputy Team Leader on overall managing the PDMC assignment as a co-lead. Responsibilities as a Team Leader will include, but is not limited to the following: • lead/review the overall design and management activities, including PRF implementation monitoring and reporting under the PDMC assessment from start to the end, including review of any existing information on state-/region-/sector-level vision, policy and/or strategy papers, master plans, sector plans, etc., and

A.	National Key Experts
	○ support to strengthen the urban infrastructure vision/plans and preparation of urban strategy and city investment plans along with prioritization framework and subproject selection criteria, identification/review and prioritization of subprojects based on pre-feasibility studies and above-stated vision/plans/framework/criteria, prior to–undertaking feasibility studies/conceptual design, etc. (as appropriate); ○ develop the list of priority subproject packages based on feasibility studies and in consultation with the Client, and complete those designs on priority-wise in order to reach the bidding stage; and ○ facilitate in project procurement risk/ capacity assessment, strategic procurement planning study [conducting SPP Workshop, including contract management support requirement assessed and preparation of contract management plan(s) during pre-contract award stage], to identify contract packaging with suitable contract modalities, and based on procurement strategy arrived in SPP study preparation of procurement plan in consultation with Client and ADB (including any subsequent review/ updation of procurement plan, as felt required during PRF implementation), and bid documents; and supporting the bidding process until contract award; • assume full responsibility for the consulting team and its performance of services under the consultancy contract for innovation in design, including rapid climate risk assessment/ detailed climate risk and adaptation assessment or CRA (*formerly climate risk and vulnerability assessment or CRVA*) and the climate resilience framework and measures prepared for adoption in detailed engineering designs, etc., at subproject/project-level; while duly following provisions made in the PRF project administration manual (PAM), and in any other governing/guidance documents of ADB, including those approved by ADB for the PRF Project; • oversee the review of institutional/ organization structure, assessment of institutional strengthening and capacity building requirements, tariff-/ fare-/ user fee or user charges-/ tipping fee-policy or structure/ incentives/ subsidies/ concessions, and own source revenue generation/cost recovery mechanisms, municipal governance structure/governance performance requirements, etc., and formulate necessary recommendations in consultation and with support of other Sector Experts and Municipal Reforms/Institutional Governance Expert, and guide the Client in implementing such recommendations/ reform interventions, including adoption of national benchmarks/SLAs based-service delivery systems; • ensure that the consulting team undertakes the design activity in timely manner and undertake comprehensive review of the designs/ specifications/ drawings, including the DPRs, especially ensuring that water supply, stormwater drainage, and wastewater/septage management interventions incorporate the concepts/best practices of integrated water resource management (IWRM), integrated urban water management (IUWM), water sensitive urban design (WSUD), faecal sludge and septage management systems supported by scheduled desludging/emptying mechanism managed through performance linked annuity model of private sector participation, etc.; • work as coordinator for managing the comprehensive planning and design efforts that are based on prescribed national standards/international best practices, ADB requirements, and are inclusive, climate resilient, have high disaster risk resilience, and sustainable in nature (as per national standards/international standards and/or best practices, including ADB's South Asia Department framework and practice, etc.); while, ensuring as Team Leader that design outputs achieved duly considered the aspects of diversity/ equity/ inclusion along with integration of existing/proposed master planning interventions of landuse mix/economic-mix/housing mix with social justice, and duly illustrate a synergy and harmony/continuum of green–blue environments; • assist Client as part of reform process in making efforts to transfer the Fund, Function and Functionaries to the Municipal Corporations/Municipal Councils/ Town Committees/Village Councils etc. of concerned towns/areas in accordance with the provisions of the 73rd and 74th Constitutional Amendment Acts of 1992;

A.	National Key Experts
	• support Client and stakeholder authorities to incorporate in infrastructure/service design the adoption of value capture financing-VCF tools to generate revenue to fund future development proposals in a substantial manner, i.e., encouraging/supporting in building their capacities towards ensuring business models that are sustainable are adopted for such design; • ensure that the consulting team provides procurement processing support with documentation/ reports following ADB accepted formats and meeting ADB requirements; • in coordination with the Social Safeguards Expert, support Client in setting-up of a Communication Strategy and Grievance Redress Mechanism at IA-level, and facilitate its proper functioning/implementation, including towards maintaining an appropriate database; • set-up/facilitate development of a PPMS at PMU (DUD) integrated with a FMS in consultation with other Sector Experts, and ensure preparation of detailed and quantitative progress reports, that would also support the Contractor's requests for progress payments; • keep the Client informed of technical issues and progress of all works both by informal and formal meetings and correspondence, including internal review/submitting of quarterly progress reports and semi-annual/annual safeguards monitoring reports (with any updates on site-specific health and safety management plan covering HS COVID-19 Plan), etc., for submission to the Client/ and by Client to ADB, and assist in any project issue/consultations needed, which the Client may require to be addressed/undertaken; • ensure that PDMC consulting team facilitates the Client in the ensuing loan/project processing stage of work by undertaking as needed, financial management assessment, due diligences of economic and financial analyses, project financial management manual, project procurement risk/ capacity assessment, environmental assessment and review framework, initial poverty and social analysis/ summary poverty reduction and social strategy(SPRSS) assessment, RP and related due diligence reports/ IPP, GESI AP, and assessment for climate change and disaster risk resilience, including developing a design and monitoring framework (DMF), as per relevant ADB–guidelines/accepted formats and meeting ADB approval requirements; • contribute to programs on training/workshops/seminars/conferences, etc., based on sectoral expertise of the consultant, and impart training; and • any other tasks/ duties assigned by the Client under PRF implementation.
2.	**Transport/ Pavement Engineer (Deputy Team Leader)**
	Qualifications: Preferably a Master's degree in Transportation Engineering/ Transport Planning/ Pavement Engineering/ Civil Engineering/Architectural Engineering or equivalent; over a basic degree of Bachelor's from a recognized University in Civil Engineering/Architecture/ Architectural Engineering or equivalent.
	Experience: Preferably 12 years of general experience; and 10 years of specific experience as Transport/ Pavement Engineer in integrated urban roads, and urban/ road safety and security related infrastructure projects with proven credentials in integrated urban/transport infrastructure development, especially for planning and design of urban roads with roadside stormwater drainage/ cross-drainage systems and landslip protection works. Work experience in planning and design, and implementation of external-aided/MDB projects in integrated urban sector is desirable.
	Responsibilities: In consultation with the national Team Leader, the national Climate and Disaster Resilience Expert and other Sector Experts, the consultant will be responsible for and contribute to the planning and designs of urban roads, integrated with stormwater drainage and landslip protection works, pedestrian pathways/ footpaths/ footsteps, utility ducting, street lighting, other streetscape elements, etc. Co-lead the consulting team for the overall detailed engineering design/any other design work component under the project. Tasks of the consultant would be following, but not limited to:

A.	National Key Experts
	• review existing information on state-/region-/sector-level vision, policy and/or strategy papers, master plans, sector plans, etc., support to strengthen the urban infrastructure vision/plans and preparation of urban strategy and city investment plans along with prioritization framework and subproject selection criteria, identification/review and prioritization of subprojects based on pre-feasibility studies and above vision/plans/framework/criteria, prior to–undertaking feasibility studies/conceptual design, etc. (as appropriate),and preparation of comprehensive DPRs and bid documents; • as a co-lead, assume responsibility for the consulting team and its performance of services under the consultancy contract for innovation in design, including rapid climate risk assessment/ detailed climate risk and adaptation assessment or CRA (*formerly climate risk and vulnerability assessment or CRVA*) and climate resilience framework and measures prepared for adoption in detailed engineering designs, etc., at subproject/project-level; while duly following provisions made in the PRF PAM, and in any other governing/guidance documents of ADB, including those approved by ADB for the PRF Project; • assist in undertaking necessary engineering and demand surveys at the study stage for subproject components for the integrated traffic and transportation infrastructure/urban transport elements (motorized and/or non-motorized)/urban infrastructure sectors, including traffic impact analysis of any proposed surrounding greenfield or brownfield/ densification development projects, and recommend changes/modifications for improvement in urban roads capacity, road junctions/ intersection, streetscape elements with integrated stormwater drainage, etc., as required; • design of integrated traffic and transportation infrastructure/urban transport elements, such as roads/streets, road junctions/ intersections, signalling system, bus stops/bus bays, landscape-/street-lighting, pedestrian paths/trails, integrated landscaping and traffic calming features, street signs and all pavement markings including bus box; integration with bridges/flyovers/foot-over-bridges/ primary drains/ culverts/ tunnel or underpass or subway/ separate or unified utility ducting, etc.; alternatives of urban transport (motorized and/or non-motorized transport with horizontal and vertical element interfaces), including any potential for use of high occupancy vehicles/dedicated lanes, etc., as felt required; • prepare/review detailed engineering designs, engineering cost estimate and item-rate analysis, specifications and drawings of the same in the subprojects' comprehensive DPRs and incorporate in bid documents (as applicable), duly: (i) considering the conventional engineering concepts of cost-effective and efficient design, safe geometric design, road safety/traffic control features, security infrastructure, integrated stormwater drainage design (including any drainage rehabilitation and repair plan/details) and landslip protection works, existing/proposed traffic plans and amenities; and (ii) incorporating/encouraging use of inclusive planning for universal access, and innovative design principles and climate resilient factors [as per rapid climate risk assessment/ detailed CRA (*formerly CRVA*) and climate resilience framework and measures prepared for adopted in detailed engineering designs, etc., at subproject/project-level], such as gender-sensitive urban design by promoting crime prevention through environmental design or CPTED that adopts clear sightlines for achieving eyes-on-the street principle, green infrastructure/low-impact development principles, linked open space systems/ integrated green corridor continuum with green–blue environment linkages, complete streets, planning and implementation of vision zero strategy for progressive improvement in safety of physical access and commuting on urban roads, etc.; and provide guidance to/collaborate with Design Engineers and Other Support Staff in achieving desirable detailed engineering design outputs; • assess traffic demand, and prepare an executable traffic management plan (TMP) during the design stage, and as a test-case execute it for any prioritized subprojects that involves integrated urban sector, for any learnings, and modify the TMP accordingly, for any future use by Client and concerned stakeholder authorities during the ensuing loan(s)/project(s) implementation subsequently;

A.	National Key Experts
	• strengthen the designs, when required in close coordination with the Client and other stakeholder authorities; and provide recommendations/prepare plans to guide and ensure that the safety and security features in traffic and transportation infrastructure/urban transport components designed herein are retained during any amendment/updation process of master plans/regional plans/mobility plans in future, unless deemed in need of change on critical review at such a time; • facilitate in review of the institutional strengthening and capacity building requirements, tariff-/ fare-policy or structure/ incentives/ subsidies/ concessions, and own source revenue generation/ cost recovery mechanisms, municipal governance structure/ governance performance requirements, etc., and formulation of necessary recommendations in consultation and with support of the Team Leader/Deputy Team Leader, other Sector Experts and Municipal Reforms/ Institutional Governance Expert, and guide the Client in implementing such recommendations/reform interventions, including adoption of national benchmarks/SLAs based-service delivery systems; • support Client and stakeholder authorities to incorporate in infrastructure/service design the adoption of value capture financing-VCF tools to generate revenue to fund future development proposals in a substantial manner, i.e., encouraging/supporting in building their capacities towards ensuring business models that are sustainable are adopted for such design; • co-lead to ensure that PDMC consulting team facilitates the Client in the ensuing loan/project processing stage of work by undertaking as needed financial management assessment, due diligences of economic and financial analyses, project financial management manual, procurement risk/ capacity assessment, environmental assessment and review framework, initial poverty and social analysis/SPRSS assessment, due diligence for indigenous peoples, GESI AP, and assessment for climate change and disaster risk resilience, including developing a DMF, as per relevant ADB–guidelines/accepted formats and meeting ADB approval requirements; • contribute to programs on training/workshops/seminars/conferences, etc., based on sectoral expertise of the consultant, and impart training; • provide inputs to periodic and annual reports, as required; and • and any other tasks/ duties assigned by the national Team Leader and/or the Client under PRF implementation.
3.	**Water Supply Expert**
	Qualifications: Preferably a Master's degree in Environmental Engineering/ Public Health Engineering/Hydrological Engineering/ Water Resources Engineering/ Civil Engineering/Structural Engineering or equivalent; over a basic Bachelor's degree from a recognized University in Civil Engineering or equivalent.
	Experience: Preferably 12 years of general experience; and 10 years of specific experience as Water Supply Expert in undertaking planning and detailed engineering design work for major water supply networks infrastructure projects with proven experience in urban development, complete water supply (both ground and surface water) and treatment, and related infrastructure designs. Work experience in planning and design, and implementation of external-aided/MDB projects in integrated urban sector is desirable.
	Responsibilities: In consultation with the national Team Leader/ Deputy Team Leader and other Sector Experts, and Climate and Disaster Resilience Expert, the consultant will be responsible for and contribute to the planning and designs of urban development projects related to water supply networks (both ground and surface water), treatment plants, and related structures. Tasks of the consultant would be following, but not limited to: • review of any existing information of state-/region-/sector-level vision, policy and/or strategy papers, master plans, sector plans, etc., support to strengthen the urban infrastructure vision/plans and preparation of urban strategy and city investment plans along with

A.	National Key Experts
	prioritization framework and subproject selection criteria, identification/review and prioritization of subprojects based on pre-feasibility studies and above vision/plans/framework/criteria, prior to–undertaking feasibility studies/conceptual design, etc. (as appropriate),and preparation of comprehensive DPRs and bid documents; and at the study stage, the subproject component should cover intakes, intake/ diversion weirs, desilting tanks, water supply transmission/ distribution networks (new/ replacement), water treatment plants, pumping stations, reservoirs, metering, etc., including potential water conservation measures at different levels of water usage/landuse intensities; and recommend any changes/modifications for improvement, if required; • support in supervising topographic surveys, review the results of the topographical surveys, geo-technical investigations, hydrological and geological studies (as felt required), and integrate these considerations in the design. Based on preliminary surveys, investigations and validated data contribute to the planning and design activities related to water supply networks (both ground and surface water), water treatment plants, pumping stations, potential for water conservation and groundwater recharge, etc.; • support to strengthen any existing plans for prioritized subprojects, and finalize the subproject components (e.g., water supply networks, overhead or ground reservoirs, high service reservoirs, main water sources, intake/ diversion weirs, desilting tanks, transmission mains (raw water and treated water) and water distribution networks (new/ replacement), water treatment plant with components tanks for coagulation-flocculation-aeration, sedimentation, filtration, disinfection and storage, water under drainage system, pumping station, water conservation measures, etc.); • while finalizing the detailed engineering designs, specifications and drawings, keep in consideration, all the national standards/ international best practices, and factors for resilience to climate risks/ climate change impacts and disaster risks (as per national standards/international standards and/or best practices, including ADB's South Asia Department framework and practice, etc.), with due consideration to concepts of IWRM, IUWM, WSUD, etc.; • prepare, review, validate and finalize ground and surface water modelling of project area, as felt required; • responsible for the preparation of detailed engineering designs, bid-level working/ good for construction drawings, including engineering cost estimates and item-rate analysis, and specifications of the finalized water supply subproject components in comprehensive DPRs and incorporated in bid documents (as applicable), in an integrated, inclusive and sustainable manner, and with climate resilient nature of design in mind; including providing guidance to/collaborating with Design Engineers and other Support Staff in achieving desirable detailed engineering design outputs; • facilitate in review of the institutional/ organization structure, assessment of institutional strengthening and capacity building requirements, tariff-/ user fee or user charges-policy or structure/ Incentives/ subsidies/ concessions, and own source revenue generation/ cost recovery mechanisms, municipal governance structure/ governance performance requirements, etc., and formulation of necessary recommendations in consultation and with support of the Team Leader, other Sector Experts and Municipal Reforms/ Institutional Governance Expert, and guide the Client in implementing such recommendations/reform interventions, including adoption of national benchmarks/SLAs based-service delivery systems; • assist Client as part of reform process in making efforts to transfer the Fund, Function and Functionaries to the Municipal Corporations/Municipal Councils/ Town Committees/Village Councils of concerned towns/areas in accordance with the provisions of the 73rd and 74th Constitutional Amendment Acts of 1992; • support Client and stakeholder authorities to incorporate in infrastructure/service design the adoption of value capture financing-VCF tools to generate revenue to fund future development

A.	National Key Experts
	proposals in a substantial manner, i.e., encouraging/supporting in building their capacities towards ensuring business models that are sustainable are adopted for such design; • contribute to programs on training/workshops/seminars/conferences, etc., based on sectoral expertise of the consultant, and impart training; • provide inputs to periodic and annual reports, as required; • and any other tasks/ duties assigned by the national Team Leader and/or the Client under PRF implementation.
4.	**Wastewater/Septage Management Expert**
	Qualifications: Preferably a Master's degree in Environmental Engineering/ Public Health Engineering/Hydrological Engineering/ Water Resources Engineering/ Civil Engineering/ Structural Engineering or equivalent; over a basic Bachelor's degree from a recognized University in Civil Engineering or equivalent.
	Experience: Preferably 12 years of general experience; and 10 years of specific experience as Wastewater/Septage Management Expert in undertaking planning and detailed engineering design work for major wastewater projects with proven experience in wastewater infrastructure networks' designs, wastewater treatment plants, oxidation ditch, etc., and septage management interventions. Knowledge of climate resilient interventions, such as planning and design of bio-digesters systems with reed plant, constructed wetlands, etc., will be an added advantage. Work experience in planning and design, and implementation of external-aided/MDB projects in integrated urban sector is desirable.
	Responsibilities: In consultation with the national Team Leader/Deputy Team Leader, the national Climate and Disaster Resilience Expert, and other Sector Experts, the consultant will be responsible for and contribute to the planning and designs of urban development projects related to wastewater/sanitation networks, advanced wastewater treatment plants, septage management interventions, and other climate resilient treatment systems. Tasks of the consultant would be following, but not limited to: • review of any existing information of state-/region-/sector-level vision, policy and/or strategy papers, master plans, sector plans, etc., support to strengthen the urban infrastructure vision/plans and preparation of urban strategy and city investment plans along with prioritization framework and subproject selection criteria, identification/review and prioritization of subprojects based on pre-feasibility studies and above vision/plans/framework/criteria, prior to–undertaking feasibility studies/conceptual design, etc. (as appropriate),and preparation of comprehensive DPRs and bid documents; and at the study stage, the subproject components should cover wastewater/sanitation networks, septage management systems, wastewater/ septage treatment requirements; and recommend any changes/modifications for improvement, if required, while keeping in mind the feasibility of any possibilities/potential use for innovative and climate resilient interventions compatible with natural ecosystems/ bio-diversity, such as bio-digesters that perform based on principles of bio-remediation and/or phyto-remediation (with or without energy recovery), constructed wetlands, etc.; • support in supervising topographic surveys, review the results of the topographical surveys, geotechnical surveys/ investigations, hydrological and geological studies (as felt required), and integrate these considerations in the design. Based on preliminary surveys, investigations and validated data contribute to the planning and design activities related to wastewater/sanitation networks, wastewater/ septage treatment requirements, such as wastewater/ sewage treatment plant (WWTP/ STP) and/or septage treatment plants (SeTP), oxidation ditch, etc., septage management interventions (including vehicles/ equipment, etc.), including any site integrated bio-digester systems with reed plant, constructed wetlands, etc.; • support to strengthen any existing plans for subprojects, and finalize the subproject components (e.g., wastewater collection points, wastewater storage, transmission, treatment and connections to the treatment and disposal networks; WWTP/ STP with components of bar

A.	National Key Experts
	screens, grit chamber, comminutors, pre-aeration tank, primary settling tank, aeration tank, secondary settling tank, biological filters, sludge handler, oxidation ditch, disinfection process; septage management interventions (including vehicles/ equipment, SeTP, etc.), any site integrated bio-digester systems with reed plant, constructed wetlands, etc.); • while finalizing the detailed engineering designs, specifications and drawings, keep in consideration factors for resilience to climate risks/ climate change impacts and disaster risks(as per national standards/international standards and/or best practices, including ADB's South Asia Department framework and practice, etc.), rapid climate risk assessment/ detailed climate risk and adaptation assessment or CRA (*formerly climate risk and vulnerability assessment or CRVA*) and climate resilience framework and measures prepared for adoption in detailed engineering designs, etc., at subproject/project-level, with due consideration to concepts/best practices of IWRM, IUWM, WSUD, faecal sludge and septage management systems supported by scheduled desludging/emptying mechanism managed through performance linked annuity model of private sector participation, etc.; and potential use of innovative and climate resilient advanced wastewater treatment systems (principles of faecal sludge and septage management with co-treatment/reuse of treated wastewater/integrated- with or without energy recovery), as feasible; • responsible for the preparation of detailed engineering designs, bid-level working/ good for construction drawings, including engineering cost estimates and item-rate analysis, and specifications of the finalized subprojects' comprehensive DPRs and incorporate in bid documents (as applicable) for wastewater/sanitation networks, and wastewater treatment/septage management requirements, in an integrated, inclusive and sustainable manner, and with climate resilient nature of design in mind; including providing guidance to/collaborating with Design Engineers and other Support Staff in achieving desirable detailed engineering design outputs; • facilitate in review of the institutional strengthening and capacity building requirements, tariff-/ user fee or user charges-policy or structure/ incentives/ subsidies/ concessions, and own source revenue generation/ cost recovery mechanisms, municipal governance structure/ governance performance requirements, etc., and formulation of necessary recommendations in consultation and with support of the Team Leader/Deputy Team Leader, other Sector Experts and Municipal Reforms/Institutional Governance Expert, and guide the Client in implementing such recommendations/reform interventions, including adoption of national benchmarks/SLAs based-service delivery systems; • support Client and stakeholder authorities to incorporate in infrastructure/service design the adoption of value capture financing-VCF tools to generate revenue to fund future development proposals in a substantial manner, i.e., encouraging/supporting in building their capacities towards ensuring business models that are sustainable are adopted for such design; • contribute to programs on training/workshops/seminars/conferences, etc., based on sectoral expertise of the consultant, and impart training; and • provide inputs to periodic and annual reports, as required.
5.	**Stormwater Drainage Expert**
	Qualifications: Preferably a Master's degree in Civil Engineering/Structural Engineering/ Environmental Engineering/ Public Health Engineering/Hydrological Engineering/ Water Resources Engineering or equivalent; over a basic Bachelor's degree from a recognized University in Civil Engineering or equivalent.
	Experience: Preferably 12 years of general experience; and 10 years of specific experience as Stormwater Drainage Expert in undertaking planning and detailed engineering design for major stormwater drainage projects with proven experience in roadside or otherwise stormwater infrastructure drains/networks' designs, integration with retention ponds, landslip protection works, etc. Knowledge of climate resilient interventions, such as planning and design of based on low-impact development that adopts natural filtration/green infrastructure principles compatible with

A.	National Key Experts
	natural ecosystems/ bio-diversity such as, bio-swales, retention ponds, constructed wetlands, etc., will be an added advantage. Work experience in planning and design, and implementation of external-aided/MDB projects in integrated urban sector is desirable.
	Responsibilities: In consultation with the national Team Leader/Deputy Team Leader, the national Climate and Disaster Resilience Expert, and other Sector Experts, the consultant will be responsible for and contribute to the planning and designs of urban development projects related to integrated roadside/ any local area or site-stormwater drainage and landslip protection works, and other climate resilient stormwater management systems. Tasks of the consultant would be following, but not limited to: • review of any existing information on state-/region-/sector-level vision, policy and/or strategy papers, master plans, sector plans, etc., support to strengthen the urban infrastructure vision/plans and preparation of urban strategy and city investment plans along with prioritization framework and subproject selection criteria, identification/review and prioritization of subprojects based on pre-feasibility studies and above vision/plans/framework/criteria, prior to–undertaking feasibility studies/conceptual design, etc. (as appropriate),and preparation of comprehensive DPRs and bid documents, including: o support to strengthen/integrate existing DPRs or work components prepared separately by the government, as part of preparation of comprehensive DPRs; and o at the study stage, subproject components should cover stormwater drainage system integrated with the urban roads component with roadside stormwater drainage and landslip protection works; and recommend any changes/modifications for improvement, if required, while keeping in mind the feasibility of any possibilities/potential use for innovative and climate resilient interventions based on low-impact development that adopt natural filtration/green infrastructure principles compatible with natural ecosystems/ bio-diversity such as, bio-swales, retention ponds, constructed wetlands, etc., including any urban water body conservation/ beautification as part of innovative use of urban open spaces and to facilitate ground water recharge; • support in supervising topographic surveys, review the results of the topographical surveys, geo-technical surveys/ investigations, hydrological and geological studies (as felt required), and integrate these considerations in the design. Based on preliminary surveys, investigations and validated data contribute to the planning and design activities related to integrated stormwater drainage and landslip protection works, where applicable; • while finalizing the detailed engineering designs, specifications and drawings, keep in consideration factors for resilience to for climate risks/ climate change impacts and disaster risks (as per national standards/international standards and/or best practices, including ADB's South Asia Department framework and practice, etc.), rapid climate risk assessment/ detailed climate risk and adaptation assessment or CRA (*formerly climate risk and vulnerability assessment or CRVA*) and climate resilience framework and measures prepared for adoption in detailed engineering designs, etc., at subproject/project-level; • responsible for the preparation of detailed engineering designs, bid-level working/ good for construction drawings, including engineering cost estimates and item-rate analysis, and specifications of the finalized subprojects' comprehensive DPRs and incorporate in bid documents (as applicable) for stormwater drainage components, in an integrated, inclusive and sustainable manner, and with climate resilient nature of design in mind; including providing guidance to/collaborating with Design Engineers and other Support Staff in achieving desirable detailed engineering design outputs; • facilitate in review of the institutional/ organization structure, assessment of institutional strengthening and capacity building requirements, tariff-/ user fee or user charges-policy or structure/ incentives/ subsidies/ concessions, and own source revenue generation/ cost recovery mechanisms, municipal governance structure/ governance performance requirements, etc., and formulation of necessary recommendations in consultation and with support of the Team Leader/Deputy Team Leader, other Sector Experts and Municipal

A.	National Key Experts
	Reforms/Institutional Governance Expert, and guide the Client in implementing such recommendations/reform interventions, including adoption of national benchmarks/SLAs based-service delivery systems; • support Client and stakeholder authorities to incorporate in infrastructure/service design the adoption of value capture financing-VCF tools to generate revenue to fund future development proposals in a substantial manner, i.e., encouraging/supporting in building their capacities towards ensuring business models that are sustainable are adopted for such design; • contribute to programs on training/workshops/seminars/conferences, etc., based on sectoral expertise of the consultant, and impart training; and • provide inputs to periodic and annual reports, as required.
6.	**Solid Waste Management Expert**
	Qualifications: Preferably a Master's degree in Environmental Engineering/Public Health Engineering/Civil Engineering or equivalent; over a basic Bachelor's degree from a recognized University in Civil Engineering or equivalent.
	Experience: Preferably 12 years of general experience; and 10 years of specific experience in planning and detailed engineering designs for implementation, and operation and maintenance of municipal solid waste (MSW) management-related infrastructure, including through use of waste transfer station and/or waste storage depot/ material recovery and/or recycling facilities, vehicles (conveyance with/ without waste compaction, and street cleaning), other equipment, etc., under integrated urban sector. Knowledge of environment-friendly/climate resilient interventions, such as planning and design of landfill, bio-gas plant, vermi-composting, mechanical composting, resource recovery centers, waste-to-energy recovery systems when integrated with scientifically-laid sanitary landfill-mechanical or vermi composting-incinerator-plasma gasification or vitrification plant, etc., will be an added advantage. Work experience in planning and design, and implementation of external-aided/MDB projects in integrated urban sector is desirable.
	Responsibilities: In consultation with the Team Leader/Deputy Team Leader, the national Climate and Disaster Resilience Expert, and other Sector Experts, the consultant will be responsible for and contribute to the planning and designs of MSW collection, transfer and transportation, treatment and disposal requirements, including potential for adoption of a targeted waste diversion rate/ principle of avoid-reduce-reuse-recover/recycling options, whether through conventional interventions of sanitary landfill, and/or other environment-friendly/climate resilient treatment systems. Tasks of the consultant would be following, but not limited to: • review of any existing information of state-/region-/sector-level vision, policy and/or strategy papers, master plans, sector plans, etc., support to strengthen the urban infrastructure vision/plans and preparation of urban strategy and city investment plans along with prioritization framework and subproject selection criteria, identification/review and prioritization of subprojects based on pre-feasibility studies and above vision/plans/framework/criteria, prior to–undertaking feasibility studies/conceptual design, etc. (as appropriate), and preparation of comprehensive DPRs and bid documents; and at the study stages, the subproject components should cover mechanisms for MSW management, including door-to-door and/or community collection of segregated waste at source, transfer, transportation, and treatment requirements; and recommend any changes/ modifications for improvement, if required, while keeping in mind the feasibility of any possibilities/potential use for innovative and climate resilient interventions, such as, bio-gas plant, vermi-composting, mechanical composting, material resource centers, with or without waste-to-energy recovery systems when integrated with scientifically-laid sanitary landfill-mechanical or vermi composting-incinerator-plasma gasification or vitrification plant, street cleaning vehicles, etc., as feasible, and arrive at MSW management plan for each prioritized subproject town; • review and assess the available/affordable technological solutions in India/region/subregion for plastic reuse and recycle, legacy waste management, decentralized but integrated

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	solutions for waste treatment, efficient and cost-effective waste segregation and collection systems, resource recovery facilitating a higher waste diversion rate from conventional treatment system of sanitary landfill, etc.: • support in supervising topographic surveys, review the results of the topographical surveys, geotechnical surveys/ investigations, hydrological and geological studies (as felt required), and integrate these considerations in the design. Based on preliminary surveys, investigations and validated data contribute to the planning and design activities related to mechanisms for MSW collection, transportation, treatment and disposal requirements (such as sanitary landfill, incinerators, bio-gas plant, vermi-composting, mechanical composting, waste transfer station and/or waste storage depot/ waste compression or compaction or bailing equipment/material resource centers and/or recycling facility, with or without waste-to-energy recovery systems when integrated with scientifically-laid sanitary landfill-mechanical or vermi composting-incinerator-plasma gasification or vitrification plant, street cleaning vehicles, etc., as feasible); • support to strengthen any existing plans for subprojects, and finalize the subproject components (e.g., MSW segregation-at-source, door-to-door and/ or community collection systems, waste generated/average waste generation rate, waste diversion rate on resource recovery, waste transfer station and/or waste storage depot/ waste compression or compaction or bailing equipment/material resource centers and/or recycling facility, MSW transportation infrastructure, treatment and disposal mechanisms, including of residual waste, street cleaning vehicles, etc., as feasible); • while finalizing the detailed engineering designs, specifications and drawings, keep in consideration factors for resilience to climate risks/ climate change impacts and disaster risks (as per national standards/international standards and/or best practices, including ADB's South Asia Department framework and practice, and ADB's brief note on managing infectious medical waste during pandemics, such as coronavirus disease [COVID-19] pandemic, etc.), rapid climate risk assessment/ detailed climate risk and adaptation assessment or CRA (*formerly climate risk and vulnerability assessment or CRVA*) and climate resilience framework and measures prepared for adoption in detailed engineering designs, etc., at subproject/project-level, with due consideration made to concepts/best practices of significant waste segregation-at-source and resource recovery, higher waste diversion rate, involvement of private sector/community-level participation, etc.; • responsible for the preparation of detailed engineering designs, bid-level working/ good for construction drawings, including engineering cost estimates and item-rate analysis, and specifications (goods/plant and/or civil works components) for bid documents of the finalized subprojects' comprehensive DPR covering MSW management, in an integrated, inclusive and sustainable manner, and with climate resilient nature of design in mind; including providing guidance to/collaborating with Design Engineers and other Support Staff in achieving desirable detailed engineering design outputs; • facilitate in review of the institutional/ organization structure, assessment of institutional strengthening and capacity building requirements, tariff-/user fee or user charges-/tipping fee-policy or structure/ incentives/ subsidies/ concessions, and own source revenue generation/cost recovery mechanisms, municipal governance structure/governance performance requirements, etc., and formulation of necessary recommendations in consultation and with support of the Team Leader/Deputy Team Leader, other Sector Experts and Municipal Reforms/Institutional Governance Expert, guide the PMU (DUD)/ DMA in implementing such recommendations/reform interventions, including adoption of national benchmarks/SLAs based-service delivery systems; • support PMU (DUD)/ DMA and stakeholder authorities to incorporate in infrastructure/service design the adoption of value capture financing-VCF tools to generate revenue to fund future development proposals in a substantial manner, i.e., encouraging/supporting in building their capacities towards ensuring business models that are sustainable are adopted for such design;

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	• contribute to programs on training/workshops/seminars/conferences, etc., based on sectoral expertise of the consultant, and impart training; and • provide inputs to periodic and annual reports, as required.
7.	**Landslip Protection Expert**
	Qualifications: Preferably a Master's degree in Geotechnical Engineering/ Civil Engineering/ Geology/ Environmental Engineering/Natural Resource Management or equivalent; over a basic degree of Bachelor's from a recognized University in Civil Engineering/Architectural Engineering/ Environmental Science or equivalent.
	Experience: Preferably 12 years of general experience; and 10 years of specific experience as as a technical expert in projects related to planning and detailed engineering design, and implementation of measures/ protection works to address land degradation and land/ slope stabilization management. Demonstrated/ proven credentials on hands on experience in management of landslides/ landslips through protection works that involve engineering and bioengineering techniques is required, especially when planning and design is integrated with urban roads with roadside stormwater drainage/ cross-drainage systems and landslip protection works. Substantial knowledge and understanding of issues related to environmental recovery and disaster management, and experience in landslip protection works in Himalayan region is an added advantage. Work experience in planning and design, and implementation of external-aided/MDB projects in integrated urban sector is desirable.
	Responsibilities: Under the supervision of the Team Leader/ Deputy Team Leader, and in consultation with the national Climate and Disaster Resilience Expert and other Sector Experts, the consultant will be responsible for the following tasks, but not limited to: • review existing information on locations/ alignments sited in landslide-prone/ landslip areas along roadsides or in habitation areas, and apart from PMU (DUD), as applicable, liaise and conduct stakeholder consultations with authorities like, Forest Department, PWD (R&B), etc. on land/ slope stabilization and landslide/ landslip management, and debris management in hilly regions; • carry out situation analysis based on available information and gather additional information, if required, on landslide-prone/ landslip areas and any destabilized slopes; and assess and mitigate threat to environment, social development aspects, and human health and safety on account of land/ slope stabilization and landslide/ landslip management, and debris management; • prepare landslide/ landslip stabilization strategy based on situation analysis and other relevant information; • assist in undertaking necessary engineering surveys, like topographical survey, geo-technical investigations, geological or hydrologic surveys, as felt required; overlay survey/ investigation/ secondary data inputs, and assess possible solutions for landslip protection works that may be integrated with urban roads and stormwater drainage/cross-drainage systems; • review as part of prioritized subprojects, the selected landslide-prone/ landslip areas and undertake technical and financial viability for their technical treatment/stabilization; • prepare plans for landslide/ landslip area stabilization or review any existing landslide/ landslip area stabilization plans (standalone plans/ as part of disaster management plans)and provide technical inputs to strengthen such plans; • assess the effectiveness of existing landslide/ landslip stabilization measures and suggest changes and modifications; • suggest technical measures, including engineering and bioengineering techniques and which may cover rigid and/or flexible structural elements for landslip protection works and land/ slope stabilization; including advice on traditional monitoring system or any innovative early warning systems towards building/strengthening institutional capacities, with differing responses to

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	address different warnings levels (increasing order of warning level may be such as ordinary/ attention/ alarm, which could be effected due to some degree of seasonal variations/ prolonged rainfall resulting in potential dangerous conditions/ accelerating trend expected to result in slope collapse); • prepare detailed engineering designs/review to strengthen any existing detailed engineering designs of landslip protection works and land/ slope stabilization, engineering cost estimate and item-rate analysis, specifications and drawings of the same in the subprojects' comprehensive DPRs and incorporate in bid documents (as applicable), duly: (i) considering the conventional engineering or innovative bioengineering concepts of cost-effective and efficient design, safety features, integration with urban roads alignment/streetscape elements and stormwater drainage/ cross-drainage system, green infrastructure/low-impact development principles, linked open space systems/ integrated green corridor continuum with green–blue environment linkages, etc.; and (ii) incorporating climate resilient factors [as per rapid climate risk assessment/ detailed climate risk and adaptation assessment or CRA (*formerly climate risk and vulnerability assessment or CRVA*) and climate resilience framework and measures prepared for adopted in detailed engineering designs, etc., at subproject/project-level]; and provide guidance to/collaborate with Design Engineers/ Geotechnical Engineer and Other Support Staff in achieving desirable detailed engineering design outputs; • assess the institutional capacity of relevant government agencies like UDD/ DUD, Forest Department, PWD (R&B), etc., and contribute to preparation of institutional strengthening/ capacity building plan for land/ slope stabilization and landslide/ landslip management, and debris management in hilly regions; • contribute to programs on training/workshops/seminars/conferences, etc., based on sectoral expertise of the consultant, and impart training; and • provide inputs to periodic and annual reports, as required.
8.	**Climate and Disaster Resilience Expert**
	Qualifications: Preferably a Master's degree in Civil Engineering/Structural Engineering/ Environmental Planning/Environmental Engineering/Environmental Conservation/ Environmental Science/ Climate Change/Architectural Engineering with a specialization in Structural Engineering/ or equivalent; over a basic Bachelor's degree from a recognized University in Civil Engineering/Architecture/Architectural Engineering/Environmental Science or equivalent.
	Experience: Preferably 12 years of general experience; and 10 years of specific experience in planning and design of climate resilient of buildings and site complexes, and urban infrastructure and services, such as water supply and sanitation, roads/ transport, power and other utilities, and related infrastructure sectors' structural design, that assessed climate risks/ climate change impacts and disaster risks, and related vulnerability of development zones and infrastructure, and duly incorporated "climate-resilient design"/ "disaster-secure engineering" and "structural norms/ non-structural measures" for risk reduction, including design considerations for any "climate proofing" of existing infrastructure is mandatory. Work experience in planning and design, and implementation of external-aided/MDB projects in integrated urban sector is desirable.
	Responsibilities: Under the supervision of the national Team Leader/Deputy Team Leader and in consultation with other Sector Experts, the national Climate and Disaster Resilience Expert shall co-lead the entire consulting team with regards to setting-up priorities, direction, and to ensure all proposals are evaluated for building climate and disaster resilience, and promoting sustainability. The national Climate and Disaster Resilience Expert would undertake the following tasks, but not limited to: • undertake a rapid climate risk assessment using the preliminary climate (and disaster) risk screening checklist for each prioritized subproject to establish the climate resiliency of the improved urban infrastructure plans and feasibility studies, particularly site selection and

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	designs. Based on the outcome of the checklist assessment ('medium' or 'high' risk), prepare an initial climate change assessment (CCA) during the subproject preparation stage. Results and findings from the initial CCA will then be the basis of proposed climate change adaptation and/or mitigation plans, whose costs will determine the subproject's climate financing contribution. The initial CCA will undergo further modification, based on a more detailed climate risk and adaptation assessment or CRA undertaken by adopting ADB's CRA (*formerly climate risk and vulnerability assessment or CRVA*) Tool; • undertake research on new technologies in water supply, sanitation, roads/ transport, and other project components that focus on climate resilience innovations for target cities, taking in consideration any existing information on state-/region-/sector-level vision, policy and/or strategy papers, master plans, sector plans, etc., already undertaken by the government, ADB, etc.; • facilitate discussions on the new technologies with state and central agencies, and sensitize the government to the benefit of adopting viable climate proofing/resilience technologies, including support to strengthen urban infrastructure vision/plans; • prepare climate resilience framework for onward guidance and to address climate risks/ climate change impacts and disaster risks aspects in detailed planning and infrastructure design (which would be useful during subsequent implementation, operation and maintenance processes as well), include the applicable new technologies in the "List of Best Practices" sheet to be considered for planning and design purposes, design viable climate and disaster resilience measures–such as risk avoidance/ minimization measures, adaptation, and/or mitigation measures, etc.; • as a lead on building climate and disaster resilience, assume responsibility for the consulting team and its performance of services under the consultancy contract to ensure that climate and disaster resilience measures are integrated into the planning and detailed engineering designs to achieve (as per national standards/ international standards and/or best practices, including ADB's South Asia Department framework and practice, etc.), and demonstrates resilience as per rapid climate risk assessment/ detailed CRA (*formerly CRVA*) and the climate resilience framework and measures prepared, i.e., ensure mandatorily that "disaster-secure engineering," "structural norms/ non-structural measures," etc., for risk reduction are built-in the plans/designs, including design considerations for any "climate proofing" of existing infrastructure, from the very beginning at subproject/project-level towards supporting climate-disaster-and-urban resilience; while duly following provisions made in the PRF PAM, and in any other governing/guidance documents of ADB, including those approved by ADB for the PRF project; • collect data of gender-differentiated climate change and disaster impacts in collaboration with Gender Equality and Social Inclusion (GESI) Expert, identify marginalised/ excluded groups, most vulnerable communities and areas; identify and create an awareness of climate risks/ climate change impacts and disaster risks on existing communities and future growth areas; and proactively document and address vulnerabilities to climate risks/ climate change impacts and disaster risks in the climate resilience framework, while ensuring that infrastructure should also be resilient against human made risks under integrated urban sector–project formulation and preparedness assessments, and for project development/ implementation; • provide guidance to the design team members for various sectors, to consider necessary parameters in planning and detailed engineering designs/any other design work, from the context of building climate and disaster resilience; • co-lead the team of consultants to collaborate for the integration of the climate resilient measures into the main designs, in an inclusive and sustainable manner, with due consideration to concepts of IWRM, IUWM, WSUD, etc.; • review the material strength adopted in the design of all the structures;

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	• review the design to ensure that the planning, and detailed structural analyses and design are in accordance with the prescribed national codes and standards/international codes and standards; • check that the seismic design parameters adopted for the design are in accordance with the latest provisions of the National Building Code of India, considering the locational context of northeastern region being part of Himalayan Region; • review civil structural drawings and design calculation/compute models of all the structures to ensure that the structural design prepared are in accordance with provisions of the national/international guidelines and safety standards; • review the construction specifications pertaining to the construction of all reinforced above-ground/ concealed structures; • review the inspection and testing plans that would subsequently be implemented during constructions of structures; • prepare a comprehensive design review report to confirm compliance of climate resilience measures in planning and detailed engineering designs, and as required, clearly identify the modifications to be incorporated by the design team, in the detailed designs, specifications, and bid-level working/ good for construction drawings with regards to compliance to factors for resilience to climate risks/ climate change impacts and disaster risks aspects. The design review report includes the list of applicable innovations and new technologies that will be further integrated into the planning and relevant detailed engineering designs. Encourage and guide other Sector Experts, and Design Engineers and Other Support Staff technically involved in planning and detailed engineering design to ensure effective and efficient incorporation of climate and disaster resilient design interventions, at best as a timely and prior effort in the first place; • prepare a consolidated draft final design review report to be internally reviewed first by the Team Leader/Deputy Team Leader, and then submitted to Client, and ADB. Incorporate comments for finalization of the report, and submit it for final internal review, prior to the final report being submitted for knowledge sharing and reference purposes to Client, ADB and other stakeholder authorities; • facilitate the Client in the ensuing loan/project processing stage of work by undertaking due diligence assessment for building climate and disaster resilience (as per national standards/ international standards and/or best practices, including ADB's South Asia Department framework and practice, etc.), following ADB accepted formats and meeting ADB approval requirements; and • contribute to programs on training/workshops/seminars/conferences, etc., based on sectoral expertise of the consultant, and impart training and sensitize stakeholders towards climate risks/ climate change impacts and disaster risks and the need for necessary risk avoidance/ minimization, and adoption of adaptation and/or mitigation measures during the planning and design formulation stage, project development/ implementation stage, and monitoring/ operation and maintenance stage for sustainability of assets.
9.	**Municipal Reforms/ Institutional Governance Expert**
	Qualifications: Preferably Master's degree in Development Studies/Urban Economics/ Urban Planning/Finance/Management or Administration (Business/Public)/Civil Engineering/Transport Planning/Transportation Engineering/ Pavement Engineering or related field or equivalent; over a basic degree in Bachelor's from a recognized University in Civil Engineering/Physical Planning/ Development Studies/Economics/Finance/Administration (Business/ Public) or related field or equivalent.
	Experience: Preferably 12 years' general experience; and 10 years' specific experience in review/ diagnosis/ design of institutional/ organization structure, municipal structure (municipal cadre system/ staffing pattern/ skill-set etc.), and governance improvement and reforms of urban

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	infrastructure, such as water supply and sanitation, electrical utilities/power systems or similar public utility companies, transport sector, etc., including institutional strengthening and capacity building requirements, governance performance requirements, etc. Experience in community and communal services institutional analysis and development, particularly in the water supply and sanitation sector is required. Work experience in review, design and implementation of external-aided/MDB projects in integrated urban sector in the field of institutional development is desirable.
	Responsibilities: In consultation with the other Sector Experts, and under the supervision of the national Team Leader/Deputy Team Leader, the Municipal Reforms/Institutional Governance Expert will undertake the following responsibilities w.r.t. the identified stakeholder authorities, but not limited to: • assist to review and map the institutional/ organization structure, mandates, municipal cadres system/ staffing pattern and skill-set requirements, and present job descriptions and qualifications; • assist/prepare service standards and key performance indicators that are clearly defined and measurable, to be reported by identified stakeholder authorities; • review the institutional strengthening and capacity building requirements, tariff-/ fare-/ user fee or user charges/ tipping fee-policy or structure/incentives/ subsidies/ concessions, and own source revenue generation/cost recovery mechanisms, municipal governance structure/ governance performance requirements, etc., and formulation of necessary recommendations in consultation and with support of the Team Leader/Deputy Team Leader, other Sector Experts, outline any reforms, as felt required, and guide the Client in implementing such recommendations/reform interventions, including adoption of national benchmarks/SLAs based-service delivery systems; • assist Client as part of reform process in making efforts to transfer the Fund, Function and Functionaries to the Municipal Corporations/Municipal Councils/ Town Committees/Village Councils of concerned towns/areas in accordance with the provisions of the 73rd and 74th Constitutional Amendment Acts of 1992; • co-lead to work with government Officials and other Consultants to implement financial sustainability action plan(s) and/or other interventions for enhancing the effectiveness and efficiency in integrated urban infrastructure governance, municipal finance (e.g., enhanced through own source revenue generation through taxation, tariff-/ fare-/ user fee-level charges, development charges, revenues from resource recovery/ recycling, etc.), and infrastructure service delivery; • support Client and stakeholder authorities to incorporate in infrastructure/service design the adoption of value capture financing-VCF tools to generate revenue to fund future development proposals in a substantial manner, i.e., encouraging/supporting in building their capacities towards ensuring business models that are sustainable are adopted for such design; • assist to assess capacity requirements for staff, and prepare an institutional strengthening and capacity development plan, and programs for enhancing the capacities of identified stakeholder authorities, focusing on technical aspects, with due consideration for gender equality and social inclusiveness/ gender-responsive elements; and support Client in initiating the implementation of the institutional strengthening and capacity building process on a prioritized basis; • assist/develop a monitoring framework for urban utilities reflecting the service level national benchmarks/standards and key performance indicators, including adoption of SLAs-based service delivery systems, and assist identified stakeholder authorities in undertaking monitoring and producing reports towards effective and efficient operation and maintenance and sustainability of assets; • liaise and advise UDD, PMU (DUD), including DMA and PHED, relevant district authorities, ULBs/VCs, etc., or any other stakeholders on international best practices for water and

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	sanitation sector, roads/transport sector, and related infrastructure sector regulations and provide specific guidance considering the context of northeastern region of India; • overall lead the institutional strengthening and capacity building program, and provide support with specific training modules, and conduct/participate in training/workshops/seminars/conferences, etc., sessions, and sensitize stakeholders in necessary reforms to be undertaken on priority basis to enhance the capacities for project planning and design formulation, project development/ implementation, and monitoring/ operation and maintenance for sustainability of assets; and • provide inputs to periodic and annual reports, as required.
10.	**Procurement Expert**
	Qualifications: Preferably a Master's degree in Civil Engineering/Mechanical Engineering /Electrical Engineering/Law/Contracts Procurement and Management or equivalent; over a basic Bachelor's degree from a recognized University with a major in Civil Engineering/Architectural Engineering/Mechanical Engineering/Electrical Engineering/Law/Purchasing, Contracts, and Business Management or equivalent.
	Experience: Preferably 12 years' general experience; and 10 years' specific experience in procurement and contract management for major civil works and goods projects, and consulting services, with proven credentials in procurement management. Knowledge of ADB Procurement Policy, Regulations, Standard Bidding Documents (SBDs with required addendum wording for HS COVID-19 Plan) and User Guides, Request for Quotation (RFQ)/ Standard Request for Proposal (SRFP), and Guidelines/ Guidance Notes issued by ADB, including those under the ADB's New Procurement Framework of 2017, is an advantage. Work experience in procurement planning, and project design and implementation of external-aided/MDB projects in integrated urban sector is desirable.
	Responsibilities: Under the supervision of the national Team Leader/Deputy Team Leader, and in consultation with other Sector Experts, the Procurement Expert will undertake the following tasks, but not limited to: • undertake strategic procurement planning (SPP) study, conduct SPP Workshop and discuss/ assess contract management support requirement and prepare draft Contract Management Plan(s) during pre-contract award stage for finalized subproject contract packages for the ensuing project (proportional to complexity, risk, and value of the contract; and due consideration to whether large subprojects have an individual Contract Management Plan and/or one Contract Management Plan can cover a group of similar contract packages of a similar size for smaller contract packages, etc.), arrive at Procurement Strategy in SPP Study, and prepare SPP Report in consultation with Client, to be submitted to ADB for review and approval; • based on SPP study outcome/ procurement strategy arrived at, prepare Procurement Plan in consultation with Client and ADB (including any subsequent review/updation, as felt required during PRF implementation) for the identified subproject contract packages with appropriate details of suitable contract modalities, such as contract package name/ description/ estimated value, procurement method, review mechanism[prior review/post review (sampling)], bidding procedure, etc., and coordinate the preparation of procurement documents, such as IFBs, bid documents, expression of interests, request for proposals/ quotations, etc., for procurement of finalized subproject contract packages (goods, plants and equipment/civil works) and any consulting/ non-consulting services, related to integrated urban sector's work components; • prepare bid documents in close coordination with the Client's Procurement Officer/ Expert for the procurement of works, goods and plant, and any consulting/ consulting services, and make sure that such documents are in accordance with ADB Guidance Notes on Procurement (June 2018, as amended from time to time) and FIDIC-MDB June 2010 harmonised construction contract document, and as per latest appropriate SBD (with required addendum wording for

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	HS COVID-19 Plan) and related user guide, and RFQ/ SRFP issued by ADB, while duly following provisions made in the PRF PAM, and in any other governing/guidance documents of ADB, including those approved by ADB for the PRF Project. Ensure bid documents/ contracts to comply with measures as set out in the IEE/ EIA (as applicable), EMP, and RP (to the extent they may cause impacts to affected people) as well as corrective action plans; • assist Client to carry out procurement progress reporting and annual review of the Procurement Plan with appropriate details of contract packaging, such as contract package name/ description/ estimated value, procurement/ selection method, review mechanism [prior review/post review/post review (sampling)], bidding procedure, expected advertisement timeline, etc.; • assist Client's Procurement Officer/ Expert and the tender or bid evaluation and recommendation committee in the coordination for the bidding process for the procurement of works, goods and plant, and any consulting/ non-consulting services; • support Client for (i) the preparation and publication of invitations for bids, (ii) answers to bidders' queries, (iii) bid openings and evaluation of tenders, and (iv) preparation of bid evaluation reports; and similarly support the procurement process for any consulting/ non-consulting services; • assist in coordination for organizing SPP Workshop, and bidder's site visits (if applicable); • assist to procure any office–vehicles, supplies and equipment; • work together with the Client and other stakeholder authorities to coordinate the processes of obtaining no-objection from the ADB, during the bid evaluation and for bid evaluation reports; • manage all procurement processes, documentation/ reports, claims, etc.; • ensure implementation of applicable rules and procedures as per ADB and/or local guidelines; • work together with the Project Director, PMU (DUD) for the preparation of the necessary documentation for contract signing, and contractor and/or consultant mobilization; • provide inputs on procurement status/any issues to periodic and annual reports, as required; • facilitate Client in the ensuing loan/project processing stage of work by undertaking project procurement risk/ capacity assessment, as per revised ADB Procurement Policy (2017, as amended from time to time) and Procurement Regulations (2017, as amended from time to time), relevant ADB–guidelines/accepted formats and meeting ADB approval requirements; and • contribute to programs on training/workshops/seminars/conferences, etc., based on sectoral expertise of the consultant, and impart training.
11.	**Environment Safeguards Expert**
	Qualifications: Preferably a Master's degree in Environmental Science/ Environmental Planning/Environmental Engineering/Civil Engineering or equivalent; over a basic degree of Bachelor's from a recognized University in Natural or Environmental Science/ Environmental Engineering/Physical Planning/Architecture/Architectural Engineering/Civil Engineering or equivalent.
	Experience: Preferably 12 years of general experience; and 10 years of specific experience in planning, designing, implementation, and monitoring of comprehensive environmental management plan (EMP including health and safety management plan), initial environmental examination (IEE)/ environmental impact assessment (EIA), and other categorization/ readiness checklists. Knowledge of ADB Safeguard Policy Statement 2009/environmental policy and frameworks, and experience with the application of ADB environmental guidelines is an added advantage. Excellent verbal and written communication skills in English are desirable. Work experience in planning and design, and implementation of safeguard elements in external-aided/MDB projects in integrated urban sector is desirable.

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	Responsibilities: Under the supervision of the national Team Leader/Deputy Team Leader, and in consultation with the national Climate and Disaster Resilience Expert and other Sector Experts, the Environment Safeguards Expert will undertake the following tasks, but not limited to: • prepare/review/update the IEE/EIA (as applicable) and comprehensive EMP (including health and safety management plan–HSMP*), and provide the necessary inputs for the implementation of the comprehensive EMP using the compliance monitoring checklist included in the IEE/EIA; [* Updated as site specific health and safety management plan (SSHSMP) with site-specific health and safety COVID-19 plan (HS COVID-19 Plan).] • provide inputs to Client to establish the baseline measurement, and to supervise the pre-commissioning baseline monitoring following the mitigation and monitoring guidelines provided in the IEE/EIA; • organize analysis of water, air and soils as specified in the comprehensive EMP; • monitor and report on effectiveness of management of any waste/debris generated from existing infrastructure/utilities being removed/rehabilitated, paying attention to the handling of removed debris until disposal or recycling, and landscaping; • propose/elaborate reporting formats to be further used by Client to make sure that results of monitoring are reported in quarterly, semi-annual, and annual reports, and later in the project completion report to represent the performance of competed PRF, for submission to Client and ADB, as required, while duly ensuring that these follow ADB accepted formats/templates; • provide inputs to Client in dealing with Contractors for the implementation of the comprehensive EMP/supervise the compliance of the Contractor in implementing the environmental mitigation measures; • provide guidance in the implementation and monitoring of the comprehensive EMP, including ensuring any mitigation measures as recommended are implemented during the pre-construction period. This also includes to conduct the EIA, where required, and approval from relevant authorities, and monitoring reports; • assist Client in dealing with the concerned Roads/Police Department for the preparation of traffic emergency plans and temporary diversion of traffic during construction, with minimal inconvenience to public and environmental impacts; • provide any guidance to Contractor for any design and build (DB) contract of wastewater/ sewage treatment plants (WWTPs/ STPs) to prepare a sludge management plan of the new plants six-months before commissioning of the plant, open a dialogue with Client and other concerned authorities to endorse due responsibility for environmentally compatible management of the sludge during the long-term operation of the WWTP/ STP, including any septage treatment plant (SeTP); • prepare a methodology and a checklist review for supervision of the comprehensive EMP implementation completion and relevant report to be prepared by Contractors and assist Client and other concerned authorities to timely obtain such reports; • provide inputs and methodology to Client and other concerned authorities: (i) prepare and maintain a grievance redressal mechanism, (ii) establish a grievance redressal committee (GRC), and (iii) carry out monitoring on effectiveness, and make sure that GRC will have strong female representation, and the grievance redressal process is implemented effectively, according to the plan and schedule in the IEE/EIA; • undertake/assist in additional studies including topographical surveys, geo-technical investigations, and socio-economic/inventory of loss/willingness-to-pay surveys, and environmental and social safeguards surveys, etc., as the needs arise, duly incorporating considerations for gender equality and social inclusiveness/ gender-responsive elements;

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	• consolidate/prepare for assistance to Client in quarterly progress and semi-annual/annual environmental monitoring(with monitoring reports, covering any updates on site-specific health and safety management plan covering HS COVID-19 Plan); • facilitate Client in the ensuing loan/project processing stage of work by undertaking environmental assessment and review framework, as per ADB Safeguard Policy Statement (June 2009, as amended from time to time), following ADB accepted formats and meeting ADB approval requirements; • contribute to programs on training/workshops/seminars/conferences, etc., based on sectoral expertise of the consultant, and impart training; and • any other related task assigned by the Team Leader/Deputy Team Leader, and/or the Client.
12.	**Social Safeguards Expert**
	Qualifications: Preferably a Master's degree in Social Science/Sociology/Anthropology or equivalent; over a basic degree of Bachelor's degree from a recognized University with a major in Social Science/Sociology/Anthropology or equivalent.
	Experience: Preferably 12 years' general experience; and 10 years' specific experience as a Social Safeguards Expert on similar major infrastructure projects, and in land acquisition and involuntary resettlement, resettlement planning, and Indigenous Peoples plan documentation and related due diligence reports, health and safety management plan, is required. Possess up-to-date knowledge of laws and regulations of India on land acquisition and compensation, rehabilitation and related activities. Knowledge of ADB Safeguard Policy Statement 2009, and necessary safeguard document preparation and monitoring for compliance is an added advantage. Excellent verbal and written communication skills in English are desirable. Work experience in planning and design, and implementation of safeguard elements in external-aided/MDB projects in integrated urban sector is desirable.
	Responsibilities: Under the supervision of the national Team Leader/Deputy Team Leader, and in consultation with the national Climate and Disaster Resilience Expert and other Sector Experts, the Social Safeguards Expert will undertake the following tasks, but not limited to: • undertake/participate in stakeholder consultations during identification/review/prioritization of subprojects, undertake/review SPRSS assessment, assist in planning and conducting socio-economic surveys, prepare/update/ include health and safety management plan–HSMP*as part of comprehensive EMP in the bid documents, and where required prepare resettlement plan (RP)documentation and related due diligence reports (DDRs)/ Indigenous Peoples plan (IPP), and undertake its monitoring for compliance; [* Updated as site-specific health and safety management plan (SSHSMP) with site-specific health and safety management COVID-19 plan (HS COVID-19 Plan).] • work with the Client to establish baseline measurement duly incorporating considerations for gender equality and social inclusiveness/ gender-responsive elements, and a system to monitor social safeguards of the project and prepare indicators for monitoring important parameters of safeguards; • take proactive action to anticipate the potential resettlement requirements of the project to avoid delays in implementation; • where required, update all the RP related data and DDRs/ IPP, activities and reports; • develop the RP documentation and related DDRs/ IPP for all applicable subprojects, related to all sectors wherein resettlement or land or any other asset of the general public is being acquired for the project. The ADB safeguard policies and guidelines/ ADB accepted formats will be followed in addition to the local laws related to resettlement and land acquisition. The consultant will also prepare safeguards-due diligence reports (DDRs) for all subprojects' contract packages prior-to construction stage;

A.	National Key Experts
	• preparation of database of all the affected households/ trade establishment units, etc., and their eligibility and entitlement based on the final RP and related DDR; • assist in disbursement of compensation and assistance and ensure that affected persons are compensated as per the RP and related DDR prior to commencement of civil works in relevant subprojects/ project; • review, monitor and evaluate the effectiveness with which the RP and related DDRs/ IPP is implemented, and recommend necessary corrective actions to be taken; and advise on corrective measures where necessary, to Client and ADB; • prepare procedures to document and record the grievances and sensitize the Client and other concerned authorities, on the Communication Strategy and Grievance Redress Mechanism, which includes the notification, arranging the grievance redressal committee (GRC) meetings and recording the grievance in a database; • assist Client in monitoring the implementation of land acquisition in the subproject/ project; • design a RP and related DDR/ IPP monitoring report template and develop monitoring indicators; • consolidate/ prepare for assistance to Client in quarterly progress and semi-annual/ annual social monitoring (with monitoring reports, covering any updates on site-specific health and safety management plan covering HS COVID-19 Plan), and DDRs of contract packages; • facilitate Client in the ensuing loan/ project processing stage of work by undertaking initial poverty and social analysis/ SPRSS assessment, and RP and related DDRs/ IPP, as per ADB Safeguard Policy Statement (June 2009, as amended from time to time), following ADB accepted formats and meeting ADB approval requirements; • contribute to programs on training/ workshops/ seminars/ conferences, etc., based on sectoral expertise of the consultant, and impart training; and • any other related task assigned by the Team Leader/ Deputy Team Leader, and/or the Client.
13.	**Gender Equality and Social Inclusion (GESI) Expert**
	Qualifications: Preferably a Master's degree in Sociology/ Social Science/ Anthropology/ Gender or Development Studies/ Economics or equivalent; over a basic Bachelor's degree from a recognized University in Sociology/ Social Science/ Anthropology/ Gender or Development Studies/ Economics or equivalent.
	Experience: Preferably 12 years' general experience; and 10 years' specific experience of working as Gender Expert or Gender Equality and Social Inclusion (GESI) Expert, and training and capacity building in social safeguards and gender mainstreaming/ GESI aspects/ gender-responsive design features related project elements in sectors of integrated urban sector development, such as water supply and sanitation, urban roads/ transport, etc. Preferably direct experience in non-government organizations, government agencies and research institutes, with direct involvement in the development and implementation of gender mainstreaming in planning and decision-making/ GESI aspects/ gender-responsive design features in development projects, including design of gender action plan (GAP)/ GESI action plan (GESI AP) is required. Excellent verbal and written communication skills in English are desirable. Work experience in planning and design, and implementation of safeguard elements and gender mainstreaming features in external-aided/MDB projects in integrated urban sector is desirable.
	Responsibilities: Under the supervision of the national Team Leader/Deputy Team Leader, and in consultation with the national Climate and Disaster Resilience Expert and other Sector Experts, the GESI Expert will undertake the following tasks, but not limited to: • assist Client and other stakeholder authorities in identifying scope for gender sensitization/ gender mainstreaming in planning and decision-making, and assist in implementation and monitoring of gender action frameworks;

A.	National Key Experts
	• conduct a gender analysis along with facilitating data collection of gender-differentiated climate change and disaster impacts, and assess key gender and social inclusion (GESI) related issues, and potential actions to be taken under the ensuing project; and identify gender-responsive design features of subprojects and ensure project components are designed to be gender sensitive, apart from being inclusive, sustainable, and resilient in design considering the need to building climate and disaster resilience in the urban communities; duly including in its advice/ recommendations, the potential EWCDT–elderly, women, children, differently-abled, and transgender facilities, and other gender and socially inclusive approaches that can be incorporated in the design of the ensuing project; • design and prepare/review GESI action plan (GESI AP), initial poverty and social analysis/social poverty reduction and sector strategy, and other social development documents; • orient Client and other stakeholder authorities in assuring clear understanding of project schedule and respective roles and responsibilities in GESI AP implementation and other social development activities; • establish an effective monitoring and reporting system based on sex-disaggregated data (including beneficiary data, and which comply with privacy considerations) to be recorded as collected through public consultations and obtained from Client implementation team, field staff, contractors and other stakeholder authorities, on people who participated in training, including on trainers who will provide community hygiene promotion/ sanitation awareness/ effective-behavioural change communication training and awareness to build women's resilience to climate change and disaster impacts and environmental degradation through greater access to technology and innovation/ diversified livelihoods/ finance or micro-finance or other financial safety nets/ dedicated crisis-responding social assistance systems, etc., on women and/or people from marginalised/ excluded and vulnerable groups employed-in or job-/ entrepreneurship-/ business-opportunities (including, green jobs/ green businesses, food-for-work opportunities, etc.) for them in integrated urban sector, including skill development for semi-skilled/ skilled job types, upskilling, and business skills, on spatial planning-relevant infrastructure-public space improvements made/ benefits extended to women/ children/ elderly/ differently-abled, etc. for access to infrastructure and services/ safe mobility/ accessible child and elderly care services, etc., through GESI AP implementation progress during the PRF implementation and also during ensuing project(s) implementation (as per indicators and targets set at outcome and output levels in design and monitoring framework prepared) so as to be informed with result achievement-levels against measured baseline data in the project completion report as well, whenever due; • training of Client and other stakeholder authorities' Staff, and other Consultants/ Deputed Staff on gender areas/ GESI aspects on continuous basis and prepare training/ information, education, and communication–IEC material in English/ local language; • implement the GESI AP with support of Client and other stakeholder authorities; • ensure that the GESI AP report is included in the quarterly reports to Client/ by the Client to ADB; • facilitate Client in the ensuing loan/project processing stage of work by conducting gender analysis/ assessments and design of GESI AP, as per relevant ADB–guidelines/accepted formats and meeting ADB approval requirements; • contribute to programs on training/workshops/seminars/conferences, etc., based on sectoral expertise of the consultant, and impart training; and • any other related task assigned by the Team Leader/Deputy Team Leader, and/or the Client.
14.	**Financial Management Expert**
	Qualifications: Preferably a Chartered Accountant or having a Master's degree in Finance/ Accounting/Business Management/Economics/Cost Accountant or equivalent; over a basic

A.	National Key Experts
	Bachelor's degree from a recognized University with a major in Business Management/Finance/Accounting/Economics or equivalent. Qualification preferably be from a professional accounting body (PAO) recognized by the international federation of accountants (IFAC) (e.g., CA/CPA/ACCA) or equivalent.
	Experience: Preferably 12 years of general experience in public sector project finance and accounting with professional practice experience focusing financial reporting in India. Knowledge of financial management systems, financial/cash flow modelling and risk analysis, experience in undertaking financial analysis of public/private sector infrastructure organizations, and accounting principles/processes/ procedures mandated by Government of India (e.g., General Finance Rules, 2017, as amended from time to time) is required. Preferably 8-10 years of specific experience in financial analysis, and tariff setting/regulation of integrated urban or municipal infrastructure sectors and services is an asset. Must be familiar with relevant reporting standards framework including accounting standards prevalent in India (e.g., IND-AS, Accounting Standards issued by ICAI and Government Accounting Standards) or having working knowledge on International Financial Reporting Standards (IFRS) or International Public Sector Accounting Standards (IPSAS).Be able to demonstrate experience in auditing financial statements for projects and entities comparable in type, nature and complexity; and have the necessary capabilities to complete tasks and manage audit team queries on time. Diverse exposure into industries sectors such as public sector/ private sector operations, regulatory/ non regulatory financial institutions, municipal/ utility set-ups manufacturing, on related financial accounting or auditing assignments within computerized environment will help in streamlining the present manual set up of the Client and is desirable. Should have sound and proven formal communication skills (both verbal and written), be excellent in written and fluent over spoken English, and to act as a team player is essential.Work experience in planning and design, and implementation of external-aided/MDB projects in integrated urban sector is desirable.
	Responsibilities: Under the supervision of the national Team Leader/Deputy Team Leader, and in consultation with the national Municipal Reforms/Institutional Governance Expert and the Economist, and other Sector Experts, the Financial Management Expert will undertake the following tasks, but not limited to: • conduct in-depth due diligence of financial analysis of subproject/project investments (starting with subprojects and leading to project-level financial analysis that meets requirements as per ADB Guidelines/ Technical Guidance Notes (as amended from time to time), including for facilitating during PRF period on project processing of the ensuing loan/project); and provide a comparison with the FIRR done at the time of PRF/the ensuing loan appraisal, including any impacts of midstream changes during the PRF period; • support Client to review tariff and consumers affordability implications, based on secondary data of current revenue billing and collection details, cost recovery mechanisms, prevailing tariff-/ fare-/ user fee or user charges-/ tipping fee-policy or structure/incentives/ subsidies/ concessions, ongoing capital and maintenance works (plan and non-plan), etc.; and data obtained from primary surveys (e.g. socio-economic/inventory of loss/willingness-to-pay surveys, etc.) to make appropriate recommendations for any updation of ongoing municipal reforms from institutional or municipal governance and financial sustainability perspectives to support Client and relevant stakeholder agencies, resulting in appropriate/implementable own source revenue generation and cost recovery strategies, recommended tariff-/ fare-/ user fee or user charges-level mechanism based on user pays principle and financing mechanism, incentives/ subsidies (if any)/concessionaire, governance performance requirements, etc.; • facilitate Client and stakeholder authorities to incorporate in infrastructure/service design the adoption of value capture financing-VCF tools to generate revenue to fund future development proposals in a substantial manner, i.e., ensuring business models that are sustainable are adopted for such design; • undertake/ review financial analysis and evaluation (FAE)/ financial management assessment (FMA) of the EA/ IA consistent with project and entity risks, including design of project fund

A.	National Key Experts
	flow mechanism at year 1 of the PRF as per ADB's Guidelines/ Technical Guidance Notes (as amended from time to time); or if the undertaking of FAE/ FMA and design of project fund flow mechanism at year 1 of the PRF is already completed, carry out a review for any update in the design of project fund flow mechanism and FAE/ FMA of the EA/ IA under PRF annually at year 2/year 3 of the PRF or facilitate Client in consultation with PMU Financial Management Expert/ Financial Management Expert (TA Consultant)/ ADB Staff in carrying out such a review and update, as felt required. This would include facilitating revision of PRF PAM on account of any such update; • prepare/review the detailed engineering cost estimates for identified/ prioritized subprojects, including preparing cost estimation for sizing of the ensuing loan(s) for city-level/ project-level investment planning; • support Client and stakeholder authorities to prepare withdrawal applications and supporting documents for timely disbursements; • work closely with Client's Accounts Officer(s)/Accountant(s), and also guide Accountant under the consulting services to manage project accounts to facilitate timely submission of withdrawal applications and timely disbursements; • identify, procure, develop, and set up a FMS, including integration with PPMS in consultation with the Team Leader, and project financial information and accounting system to be used during the implementation of the PRF, and further transferred to Client to be useful for the subsequent or ensuing loan/project implementation; • prepare a project Financial Management Manual for the ensuing project and assess capacity of the EA/ IA's IT systems for accounting and reporting of project activities, and support in building capacity as per identified project and entity risks, and based on assessed capacity gaps; • elaborate and propose procedures for setting-up and maintaining consolidated/ separate project accounts throughout the implementation of PRF, and which could be useful for the ensuing loan/project implementation, while duly ensuring that these follow guidelines/ accepted formats of ADB and/or government, as required; • provide assistance to Client for the preparation of the first annual work plan and budget and for the subsequent years under PRF period, as well as in updating of detailed cash flow projections and its periodical reviews; • provide assistance to prepare draft loan withdrawal applications for the payment of eligible costs under PRF and other disbursement related documents; • assist Client in preparing terms of reference for auditing all project account(s) under PRF, recruit project auditor, and following up on the comments/recommendations of the auditor; • assist Client in preparing the PRF-related financial progress reports as required by government/ADB; provide required inputs and information necessary for the preparation of periodical progress reports and project completion report to represent the performance of completed PRF; • provide advice on capacity building needs of Client and other stakeholder authorities' staff, review financial management capacity building programs proposed by the suppliers of the FMS software, and provide assistance during the delivery of training sessions; • liaise with the Accounts Officer(s)/Accountant(s) selected for the delivery of training in financial management under the Capacity Building Program, including as per the Financial Management Manual prepared, and provide relevant inputs and material for training preparation as required; • assist Client and other stakeholder authorities to maintain regular book keeping and accounting, and facilitate PMU (DUD) under UDD, GoN in managing the advance fund procedure/advance account;

A.	National Key Experts
	• provide input to Client on carrying out review and consolidating monthly financial statements and requests for any payment by contractors and service providers, and assist Client in the process of approval for payment release; • provide inputs to monthly, quarterly, semi-annual and annual reports as needed, and support Client in timely submission of annual project financial statements, towards compliance with loan conditions/covenants under PRF Project; • facilitate Client in the ensuing loan/project processing stage of work by undertaking/ reviewing/ updating FAE/ FMA and any project fund flow mechanism update, and in due diligence of financial analyses to be consistent with ADB technical guidance note on FAE and to be consistent with project and entity risks, as per relevant ADB–guidelines/accepted formats and meeting ADB approval requirements; and • contribute to programs on training/workshops/seminars/conferences, etc., based on sectoral expertise of the consultant, and impart training.
15.	**Economist**
	Qualifications: Preferably a Master's degree in Economics/Urban Economics/Transport Economics/Business Management/Finance or equivalent; over a basic Bachelor's degree from a recognized University with a major in Economics/Business Management/Finance or equivalent.
	Experience: Preferably 12 years of general experience in subproject/project-level economic analysis and review in public sector infrastructure projects. Knowledge of functioning of integrated urban infrastructural economics, economic growth modelling and risk analysis; experience in undertaking economic analysis of public/private sector infrastructure organizations, and economic viability/viability gap funding for infrastructure investment planning is required. Preferably 8-10 years of specific experience in economic analysis, sensitivity analysis, and tariff setting/regulation of integrated urban or municipal infrastructure sectors and services is an asset. Work experience in planning and design, and implementation of external-aided/MDB projects in integrated urban sector is desirable.
	Responsibilities: Under the supervision of the national Team Leader/Deputy Team Leader, and in consultation with the national Climate and Disaster Resilience Expert, the Municipal Reforms/Institutional Governance Expert, the Financial Management Expert, and other Sector Experts, the Economist will undertake the following tasks, but not limited to: • conduct in-depth due diligence of economic analysis of subproject/project investments (starting with subprojects and leading to project-level economic analysis that meets requirements as per ADB Guidelines for Economic Analysis of Projects, 2017 (as amended from time to time), including for facilitating during PRF period on project processing of the ensuing loan/project); and provide a comparison with the EIRR done at the time of PRF/the ensuing loan appraisal, including any impacts of midstream changes during the PRF period; • should take into account relevant environmental and non-environmental factors in analysis, analyse and estimate the economic justification using avoided costs/consumer surplus, access to service and enhanced quantity/quality of service resulting in hygiene and health benefits, etc., as applicable, as the measure of benefits, and in line with the principle of sustainable commercial operations; • discuss with the Client various issues associated with demand curve estimation and the inclusion of externalities in the analysis, as applicable; • examine the robustness of conclusions with an appropriate sensitivity analysis (switching values), as applicable; • prepare estimates of the aggregate costs and economic benefits of the subproject/project (including calculating monetary value of climate change impacts [e.g., physical impacts–a property or town area that will be flooded, likely to be affected by landslides/ as landslip areas, likely pollution impacts, etc./ other impacts] using a current price data, consideration of

A.	National Key Experts
	global/national carbon benefits, etc., as applicable for study by choosing a range of climate change scenarios on which to base the economic assessment study); • assist in planning and conducting socio-economic surveys; and suggest parameters for economic monitoring, including baseline measurement, to be incorporated in the FMS set-up integrated with PPMS, to be used during the implementation of the Project and further transferred to Client; • support Client to review tariff and consumers affordability implications, based on secondary data of current revenue billing and collection details, cost recovery mechanisms, prevailing tariff-/ fare-/ user fee or user charges-/ tipping fee-policy or structure/incentives/ subsidies/ concessions, ongoing capital and maintenance works (plan and non-plan), etc.; and data obtained from primary surveys (e.g., socio-economic/inventory of loss/willingness-to-pay surveys, etc.) to make appropriate recommendations for any updation of ongoing municipal reforms from institutional or municipal governance and economic perspectives to support Client and relevant stakeholder agencies, resulting in appropriate/implementable own source revenue generation and cost recovery strategies, recommended tariff-/ fare-/ user fee or user charges-level mechanism based on user pays principle and financing mechanism, incentives/ subsidies (if any)/concessionaire (if feasible), governance performance requirements, etc.; • facilitate Client and stakeholder authorities to incorporate in infrastructure/service design the adoption of value capture financing-VCF tools to generate revenue to fund future development proposals in a substantial manner, i.e., ensuring business models that are sustainable are adopted for such design; • provide assistance to Client for the preparation of the first annual work plan and budget and for the subsequent Project's years as well as in any periodical reviews of detailed cash flow projections; • assist Client in preparing terms of reference for auditing all project accounts, recruit project auditor, and following up on the comments/recommendations of the auditor; • assist Client in preparing the Project financial progress reports as required by ADB; provide required inputs and information necessary for the preparation of periodical progress reports and project completion report to represent the performance of completed PRF; • provide advice on capacity building needs of Client and other stakeholder authorities' staff, review any economic prudence and financial management capacity building programs proposed by the suppliers of the FMS software, and provide assistance during the delivery of training sessions; • liaise with the Project Director, PMU (DUD), including DMA and PHED, and other Staff selected for the delivery of training in economic prudence and financial management under the Capacity Building Program and provide relevant inputs and material for training preparation as required; • provide inputs to monthly, quarterly, semi-annual and annual reports as needed, and support Client in baseline monitoring and timely compliance with any applicable loan covenants; • facilitate Client in the ensuing loan/project processing stage of work by undertaking due diligence of economic analyses and reviews, as per relevant ADB–guidelines/accepted formats and meeting ADB approval requirements; and • contribute to programs on training/workshops/seminars/conferences, etc., based on sectoral expertise of the consultant, and impart training.

Table 6: Support Staff Positions–Qualifications and Experience Requirements[a]

S. No.	Positions of National Support Staff	Qualification Requirements	Experience
1.	Technical Coordinator	Preferably a Master's degree in Infrastructure Planning/Public Health Engineering/ Environment Engineering/ Transportation Engineering/ Civil Engineering/Architectural Engineering/ Urban Planning/Environment Planning/Transport Planningor equivalent; over a Bachelor's degree from recognized university in Public Health Engineering/ Environment Engineering/Civil Engineering/Architectural Engineering/ Physical Planning or equivalent	8–10years [Demonstrated experience of technical coordination and having overseen conceptual/ detailed design stage of works in government/ public-sector domain related integrated urban sector/ infrastructure development projects]
2.	Design Engineer-Water Supply	BSc, B.E., or B.Tech. from a recognized University in Public Health Engineering/ Environment Engineering/Civil Engineering/Architectural Engineering or equivalent	5–7years
3.	Design Engineer-Wastewater/ Septage Management	BSc, B.E., or B.Tech. from a recognized University in Public Health Engineering/ Environment Engineering/Civil Engineering/Architectural Engineering or equivalent	5–7 years
4.	Design Engineer-Stormwater Drainage	BSc, B.E., or B.Tech. from a recognized University in Public Health Engineering/ Environment Engineering/Civil Engineering/Architectural Engineering or equivalent	5–7 years
5.	Design Engineer-Solid Waste Management	BSc, B.E., or B.Tech. from a recognized University in Environment Engineering/ Public Health Engineering/ Civil Engineering/ Architectural Engineering or equivalent	5–7 years
6.	Design Engineer(s)-Urban Roads – 2 No's	Bachelor's degree from a recognized University in Civil Engineering/Transportation Engineering/Architectural Engineering or equivalent	5–7 years
7.	Geotechnical Engineer	Master's degree in Geotechnical Engineering/ Engineering Geology or equivalent; over a basic Bachelor's degree from a recognized University in Geotechnical Engineering/ Engineering Geology or equivalent	8–10 years of professional experience in the relevant field (geotechnical investigations, testing etc.)
8.	Bridge Engineer	M.S., M.E., or M.Tech. in Bridge Engineering/ Structural Engineering or equivalent; over a basic Bachelor's degree from a recognized University in Civil	8–10 years of professional experience in project preparation and design consulting for bridge projects, including related

S. No.	Positions of National Support Staff	Qualification Requirements	Experience
		Engineering/ Mechanical Engineering or equivalent	structures/ approach elements of single-/intermediate-/two-/four-lane, NH/SH/MDR/Expressways for preferably two major bridges (each having a span of 100–150 m), culverts etc.
9.	Architect-Urban Planner	Preferably a Master's degree in Urban Planning/Urban and Regional Planning/ Infrastructure Planning/ Transport Planning/Environment Planning/ Architectural Design/Urban Design or equivalent; over a basic Bachelor's degree from a recognized University in Architecture/Architectural Engineering or equivalent	5–7 years [Shall be conversant with use of GIS software(s) in preparation of master/ development plans, local or area-based specific plans under urban development, utility/ infrastructure plans, etc.]
10.	Structural Engineer	Preferably a Master's degree in Structural Engineering/Civil Engineering/Architectural Engineering or equivalent; over a basic degree of Bachelor's from a recognized University in Civil Engineering/Mechanical Engineering/Architecture/ Architectural Engineering or equivalent.	8–10 years(Shall be conversant with use of latest structural design software tools, and undertaking designs of structural elements in integrated urban sector)
11.	Electro-Mechanical Engineer (Water/Wastewater Systems)	BSc, B.E., or B.Tech. from a recognized University in Mechanical Engineering/ Electrical Engineering or equivalent	10 years (Pumping Machinery) Preferably 5 years (Water/Wastewater Pumping Systems)
12.	Electrical Engineer (Power Systems/Street Lighting)	BSc, B.E., or B.Tech. from a recognized University in Electrical Engineering/Electrical and Communication Engineering/ Electrical and Electronics Engineering or equivalent	5–7 years
13.	Socio-Economic Surveyor	Preferably a Master's degree in Social Science/Urban Planning or equivalent; over a basic degree of BSc, BA, B.E. or B.Tech. from a recognized University in Social Science/Physical Planning/Civil Engineering or equivalent	10 years (Socio-economic survey/demand surveys/ inventory of loss survey/willingness-to-pay surveys, etc.) Preferably 5 years (GIS-based urban surveys, including experience in Mobile based Apps, collecting field data, geocoding population demographics for integrated urban sector projects)

S. No.	Positions of National Support Staff	Qualification Requirements	Experience
14.	Geographic Information System (GIS) Analyst	Preferably a Master's degree in GIS & RS/Geography/Geology/ Geophysics/Geo-informatics or equivalent; with a basic degree of BA/BSc, B.E., or B.Tech. from a recognized University in Civil Engineering/Architectural Engineering/Computer Engineering/ Geography/GIS & RS/Geology/ Geophysics or equivalent	8–10 years
15.	GIS Operator	BA/BSc, B.E., or B.Tech. from a recognized University in Civil Engineering/Architectural Engineering/Geography/GIS &RS/Geology/Geophysics/Computer-Aided Design or equivalent	5–7 years
16.	Quantity Surveyor(s) – 2 No's	B.E. from a recognized University or Diploma in Civil Engineering /Architectural Engineering/ Mechanical Engineering/Electrical Engineering/Quantity Surveying or equivalent	5 years (B.E.) 10 years (Diploma) [Urban Infrastructure-Water Supply/ Drainage/ Sewerage or Septage/Electro-Mechanical, Transportation, and Other Related Infrastructure]
17.	Office Manager-cum-Accountant	BA/BSc/BCom/BBA/CA or equivalent	5–7 years
18.	Auto-CAD Draughtsman – 2 No's	Diploma in Civil Engineering/ Architectural Engineering/Computer Science/Computer-Aided Design or equivalent	5–7 years (Experience of working on GIS software like, Arcinfo, Geomatica, etc., is desirable)
19.	Data Processing and Reprographic Operator(s) – 2 No's	Diploma/ITI Certificate in Computer Typing/Stenography or equivalent	3–5 years
	Office Assistant(s) – 2 No's	BA/BSc/BCom/Diploma or any other Graduate equivalent	3–5 years

[a]These experts will not be rated. Their deployment, however, will be subject to the Client's prior approval w.r.t. meeting the above-stated qualification and experience requirements.

VI. OTHER RELEVANT INFORMATION

A. General Requirements

26. The consulting firm will provide for the duration of the proposed consulting services work under integrated urban sector, the full person-months' time input as set out in their technical proposal. The PDMC will be attached to and be based with its office within the premises of PMU (DUD) in the capital city Kohima, from where the consultants will carry out their duties. The

Consultants will work alongside the Client's Staff, Client-designated Working Groups/Committees, other stakeholder authorities from respective DHTs/concerned ULBs or VCs (as applicable), other state-appointed Consultants, and central agencies like NEC/MDONER/MOHUA, etc., to have frequent interactions to understand project requirements that would facilitate undertaking proposed consulting services work and which would be useful for subsequent project implementation through the ensuing loan(s)/project(s). The PDMC will also assist and carry out on-the-job training as a routine part of their activities as well as part of the identified institutional strengthening and capacity building programs based on the PDMC review of the institutional structure and organizational/human resource capacities. In addition, for the purpose of effective and efficient execution of the PRF, and as felt required by the Client, the PDMC consulting firm should closely interact with the designated ADB Staff and TA consultants/TA consulting firm.

27. It is expected that the consulting firm/consultant experts will have as many as possible of the following credentials:

- relevant general management or technical education and background;
- a thorough understanding of the systems, procedures guiding the implementation, management, and administration of loan projects supported by the ADB, following ADB accepted formats and meeting ADB approval requirements;
- practical working experience in the management and administration of projects supported by the ADB, at the field level and its project management and administration;
- a thorough working experience of the management and administration of externally-aided or MDB-assisted/funded projects in India;
- have a demonstrated ability to work closely and effectively together with counterpart Staff of EA/ IA, and public sector organizations in South Asia; and
- have overall extensive in-country experience (including experience in the north eastern region from geographical experience perspective, considering it as a hilly region that is also part of the larger Himalayan region) in undertaking tasks for project planning, integrated urban planning/regional planning/transport planning/infrastructure planning, detailed engineering design, procurement processing and procurement management, institutional reviews and institutional- and/or municipal governance-strengthening/municipal reforms (administrative/technical/financial sustainability/personnel/O&M-related)/capacity building, and project implementation, including construction supervision and contract management/ project management.

28. The PDMC in consultation with Client shall also coordinate and collect data from line departments, to meet necessary data inputs for undertaking tasks under the scope of services of proposed consulting services package.

29. All project documentation for the PRF Project will be in the English language, with translation into local languages as required. In particular all training manuals, etc., will be both in English and local languages; while, for on-the-job training, the use of the English language is preferred.

30. The PDMC consulting firm shall be responsible to:

- procure items of furnishing/ refurbishment of office space with furniture, computers, data processing capacity (any licensed software/ hardware), printing equipment,

presentation equipment, other equipment, etc., in consultation with and prior approval of the Employer, as required for setting-up and maintenance of its office, and these being property of the Employer, handover the same in acceptable condition to the satisfaction of PMU (DUD) on completion of the consulting assignment. The costs of any such computers/ equipment would be inclusive of insurance over the assignment period.

[**Note:** While, all regular design software/ hardware cost is considered to be included in firm's consultancy fee; it being property of the Client, handover the same in updated working condition to the satisfaction of PMU (DUD) on completion of the consulting assignment.];

- arrange for all transportation and travelling required throughout the State, and to other cities outside the State for any review meetings/training/workshops/ seminars/ conferences, etc., and the travel costs should be inclusive of travel insurance cost, which shall take into account possible travel-related risk due to COVID-19 pandemic; and
- prepare/arrange for any training material, printouts, etc., required for undertaking the consulting services.

B. Government Inputs

31. The state's executing agency–UDD, GoN, and implementing agency–DUD, with PMU(DUD)constituted with members from DUD for overall urban component, and PHED for water supply component, and the participating stakeholder authorities/agencies will provide suitable and adequate strength of dedicated counterpart staff deployed to work in the PMU (DUD)as indicated below (Table 7). The government will also make available to the Consultants, the support facilities physically located in the PMU (DUD)premises for their office at Kohima, including all relevant and available study reports/master plans/sector plans/survey reports/topographical survey maps/technical investigation reports, etc., any policy papers/strategy papers/guidelines/schedule of rates with rate analyses methods and other related documents, maps/GIS-database(s), photographs, etc. The actual disposition and number of counterpart staff will be determined together at the time of contract negotiation process with the PDMC consulting firm.

Table 7: Counterpart Staffing for PMU (DUD) under Nagaland Urban PRF[32]

S. No.	Positions	Designation
1.	Project Director	Director, Urban Development
2.	Deputy Project Director-1	Additional Chief Engineer, Urban Engineering Wing
3.	Deputy Project Director-2	Chief Engineer, PHED
4.	Nodal Officer	Joint Director (Tech.), Urban Development
5.	Project Engineer-Urban	Executive Engineer-I, Urban Engineering Wing
6.	Project Engineer-PHE	Executive Engineer, PHED
7.	Assistant Project Engineer-Urban	Assistant Engineer/ SDO, Urban Engineering Wing
8.	Assistant Project Engineer-PHE	Assistant Engineer/ SDO, PHED

[32]Government of Nagaland Notification NO.UDD/19-ADB/02/2009(Pt), dated 10 June 2021, Kohima.

S. No.	Positions	Designation
9.	Environment Specialist/ Expert	Senior Environment Officer, Urban Development
10.	Accounts Officer	Accounts Officer, DUD
11.	IT Officer	IT Coordinator
12.	Office Assistants (2 Positions)	UDA/ LDA

DUD = Directorate of Urban Development, LDA = Lower Division Assistant, PHE = Public Health Engineering, PHED = Public Health Engineering Department, PMU = project management unit, PRF = project readiness financing, SDO = Sub-Divisional Officer, UDA = Upper Division Assistant.

32. **Information to facilitate Proposal preparation**. The Client in consultation with the concerned district authorities, and other stakeholder authorities/ULBs/VCs, as felt required, will make best efforts in providing all relevant and available reports, master plans/development plans/sector plans, maps, documents, etc., to facilitate the consulting firm for making a proposal.

33. PMU (DUD) shall provide appropriate unfurnished office space in Kohima for establishing the PDMC consulting firm's office at Kohima.While, the office space would be provided without any rentals; the water charges, electricity bills, etc., are to be borne by PDMC.

TERMS OF REFERENCE (TOR)
CONSULTING SERVICES (INDIVIDUAL EXPERTS)

1. **URBAN DEVELOPMENT EXPERT (PROJECT MANAGER)**

Minimum Educational Qualification: Master's degree in Urban Planning/ Town Planning/ Urban Design/ Civil Engineering/ Environmental Engineering/ Business Administration or equivalent; over a Bachelor's degree in Engineering/ Architecture/ Architectural Engineering/ Physical Planning or equivalent.

Professional Experience: Shall have at least 15 years of general experience and 10 years of specific experience in project preparation/ planning/ implementation of urban/ regional/ transport/ environment planning and/or urban design projects related to preparation and management of city/ town master plan(s), city development plan(s), city investment plans, urban roads (including facilities for pedestrianization and other non-motorized transport modes), urban services (water supply, wastewater or sewerage/ septage management, stormwater drainage, solid waste management, etc.), renewal and rehabilitation, urban regeneration/ revitalisation/ rejuvenation, and relevant smart city urban projects. Exposure in procurement and contract management of integrated infrastructure projects is desirable.

Work experience of five years with any of the following project or project authority is desirable: UN umbrella organisation; externally aided project by multilateral development banks (ADB, The World Bank, NDB, etc.)/ bilateral agencies (JICA, DFID, GIZ, etc.); in integrated urban sector. Demonstrated knowledge of the current procurement policy/ regulations/ procedures of ADB would be preferred.

Three years of work experience in North East Region or similar hill states or geographic locations in the Himalayan Region (e.g., Uttarakhand, Himachal Pradesh, UT of Jammu & Kashmir, UT of Ladakh, etc.) in India is an added advantage.

SCOPE OF WORK

The **Urban Development Expert (Project Manager)** will support/ assist/ facilitate the EA/ IA in coordination and conceptualization of the requirements for integrated urban sector components with respect to project management support in the PMU (DUD), including facilitation for review of urban strategy, identification/ review/ finalization and prioritization of subproject towns/ subproject work components, and investment plans and action plans. The consultant will also be responsible for validation of technical documents/ reports produced by the PDMC consulting firm, support in PDMC contract management, compliance of PRF loan covenants, procurement processing-related activities, support in PRF Project progress monitoring and overall PRF implementation, loan processing support, etc.

DETAILED TASKS AND EXPECTED OUTPUTS

Under the supervision of Deputy Project Director(s), and in consultation with the Project Director, and in coordination with the Nodal Officer and the other national individual consultants, the expert will support/ assist/ facilitate the EA/ IA in:

- the overall objective of the PRF and assist the EA/ IA in achieving those objectives by providing inputs in all project management activities;

- conceptualization of requirements for integrated urban sector components in the PMU (DUD), including facilitation for review of urban strategy, identification/ review/ finalization and prioritization of subproject towns/ subproject work components, and city investment plans and action plans;
- bridging technical consensus and supplementing project related decision-making for this integrated urban sector PRF amongst the key stakeholders including inter-departmental liaising, coordination and resolution;
- ensuring cooperation and consultations on project related nuances for the integrated urban sector PRF amongst officials/ staff/ designates from UDD/ DUD/ DMA, PHED, other line departments, local authorities, ULBs, VCs, PDMC firm/ national individual consultants, NEC, MDONER, MOHUA, ADB, statutory body(ies), voluntary organisations, and any other stakeholder;
- ensuring specific integrated urban sector PRF related compliance of loan covenants, from loan agreement and project agreement, project administration manual, safeguard framework(s), etc.;
- ensuring satisfactory attainment of the desired integrated urban sector PRF outlined outputs within set time frame(s) and report accordingly the status/ progress and performance;
- ensuring attainment of service level performance and coverage for drinking water, wastewater treatment/ faecal sludge and septage management, urban roads with integrated pedestrian pathways or footpaths/ footsteps, stormwater drainage and landslip protection, urban water bodies, solid waste management, etc., while preparing the city investment plans and action plans, feasibility studies and DPRs;
- overall, ensuring adequate expertise deployments, monitoring activities/ tasks, and auditing/ validating technical outputs of the PDMC firm under PRF regarding its deliverables against the scope of work or any other agreed activity assigned to it thereof;
- overview preparation and (re)validation of technical documents/ reports produced by the PDMC firm and/or any other designated agency, it shall cover pre-feasibility reports, proof of concepts, concept designs/ plans, appraisal reports, feasibility reports, detailed project reports with cost estimates, specifications, drawings, etc.; extend relevant technical support (e.g., review of cost norms or cost estimation based on State SORs/ methods for rate analysis/ market rates, etc.; support in identification of construction materials and potential availability of material sources, etc.), for prioritized subprojects;
- coordinate and facilitate strategic procurement planning (SPP) process, and review the output(s) of the PDMC firm under PRF on SPP Study (wherein SPP Workshop is conducted, with discussion on/ assessment of contract management support required), procurement strategy and SPP Study Report prepared; Contract Management Plan(s) prepared during pre-contract award stage for finalized subproject contract packages for the ensuing project (proportional to complexity, risk, and value of the contract);
- support EA/ IA in contract management of services of PDMC firm, survey agencies, equipment suppliers or vendors, contractors for subproject contract packages, etc., as applicable, including contract administration activities like, performance management, payment verification for claim processing (including price adjustment), change management (i.e., need for variations, change impacts on quality/cost/time, etc.), claim and dispute management, contract closing, etc.;

- support EA/ IA in reviewing and finalizing the procurement plan prepared by the PDMC firm for all goods, works and services to be taken up during the ensuing project(s), including periodic updation of procurement plan;
- support EA/ IA in reviewing and finalizing the bid documents, complete in all respects of supporting documentation/ attachments;
- review of bid evaluation reports (technical/ financial) and related transactions till contract award;
- follow-up on procurement evaluation and/or approval, and collaborate with Nodal Officer to facilitate the PMU (DUD) in addressing/ learning from review comments/ recommendations received from ADB on procurement processing;
- commissioning, proof checking, monitoring and auditing quality of outputs of field/ sectoral surveys, investigations, studies, scientific analyses, polls, etc., proposed by the PDMC firm for prioritized subprojects/ ensuing project(s);
- case-by-case, reviewing and validating final engineering/ architectural designs, drawings, specifications, bill of quantities, rate analysis, cost norms, adoption of SORs, design standards/ best practice compliances, sustainable approaches, economic/ financial analyses, etc., proposed by the PDMC firm and/or any other designated agency;
- supervising and continually monitoring the progress of the PRF Project, and overseeing preparation and updation of information in the design and monitoring framework (DMF) including baseline measurement, data collection, collation and analyses for the ensuing project(s);
- authorizing and monitoring the output reporting requirements, earmarked deliverables, key milestones, project time-keeping and expertise deployments of the PDMC firm, and facilitating PMU (DUD) through verification of PDMC invoice claim processing on time efforts made and quality of outputs/ deliverables received;
- progress monitoring (monthly/ quarterly/ semi-annual/ annual, as applicable), including status of service level benchmark monitoring during PRF implementation;
- disbursing training, capacity and knowledge development of Staff in EA/ IA and PMU (DUD) in the integrated urban planning and development sectoral subject matter;
- ensuring, on behalf of the government for the PDMC firm, provision of support facilities, access to documents/ database or knowledge repositories/ statutory documents, cooperation amongst stakeholders/ government departments;
- updating information specific to preparation of state's urban sector review with ADB/ TAs/ TA consulting firm/ resource person(s);
- advising in filtering ensuing project(s) based on the integrated urban sector priorities, readiness, financing potentiality, etc.;
- overseeing/ preparation and validation of draft TOR and EOI for selection of Third-Party Quality Audit Consultant and/or Implementation Supervision Consultant firm(s) for the ensuing project(s); and
- any other task as assigned by the PMU (DUD) from time to time under the PRF, including during the ensuing loan processing.

2. **ENVIRONMENT SAFEGUARDS EXPERT**

Minimum Educational Qualification: Master's degree in Urban Planning/ Town Planning/ Urban Design/ Civil Engineering/ Environmental Engineering/ Business Administration or equivalent; over a Bachelor's degree in Engineering/ Architecture/ Architectural Engineering/ Physical Planning or equivalent.

Professional Experience: Shall have at least 15 years of general experience and 10 years of specific experience in project preparation/ planning/ implementation of urban/ regional/ transport/ environment planning and/or urban design projects related to preparation and management of city/ town master plan(s), city development plan(s), city investment plans, urban roads (including facilities for pedestrianization and other non-motorized transport modes), urban services (water supply, wastewater or sewerage/ septage management, stormwater drainage, solid waste management, etc.), renewal and rehabilitation, urban regeneration/ revitalisation/ rejuvenation, and relevant smart city urban projects. Exposure in procurement and contract management of integrated infrastructure projects is desirable.

Work experience of five years with any of the following project or project authority is desirable: UN umbrella organisation; externally aided project by multilateral development banks (ADB, The World Bank, NDB, etc.)/ bilateral agencies (JICA, DFID, GIZ, etc.); in integrated urban sector. Demonstrated knowledge of the current procurement policy/ regulations/ procedures of ADB would be preferred.

Three years of work experience in North East Region or similar hill states or geographic locations in the Himalayan Region (e.g., Uttarakhand, Himachal Pradesh, UT of Jammu & Kashmir, UT of Ladakh, etc.) in India is an added advantage.

SCOPE OF WORK

The **Environment Safeguards Expert** will support/ assist/ facilitate the EA/ IA in coordination and reporting of environmental safeguards activities, including stakeholder consultations, and supervise, facilitate and review PDMC consulting firm's outputs from environmental safeguards perspective on integrated urban sector subprojects. The consultant will also be responsible for validation of environmental safeguards documents/ monitoring reports produced by the PDMC firm, progress monitoring, project related compliance from PRF loan covenants, loan processing support, etc.

DETAILED TASKS AND EXPECTED OUTPUTS

Under the supervision of Deputy Project Director(s), and in consultation with the Project Director, and in coordination with other national individual consultants, the expert will support/ assist/ facilitate the EA/ IA in:

- stakeholder consultations, and supervise, facilitate and review PDMC firm's outputs from environmental safeguards perspective on integrated urban sector subprojects, viz. environmental screening/ categorization/ assessment checklists, IEE/ EIA documentation, inputs for implementation of the comprehensive EMP using the compliance monitoring checklist included in the IEE/ EIA, SPRSS assessment, comprehensive EMP [including HSMP updated as site-specific health and safety management plan (SSHSMP) with site-specific health and safety COVID-19 plan (HS COVID-19 Plan)] in the bidding documents in ADB accepted formats/ templates, and its monitoring status for compliance under PRF Project;
- facilitate to arrive at/ update an initial readiness status when undertaking identification/ review/ finalization and prioritization of–subproject towns/ subproject components in urban areas, based on initial information available for necessary facts like, water resource/ forest land/ State PCB and all other environmental norms etc., related no-objection certificates (NOCs) and/or any environmental clearances etc.

- facilitate to establish the baseline measurement [towards finalizing design and monitoring framework (DMF) for the ensuing project(s)] duly incorporating considerations to monitor environmental safeguards of the project, and review and finalize indicators for monitoring important parameters of environmental safeguards, and to supervise the pre-commissioning baseline monitoring process following the mitigation and monitoring guidelines provided in the IEE/ EIA;
- coordinate and organize analysis of water, air and soils as specified in the comprehensive EMP, and review the analysis reports;
- supervise and review the monitoring report on effectiveness of management of any waste/ debris generated from existing infrastructure/ utilities being removed/ rehabilitated, paying attention to the handling of removed debris until disposal or recycling, and landscaping;
- review and finalize reporting formats to be further used by PMU (DUD) for environmental safeguards monitoring, and supervise monitoring and make sure that results of progress monitoring are reported (monthly/ quarterly/ semi-annual/ annual, as applicable); and later in the project completion report of the EA to represent the performance of competed PRF for submission to ADB, as required, while duly ensuring that these follow ADB accepted formats/ templates;
- ensuring specific integrated urban sector PRF related compliance of loan covenants, from loan agreement and project agreement, project administration manual, environmental safeguard framework(s), etc.;
- guide the implementation and monitoring of the comprehensive EMP, including ensuring any mitigation measures as recommended are implemented during the pre-construction period. This also includes to review any EIA conducted, where required, and facilitation during approval from relevant authorities;
- coordinate and facilitate the PMU (DUD) in dealing with the concerned Roads/ Police Department for the preparation of traffic emergency plans and temporary diversion of traffic to be planned for adoption during construction, with minimal inconvenience to public and impacts;
- review inputs and methodology provided by the PDMC firm to PMU (DUD) for: (i) preparing and maintaining a grievance redressal mechanism, (ii) establishing a grievance redressal committee (GRC), and (iii) carrying-out monitoring on effectiveness, to ensure that GRC will have strong female representation, and the grievance redressal process is implemented effectively, according to the plan and schedule in the IEE/ EIA;
- review and finalize procedures to document and record the grievances and sensitize the authorities, on the communication strategy and grievance redress mechanism, which includes the notification, arranging the GRC meetings and recording/ maintaining the grievance in a database;
- facilitate the PMU (DUD) in any additional studies, including topographical surveys, geo-technical investigations, and demand/socio-economic/willingness-to-pay surveys etc., and any environmental/ social safeguards surveys, etc., as the needs arise; duly ensuring that not only sustainability, facility inclusiveness, affordability, and gender equality and social inclusiveness responsive elements to develop urban services management (where applicable) have been incorporated, but also ensuring that climate and disaster resilience aspects with risk avoidance/ minimization, adaptation and/or mitigation measures have been duly incorporated in the planning and detailed engineering designs for integrated urban sector subprojects by the PDMC firm under PRF Project;

- coordinate structured program sessions for capacity building through training/ workshops/ seminars/ conferences, etc., facilitate in training activities, and impart training in environmental safeguard aspects for integrated urban sector in PMU (DUD);
- facilitate in preparation and validation of draft TOR and EOI for selection of Third-Party Quality Audit Consultant and/or Implementation Supervision Consultant firm(s) for the ensuing project(s);
- coordinate with Urban Development Expert (Project Manager) in delivering/ review of any project activities as and when required; and
- any other task as assigned by the PMU (DUD) from time to time under the PRF, including during the ensuing loan processing.

3. **SOCIAL SAFEGUARDS EXPERT**

Minimum Educational Qualification: Master's degree in Social Science/ Sociology/ Anthropology/ Gender or Development Studies or equivalent; over a Bachelor's degree in Social Science/ Sociology/ Anthropology or equivalent.

Professional Experience: Shall have 15 years of general experience and 10 years of specific experience as social safeguards/ resettlement expert with exposure in gender analysis/ sensitization/ mainstreaming/ gender equality and social inclusion (GESI) aspects in development of integrated urban sector or similar major infrastructure projects in–project formulation, planning, designing, implementation, management, and monitoring-appraisal-evaluation of social safeguard framework, social categorization and other checklists, summary poverty reduction and social strategy (SPRSS), health and safety management plan (HSMP)/ site-specific health and safety management plan (SSHSMP) with site-specific health and safety COVID-19 plan (HS COVID-19 Plan), land acquisition and resettlement plan (RP) and related due diligence reports (DDRs), Indigenous Peoples plan (IPP), gender action plan (GAP)/ GESI action plan (GESI AP), etc.

Work experience of five years with any of the following project or project authority shall be preferred: UN umbrella organisation; externally aided project by multilateral development banks (ADB, The World Bank, NDB, etc.)/ bilateral agencies (JICA, DFID, GIZ, etc.); in integrated urban sector. Knowledge of ADB Safeguard Policy Statement 2009 (as amended from time to time), experience with the application of ADB safeguard policy/ assessments/ frameworks, social guidelines, and necessary social safeguard document preparation and monitoring for compliance is desirable. Shall possess up-to-date knowledge of laws and regulations of India on land acquisition and compensation, resettlement and rehabilitation, and related activities. Excellent verbal and written communication skills in English are desirable.

Three years of work experience in North East Region or similar hill states or geographic locations in the Himalayan Region (e.g., Uttarakhand, Himachal Pradesh, UT of Jammu & Kashmir, UT of Ladakh, etc.) in India is an added advantage.

SCOPE OF WORK

The **Social Safeguards Expert** will support/ assist/ facilitate the EA/ IA in coordination and reporting of social safeguards activities, including gender equality and social

inclusiveness approaches, covering: stakeholder consultations, and supervise, facilitate and review PDMC consulting firm's outputs from social safeguards perspective on integrated urban sector subprojects. The consultant will also be responsible for validation of social safeguards and gender documents/ monitoring reports produced by the PDMC firm, progress monitoring, project related compliance from PRF loan covenants, loan processing support, etc.

DETAILED TASKS AND EXPECTED OUTPUTS

Under the supervision of Deputy Project Director(s), and in consultation with the Project Director, and in coordination with other national individual consultants, the expert will support/ assist/ facilitate the EA/ IA in:

- stakeholder consultations, and supervise, facilitate and review PDMC firm's outputs from social safeguards perspective on integrated urban sector subprojects, viz. social screening/ categorization/ assessment checklists, SPRSS assessment, contribute to comprehensive EMP [including HSMP updated as site-specific health and safety management plan (SSHSMP) with site-specific health and safety COVID-19 plan (HS COVID-19 Plan)] in the bidding documents, and where required RP and related DDRs/ IPP, etc., in ADB accepted formats/ templates, and its monitoring status for compliance under PRF Project;
- facilitate to arrive at/ update an initial readiness status when undertaking identification/ review/ finalization and prioritization of–subproject towns/ subproject components in urban areas, based on initial information available for necessary facts like, land ownership status to ascertain clear land title, any further requirements for land etc. related no-objection certificates (NOCs), any resettlement/ rehabilitation requirements, etc.
- facilitate to establish the baseline measurement [towards finalizing design and monitoring framework (DMF) for the ensuing project(s)] duly incorporating considerations for gender equality and social inclusiveness responsive elements, a system to monitor social safeguards of the project, and review and finalize indicators for monitoring important parameters of social safeguards/ gender equality and social inclusion (GESI) aspects;
- facilitate to take proactive action to anticipate the potential resettlement requirements of the project to avoid delays in implementation; review and finalization of database of all the affected households and their eligibility and entitlement based on the final RP; and facilitate in disbursement of compensation and assistance and ensure that affected persons are compensated as per the RP prior to commencement of civil works in relevant section;
- review and finalize RP and related DDRs/ IPP monitoring report template and develop monitoring indicators, and monitor and evaluate the effectiveness with which the RP/ IPP is implemented, and recommend necessary corrective actions to be taken; and facilitate PMU (DUD) to take corrective measures, where necessary;
- review and finalize reporting formats to be further used by PMU (DUD) for social safeguards monitoring, GESI indicators, and supervise monitoring and make sure that results of progress monitoring are reported (monthly/ quarterly/ semi-annual/ annual, as applicable), including the implementation of any land acquisition in the project; and later in the project completion report of the EA to represent the performance of competed PRF for submission to ADB, as required, while duly ensuring that these follow ADB accepted formats/ templates;

- ensuring specific integrated urban sector PRF related compliance of loan covenants, from loan agreement and project agreement, project administration manual, safeguard framework(s), etc.;
- assist the PMU (DUD) in review and finalization of gender analysis and assessment of GESI aspects (including potential actions for EWCDT–elderly, women, children, differently-abled, and transgender facilities), and design of gender action plan (GAP)/ GESI action plan (GESI AP) and to comply with the GAP/ GESI AP attached to the project for women from most marginalized groups of society or specific actions for individual subprojects, relevant policies of the Government of India/ state government, and facilitate inclusion of gender mainstreaming in the review of state policies and strategies for integrated urban sector;
- support in capacity building for gender mainstreaming activities under the project at each level; review and monitor–GAP/ GESI AP implementation progress, collected data disaggregated by sex, and finalize/ submit update on progress and achievements;
- coordinate and facilitate the PMU (DUD) in dealing with the concerned Roads/ Police Department for the preparation of traffic emergency plans and temporary diversion of traffic to be planned for adoption during construction, with minimal inconvenience to public and impacts;
- review inputs and methodology provided by the PDMC firm to PMU (DUD) for: (i) preparing and maintaining a grievance redressal mechanism, (ii) establishing a grievance redressal committee (GRC), and (iii) carrying-out monitoring on effectiveness, to ensure that GRC will have strong female representation, and the grievance redressal process is implemented effectively;
- review and finalize procedures to document and record the grievances and sensitize the authorities, on the communication strategy and grievance redress mechanism, which includes the notification, arranging the GRC meetings and recording/ maintaining the grievance in a database;
- facilitate the PMU (DUD) in any additional studies, including topographical surveys, geo-technical investigations, and demand/socio-economic/willingness-to-pay surveys etc., and any environmental/ social safeguards surveys, etc., as the needs arise; duly ensuring that not only sustainability, facility inclusiveness, affordability, and gender equality and social inclusiveness responsive elements to develop urban services management (where applicable) have been incorporated, but also ensuring that climate and disaster resilience aspects with risk avoidance/ minimization, adaptation and/or mitigation measures have been duly incorporated in the planning and detailed engineering designs for integrated urban sector subprojects by the PDMC firm under PRF Project;
- coordinate structured program sessions for capacity building through training/ workshops/ seminars/ conferences, etc., facilitate in training activities, and impart training in social safeguard and GESI aspects for integrated urban sector in PMU (DUD);
- facilitate in preparation and validation of draft TOR and EOI for selection of Third-Party Quality Audit Consultant and/or Implementation Supervision Consultant firm(s) for the ensuing project(s);
- coordinate with Urban Development Expert (Project Manager) in delivering/ review of any project activities as and when required; and
- any other task as assigned by the PMU (DUD) from time to time under the PRF, including during the ensuing loan processing.

4. **FINANCIAL MANAGEMENT EXPERT**

Minimum Educational Qualification: Must be a graduate from recognised universities of India and chartered accountant duly qualified from a professional accounting body (PAO) recognized by the international federation of accountants (IFAC) (e.g., CA/CPA/ACCA).

Professional Experience: Possess 10 years of professional practice experience focusing financial reporting in India with at least 8 years of specific experience in dealing with accounting matters. A strong exposure on relevant reporting standards framework including accounting standards prevalent in India (e.g., IND-AS, Accounting Standards issued by ICAI and Government accounting Standards) or having working knowledge on International Financial Reporting Standards (IFRS) or International Public Sector Accounting Standards (IPSAS) would be essential.

To be able to deal with complex situations on accounting and financial reporting matters the candidate ideally should have been trained and or associated with a well-established reputed firm of chartered accountants in India or abroad in capacity of a senior role for considerable period of time.

Diverse exposure into industries sectors such as public Sector / private sector operations, regulatory / nonregulatory financial institutions, manufacturing, utility set ups, on related financial accounting or auditing assignments within computerized environment will help in streamlining the present manual set up of EA and would be highly desirable.

Sound and proven formal communication skills (Verbal and Written both).

Should be excellent in written and fluent over spoken English and Hindi.

To act as a team player is essential and prior work experience in design and implementation of external-aided/MDB projects in integrated urban infrastructure sectors is desirable.

SCOPE OF WORK

The **Financial Management Expert** will support/ assist/ facilitate the EA/ IA in establishing robust financial management system, preparing disbursement schedules and annual work plan, finalise project cost estimates, perform overall financial due diligence to include financial analysis, and financial management assessment. The consultant will also be responsible and supervise, facilitate and review of PDMC consulting firm's outputs; and support in annual project financial statements/ audited entity financial statements, billing withdrawal applications, loan related compliance of PRF loan covenants, etc.

DETAILED TASKS AND EXPECTED OUTPUTS

Under the supervision of Deputy Project Director(s), and in consultation with the Project Director, and in coordination with other national individual consultants, the expert will support/ assist/ facilitate the EA/ IA in:

- Support project management unit (PMU) in compliance of applicable loan covenants related to financial management compliances of ADB.

- Should able to perform financial due diligence in accordance with ADB FM guidelines with respect to priority sub-projects.
- Determine to assess, schedule to build capacity building (CB) programs and able to implement CB activities from the perspective of institutional strengthening and development on FM. This being a continuous activity, at regular interval review capacity of existing FM function at both state level and ULB level. Deficiencies to be pointed out to the attention of ADB project lead immediately.
- At ULB level, time to time review the FM status to cover aspects on robust accounting and reporting requirements.
- Provide inputs for preparing disbursement schedules based on actual work done duly mapped with overall budgets and work plan of the PMU.
- The candidate must follow guidelines relevant to FM function mentioned in project administration manual (PAM) at all times.
- Provide assistance to PMU/PIUs for the preparation of the first annual work plan and budget and for the subsequent years under PRF period.
- Provide assistance to prepare loan withdrawal applications through client portal for disbursements (CPD) for reimbursement of eligible costs under the PRF.
- Propose procedures for setting-up and maintaining consolidated project accounts throughout the implementation of PRF, and which could be useful for the ensuing loan/project implementation, while duly ensuring that these follow guidelines/ accepted formats of ADB and/or government, as required.
- Suggest and set-up of a feasible robust financial management system (FMS) to including project financial information and accounting system to be used during the implementation of the PRF that is immediately implementable into the PRF and could be further integrated into the ensuing loan subsequently. **Suggested system should enable in producing internal financial reporting system on a quarterly basis at the PIUs which will eventually support in preparation of an annual consolidated project financial statement.**
- Any challenges to ensure compliance with **ADB's project agreement section 2.09 on basic requirements like separate project records and to maintain regular book-keeping and accounting of the PRF by PMU/PIUs will be brought to the attention of ADB officials immediately.**
- Provide inputs and suggest PMU/PIUs in completing consolidated project financial statements (APFS) and arrange to submit the same to ADB through PMU/PIUs within covenanted time-period. **Bottlenecks or delays anticipated during preparation process of PFS if any will be brought to the attention of ADB project officer immediately by keeping EA/PMU/PIU duly informed.**
- Support PMU/PIU by designing adequate TOR towards selection and identification of independent auditor in situations **where engagement of independent private chartered accountants is envisaged.**
- Provide early/advance alerts by review of entity financial statements in case relevant auditing and or accounting standard norms are not followed in audit reports and financial statements of the entity financial statements.
- Provide support in advanced project readiness actions by providing inputs to ADB in financing proposals, project concept note, development of project FM components in coordination with the other consultants, government counterparts with respect to financial management areas.
- preparation of project cost estimates, perform overall due diligence to include financial analysis, financial management assessment of the executing agency

(EA)/PMU/PIU, sensitivity analysis if necessary **with respect to for ensuing loan(s) in accordance with ADB procedures.**

- From FM perspective and in consultation with concerned project staff at PMU/PIU including ADB project officer to suggest and propose feasible measures on operations and maintenance of subprojects from a long term sustainability point of view.
- Provide required inputs and information necessary for the preparation of periodical progress reports and project completion report to represent the performance of completed PRF.
- Assist PMU/PIUs in preparing the PRF-related financial progress reports as required by government and ADB in consultation with ADB project-officer.
- Provide advice on capacity building needs of PMU/PIUs and contribute to programs on training/workshops/seminars/conferences, etc. based on sectoral expertise of the consultant, and impart training.
- Provide inputs in preparation of project completion reports with respect to FM areas when necessary.

Appendix 3

TERMS OF REFERENCE FOR INTERNAL AUDIT WORK BY FIRM OF CHARTERED ACCOUNTANTS

A. Qualification

34. The firm shall be a firm of Chartered Accountants (CA) fulfilling the following eligibility criteria:

(i) It shall be a firm of Chartered Accountants registered with the Institute of Chartered Accountants of India (ICAI).

(ii) The firm to be selected must be independent as per guidelines of ICAI applicable for audit assignments who are not already engaged by state governments departmental functions on retainership or for rendering any other services to either the PRF project or any other projects under implementation by UDD/DUD directly or indirectly. Prior to engagement a declaration from all the partners on independence will be obtained.

(iii) The firm must be reputed and is in continuous practice for at least ten (10) years in India and having at least two (2) CAs as partners. It should be in the audit profession and have carried out internal audit services in at least two (2) similar Internal audit assignments with central government / State Government / external aided projects in India in last 10 years. The firm must have at-least five (5) or more qualified staff strength apart from partners and having a average annual in last three financial years minimum INR 2 million.

(iv) The CA firm carrying on its business and profession have its registered-head office anywhere in India but must have a branch office in any of the northeastern states of India.

(v) Preference will be given to firms who have internal audit assignments experience on the projects financed by multilateral development banks like, the World Bank, ADB, etc.

B. Objective

35. The firm engaged shall provide outsourced internal audit services to DUD for PRF project. The purpose of the engagement is to provide professional support in establishing additional level of internal control environment and through oversight over the accounting, and financial management procedures at the ADB-funded project. The internal auditors shall be appointed by the DUD, and shall report directly to the Project Director. The internal auditors so appointed are expected to be, and maintain, their independence throughout the engagement, and shall not provide any additional services to DUD, which may impair their independence. The auditor will be given access to all project documents including the loan agreements, correspondence, financial records and financial manuals, notices from the Project Management Unit and any other information associated with the project as deemed necessary by the auditor.

C. Scope of the Assignment.

36. The internal audit should be carried out in accordance with standards and the guiding principles of the Institute of Internal Auditors; will follow a risk-based approach; and will include such tests and controls, as the Internal Auditor considers necessary under the circumstances. The internal audit report shall highlight clearly the overall internal control environment affecting the project with clear recommendations for improvement and corresponding status of previous report recommendations. The internal auditor must familiarize itself with the procedures laid down

in ADB loan/project agreement, Project Administration Manual and ADB loan disbursement handbook.

37. An annual audit plan should be prepared, based on a risk assessment, and submitted to the UDD/DUD for their concurrence. Specific areas of coverage of the internal audit could include the following: (i) An assessment of the adequacy of the project financial management systems, including internal controls, adequacy and effectiveness of accounting, financial and operational control, level of compliance with general financial rules and treasury rules of the state government. Identify areas of significant inefficiencies and high risk in existing systems and suggest necessary remedial measures; (ii) The broad internal control environment should be substantiated by key transactional areas affecting financial accounting and project operations having weakness that require attention. Identification of key areas affecting overall internal control environment must include budgeting procedures, procurement system, fund flow mechanism and overall financial accounting that affects ADB's financial reporting. Other areas identified by internal auditor is subject to its discretion and judgement. (iii) The semi-annual internal audit reports must be consolidated with an annual summary by 10 September every year which must include an internal audit conclusion whether internal controls ought to have been in place in the project are indeed present and operational. (iv) An assessment of compliance with provisions of financing agreements (ADB Loan Agreement and Project Agreement) especially those relating to accounting and financial matters; (v) That all external funds received under the project have been used in accordance with the financing agreement, with due attention to economy and efficiency and only for the purposes for which the financing was provided; that consultancy services or any other categories, if any, financed have been procured in accordance with the financing agreements and procurement guidelines of the bank; (vi) The budgets are allocated to subprojects in a timely manner and expenditure is as per approved budget and proper budget controls are in place (vii) That all necessary supporting documents, contracts, and accounts have been: (a) kept in respect of all project expenditures reported by the PMU in compliance to the ADB loan disbursement handbook; (b) systematically filed in a secure location; and (c) clear linkages exist between accounting records and accounts books and the monthly/quarterly financial reports submitted by such implementing units to PMU; (d) Status of reconciliation of the accounts maintained by the Accountant General (A&E) as applicable; (viii) Follow-up on the status of past audit observations and recommendations to ensure timely implementation

38. In addition, the internal audit firm will prepare an Internal Audit Manual for use by DUD, and provide training workshops to the senior management of DUD, and relevant accounting staff, to explain the scope and objectives of internal audit function

39. The internal auditor will prepare semi-annual reports and share it with the project management for their comments before finalization. The report is to include at least the following parts (a) executive summary; (b) audit observations; (c) implications of the observations; (d) suggested recommendations; (e) management's comments/agreed actions and (f) status of actions on the previous recommendations with a detailed table provided as an annex. In addition to the consolidated IA report for external project auditor. All audit reports together final consolidated IA audit report must be submitted to the Project Director no later than 30 days after the end of each period.

D. Selection process and duration

40. Government of Nagaland will ensure sufficient budgetary allocations in case circumstances necessitate engagement of a private CA firm. Engagement can be performed by following usual procurement guidelines prevailing at Government of Nagaland. For engagement of good quality reputed audit firms, in case ADB loan funds or any other resources are assessed to be used for payment of audit fees, engagement of firm can be done by following ADB

procurement guidelines. Should this option be exercised, engagement period may cover 2-3 years with careful planning by the DUD/UDD and PMU from the perspective of optimum utilization of services and time-lines required to engage using ADB procurement guidelines. The internal audit firm will be engaged for an initial period of 13 months (____2022-___ 2023) and depending upon the performance the contract, may be renewed for further period/(s) i.e. until the completion of project. The audit period would cover systems in place commencing from the first disbursement i.e. ____2022.

Appendix 4

OUTLINE TERMS OF REFERENCE FOR INDEPENDENT AUDITOR FOR ADB ASSISTED EXTERNALLY ASSISTED PROJECTS (EAP)

A. Auditor Qualification (in case a private audit firm who is qualified to practice in India for carrying out statutory audits duly registered with Institute of Chartered Accountants of India-ICAI is engaged). This is subject to obtaining a No-Objection from ADB financial management team prior to engagement of the firm.

1. The desired auditor must be either an individual who is having a valid certificate of practice (COP) issued and registered under the Institute of Chartered Accountants of India (ICAI) or a reputed firm of chartered accountants who shall be (i) objective and independent; (ii) be able to demonstrate similar experiences in auditing or accounting of financial statements for projects and entities comparable in type, nature and complexity; (iii) all partners must be a chartered accountant (iv) Signing partner must have completed at-least 40 years of age with minimum 15 years of post-qualification experience in field of attesting financial statements. (v) the signing partner including his team members will be willing to act as a team player and will be open to always obtain instructions from project authorities and ADB officials, (vi) Must possess good communication skills, which is subject to evaluation through a quality expression of interest application submission. (vii) Firms where partners having reputed national or international audit exposure including accounting experiences will be given preference.

2. The firm to be selected must be independent as per guidelines of ICAI applicable for audit assignments who are not already engaged by state governments departmental functions on retainership or for rendering any other services to either the PRF project or any other projects under implementation by UDD/DUD/PMU directly or indirectly. Prior to engagement a declaration from all the partners on independence will be obtained.

B. Scope of the Assignment.

3. An audit report of PRF project including a management letter. For detailed scope of audit deliverables, refer terms of reference (TOR) document with templates on cash accounting method agreed with Comptroller and Auditor General (CAG) of India office and department of economic affairs (DEA). The detailed TOR can either be obtained from ADB project team or downloaded directly from DEA website[60]. The templates provided are suggestive and can be tailored to suite PRF project reporting needs with minor adjustments for reporting crucial matters. Substantial modification of audit report and other reporting forms as per prescribed templates will be not allowed. Private auditors must issue a management letter using the suggested template as attached/(or annexure).

C. Selection Process

4. Government of Nagaland will ensure sufficient budgetary allocations in case circumstances necessitate engagement of a private CA firm. Engagement can be performed by following usual procurement guidelines prevailing at Government of Nagaland. For engagement of good quality reputed audit firms, in case ADB loan funds or any other resources are assessed to be used for payment of audit fees, engagement of firm can be done by following ADB

[60] www.dea.gov.in/sites/default/files/16-Audit-TOR_0.pdf

procurement guidelines. Should this option be exercised, engagement period may cover 2-3 years with careful planning by the DUD/UDD and PMU from the perspective of optimum utilization of services and time-lines required to engage using ADB procurement guidelines.

Appendix 5

Quarterly Progress Report (QPR) Format

Loan: ___-IND
Nagaland Urban Infrastructure Development Project
[ADB Assisted - PRF Loan]

Consolidated PRF Project
Quarterly Progress Report (QPR-x)
(_____ 20xx)

Name of Executing Agency

Contents

CHAPTER 1
PROJECT AT A GLANCE

Brief project description to be filled by project team (one-time entry; to be updated only in case of change).

1. LOAN MILESTONE

Milestone	Approval	Signing	Effective	Orig. Closing	Rev. Closing
Dates					
Extensions (Nos)				Time Remaining	

2. LOAN UTILIZATION STATUS ($ MILLION)

Cat.	Description	Allocation (a)	Contracts (b)	Unutilized loan balance (c) =(a-b)	Disbursed (d)	Undisb. Contract balance (e)=(b-d)	Overall Undisbursed (f)=(a-d)

3. POTENTIAL LOAN SAVINGS (IF ANY) AND LIKELY CANCELLATION DATE.

4. STATUS OF COUNTERPART FUNDS ($ MILLION)

Required Counterpart Expenditure by the Executing Agency	Budgeted by State Govt. in Current Financial Year	Actual Amount Released	Shortfall /Excess
1.Non-reimbursables Activities fully funded by the executing agency (LA/R&R etc.)			
2. Reimbursable (from loan)			

5. STATUS OF CONTRACT AWARDS AND DISBURSEMENTS ($ MILLION) IN CY XXXX

Indicator	Quarter	I	II	III	IV	Total
Contract Award	Target					
	Achieved					
	Balance					
Disbursement	Target					
	Achieved					
	Balance					

[*Targets – for the ADB PRF financing compare the actual disbursement with the disbursement projections as per the S curve included in the PAM), Include an analysis of significant variances between planned and actual disbursements; and*]

6. STATUS OF PROJECT REPORTS* TO BE SUBMITTED TO ADB

Type of Reports	Frequency	Due Date	Status
Quarterly Progress Reports			
Consolidated Annual Reports			
Audited Project Accounts - APFS			
Audited Project Accounts - AEFS			

* As stated in project administration manual.
AEFS = audited entity financial statement, APFS = audited project financial statement.

CHAPTER 2
STAFFING

A. STATUS OF PMU/ PIU STAFFING

(a) PMU Staffing

1 a	Is the Project Director (PD) currently posted?	Yes/ No	Nature of PD posting	Part Time/Full Time
1 b	Current PD is posted since when?	xx		
2 a	No. of PMU staff as agreed with ADB or as per Org. Structure in PAM.	xx	Actual no. of PMU staff in place at present.	
			Full Time	
			Additional Charge	
2 b	Details of PMU Positions which are currently vacant.*	•		
3 a	Are PIUs required to be established in the Project?	Yes/ No	Are PIUs fully staffed	
3 b	No. of PIUs required as agreed with ADB in Org. Structure in PAM	xx	Actual no. of PIUs	

* Includes individual consultants under PRF.
ADB = Asian Development Bank, PAM = project administration manual, PIU = project implementation unit, PMU = project management unit, PRF = project readiness financing.

(b) PIU Staffing

1 a	Is the Additional Project Director (APD) currently posted?	Yes/ No	Nature of APD posting	Part Time/Full Time
1 b	Current APD is posted since when?	xx		
2 a	No. of PIU staff as agreed with ADB or as per Org. Structure in PAM.	xx	Actual no. of PIU staff in place at present.	
			Full Time	
			Additional Charge	
2 b	Details of PIU Positions which are currently vacant.*	•		

* Includes individual consultants under PRF.
ADB = Asian Development Bank, PAM = project administration manual, PIU = project implementation unit, PRF = project readiness financing.

B. MOBILIZATION STATUS OF CONSULTANT'S STAFFING (KEY EXPERT POSITIONS) AND THEIR PERFORMANCE

(*Please provide your overall feedback in narrative statement e.g. key issues overall performance etc. and attach staffing status and Consultant's Performance Evaluation Report (PER): Attachment 2 & 3*)

CHAPTER 3
STATUS OF PROCUREMENT AND CONTRACT MANAGEMENT

A. Prioritized Subprojects

(a) List of Names of Prioritized Subprojects

Project Town/ Destination	Longlist of Subprojects	Shortlist of Subprojects	Prioritized Subprojects	Remarks
Total	**… No's**	**… No's**	**… No's**	

(b) Status of Prioritized Subprojects

Project Town/ Destination	Name of Prioritized Subproject	Feasibility Study Report	DPR	Due Diligence Documentation	Bid Document

B. Status of Contracts Awarded

Cost Category under which Procurement is carried out	ADB Financing	Cumulative Contract Awards	Uncontracted Loan Balance	Cumulative Disbursements
Consultants	$..... million	$..... million (xx Pkgs awarded)	$..... million	$..... million
Civil Works	$..... million	$..... million (xx Pkgs awarded)	$..... million	$..... million
Equipment	$..... million	$..... million (xx Pkgs awarded)	$..... million	$..... million
Total	**$..... million**	**$..... million**	**$..... million**	**$..... million**

(*Please attach Contract Monitoring Sheet indicating status of each of the awarded contracts in Attachment 1*)

C. Status of Remaining Procurement

S. No.	Component	Remaining Contract Packages			
		No. of Pkgs with Cost	**Brief Scope**	**Current Stage**	**Target Date of Award**
1	Consultants	xx ($...million)			MM/YYYY
2	Civil Works	xx ($... million)	km of road rehabilitation/ house service connections in xx towns	- IFB to be issued - Under Tech Evaluation - Under Fin. Evaluation - Under Contract Negotiation - Under Contract Signing	MM/YYYY
3	Equipment	xx ($...million)			MM/YYYY
	Total xx Packages	**$xx million**			**(Target date of the latest procurement)**

D. Status of Other PRF Activities/ Outputs/ Consultant's Reports*

S. No.	Activity/ Output Description	Intended Milestone/ Any Revised Timeline	Actual Achievement	Remarks
1	Inception Report with QAP/ QMP			
2	Strategy, Action Plan, and Investment Plan			
3	Prioritization Matrix/ Subproject Selection Criteria			
4	Climate Risk and Vulnerability Assessment (CRVA) and Climate Resilience Framework			
5	Destination Improvement Master Plan			
6	Report on Tourism Market Analysis and Investment Needs Assessment			
7	Report on (a) Tourism Product Development; and (b) Tourism Marketing and Promotion Strategies			
8	Planning/Procurement for Promotional Material			
9	Report on Use of Potential PPP Modality in Tourism			

S. No.	Activity/ Output Description	Intended Milestone/ Any Revised Timeline	Actual Achievement	Remarks
	Sector with Key Innovative PPP Initiatives, and An Enabling Framework for PPP in Tourism Sector			
10	Institutional Review Report			
11	Institutional Strengthening/ Capacity Development Plan			
12	Programs on Training/ Workshops/Seminars/ Conferences, etc., including Training Guidelines and Plan			
13	Training Sessions			
14	Training Implementation and Evaluation Report			
15	Strategic Procurement Planning (SPP) Study Report			
16	Procurement Plan			
17	Comprehensive Design Review Report on Compliance to Climate Resilient Design Inputs			
18	Detailed good for construction (GFC) drawings			
19	Contract Management Plan(s)			
20	QAQC Manual			
21	O&M Manual			
22	Implementation of Institutional Reforms			
23	GAP/ GESI Plan			
24	*etc.*			

* As stated in project administration manual.

GAP = gender action plan, GESI = gender and social inclusion, O&M = operation and maintenance, PPP = public – private partnership, QAP = quality assurance plan, QAQC = quality assurance quality control manual, QMP = quality management plan.

CHAPTER 4
PROGRESS ON PROJECT OUTPUTS (AS IN PAM)

Output	Monitoring Indicators/ Targets	Progress		Remarks
		Last Quarter	Current Quarter	

Detailed status of ongoing contracts is in Attachment 1.

CHAPTER 5
STATUS OF ACTION PLAN

(*Please include issues previously discussed during previous ADB Review Missions/ TPRM/ Progress Report and their compliance/ status)*

SN	Issues/ Action Plan	Responsibility	Time Frame	Status

CHAPTER 6
COMPLIANCE WITH MAJOR COVENANTS

S. No.	Covenants	Compliance (Y/ N)*	Remarks
A	**Loan Agreement**		
1			
2			
3			
4			
5			
6			
B	**Project Agreement**		
1			
2			
3			
4			
5			
6			

In case of any exceptions, deviations, non-adherence identified, please provide details as an "Annexure" to the Quarterly Project Report highlighting the shortcomings and proposed time-bound corrective action plans to achieve compliance.

CHAPTER 7
(KEY IMPLEMENTATION ISSUES/ CHALLENGES AFFECTING PROJECT PROGRESS AND PRPOSED ACTIONS)

S. No.	Major Issues*	Actions	Responsibility	Time Frame
1	**Planning and Design Issues** (Change in design/ scope/ implementation arrangement/ cost overrun/ staffing…….)			
2	**Procurement Issues** (Contract packaging/ material sources/ availability of contractors/ skill sets/ contract management issues etc.)			
3.	**Safeguard issues during Planning and Design (**Land acquisition / Resettlement /tree cutting/ etc.)			
4.	**Other Issues during PRF Implementation**			

In case issue identified, please provide details e.g. details of change in design/ implementation arrangements, pending safeguards actions, encumbrance free sites to be handed over to the contractor (numbers/kilometer) with targeted date by which the same could be handed over to the contractor; If all Drawings/Design are not issued/approved, name of such Drawings/Design and targeted date by which the same could be handed over to the contractor; Decision pending with employer and consultants (such decision could be approval of, variations, extra item rate, etc.)

CHAPTER 8
(FINANCIAL MANAGEMENT AND RECONCILIATION WITH ADB DISBURSMENT RECORDS)

A. Reconciliation of Project records and ADB's disbursement records.

1. [Include here a summary reconciliation of project records and ADB disbursement records (LFIS) for the reporting period and cumulative from project inception to end of the reporting period.

2. Explain reasons for discrepancies and outline follow-up actions required (if any). Attach a detailed reconciliation by withdrawal application as per Attachment 4].

B. Status of the project's Financial management arrangements

3. Here include the following:

(i) Describe any problems in the existing financial management arrangements and /or flow of funds and any significant changes occurred during the reporting period (e.g., financial management staff turnover, implementation of new financial systems, emerging financial management related risks etc..).

(ii) Summarize the status of each agreed action in the financial management action plan outlined in the PAM. Attach a detailed log as per Attachment 5].

(iii) Outline the status of recommendations and immediate actions provided by ADB as part of the APFS/AEFS review (if any) and financial management related recommendations agreed during ADB review missions (if any).

(iv) Summarize the status of Status of past audit observations (if any). Attach a detailed log as per Attachment 6.

Attachments:

Attachment 4. Detailed reconciliation (by Withdrawal application) of project records and ADB disbursement records (LFIS/GFIS) for the fiscal year to date and cumulative.										
WA details			**Per project records/APFS (Amount recorded in the project Financial statements as reimbursement, direct payment, etc..)**				**Per ABD disbursement records LFIS/GFIS (actual Paid)**			
Withdrawal application No (WA)	Disbursement method (reimbursement, direct payment, etc..)	Time period covered in the WA	Date	In local currency (as recorded in project records/ financial statements)	exchange rate	USD equivalent (A)	Value date	In USD (B)	Difference (A-B)	Reason for difference (i.e. timing forex. Pending rejected)
1		1-31.3.2020		XX		XX		XX		
2				XX		XX		XX		
3				XX		XX		XX		
etc..										
Total in Fiscal year to date				XX		XX		XX		
Total Cumulative to date				XX		XX		XX		

Attachment 5: Status of Financial Management Action Plan					
Key Risk	**Risk Mitigating Activity**	**Timeline**	**Responsible Entity**	**Current status (implemented/Pending)**	**Remarks (including planned actions and timeline in case of noncompliance)**

Attachment 6: Status of external audit observations – Cumulative from inception to end of reporting period						
Recommendation/ audit observation	**External audit recommendation**	**Date of the recommendation**	**Planned action to address the recommendation**	**Responsibility**	**Current Status of the planned action (pending /resolved)**	**Remarks**

Annex XX. Indicative Project Financial statements

1. Statement of Receipts and Payments for the year ended DD/MM/YYYY							
	Notes	**Current year**		**Previous year**		**Cumulative (from inception to the end of current year)**	
Cash receipts		**Cash Receipts/Payments controlled by the entity**	**Direct/third party payments**	**Cash Receipts/Payments controlled by the entity**	**Direct/ third party payments**	**Cash Receipts/Payments controlled by the entity**	**Direct/ third party payments**
ADB loan (loan number)	3.1						
ADB grant (grant number	3.2						
ADB Additional loan (loan number)	3.3						
ADB additional Grant (grant number)	3.4						
Government of Bhutan	3.5						
etc..							
Total receipts							
Payments	**4**						
Expenditure category 1	4.1						
Expenditure category 2	4.2						
Expenditure category 3	4.3						
Expenditure category 4							
etc..							
Total payments							
Cash balance at the beginning of the year	**6 .1**						
Cash balance at the end of the year	**6.2**						
Project Director: [Signature]				Finance Manager: [signature]			

2. Statement of Budget vs. Actual for the year ended DD/MM/YYYY										
	Notes*	For the current year ended 20xx			For the Prior year ended 20xx			Cumulative (from inception to the end of current year)		
Expenditure Categories		Budgeted	Actual	Variance	Budgeted	Actual	Variance	Project Budgeted as per the PAM	Actual	Variance
Expenditure category 1	5.1									
Expenditure category 2	5.2									

2. Statement of Budget vs. Actual for the year ended DD/MM/YYYY										
	Notes*	For the current year ended 20xx			For the Prior year ended 20xx			Cumulative (from inception to the end of current year)		
Expenditure Categories		Budgeted	Actual	Variance	Budgeted	Actual	Variance	Project Budgeted as per the PAM	Actual	Variance
Expenditure category 3	5.3									
Expenditure category 4										
Etc.										
Total Payments										
Total Project Cost										
* Any significant variances are to be explained in the notes										
Project Director: [Signature]				Finance Manager: [signature]						

3. Statement of Disbursement By Financing Source for the year ended DD/MM/YYYY				
Statement of Disbursement	**Notes**	**Current Year**	**Prior Year**	**Cumulative Project to Date**
	7.1			
ADB grant - Funds claimed during the year				
Reimbursement[3]				
Imprest Fund[3]				
Direct Payment				
Subtotal				
ADB Loan - Funds claimed during the year	7.2			
Reimbursement[3]				
Imprest Fund[3]				
Direct Payment				
Subtotal				
ADB additional Loan - Funds claimed during the year	7.3			
Reimbursement[3]				
Imprest Fund[3]				

3. Statement of Disbursement By Financing Source for the year ended DD/MM/YYYY				
Statement of Disbursement	**Notes**	**Current Year**	**Prior Year**	**Cumulative Project to Date**
Direct Payment				
Subtotal	7.4			
ADB additional Grant Funds claimed during the year				
Reimbursement[3]				
Imprest Fund[3]				
Direct Payment				
Subtotal				
*list of WAs/claims submitted to be disclosed in the notes				
Project Director: [Signature]				Finance Manager: [signature]

4. Statement of Imprest/ Advance account for the year/ period ended DD/MM/YYYY (for each advance account separately)

Account details: XXXX			
	Notes	**Current Year**	**Prior Year**
Balance brought forward from previous period			
Add: Advance[1] Replenishment received during the year/period[1] Interest Earned			
Subtotal (A)			
Deduct: Payments made during the year/period Replenishment /Liquidation[1] Expenditure yet to be claimed Amount refunded during the year/period			
Closing Balance (B)			
As per bank statement (copy attached)			

Project Director: [Signature] Finance Manager: [signature]

NOTES TO THE FINANCIAL STATEMENTS
FOR THE YEAR ENDED [YEAR END DATE]

1.Project Information

1.1 Key highlights:

Project title
Funded by:
Management:
Executing Agency
Implementing agencies
Start Date:
Closing date:
Project Duration:
Funding Sources/modality/amount

1.2 Impact and Outcome

2. Summary of Significant Accounting policies.

2.1 Basis of preparation
2.2. Cash Basis of accounting
2.3. Recognition of Receipts and payments
2.4. Third party payments
2.5. Presentation currency
2.6 Foreign Currency Translation
2.7. Changes in Accounting policies
2.8 Reporting period
2.9 Comparatives

3. Funds received

3.1 -3.4 Funds received from ADB /List of WAs by financing source

3.5 Funds received from the Government
3.6. funds received from Other
etc..

4. Payments

List of Payments from the advance account/sub-advance account.
List of third-party payments/direct payments.

5. Variances

List and explain any significant variances between budget and actual expenditures

6. Opening and closing balances

List details of the opening balances
List details of the closing balances

7. Disbursements/Withdrawal Applications

Include detailed list of WAs claimed from ADB with the following breakdown : i) funding source (ADB loan, ADB grant, ADB additional loan, ADB additional grant), ii)) WA number, iii) time period in which expenditures were incurred iv) the amount claimed and currency, v) date submitted, vi) disbursement method, vii) the amount disbursed by ADB and vii) used exchange rate.

8. Special notes for the FY

Disclose a break down Interest Expenses/ Financial Charges incurred as part of the project for the current year, past year and cumulatively.