

Project Readiness Financing Project Administration Manual

Project Number: 53128-001
Loan Number: PRFXXXX
January 2020

Islamic Republic of Pakistan: Project Readiness Financing for Punjab Urban Development Projects

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1.	Consultants' Terms of Reference
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Project Administration Manual for Project Readiness Financing: Purpose and Process

The project administration manual (PAM) for the project readiness financing (PRF) 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 following the policies and procedures of the government of Punjab. 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 Local Government and Community Development (LG&CD) Department (executing agency) of the Government of Punjab, and the Project Management Unit, LG&CD Department (implementing agency) are wholly responsible for the implementation of ADB-financed PRF projects, as agreed between the borrower and ADB, and following the policies and procedures of the government and ADB. ADB staff is responsible for supporting implementation, including compliance by Punjab LG&CD Department, the Transport Department, and the Metropolitan and Municipal Corporations and/or Municipal Committees city implementation units 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 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
EA	–	executing agency
EDCM	–	engineering design and construction management
LG&CD	–	Local Government and Community Development
MCC	–	Metropolitan and Municipal Corporation and/or Municipal Committee
ODBM	–	operational design and business model
PAM	–	project administration manual
PRF	–	project readiness financing
PMU	–	project management unit

Activities	Advance Actions (2019)				PRF Year 1 (2020)				PRF Year 2 (2021)				PRF Year 3 (2022)			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Selection					■											
Contract Award					■											
Implementation Phase						■	■	■	■	■	■	■	■			
Package 3 – Urban Transport																
Advertisement						■										
Selection							■									
Contract Award								■	■	■						
Implementation Phase																
Package 4 – Individual Consultants																
Advertisement																
Selection				■												
Contract Signing					■											
Implementation Phase					■	■	■	■	■	■	■	■	■			
B. Management Activities																
PRF negotiations				■												
ADB Board approval				■												
PRF Signing				■												
Declaration of PRF effectiveness					■											
Issue legal opinion					■											
PRF effectiveness					■											
Develop PPMS																
Provide various training including external training																
Submission of quarterly progress reports						■	■	■	■	■	■	■	■	■	■	■
Submission of annual progress reports									■				■			
Submission of APFS								■				■				■
Date of ensuing loan (Phase 2) approval										■						

ADB = Asian Development Bank; APFS = audited project financial statement; BOQ = bill of quantity; CIU = city implementation unit; EDCM = engineering design and construction management; GIS = geographic information system; ODBM = operational design and business model; PPMS = project performance monitoring system; PRF = project readiness financing; Q = quarter.

Source: ADB.

II. PROJECT READINESS FINANCING 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
<p>A. Executing Agency Local Government and Community Development (LG&CD) Department, Government of Punjab</p>	<ul style="list-style-type: none"> (i) Liaise with ADB to address issues identified during the design and implementation stages. (ii) Effective coordination with the Ministry of Finance's Economic Affairs Division for adequate allocation of annual budget to the project. (iii) Guide consultants. (iv) Provide office space to the project management unit (PMU). (v) Provide guidance to the PMU, Transport Department, Metropolitan/Municipal Corporations and/or Municipal Committees (city implementation units), and water and sanitation (WASA). (vi) Review and approves detailed engineering designs and cost estimates.
<p>B. Implementing Agency Project Management Unit (PMU)</p>	<ul style="list-style-type: none"> (i) Recruit and manage consultants. (ii) Review detailed design, bidding documents, and draft contract. (iii) Monitor and evaluate project activities and outputs, including periodic review, preparation of progress reports reflecting issues and time-bound actions by establishing program performance monitoring sheet in line with monitoring and evaluation framework and provide six-monthly report and annual monitoring reports to LG&CD Department, PRF project steering committee, and ADB. (iv) Public disclosure of project outputs. (v) Manage and ensure safeguard due diligence and disclosure requirements including resettlement and environmental safeguards in accordance with ADB's Safeguards Policy Statement (2009). (vi) Quality assurance of consulting services and counterpart staff. (vii) Establish financial management system and submitting timely withdrawal applications to ADB. (viii) Prepare and submit periodic progress reports, and completion report to ADB. (ix) Provide disbursement-related documentation to ADB and Finance Department (Government of Punjab). (x) Provide support to ADB review and special missions. (xi) Act as a Secretariat to the Project Steering Committee (PSC) headed by Chair of the Planning and Development Board. (xii) Implement the project communication strategy. (xiii) Participate in the investment planning, implement city reforms, and provide related approvals. (xiv) Approve and implement reform-related system, organizations, plans, and programs as required for the project, including service delivery arrangements. (xv) Facilitate land acquisition. (xvi) Ensure timely submission of quarterly progress reports to PMU, identifying issues and providing action plans. (xvii) Focal point for communication with ADB on project-related matters. (xviii) Ensure safeguards compliance and reporting, in line with the legal agreements. (xix) Facilitate consultants in all aspects of surveys, data and information access and provision, and office space. (xx) Ensure submission of draft initial environmental examination, land acquisition resettlement plan's, and environmental management plan requirements.

PRF Project Implementation Organizations	Management Roles and Responsibilities
C. Asian Development Bank	<ul style="list-style-type: none"> (i) Monitor and review the overall implementation of the project in consultation with the EA, including, but not limited to, progress towards the achievement of project outputs, progress of contract awards and disbursements, procurement and performance audits, and compliance with loan covenants. (ii) Provide guidance to LG&CD Department PMU, and ensuing projects implementing agencies on implementation issues and project design. (iii) Timely processing of withdrawal applications and release of eligible funds. (iv) Maintain the ADB project website and project updates. (v) Disclose safeguard documents as per the disclosure provision of the ADB Safeguard Policy Statement (2009).
D. Project Steering Committee (PSC) ^a	<ul style="list-style-type: none"> (i) Provide policy direction and strategic oversight for the PRF implementation. (ii) Provide advice and make policy level decisions to facilitate timely execution of PRF project actions. (iii) Review quarterly and annual performance reports. (iv) Review consultancy contract variations, including time extensions. (v) Accord principal approval of the investments. (vi) Ensure that the project is implemented in line with legal agreements. (vii) Ensure provision of counterpart funding and budget approval for counterpart funding. (viii) Approve annual operational and business plans of the utility companies and their annual operational allocation. (ix) Approve monitoring and evaluation reports.

ADB = Asian Development Bank, EA = executing agency, LG&CD = Local Government and Community Development Department, PMU = project management unit, PRF = project readiness financing, PSC = Project Steering Committee, WASA = water and sanitation agency.

^a The project steering committee will be chaired by Chair, Government of Punjab's Planning and Development Board and will comprise the secretaries of Local Government and Community Development Department; the Finance Department; Housing, Urban Development and Public Health Engineering Department; Transport Department; mayors of metropolitan and municipal corporations and/or committees (or equivalent); and managing directors of water and sanitation agencies and solid waste management companies of the respective cities.

Source: ADB.

B. Key Persons Involved in Implementation

Executing Agency

Local Government and
Community Development
(LG&CD) Department,
Government of Punjab

Ahmed Javed Qazi
Position: Secretary,
Telephone: +92 42 992 12416 Telephone: +92 42 992
12416
Email address: lgcd.dept@gmail.com
Office Address: Civil Secretariat, Lahore, Punjab, Pakistan

Implementing Agency

Project Management Unit,
LG&CD Department,
Government of Punjab

Kaiser Saleem
Position: Project Director
Telephone: +92 42 992 11071
Email address: kaisersaleem81@gmail.com
Office Address: 6th floor, Local Government Complex
Sanda, Lahore, Punjab, Pakistan

Asian Development Bank (ADB)

Water and Urban Development
Division

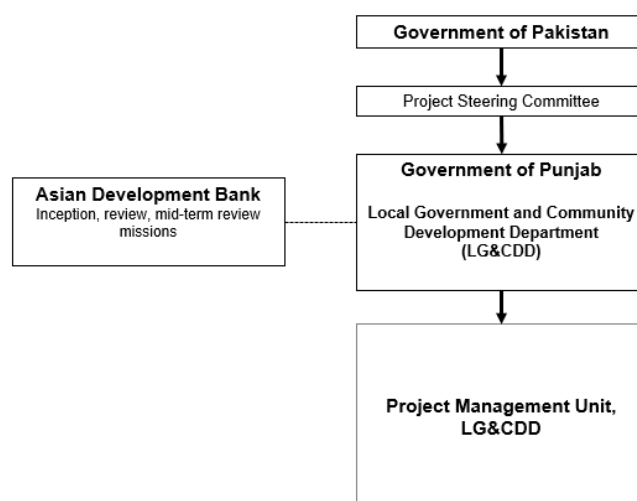
Yong Ye
Position: Director
Telephone No.: +63 2 632 4444
Email address: yyong@adb.org

Mission Leader

Jude E. Kohlhase
Position: Senior Urban Development Specialist
Telephone No.: +63 999 999 1488
Email address: jkohlhase@adb.org

C. Project Readiness Financing Project Organization Structure

Figure 1: Project Readiness Financing Project Organization Structure



Note:

The arrangement is applicable to the PRF implementation. Implementation arrangements for the ensuing loan will be discussed and prepared during PRF implementation.

III. COSTS AND FINANCING

A. Key Assumptions

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

Exchange rate: PRs155.7= \$1.00 (as of 30 October 2019).

Table 3: Escalation Rates for Price Contingency Calculation

Item	2019	2020	2021	2022	2023	Average
Foreign rate of price inflation	1.5%	1.5%	1.6%	1.6%	1.6%	1.6%
Domestic rate of price inflation	7.3%	12.0%	8.0%	6.0%	5.0%	7.7%

Source: Asian Development Bank.

B. Allocation and Withdrawal of Loan Proceeds

Table 4: Allocation and Withdrawal of Project Readiness Financing Loan Proceeds

Number	Category	Total Amount Allocated for ADB Financing (\$)	Basis for Withdrawal from the Loan Account
1	Consulting Services	13,650,000	100% total expenditure claimed*
2	Financing charges during implementation	580,000	100% total expenditure
3	Unallocated	770,000	
	Total Base Cost (ADB Share)*	15,000,000	

* Exclusive of taxes and duties imposed within the territory of the Borrower.¹

Source: Asian Development Bank.

C. Detailed Cost Estimates by Expenditure Category and Financier

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

¹ As applicable, which may vary from time to time.

Table 5: Detailed Cost Estimates by Expenditure Category and Financier
(\$ million)

Item	ADB Loan		Government		Total Cost	
	Amount	% of Cost Category	Amount	% of Cost Category	Amount	Taxes and Duties
A. Investment Costs						
Consulting Services - EDCM (Design Phase)	7.60	90%	0.81	10%	8.41	0.81
Consulting Services - ODBM	2.40	91%	0.24	9%	2.64	0.24
Urban Transport (Detail Design)	2.18	93%	0.17	7%	2.35	0.17
Individual Consultants	1.46	91%	0.14	9%	1.60	0.14
Subtotal (A)	13.65	91%	1.36	9%	15.00	1.36
B. Contingencies	0.77	100%	-	-	0.77	-
C Interest During Implementation	0.58	100%	-	-	0.58	-
Total Project Cost (A+B+C)	15.00	92%	1.36	8%	16.36	1.36
% of Total Project Cost		92%		8%	1.00	

ADB = Asian Development Bank; EDCM = engineering design and construction management, ODBM = operational design and business model.

Note: Numbers may not sum precisely because of rounding.

^a Prices as of October 2019.

^b Contingency is computed at 5% of the base costs.

^c Interest during implementation for the ordinary capital resources loan has been computed at the 3-year United States dollar fixed swap rate plus an effective contractual spread of 0.5%.

Source: ADB.

D. Detailed Cost Estimates by Year

Table 6: Detailed Cost Estimates by Year
(\$ million)

Item	Total Cost	2020	2021	2022
A. Investment Costs				
Consulting Services - EDCM (Design Phase)	8.41	3.78	3.78	0.84
Consulting Services - ODBM	2.64	1.19	1.19	0.26
Urban Transport (Detail Design)	2.35	1.06	1.06	0.24
Individual Consultants	1.60	0.72	0.72	0.16
Subtotal (A)	15.00	6.75	6.75	1.50
B. Contingencies	0.78	0.23	0.23	0.31
C. Interest During Implementation	0.58	0.26	0.26	0.06
Total Project Cost (A+B+C)	16.36	7.25	7.25	1.87
% Total Project Cost	100.0%	44.3%	44.3%	11.4%

EDCM = engineering design and construction management, ODBM = operational design and business model.

Note: Numbers may not sum precisely because of rounding.

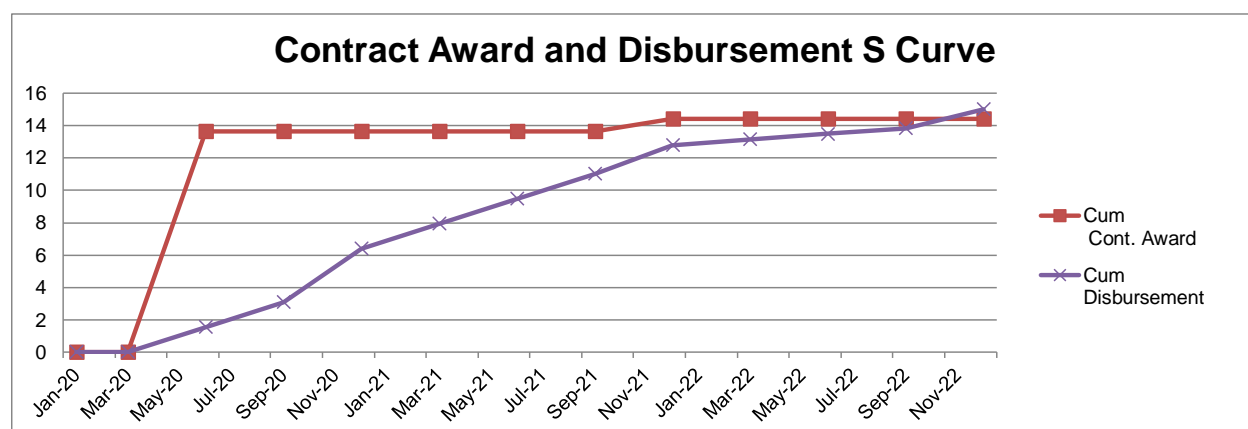
Source: Asian Development Bank.

E. Contract and Disbursement S-Curve

**Table 7: Contract Awards and Disbursements
(\$ million)**

	Contract Awards (in USD million)					Disbursements (in USD million)				
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total
2019	-	-	-	-	-	-	-	-	-	0
2020	-	13.65	-	-	13.65	-	1.54	1.54	3.33	6.40
2021	-	-	-	0.77	0.77	1.54	1.54	1.54	1.80	6.40
2022	-	-	-	-	-	0.34	0.34	0.34	1.17	2.19
Total Contract Awards					14.42	Total Disbursements				15.00

Source: Asian Development Bank.



Source: Asian Development Bank.

IV. FINANCIAL MANAGEMENT

A. Financial Management Assessment

4. The financial management assessment was conducted during Q1 2019 in accordance with Asian Development Bank (ADB) *Guidelines for the Financial Management and Analysis of Projects and the Financial Due Diligence: A Methodology Note*. The financial management assessment considered the capacity of LG&CD Department, including funds flow arrangements, staffing, accounting and financial reporting systems, financial information systems, and internal and external auditing arrangements. Based on the assessment, the key financial management risk is that new staff may lack the necessary experience with ADB projects, procedures, and requirements on financial management. The control risk at project level is *moderate*. However, the inherent risk at country level is *substantial* due to ineffective internal audit. It was concluded that the overall pre-mitigation financial management risk of LG&CD Department is *substantial*. The LG&CD Department has agreed to implement the following mitigation plan as key measures to address the deficiencies.

Table 8: Financial Management Mitigation Plan

Risk	Action	Responsibility	Timeframe
Delays in project implementation due to delaying in payment to contractor/supplier due to vacant cashier position	Fill up vacant position	PMU	Within 3 months after loan effectiveness
New FM staff may be unfamiliar to ADB's financial reporting requirements	Provide training on ADB's financial management requirements and disbursement procedures	ADB	Within 6 months after loan effectiveness

ADB = Asian Development Bank, FM = financial management, PMU = project management unit.

B. Disbursement

5. The loan proceeds will be disbursed in accordance with ADB's *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.² Project staff are encouraged to avail of this training to help ensure efficient disbursement and fiduciary control.

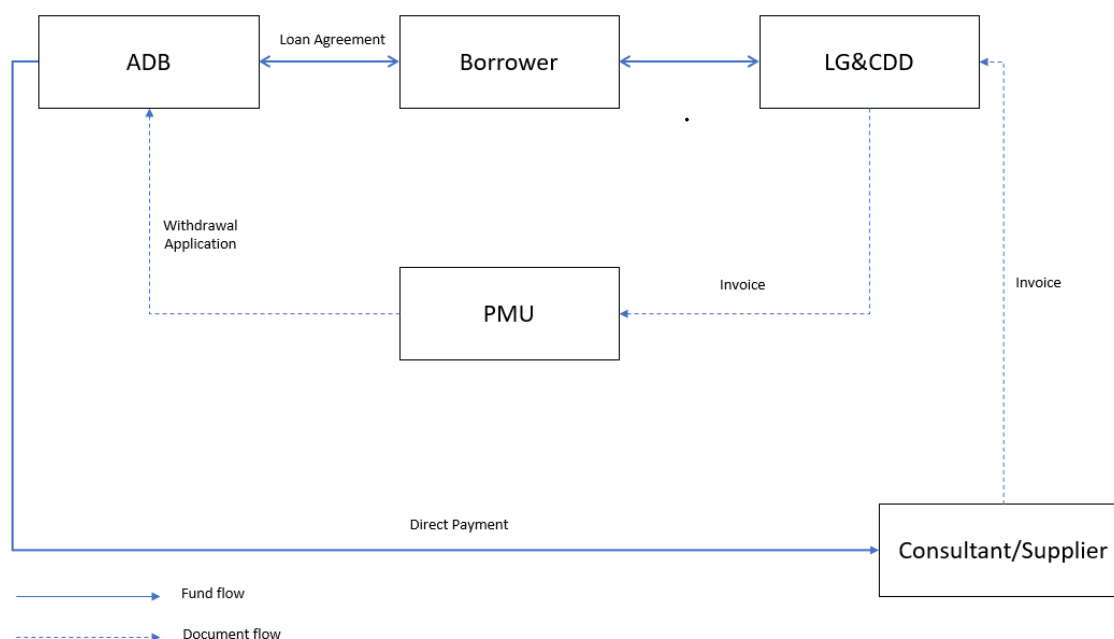
6. **Direct payment procedure.** The direct payment procedure will apply.

7. Before submitting the first withdrawal application, the government should submit to ADB sufficient evidence of the authority of the person(s) 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 (i) by the LG&CD Department 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 encouraged for submission of withdrawal applications to ADB.³

8. No further disbursements will be made from the PRF account upon refinancing under an ensuing or ongoing loan. The PRF loan amount and accrued financing charges are paid out under the PRF cost category of the ensuing or ongoing loan that will refinance the PRF loan. Provided the following costs are eligible expenditures, the ensuing or ongoing 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.

² Disbursement eLearning. http://wpqr4.adb.org/disbursement_elearning.

³ 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](#).

Figure 3: Funds Flow

ADB = Asian Development Bank, LG&CDD = Local Government and Community Development Department, PMU = project management unit.

C. Accounting

9. The LG&CD Department will maintain separate PRF project accounts and records by funding source for all expenditures incurred on the PRF project. PRF Project's accounts will follow International Public-Sector Accounting Standards (IPSAS) cash-based accounting.⁴

D. Auditing and Public Disclosure

10. LG&CD Department will cause the detailed project financial statements to be audited following the International Standards for Supreme Audit Institutions by an independent auditor acceptable to ADB. LG&CD Department will present the audited project financial statements together with the auditor's opinion, in English, to ADB within 6 months from the end of the fiscal year.

11. The audit report for the project financial statements will include a management letter and auditor's opinions, which cover (i) whether the project financial statements present an accurate and fair view or are presented fairly, in all material respects, following the applicable financial reporting standards; (ii) whether the proceeds of the loan were used only for the purpose(s) of the project; and (iii) whether the borrower or executing agency (EA) complied with the financial covenants contained in the legal agreements (where applicable).

⁴ International Public-Sector Accounting Standards (IPSAS) are issued by the International Public Sector Accounting Standards Board (IPSASB).

12. Compliance with financial reporting and auditing requirements will be monitored by review missions and during normal program supervision, and followed up regularly with all concerned, including the external auditor.

13. ADB has made the government, EA, and implementing agency aware of ADB's approach to delayed submission and the requirements for satisfactory and acceptable quality of the audited project financial statements. 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 project's financial accounts to confirm that its policies and procedures were followed when the share of ADB's financing was used.

14. ADB's Access to Information Policy (2019) will guide the public disclosure of the audited project financial statements, including the auditor's opinion on the project financial statements. After the review, ADB will disclose the audited project financial statements and the opinion of the auditors on the project financial statements no later than 14 days of ADB's confirmation of their acceptability by posting them on ADB's website. The management letter, additional auditor's opinions, and audited entity financial statements will not be disclosed.⁵

V. PROCUREMENT AND CONSULTING SERVICES

A. Advance Contracting

15. All advance contracting will follow ADB Procurement Policy (2017, as amended from time to time) and Procurement Regulations for ADB Borrowers (2017, as amended from time to time). The issuance of consulting services recruitment notices under advance contracting will be subject to ADB approval. ADB has advised the borrower, the Government of Punjab and its LG&CD Department that approval of advance contracting does not commit ADB to finance the PRF project.

16. To expedite the consultant recruitment process, the government has requested assistance from ADB in selecting the consultants. Once proposal evaluations are completed by ADB, the government will negotiate with these consultants and sign the contracts accordingly. Advertisements for engineering design and construction management (EDCM), operational design and business model (ODBM), and individual consultants to be completed in December 2019 and shortlisting of consulting firms is envisaged by January 2020.

B. Procurement of Consulting Services

17. All consultants will be recruited according to ADB Procurement Policy (2017, as amended from time to time) and Procurement Regulations for ADB Borrowers (2017, as amended from time to time). ADB will conduct proposal evaluations and select consultants in close coordination with the government.

18. Activities to be conducted under the PRF include four consulting service contract packages: (i) EDCM contract for Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha; (ii) the ODBM; and (iii) Urban Transport (Detailed Design).

⁵ Such information generally falls under public communications policy exceptions to disclosure (ADB. 2018. *Access to Information Policy*. Manila [para. 17(iv-vi)]).

Besides these consulting services packages, individual consultants will also be hired under the PRF.

19. A detailed engineering design consulting firm will be recruited to undertake engineering design support activities, an operational, design and business model consulting firm will facilitate business model improvement, and an urban transport consultant firm will carry out design for transport. To expedite the consultant recruitment process, the government has requested assistance from ADB in selecting the consultants. ADB will conduct proposal evaluations and select consultants in close coordination with the government. The LG&CD Department will negotiate with the selected consultants and sign the contracts.

20. EDCM consultant firm will be recruited under the framework contract arrangement. The first call-off will be (i) planning, DED, procurement document preparation, and procurement support activities and (ii) construction management may be awarded directly on second call-off subject to satisfactory performance under Phase 1, ensuing loan effectiveness and requirements of ADB's Procurement Policy (2017, as amended from time to time) and Procurement Regulations for ADB Borrowers (2017, as amended from time to time). The institutional review and capacity building support will be initially financed under the PRF during the project preparation phase, and then subsequently funded under the ensuing loans during the project implementation phase. Consulting firms will be engaged using the quality- and cost-based selection (QCBS) method with a standard quality and cost ratio of 90:10.

21. **Engineering Design and Construction Management.** For Phase 1 or engineering design phase, a total of 1,673 person-months including 80 person-months of international key experts; 781 person-months of national key experts; and 812 person-months of non-key experts of consulting services are required to undertake all project engineering design work and strengthen the institutional and operational capacity of the executing and implementing agencies for spatial planning, project design, studies and engineering design.

22. **Operation Design and Business Model.** Consulting services for a total of 34 person-months of international key experts, 145 person-months of national key experts, and 90 person-months of national non-key experts are required to provide technical and operational/management support. The ODBM consultants will be responsible for identifying and supporting implementation of the identified solution to ensure sustainable provision of quality municipal urban services. The duration of the assignment is 24 months.

23. **Urban Transport (Detailed Design).** Consulting services for a total of 38 person-months of international key experts, 111.5 person-months of national key experts are required to provide technical services to support (i) institutional capacity to manage the new integrated sustainable transport system; (ii) high-quality bus system; (iii) improved accessibility through quality walking and cycling facilities; (iv) improved traffic management; and, (v) a formal parking management system. In addition, the project will promote gender mainstreaming, greenhouse gas emission reduction, and public-private partnership (PPP).

24. Due diligence consultants are expected to be recruited individually through individual consultant selection method. The individual consultants will include 2 international, 9 national, and a panel of experts as detailed in Table 9:

Table 9: Individual Consultants

International Consultants	Months
Technical Advisor/Auditor	2
Contracts Specialist	2
Subtotal of International	4
National Consultants	
Resettlement Specialist	6
Data Management Specialist	6
Community Liaison and Communications Specialist	6
Financial Management Specialist	6
Procurement Specialist	5
Environment Specialist	6
Project Advisor	6
Project Support	6
Urban Planner	6
Subtotal of National	53
Subtotal of International + National	57
Panel of Experts	
Urban Rejuvenation (International)	6
Water Supply and Sanitation Expert (International)	6
Wastewater Treatment Plant Expert (International)	6
Urban Rejuvenation (National)	12
Water Supply and Sanitation Expert (National)	12
Wastewater Treatment Plant Expert (National)	12
Subtotal of Panel of Experts	54

25. An 18-month procurement plan indicating selection method of consulting services, review procedure, and type of proposal is in Section C. The terms of reference for all consulting services are specified in Section D and detailed in Appendix 1.

C. Procurement Plan

26. Except as ADB may otherwise agree, the following prior or post review requirements apply to various procurement and consultant recruitment methods used.

Basic Data

Project Name: Punjab Urban Development Projects		
Project Number: 53128-001	Approval Number:	
Country: Pakistan	Executing Agency: Local Government and Community Development (LG&CD) Department	
Project Procurement Classification: B	Implementing Agency:	
Project Procurement Risk: High	Project Management Unit, LG&CD Department	
Project Financing Amount: US\$16,360,000 ADB Financing (OCR): US\$15,000,000 Cofinancing: Not applicable Non-ADB Financing: Government of Punjab US\$1,360,000	Estimate PRF Completion Date: November 2022	
Date of First Procurement Plan: 8 November 2019	Date of this Procurement Plan:	8 November 2019
Procurement Plan Duration: 18 months	Advance contracting: Yes	eGP: No

1. Methods, Thresholds, Review and Procurement Plan

27. Except as the ADB may otherwise agree, the following methods shall apply to procurement of goods and works, non-consulting services, and consulting services.

Procurement of Goods, Works, and Non-consulting Services		
Method	Applicability	Comments
None	None	None

Consulting Services	
Method	Comments
Quality- and Cost-Based Selection (QCBS) for Consulting Firms	Quality-Cost Ratio: 90:10 Prior review. Advertisement posted in the ADB consultant management system. ADB standard request for proposals.
Individual Consultants Selection (ICS) for Individual Consultants	Prior review. Advertisement posted in the ADB consultant management system.

2. List of Active Procurement Packages (Contracts)

28. The following table lists consulting services contracts for which the procurement activity is either ongoing or expected to commence within the next 18 months.

Consulting Services							
Package Number	General Description	Estimated Value ^a	Selection Method	Review (Prior/ Post)	Type of Proposal	Advertisement Date (quarter/year)	Comments
PRF-1 (07-Cities)	Engineering Design and Construction Management (EDCM) Phase-1)	8,410,000	QCBS	Prior	FTP	Q4 / 2019	Assignment: International Quality-Cost Ratio: 90:10 Advance Contracting: Y
PRF-2 (07-Cities)	Operation, Design and Business Model	2,640,000	QCBS	Prior	FTP	Q4 / 2019	Assignment: International Quality-Cost Ratio: 90:10: Advance Contracting: Y
PRF-3 (07-Cities)	Urban Transport (Detailed Design)	2,350,000	QCBS	Prior	FTP	Q1 / 2020	Assignment: International Quality-Cost Ratio: 90:10: Advance Contracting: Y
PICIIP-03	Individual Consultants	1,600,000	Individual	Prior	ICS	Q4 / 2019	Assignment: International and

Consulting Services							
Package Number	General Description	Estimated Value ^a	Selection Method	Review (Prior/ Post)	Type of Proposal	Advertisement Date (quarter/year)	Comments
							National Individual consultant selection Advance Contracting: Y

^a Estimated contract values are inclusive of contingencies and applicable government taxes and duties.

3. List of Indicative Packages (Contracts) Required under the Project

29. The following table lists consulting services contracts for which the 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).

Consulting Services						
Package Number	General Description	Estimated Value	Selection Method	Review	Type of Proposal	Comments

4. List of Awarded and Completed Contracts

30. The following table lists the awarded contracts and completed contracts for consulting services.

Consulting Services					
Package Number	General Description	Contract Value ⁹	Date of ADB Approval of Contract Award ¹⁰	Date of Completion ¹¹	Comments ¹²

D. Consultant's Terms of Reference

31. A summary of the main expected for the two consulting packages under PRF is shown below:

PRF-1: Engineering Design and Construction Supervision (EDCM)

- (i) Inception phase: submission of inception report, including detailed methodology mobilization schedule of experts and outline work program (15%)
- (ii) Spatial planning: submission of (i) existing situation report, (ii) GIS base map, (iii) draft spatial plan, (iv) final spatial plan report (including prioritized subprojects lists/packages) (25%)
- (iii) Feasibility phase: submission of feasibility report (for all subprojects) (15%)
- (iv) Detailed engineering design phase: specifications, other required documents including due diligence assessments and construction drawings for priority

- packages (35%)
- (v) Final report: detailed drawings, specification, bill of quantities, cost estimates and packaging of all civil works and goods subprojects completed in all respect and accepted by the Client. All subprojects under bidding or ready for bidding and finalization of PC-1 (10%)

PRF-2: Operation, Design and Business Model (ODBM)

As the contract of ODBM will be time-based, hence, payment will be made as per the actual input of the experts.

PRF-3: Urban Transport (Detailed Design)

The principal outputs of the project are: (i) institutional capacity to manage the new integrated sustainable transport system; (ii) high-quality bus system; (iii) improved accessibility through quality walking and cycling facilities; (iv) improved traffic management; and (v) a formal parking management system. In addition, the project will promote gender mainstreaming, greenhouse gas emission reduction, and public-private partnership.

32. Detailed terms of reference for EDCM, ODBM, and Urban Transport (Detailed Design) are in Appendix 1.

VI. SAFEGUARDS

33. **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

34. **Project readiness financing project performance monitoring.** EA 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 procurement plan, and (iv) an updated implementation plan for the next 12 months. To ensure PRF projects continue to be both viable and sustainable, the EA should adequately review PRF project financial statements and the associated auditor's report. In the event that an ensuring loan is not approved, the EA will submit a PRF project completion report to ADB within 6 months of physical completion of the PRF project.⁶

35. **Compliance monitoring.** Loan and grant covenants on policy and regulations, legal, and financial will be monitored regularly through various reports (semi-annual reports) and discussions during review missions. Progress with regards to the following undertakings will be included in the monitoring report:

- (i) strengthening of IAs' financial management capacity;
- (ii) urban utilities services policy, affordability analysis, and progress on budget allocations for potential direct and cross-subsidies necessary for access to

⁶ ADB. 2018. Project Completion Report for Sovereign Operations. *Project Administration Instructions*. PAI 6.07A. Manila.

- (iii) services by vulnerable groups;
- (iii) implementing agency's customer service standards, including a gender-friendly policy;
- (iv) consultations and agreements with local stakeholders on the detailed engineering design (inclusive design);
- (v) urban utilities services accessibility; and
- (vi) implementing agency level of services.

B. Reporting

36. The LG&CD Department and PMU will provide ADB with:
- (i) PRF project's quarterly progress reports in a format consistent with ADB's project performance reporting system;
 - (ii) consolidated annual reports including (a) progress achieved by output measured against the performance targets; (b) key implementation issues and solutions; (c) updated procurement plan; and (d) updated implementation plan for next 12 months;⁷ and
 - (iii) PRF project accounts and the EA's audited financial statements, and the associated auditor's report.

VIII. ANTICORRUPTION POLICY

37. ADB reserves the right to investigate, directly or through its agents, any violations of the Anticorruption Policy (1998, as amended to date) relating to the PRF project following ADB's Integrity Principles and Guidelines.⁸ All contracts financed by ADB will include provisions specifying ADB's right to audit and examine the records and accounts of the EA 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.⁹

38. To support these efforts, ADB included relevant provisions in the PRF loan agreement, grant agreement, and the bidding documents for the PRF project. A project risk assessment will be prepared by the due diligence and climate resilience consultants and highlight the governance risks. Specific mitigation measures will be implemented under the PRF project to mitigate these risks, as recommended by ADB's Second Governance and Anticorruption Action Plan.¹⁰ Notably, the due diligence consultant team under PRF will put in place probity guidelines that will apply to all parties involved in the project, based on ADB anticorruption guidelines and any anticorruption laws and regulation that pertain to the project. These guidelines will be developed by a recognized probity professional, independent of the consultant team, and will clearly establish the anticorruption role and responsibility of staff of LG&CD Department, CIUs, contracted operating companies, and contracted consultants. These guidelines will address at least the following items:

⁷ The regional departments will present the performance of the completed PRF in the project completion report of the ensuing loan.

⁸ ADB. 2015. *Integrity Principles and Guidelines*. Manila.

⁹ ADB. *Anticorruption and Integrity*.

¹⁰ ADB. 2006. *Second Governance and Anticorruption Action Plan (GACAP II)*. Manila; ADB. 2008. *Guidelines for Implementing ADB's Second Governance and Anticorruption Action Plan (GACAP II)*. Manila; and ADB. 2008. *Sourcebook: Diagnostics to Assist Preparation of Governance Risk Assessments*. Manila (draft).

- (i) staff hiring;
- (ii) staff relations;
- (iii) handling of gifts and favors;
- (iv) tendering process; and
- (v) contract development processes.

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 a good faith effort 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.¹¹

X. RECORD OF CHANGES TO THE PROJECT ADMINISTRATION MANUAL

40. All revisions/updates during course of implementation should be retained in this section to provide a chronological history of changes to implemented arrangements recorded in the PAM.

¹¹ ADB. Accountability Mechanism.

CONSULTANT'S TERMS OF REFERENCE

I. ENGINEERING DESIGN AND CONSTRUCTION MANAGEMENT CONSULTANT FOR BAHAWALPUR, DERA GHAZI KHAN, MULTAN, MUZAFFARGARH, RAHIM YAR KHAN, RAWALPINDI, AND SARGODHA

A. Introduction

1. The Punjab Cities Improvement Project (PCIP) formerly known as Punjab Intermediate Cities Improvement Investment Project- Phase 2 (PICIIP-2) will build upon the achievements and lessons learned from previous urban sector projects supported by the Asian Development Bank (ADB) and other partners in Pakistan including the Punjab Intermediate Cities Improvement Project -1 (PICIIP-1) which will improve urban services in the two Punjab cities of Sialkot and Sahiwal by: (i) rehabilitating and expanding water supply and sanitation systems; (ii) enhancing urban amenities including bus terminals, parks, greenbelt areas, pathways and other facilities; and (iii) building institutional capacity by establishing urban service standards, enhancing customer service functions, and developing new tariff structures. The project represents the second phase of the PICIIP-1, which will continue the momentum of the first phase and ensure development continuity by providing similar urban infrastructure investments and capacity support to additional seven cities in Punjab province, namely Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha.

2. The PCIP will help improve the quality of life of residents in the additional seven cities of Punjab province, namely Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha by improving urban infrastructure and services and enhancing the operation and maintenance capacity for urban service delivery.

3. ADB will process Project Readiness Financing (PRF) facility to increase project implementation readiness and thereby facilitate the timely and cost-effective achievement of the project outcomes. Activities to be conducted under the PRF include two consulting service contract packages: (i) spatial planning, feasibility study, engineering design and construction management (EDCM) contract for Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha; and (ii) the operational design and business model (ODBM) contract for Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha. Besides these consulting services packages, individual consultants will also be hired under PRF. The project is estimated to cost around USD400 million.

4. In preparation of the above project, the Government has requested ADB to process project readiness financing (PRF) to fast track the completion of the master plan, detailed engineering designs, necessary due diligence assessments, procurement, capacity assessments and other project preparatory work for ensuing projects. This Terms of Reference (TOR) is for the recruitment of EDCM Consultant under the consultant recruitment package.

5. A consulting firm recruited under City Development Initiative Asia (CDIA) conducts the pre-feasibility study (PFS)¹ involving sector assessment and identifying infrastructure requirements for improving climate resilience and promoting planned economic growth of the seven cities to be covered under the project. The small-scale technical assistance approved in

¹ CDIA completed consultant recruitment process in order to undertake pre-feasibility study for PICIIP 2 for 4 cities in June 2018. The allocation of \$900,000 grant for the study was approved in June 2017.

December 2017 will finance preparation of PRF due diligence assessments.² PRF will be used to firm up the scope and prepare the project in parallel.

B. Background

6. Cities are the economic, social and innovative core of Pakistan. They generate most wealth and are home to about 40% of the country's population.³ Pakistan's cities, particularly the intermediate cities, are developing at a fast rate and this has led to the rapid expansion of the urban environment but in an uncoordinated, unplanned and unregulated manner. Water supply, wastewater collection and treatment, storm water drainage, and the urban road networks are increasingly unable to respond to population pressures and economic demands. Furthermore, the residents are suffering from a severe lack of open spaces and civic amenities. There is therefore a growing demand to make Pakistan's cities more livable to promote better living standards, improve public health and to develop the country's economy in a more appropriate and sustainable manner. While in other Asian countries the focus is often on attracting large firms to provincial capitals, in Pakistan, most of urban jobs are created by small and medium firms that rely heavily on the collective resources of urban infrastructure and services in the intermediate cities.⁴

7. The Government of Pakistan has realized the importance of making its cities, particularly the intermediate cities, more livable and has put the urban sector at the forefront of its national development strategy. Pakistan's Vision 2030⁵ and Framework for Economic Growth⁶ envisage livable cities as engines of national growth and centers of economic activity, culture, and knowledge. The framework also recognized the advantage of the local governments in managing the urban development on the ground, as they are closer to the beneficiary population with an informational advantage in identifying citizens' preferences, as well as essential flexibilities to respond rapidly to evolving city's needs. Under these circumstances, the government amended its constitution to decentralize the role of urban services to the provincial governments.⁷ In 2015, the Government requested ADB to process a new urban sector project covering key urban sector development in the cities of Sahiwal and Sialkot. ADB approved the PICIIP Phase-2 project in September 2017.

C. Overall Impact and Outcome

8. The impact of the project will be improved living standards, health, and economy in Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha. The outcome will be enhanced access to quality urban services by the residents of Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha cities. As the project outcome realizes, by 2024, the residents in the 7 cities of Punjab province will have improved access to quality urban basic services and enhanced utility facilities. This will contribute to economic growth, social development and improved urban environment in those cities.

² Small-Scale Transaction Technical Assistance approved on 14 December 2017.

³ Finance Division, Government of Pakistan. 2016. Pakistan Economic Survey 2015-16. Islamabad.

⁴ The Urban Unit of Punjab stipulates that a large city is a city with population size between 1.9 to 9.0 million while an intermediate city is defined as a city with population size between 0.25 to 1.9 million. See also paragraph 10.

⁵ Planning Commission, Government of Pakistan 2007 Pakistan in 21st Century, Vision 2030. Islamabad.

⁶ Planning Commission, Government of Pakistan 2011 Framework for Economic Growth Islamabad

⁷ The 18th Amendment to the Constitution of Pakistan 2010 Islamabad

D. Project Details

9. The project will have the following outputs:
- (i) Spatial planning, feasibility studies and detailed engineering design, procurement support, and due diligence for proposed investments completed
 - (ii) Service delivery standards and practices improved
 - (iii) Capacity of executing and implementing agencies for project management and operations performance improved.
10. The indicative civil works, goods and services requirements under the (ensuing) project⁸ will be provided during the contract negotiations.
11. The Government of Pakistan and Government of Punjab requested ADB to provide a PRF to conduct spatial planning, feasibility study and detailed engineering design, and assist in the procurement of civil works and equipment, ahead of ADB's Project Loan which is expected to be approved in 2020. The government also requested ADB to select on its behalf all consultants to undertake consulting services under PRF, while it will retain its authority to negotiate, sign contracts and engage the Consultants. These consulting services are categories in two packages:
- (i) **Package 1.** Spatial Planning, Feasibility Study and Detailed Engineering Design including integrated Master Plans of Urban Land Use, Water and Sanitation, Solid Waste Management, Tourism, and Urban Transport for at least upto 2050 and assistance in Procurement Support [preparation of detailed specifications of Works, Goods and Plant along with Bill of Quantities (BOQs)], followed by Construction Management (Contract Administration and Construction Supervision) on satisfactory performance during the design phase for Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha; and
 - (ii) **Package 2.** Operations Design and Business Model (ODBM) for Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha.
12. Consultants' selections and engagements as well as will be carried out in accordance with ADB's Procurement Policy (2017), using the quality-cost based selection (QCBS) method with a standard quality-cost ratio of 90:10. All procurement of works, goods and services will likewise be carried out in accordance with the same policy.
13. This relates to the services for Spatial Planning, Feasibility Study and Engineering Design and Construction Management (EDCM):
- (i) Phase 1 assignment: Spatial Planning, Feasibility Study and Detailed Engineering Design including integrated Master Plan of Urban Land Use, Water and Sanitation, Solid Waste Management, and Urban Transport for at least until 2050 and assistance in Procurement Support [preparation of detailed specifications of Works, Goods and Plant along with Bill of Quantities (BOQs)] for Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha
 - (ii) Phase 2 assignment: Construction Management (Contract Administration, Construction Supervision) for Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha
14. These services will be delivered in two phases, such as follows:

⁸ The ensuing loan will finance the components that meet ADB's due diligence requirements.

15. The contract for Phase 1 covers spatial planning, followed by feasibility study and/or detailed engineering design including Master Planning and Procurement Support [*preparation of detailed specifications of Works, Goods and Plant along with Bill of Quantities (BOQs)*] (to be completed by Q2 2020) and procurement support (all major civil works and equipment contracts to be awarded by Q4 2021), and is financed by ADB's PRF.

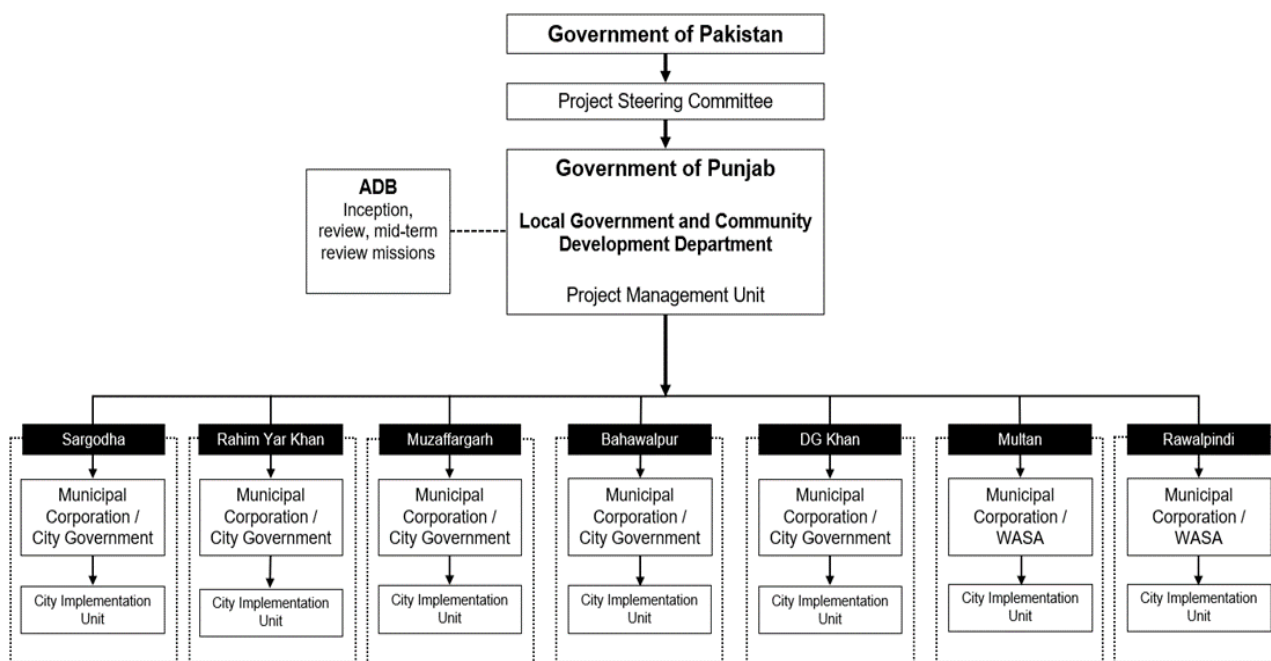
16. The contract for Phase 2 covers contract administration, construction supervision and project management of the civil works, and may be financed from the ADB Project Loan itself, if and once approved by ADB and the government. In case the ADB Project Loan does not materialize, the government will decide, at its discretion, in consultation with ADB, whether it wants to finance this contract from its own budget, or whether it prefers not to push through with it. This contract will be a separate time-based contract, with the possibility (but not limited to) to consider recruiting the same firm selected for Phase-1 to conduct the assignment for Phase-2 as per the provisions of ADB's procurement guidelines, rules and procedures. Details of the TOR covering Phase-2 assignments are provided for information only.

E. Implementation Arrangements for Project Readiness Financing

17. The borrower is the federal Government of Pakistan. The Local Government and Community Development Department (LG&CDD) in Punjab Province will be the executing agency for the project readiness financing (PRF), and the city governments of Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha will be the implementing agencies. A Project Management Unit (PMU) already established at the LG&CD at provincial level, and the City Implementation Units (CIUs) will also be established by the Municipal Corporations (MCs) to implement PRF activities in each city. Under the guidance of the Project Steering Committee, the LG&CDD will be responsible for the overall execution of the PRF. The MCs in each city will be responsible for the day-to-day project implementation. The implementation arrangements are summarized in Figure 1.

18. This contract package will be phased: (a) engineering design or Phase-1 will cover spatial planning, feasibility study and detailed engineering design and other project preparation and will be financed by the Project Readiness Financing as an output-based lump sum contract; and (b) construction management or Phase-2 will cover construction management of sub-projects and will be financed by the ensuing project(s). The Contract for Phase-2 shall be awarded as per the provisions of ADB's Procurement Policy and Procurement Regulations for ADB Borrowers.

Figure 1. Indicative Project Organization Structure (for Project Readiness Financing)⁹



ADB = Asian Development Bank, DG = Dera Ghazi, WASA = water and sanitation agency.

Note:

The arrangement is applicable to the PRF implementation. Implementation arrangements for the ensuing loan will be discussed and prepared during PRF implementation.

19. The two major objectives of EDCM are to:

1. **Spatial Planning, Feasibility Study and Detailed Engineering Design**

- (i) Develop, review and/or updating a comprehensive spatial plan for the future development of the seven cities (Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha), taking account of the projected population growth, possible economic development scenarios, the need to service existing and future development and other relevant factors. The planning approach should take account of physical and institutional constraints, existing conditions, the availability of financial and human resources, and all relevant policies, laws and government directives. More particularly it should provide early guidance as to the best investment options to bring about improvements in living and working conditions in these cities. The plan should also take into account institutional reforms, change management, internal accountability mechanisms and organizational effectiveness based on the assessment and communication with all stakeholders (i.e., employees, government and service users etc.);
- (ii) The spatial plan will identify the future growth of the cities, identifying future infrastructure and service needs and provide list of selected sub projects for development as prioritized packages to meet the immediate and long-term needs, while contributing to the implementation of the overall plan;
- (iii) Integrated Urban Development Master Plans including the Land Use,

⁹ This arrangement is applicable to the implementation of project readiness financing. Implementation arrangements for ensuing loan will be discussed and prepared during PRF implementation.

Water and Sanitation, Solid Waste Management, and Urban Transport for 2050 with the breakup of priority investments over the duration of each 5 years.

- (iv) The Plan will be presented to PMU, LG&CDD and all concerned stakeholders and modify as necessary in light of their comments and suggestions;
- (v) The Spatial Planning will be followed by feasibility studies of the identified sub projects where all sub projects plotted on GIS base map, showing their relationship to existing infrastructure will be assessed. Based on the available preliminary surveys, reports and data, safeguard documents, conduct detailed (geotechnical, site investigation and engineering) surveys and confirm that the data is correct in accordance with the specified parameters/standards and best international practices and update the data or prepare new if required to meet the project outputs as stated above, as per client's satisfaction. Based on the assessment, produce a brief feasibility report for each sub project and present this for clearance by competent authority;
- (vi) Once feasibility studies have been completed and accepted, the consultants shall proceed to detailed engineering designs drawings, engineers estimate and bill of quantities (BOQs) of all agreed subprojects;
- (vii) The Consultant shall be responsible for providing support to the Client during the period leading up to the contract award of civil works/goods.
- (viii) Determine the type and size of contracts and procurement methods based on the circumstances, engineering design, and various elements of goods, works, and services required;
- (ix) Prepare detailed drawings and specifications of works, goods and plant along with detailed BOQ and assist in procurement of all the sub-projects through to contract awards
- (x) Based on the available preliminary surveys, reports and data, safeguard documents, conduct detailed (geotechnical, site investigation and engineering) surveys and confirm that the data is correct in accordance with the specified parameters/standards and best international practices and update the data or prepare new if required to meet the project outputs as stated above, as per client's satisfaction, prior to implementation of civil works and goods contracts;
- (xi) Based on the confirmed data and technical requirements, prepare the detailed engineering design, drawings, specifications, engineer's estimate and BOQs for the required works and goods packages under the project. Determine the type and size of contract packages and procurement methods based on the circumstances, engineering design, and various elements of goods, works and services required;
- (xii) Consultant shall design at least 2 civil work projects, such as commercial plaza, green spaces, or other for the enhancement of the revenue as per the recommendations of the Operational Design and Business Model consultants in Bahawalpur, Dera Ghazi Khan, Muzaffargarh, Rahim Yar Khan, and Sargodha.

2. Construction Management (CM):

- (i) The Consultant shall be responsible for detailed resident supervision of all subprojects implemented under the first Phase of the Project and shall manage and ensure that the high-quality construction is achieved in time

within budget and that all work is carried out in full compliance with the approved engineering designs, technical specifications, agreed work schedule, and within the terms and conditions of all other contract documents and sound engineering practices;

- (ii) Demonstrate the efficacy of contract administration and supervision as an independent external party;
- (iii) Complete all the civil works and goods including all assistance to the client in completing all sub-projects contract (s) closing formalities (both technical and financial);
- (iv) Ensure that subprojects fully meet environmental and social safeguards requirements as defined in ADB's Safeguard Policy Statement (2009); and
- (v) Promote technology transfer and the introduction of modern Contract Administration practices within LG&CDD and city implementation units.

F. Scope of Consultancy Services

20. The Consultant shall provide, for the duration of the entire assignment, a team of international and national experts who are experienced in initial investigations and surveys for spatial planning, feasibility studies and detailed engineering design, procurement procedures for such projects, know the mechanical and electrical equipment requirements and supervision of goods, civil works and related services contracts for the infrastructure component under the project.

21. The consulting firm will be selected and engaged using ADB's procurement related policies, rules and procedures. The Project is expected to be effective in December 2019 and completed by April 2023. The Consultant is expected to commence in May 2020.

22. The construction supervision (Phase-2) will be the subject of a separate time-based contract. The recruitment will be selected in accordance with ADB's Procurement Policy (2017, as amended from time to time) and Procurement Regulations for ADB Borrowers (2017, as amended from time to time).

23. The consulting firm(s) is requested to provide their proposal (technical and financial) for the engineering design (Phase-1) in line with the inputs requirements given in the TORs. The consulting firm will be recruited using quality- and cost-based selection method with a standard quality-cost ratio of 90:10 with full technical proposal. The provisions of ADB's Anticorruption Policy will be included in all invitation documents and contracts for consultants. The ED or Phase-1, to be implemented in 24 months, is expected to commence in May 2020 and completed by May 2022. The CM or Phase-2 will be implemented in 36 months. For all international positions, know-how of local languages is desirable and English language skills are compulsory. For national experts, both English and Urdu language skills are required while Punjabi / Saraiki language skills are an added advantage.

24. The Consultant, in close coordination with PMU/CIUs (in case of CIUs, to be established) and Engineering Design and Construction Management (EDCM) Consultant, will perform but not limited to the following tasks:

1. **ED (Phase-1)- Spatial Planning, Feasibility Study and Detailed Engineering Design, Drawings, Specifications and Bill of Quantities:**

25. The Consultant inputs for ED phase shall include but not limited to the following tasks:

- (i) **Spatial Planning (The tasks to be carried out for each City)**
- (a) Identify key stakeholders, ensure that they are informed about the planning initiative, and that they have opportunities to engage with it.
 - (b) Collect and validate available secondary information, including reports, PC-Is, existing maps and plans etc. and including information on planned activities.
 - (c) Prepare a detailed GIS base map based on satellite imagery, using suitable GIS program.
 - (d) Prepare a physical map of the city, based on GIS base, with information updated by field surveys, to include all major features and showing limits of existing development. Distinguish between different types of development (commercial, high income residential, low income residential, parks etc.)
 - (e) Prepare overlays showing existing services (water supply, drainage, sewerage, electricity, gas lines, telephone lines, water courses, canals etc. as appropriate.
 - (f) Extensive engagement with local stakeholders, politicians, local administrations, government officials, activists, representatives of civil society organizations, and members of general public to (a) collect local knowledge and (b) obtain information on their concerns and priorities.
 - (g) Prepare existing situation report, setting out findings, relating to existing situations, including any planned works and also including an estimate of current and future growth rates and directions, based on available information.
 - (h) Assess growth and development scenarios and use this assessment as the basis for an outline spatial plan, showing the expected/preferred pattern and extent for future growth of the City.
 - (i) Assess options for meeting priority needs and forecasting the implementation of the spatial plan and develop preliminary proposal for the schemes to meet needs and facilitate implementation of the spatial plan.
 - (j) Present the Spatial Plan and possible options for meeting priority needs of local stakeholders and modify as appropriate in response to their suggestions and concerns.
 - (k) Finalize the Spatial Plans and list of priority projects/sub projects.
 - (l) Liaise with PMU and relevant stakeholders to ensure that the spatial plan and priority list projects/sub projects are formally approved and agreed.
 - (m) Presentation of Final Report
- (ii) **Feasibility Study**
- (a) Assess the sub projects relevancy showing their relationship with existing infrastructure under integrated urban development concept.
 - (b) Produce an appropriate tentative cost estimate of each sub project, based on typical sections and details using appropriate unit rates.
 - (c) Assess the relevance and feasibility of each sub project ensuring that
 - It fills a clear need (for instance in the case of proposed road improvement that traffic loadings are sufficient to justify improvement)
 - It is compatible with existing infrastructure (for instance those levels are such that proposed drains and sewers can be discharged to existing facilities or can receive flows from their proposed drainage areas and that existing drains have sufficient capacity to carry any addition flows resulting from proposed schemes. In case of water supply, check that water is available to serve new distribution system extensions etc.)
 - The proposed technology is manageable by the MC's

- (d) Based on the assessment, produce a brief feasibility report for each sub project and present this for clearance

(iii) **Detailed Engineering Design**

- (a) Review, conduct and ensure that all the available surveys data are correct (amend if required) and meets the best international practices;
- (b) Undertake field surveys (geotechnical, engineering, site investigations, topographic etc.) and studies to establish firm basis for design;
- (c) Undertake environmental and social safeguard studies (including but not limited to EIA, IEE, land acquisition and resettlement plans, health and safety management plan, gender action plan for the proposed investments;
- (d) Conduct energy audit (energy requirement analysis) for the overall project and recommend the best suitable solutions to meet the energy needs and their viable sustainable solutions in the area specific context for all the sub-projects including the final recommended designs based on the recommendations;
- (e) Undertake technical due diligence and geotechnical assessment, for the proposed sub-projects;
- (f) Review the engineering designs developed earlier and improve the designs according to international best practices and climate change resilience;
- (g) Finalize the detailed engineering designs, technical specifications, detailed cost estimates that meet all the standards, climate resilience measures, and international best practices. In addition, the detailed engineering designs should be prepared using integrated urban planning approach keeping future needs in mind and viable new technologies;
- (h) Identify the utilities to be replaced/ removed and prepare a detailed implementation plan for the same;
- (i) Finalize the draft procurement plan with procurement packages proposed for selected sub-projects;
- (j) Assist and prepare the subproject(s) PC-1 or other PMU requirements for administrative/ management approvals for starting of the procurement process;
- (k) Assist and liaison with Individual Procurement Expert in preparation of draft bidding documents for the individual packages identified in the procurement plan as per ADB standard bidding documents for works, goods and plant. This activity will be supported by the procurement specialist (individual consultant) hired for the project; and
- (l) The bidding documents shall include detailed design/construction drawings, technical specifications, BOQs, EMP, HSMP, GAP or any other documents required by the ADB;
- (m) The Consultant shall provide necessary support to the Client in all aspects of the procurement process for civil works contracts in accordance with the ADB procurement guidelines, regulations and the Punjab government procurement rules and regulations. The support shall include but not limited to the following:
- Support in the pre-bid meetings and site visits for interested bidders, preparation of responses to bidders' clarification answers; and
 - Assisting the Client in contract award, contract negotiation, preparation and finalization of contracts submission for review by concerned agencies including the Client, and the ADB, through to signature of the contracts.
 - Consultant in any case has to design the detail engineering design of projects having total cost of 400 Million USD for priority projects finalized with the PMU and LG&CD in line with integrated Master Plans.

2. CM (Phase 2)- Contract Administration & Construction Supervision

26. The Consultant while supervising the goods and construction works will make all necessary arrangements for quality control and implementation of the works and goods contracts.

The task of the Consultant will include but not be limited to:

- (i) Supervision of civil works will be carried out based on the ADB standard small works contracts and MDB FIDIC June 2010 contract, respectively. The goods contracts will be carried out on the ADB standard contract for goods and plants;
- (ii) The consultant on behalf of the employer will administer both the goods and the civil works' contracts, make engineering decisions, be responsible for quality assurance, provide general guidance and furnish timely responses to the suppliers and contractors in all matters relating to the goods and civil works, and ensure that all clauses of the contract agreement between the suppliers/contractors and PMU are respected;
- (iii) Assure submission and advise PMU on the adequacy of the Contractors' insurance policies, performance guarantees and advance payment guarantees;
- (iv) Give notice to contractor to commence the works;
- (v) Provide advance advice to PMU/CIUs concerning the schedule of handing over of sites, and possible delays due to lack of possession with a view to assure that the Contractors are given Possession of Site in accordance with the conditions of contract(s) and agreed work programs;
- (vi) Liaise with PMU, City Governments, MCs, district authorities, and other concerned parties/consultants, as required, to ensure that the site is made available to the Contractor and that any issues related to land acquisition and utilities relocations are resolved in ways that minimize delay to the contract;
- (vii) Assess the adequacy of the contractors' inputs in material, labor, construction methods, and safety measures. Monitor the progress of subproject against the contractual construction schedules. Ensure that the Contractor submits regular updated work programs that take into account the time elapsed and work completed and provide a realistic timetable for completing the works within the specified contract period. If the Contract is clearly going to time over-runs, take the actions specified in the Conditions of Contract;
- (viii) Assure the receipt of and maintain as permanent records of all warranties required under terms and conditions of the Contract Agreement for materials including their source and equipment accepted and incorporated in the project;
- (ix) Without relieving the Contractors of their obligations under the Contract, check and approve the contractors' Working Drawings, Method Statements and Temporary Works proposals;
- (x) Carry out any subsequent design changes, and expeditiously issue supplementary drawings, site instructions, variation orders and day work orders to avoid delay to the works and to ensure that the works are executed in accordance with Contract;
- (xi) Assure that the Contractors have all necessary data for setting out including the right- of-way limits, centerline, and grade and confirm permanent monuments in the construction areas where applicable;
- (xii) Check that the lines, levels and layout of the construction conform with those specified in the contract;
- (xiii) Develop and implement a quality monitoring plan to ensure the works comply with the specifications in the contract documents regarding materials used, technical requirements, and economic life of assets. Ensure that project components are tested as required by the Conditions of Contract and Specifications;
- (xiv) Inspect quarries and borrow pits, and crushing plants, and order tests of materials

- and ensure adherence to specifications, and approve the sources of materials;
- (xv) Assure quality of the works during construction, continuously inspect the soils and materials, construction operations and the works with regard to workmanship and compliance with the specifications and carry out independent testing in the field and/or in the "Engineer/Project Manager" laboratory, and approve or disapprove and certify the works that conform with the specifications and maintain permanent records of results of all the tests made;
 - (xvi) Give notice (s) to Contractors of any defects and deficiencies, and issue instructions for the removal and substitution of the improper works, where provided under the contract. If required, order suspension of the work(s) and/or recommend to PMU other recourse available under the Contract;
 - (xvii) Monitor and appraise progress of the works, and maintain a day by day project diary which shall record all events pertaining to the administration of the contract, requests from and orders given to the Contractors, and any other information which may be at a later date be of assistance in resolving queries which may arise concerning execution of the works;
 - (xviii) Check the Contractor's periodic statement of the estimated value of work completed and certify that these statements clearly and accurately describe the value of work executed on the value of the quantities of the items in the "Bill of Quantities";
 - (xix) Verify the interim payment certificates to PMU/CIUs/MCs for payment to the Contractors on the basis of "Measured Work Items", having regard to any contractual provisions for advance payment, variation of price, and exchange rate fluctuation etc. Certify the completion of the Activities/Works or parts thereof and process final payments to the Contractors;
 - (xx) Assist with interpretation of Contract Documents, explain and or reconcile any ambiguities and or discrepancies in the Contract Documents, and apply various provisions of the contract documents and provide PMU/CIUs all relevant documentation needed for settling disputes (if any) with the Contractors, and make recommendations to PMU for resolving the Contractors' escalation claims, contract time extensions, variation orders, subletting, additional cost, rate and price fixing etc.;
 - (xxi) Advise PMU/CIUs on need for effective liaison with local authorities, police, landowners, utility owners, the public and other organizations affected by the Works in order to minimize or avoid unnecessary delays or disputes;
 - (xxii) In close coordination with PMU/CIUs and local authorities, prepare an executable traffic management plan where the subprojects are in the city/populated areas;
 - (xxiii) Jointly inspect with PMU/CIUs/MCs the completed civil works, and assist in formal taking over, completion certificates and review and approve or prepare "as built" drawings and plans (as the case may be), and provide report(s) testifying to the satisfactory completion of the contracts and prepare a checklist for re-works or pending works;
 - (xxiv) Plan and review the final commissioning tests being conducted upon completion of each construction package, namely network, pumping stations, approve acceptance of performance in accordance with the targets set in the tender documents, approve the content of the O&M manuals and advise the PMU, CIUs and MCs on delivery of certificate of performance;
 - (xxv) Inspect the completed works periodically during the defect liability period within the term covering the Consultant's Agreement, prepare lists of deficiencies (if any), and carry out supervision of the remedial works, and issue the Defects Liability certificates after the rectification of notified defects by the Contractors;

- (xxvi) Establish a comprehensive system of maintaining site records including site correspondence, inspection records, test data, site diaries, records of meetings, financial records, progress records etc.
- (xxvii) Support the PMU and consultants to implement the safeguard related policies including the environment management plans, IEEs, resettlement plan including public consultation, verification of the resettlement compensation payment, and preparation of all safeguard monitoring reports;
- (xxviii) Assist PMU/CIUs in preparing monthly and quarterly progress and monitoring reports for submission to various authorities, including ADB;
- (xxix) Coordinate with contractors, consultants and local authorities on clearing roadblocks and obtaining clearances during construction and commissioning; and
- (xxx) Provide any other specialist services requested by PMU/CIUs and other Consultants under the project by mutually agreed conditions.

G. Staffing

27. For Phase 1 or engineering design phase, a total of 1,673 person-months including 80 person-months of international key experts; 781 person-months of national key experts; and 812 person-months of non-key experts would be required. The indicative team composition is in Table 1. Table 1 presents the qualifications and responsibilities for each position and Table 2. the qualifications of national non-key experts.

**Table 1: Indicative Team Composition (Key Experts) for ED (Phase 1)
(Financed through Project Readiness Financing)**

Expertise	Positions	Minimum Input (Person-Months)
A. International Experts		
1. Municipal Infrastructure Development Specialist (Team Leader)	1	20
2. Institutional and Capacity Development Expert	1	4
3. Senior Municipal Infrastructure Design Engineer	1	10
4. Senior Wastewater Treatment Plant Engineer	1	7
5. Senior Surface Water Treatment Engineer	1	5
6. Senior Water Supply and Sanitation Engineer	1	10
7. Drainage and Flood Control Engineer	1	4
8. Urban Planning and Development Specialist	1	14
9. Environmental Specialist	1	6
Subtotal International Experts	9	80
B. National Experts		
1. Deputy Team Leader / Senior Design Engineer (Water Supply and Sanitation)	1	24
2. Institutional and Capacity Development Expert	1	6
3. Urban Planning & Development Specialist	1	12
4. Architect	1	14
5. PPP Expert	1	6
6. Senior Design Engineer (WS&S)	2	30
7. WWTP Expert	1	16
8. Sewerage Infrastructure Design Engineer	1	20
9. Design Engineer (Electromechanical)	2	16
10. Design Engineer (Structural)	2	24
11. Design Engineer (Storm Water Drainage)	1	10
12. Solid Waste Management Expert	2	18
13. Drainage and Flood Control Design Engineer	1	14
14. Energy Audit	1	14
15. Geotechnical Expert	1	18
16. Hydro-geologist / Ground Water Expert	1	18
17. Horticulture Expert	7	14
18. Legal / Regulatory Framework Expert	7	14

Expertise	Positions	Minimum Input (Person-Months)
19. Senior Urban Space Developer	7	28
20. Urban Planner	7	42
21. Transport Planner (Road Infrastructure Expert)	7	42
22. Urban Infrastructure Engineer	7	35
23. GIS / Mapping Expert	7	77
24. Smart City / IT Expert	7	35
25. Chief Quantity Surveyor	2	38
26. Chief Surveyor	2	38
27. Environmental Climate Change Specialist	4	48
28. Social Development & Gender Expert	7	56
29. Resettlement Specialist	2	18
30. Hydrologist	2	18
31. Financial Management Expert	3	18
Subtotal National Experts	98	781
Total	103	850

28. **Other “Non-Key” expert staffing for Phase-1:** In addition, the firm is recommended to consider including the following experts in the team:

**Table 2: Indicative Team Composition (Non-Key Experts) for ED (Phase-1)
(Financed through Project Readiness Financing)**

S/No	Expertise	Indicative Positions	Indicative Input (Person-Months)
1	SCADA Expert	1	8
2	Architect/ Landscape Architect	7	28
3	Assistant Water Supply Design Engineer	7	112
4	Assistant Sewerage Infrastructure Design Engineer	7	112
5	Assistant Structural Design Engineer	7	112
6	Assistant Geotechnical Design Engineer	2	24
7	Assistant Hydrologist	2	12
8	Assistant Design Engineer (Mechanical)	2	18
9	Assistant SWM Expert	2	18
10	Assistant Town Planner / Architect	7	28
11	Assistant Architect (Building)	4	28
12	Assistant GIS Expert	7	56
13	AutoCAD Engineer	16	256
	Total	71	812

**Table 3: Indicative Team Composition of Support Staff for ED (Phase-1)
(Financed through Project Readiness Financing)**

S/No	Expertise	Indicative Positions	Indicative Input (Person-Months)
1	Quantity Surveyor	7	84
2	Surveyors/Data Collectors	21	252
3	Land Surveyors	21	252
4	Assistant Land Surveyors	42	504
5	Social Organizer	14	84
6	GIS Field Assistants (Geo Tagging)	14	84
7	Office Assistant/Computer Operator	18	432
8	Office Manager/Accountant	08	192
9	Cook	09	216
10	Office Boys	24	576
11	Security Guards	18	432
	Total	196	3,108

29. The proposed person-months inputs, positions and number of non-key experts described in the TOR are indicative. The firm may propose additional inputs required to complete the assignment within the time scheduled and proposed maximum budgets for the assignment. The above experts including the experts to be proposed further by the firm must be included as part of the technical and financial proposal. The firm is encouraged to provide additional details on how the services will be provided to undertake the tasks and responsibilities required to ensure delivery of successful project outputs.

Table 4: Key Positions for Phase 1

S/No	Title	Experience, Qualification, and Responsibilities
A		
1	Municipal Infrastructure Development Specialist (Team Leader)	<p>Experience Preferably 15 years of international experience as Integrated Urban Development Specialist and 10 years as Team Leader on major urban development projects. The candidate must have demonstrated ability to lead teams composed of international and national 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.</p> <p>Qualification Bachelor's degree in Civil Engineering or equivalent (internationally recognized professional qualification)– preferably master's in civil engineering / Urban Planning/ Urban Engineering/ Management or equivalent</p> <p>Responsibilities He/she will have overall responsibility for the organization, conduct and delivery of consultancy services and reporting to the Client. Team Leader will head the Consultants' team and will work directly to manage the project and will maintain liaison with the Client PMU and CIUs. Guide the Deputy Team Leader on overall managing the project and supervision activities. Responsibilities as a Team Leader will include, but is not limited to the following:</p> <ul style="list-style-type: none"> • Assist the PMU in Project implementation. • Assume full responsibility for the consulting team and performance of services under the consultancy contract. • Ensure that the consulting team undertakes the design activity in timely manner and comprehensive review of the designs and specifications. • Ensure that the consulting team undertakes comprehensive construction supervision and contract administration of the on-going civil works. • Oversee the consultant activities ensuring compliance to details provided in the construction drawings and strict adherence to construction specifications. • Oversee and supervise construction of works in accordance with details provided in the construction drawings ensuring strict adherence to technical specifications. • Ensure preparation of detailed and quantitative progress reports to support the contractor's requests for progress payments. • Keep the Employer informed of technical issues and progress of all works both by informal and formal meetings and correspondence and assist in any project issue which the Employer may require. • Ensure implementation of environment and social safeguards requirements. • Prepare technical specifications and coordinate the preparation of bidding documents for the procurement for the construction of all project components based on preliminary engineering designs, due-diligence reports, assessments, surveys, procurement plans and other relevant documents. • Provide the necessary inputs for the elaboration of the guide drawings to be included in the bidding documents as well as for the preparation of the detailed cost estimates. • Prepare the bills of quantities to be included in the bidding documents based on the engineering designs. • In collaboration with the procurement specialists make sure that the bidding documents are prepared in accordance with ADB procurement guidelines and standard bidding documents.

S/No	Title	Experience, Qualification, and Responsibilities
		<ul style="list-style-type: none"> • Prepare a list and specification of tools, equipment, and materials for maintenance and repair, kits to be included in the bill of quantities. • Provide timely inputs during the construction of all civil works; elaborate a methodology to be followed by the construction supervisors to secure appropriate monitoring of the constructions of all the civil work components; • Provide inputs for the preparation of on-the-job training in O&M of all the components; review the training schedules prepared by the Contractor and propose amendments as appropriate; supervise the implementation of the training sessions. • Elaborate a set of performance parameters to be used for monitoring the performance of the all components. • Managing other tasks covering review and/or oversee financial and economic analysis related matters (e.g., preparation of project costing and financing plan, project financial analysis and financial sustainability assessment; and oversee the work of economists to ensure findings are incorporated in the documents submitted).
2	Institutional and Capacity Development Expert	<p>Experience</p> <ul style="list-style-type: none"> • Minimum of 20 years work experience in institutional planning, business modeling, process reforms and institutional capacity building is desired. • Minimum of 10 years' working experience in similar projects in countries with similar <p>Qualification</p> <ul style="list-style-type: none"> • Preferably Master's degree in Urban Planning, Town Planning or a relevant discipline. <p>Responsibilities</p> <ul style="list-style-type: none"> • Lead to build the capacity of the MCs to design and implement a comprehensive diligence framework to engage, manage, monitor, report, financial oversight and service quality assurance pertaining to the proposed solution. • Facilitate in terms of Institutional systems strengthened through policies, procedures, tools and training which can assure compliance to required performance standards. • Develop institutional systems though policies, procedures, tools and training pertaining to: <ul style="list-style-type: none"> ▪ Strategic and Operational Planning ▪ Transparency ▪ Internal and External Grievances Redress Mechanisms ▪ Employee compensation & benefits policy ▪ Performance Management Systems • Lead and provide technical input to the sustainability assessment for the PSs during the last quarter of engagement with recommendations to strengthen future operations of the company.
3	Senior Municipal Infrastructure Design Engineer	<p>Experience</p> <p>Preferably 15 years' experience in designing and 5 years of design experience in designing of urban development infrastructure, water supply and sanitation and solid waste management facility or related structures including networks and treatments facilities. Expertise in Micro Tunneling for Sewer Infrastructure will be preferred.</p> <p>Qualification</p> <p>Bachelor's in civil engineering/Environmental Engineering / Public Health Engineering / Solid Waste Engineering or equivalent, preferably master's in environmental engineering / Urban Engineering or equivalent</p> <p>Responsibilities</p> <p>He/she will be responsible and contribute to the designs of urban development projects, water supply and sanitation and solid waste management facility or related Structures.</p> <ul style="list-style-type: none"> • Review, validate, amend existing plan/finalize the subprojects (e.g., water supply and sanitation, water and wastewater treatment plants, transmission mains and primary and secondary sewers, high service reservoirs, water distribution networks, disposal stations, etc.);

S/No	Title	Experience, Qualification, and Responsibilities
		<ul style="list-style-type: none"> • Prepare, review, validate and finalize ground and surface water modeling of project area; • Review the existing feasibility studies and master plans for the water supply and sanitation subprojects, suggest any changes if required; in and • Lead the preparation of detailed engineering design, drawing including engineering estimates of the finalized subprojects.
4	Senior Water Supply and Sanitation Engineer	<p>Experience He/she will have a post-graduate degree in Hydrology or Civil Engineering with specialization in drinking water supply and source development (ground and surface water) with over 15 years of experience in planning and designing these activities, and a minimum of 10 years proven work experience and skill in similar position in developing countries, and expertise in salinity intrusion. He/she will also work closely and oversee the work of the national water supply and sanitation expert on the team.</p> <p>Qualification Bachelor's in civil engineering, wastewater engineering, water resources engineering, public health engineering, environmental engineering, mechanical engineering, chemical engineering or equivalent (internationally recognized professional qualification). A master's qualification in the above disciplines will be preferable.</p> <p>Responsibilities He/she will be responsible to the Team Leader and work closely with the other members of consulting team and implement the following principle tasks:</p> <ul style="list-style-type: none"> • Project management and monitoring arrangements for design and implementation of the subproject, including preparing a computerized critical path schedule (or similar) and a simple benchmark information system for the water supply subprojects; • Identify problems and opportunities for the provision, operation and management of a sustainable water supply system in selected project areas, city corporations; • The nature, direction and outputs of the proposed preparatory studies for the water supply subproject, including the proposals related to alternative water supply sources, and implementation through detailed design; • Prepare detailed cost estimates and specifications for proposed water supply capital works and equipment; • The operation and maintenance (O&M) options and a preferred option for implementing the proposed improvements to the water supply; • Preparation of O&M manuals for hand & production tube wells, production tube well pumps (submersible pumps) and other aspects of the proposed water supply system; • Participation in the proposed Community Consultation Plan and consulting with any Stakeholder Committees that may be established during the subproject implementation; • Reviewing existing studies, documents and other information available; regarding in sanitation system options in the country generally and the project areas/city corporations; • Assessing the reviewing existing studies, documents and other information available; regarding in sanitation system options in the project areas generally; • Assessing the existing current sanitation systems; and the projected quantity and quality of effluent from households, commercial and industries; • Identify problems and opportunities for the provision, operation and management of a sustainable sanitation system in the project areas/city corporations; • Selection of sanitation technology options and preferred options for selected project areas/city corporations for domestic, commercial and industries, and including: (a) design criteria for septic tanks, and de-sludging; (b) design criteria for pit latrines and de-sludging;

S/No	Title	Experience, Qualification, and Responsibilities
		<ul style="list-style-type: none"> • Detailed design for sludge disposal site and for maximizing opportunities for sludge after-use; • Prepare detailed cost estimates and specifications for proposed sanitation equipment (e.g., de-sludging vehicles and pit latrines/septic tanks); • The O&M options and a preferred option for implementing the proposed improvements to the sanitation system; • Preparation of Sanitation System Manual for sustainable sanitation system septic tanks and pit latrines and other aspects of the proposed sanitation system; and • Participation in the proposed Community Consultation Plan and Community Awareness Program and consulting with any Stakeholder Committees that may be established during the subproject implementation.
	<p>Senior Surface Water Treatment Design Engineer</p>	<p>Experience He/she will have 15 years of experience as a Surface Water Treatment Design Engineer on major surface water treatment projects. He/she will also work closely and oversee the work of the national water supply and sanitation expert on the team.</p> <p>Qualification Bachelor's in civil engineering, water resources engineering, hydraulic engineering, public health engineering, environmental engineering, mechanical engineering, chemical engineering or equivalent (internationally recognized professional qualification). A master's qualification in the above disciplines will be preferable.</p> <p>Responsibilities: He/she will be responsible and contribute to the designs of urban development projects for surface water treatment.</p> <p>Design projects involving provision of potable water, disposal of wastewater and sewage, and stormwater management. Prepare environmental documentation for water resources, regulatory program compliance, data management and analysis, and field work. Perform hydraulic modeling and pipeline design. Responsibilities of the Surface Water Treatment Design Engineer will include, but is not limited to the following:</p> <ul style="list-style-type: none"> • Review existing feasibility studies prepared by others and address any gaps or deficiencies for water supply systems; • Review proposals, plans, or designs related to proposed water treatment systems; • Review project land acquisition and resettlement plan and carry out any further investigations necessary to update entitlement matrix; • Review any initial environmental impact assessment(s) and identify any further specialist environmental investigations and studies that are required; • Undertake all necessary land surveys and site investigations (including but not limited to geotechnical investigations) as required for the purposes of design development and preparation of tender documentation; • Review and recommend water quality objectives and standards for surface water discharges and potable water uses, and treatment recommendations; • Perform hydraulic analyses of water supply systems or water distribution networks to model flow characteristics, test for pressure losses, estimate leakage losses, and identify opportunities to mitigate risks and improve operational efficiency; • Prepare conceptual design studies, including flowsheet development, equipment sizing, layout requirements, and capital and operating cost projections; • Identify design alternatives for the development of new water resources; • Conduct cost-benefit analyses for the construction of water supply systems, runoff collection networks, and water treatment plants;

S/No	Title	Experience, Qualification, and Responsibilities
		<ul style="list-style-type: none"> • Analyze and recommend chemical, biological, or other treatment methods to prepare water for potential re-use; • Perform hydrological analyses, using three-dimensional simulation software, to model the movement of water or forecast the dispersion of chemical pollutants in the water supply; • Design water treatment facilities, pumping stations, storage, reservoirs, and distribution and collection systems that meet regulatory standards and water runoff collection networks, water supply channels or water supply system networks, and confirm designs using modelling techniques; • Prepare comprehensive tender documentation package based on FIDIC 'Conditions of Contract for the preferred procurement approach including 'Employers Requirements', detailed performance specifications and conditions of tender.
	<p>Senior Wastewater Treatment Plant Design Engineer</p>	<p><u>Experience:</u> Preferably 15 years of experience as Wastewater Treatment Design Engineer on major wastewater treatment projects in designing of drainage networks and wastewater treatment plants, solid waste management facility or related structures including drainage networks and disposal points.</p> <p><u>Qualification:</u> Bachelor's degree in civil engineering, sanitation engineering, public health engineering, environmental engineering, mechanical engineering, chemical engineering or equivalent (internationally recognized professional qualification). A master's degree in any of the above disciplines will be preferable.</p> <p><u>Responsibilities:</u> S/he will be responsible and contribute to the designs of urban development projects, especially toward the drainage, wastewater treatment plant, water treatment plants and solid waste management facility or related structures.</p> <p>The primary role of the Wastewater Treatment Plant Design Engineer is to design systems that safely treat urban wastewater to remove harmful substances and return it to the ecosystem and/or reuse where applicable. Wastewater Treatment Plant Design Engineer will lay out the specifications for pumping and lifting systems that bring wastewater to the treatment plants, inlet works and treatment, outfalls and monitoring. S/he will also lay out process and flow diagrams and specifications for the flow of the wastewater through the system. Responsibilities of Wastewater Treatment Plant Design Engineer will include, but is not limited to the following:</p> <ul style="list-style-type: none"> • Review existing feasibility studies, proposals, plans, or preliminary designs related to wastewater treatment systems, potential new or rehabilitation works subproject (e.g. gravity sewers e.g., lateral line, branch main or sub mains, trunk sewer, interceptor, pumping stations and rising main, waste stabilization ponds, treatment plants) and address any deficiencies, as required. • Confirm treatment process performance requirements and sizing and rating of each process component to meet final effluent quality discharge requirements; • Conduct revisions feasibility studies for the construction of wastewater treatment plants, sullage carrier, wastewater channels, pipelines, flumes, control and metering and inspection structures, and wastewater collection systems. as required; • Supervise topographic surveys, review the results of the topographical survey and geotechnical and hydrological studies and integrate these considerations in the designs. Based on preliminary surveys, investigation and confirm data take the lead of overall design activities; • Identify and address any outstanding land acquisition and resettlement issues including any necessary land surveys and site investigations (including but not limited to geotechnical investigations) as required for the purposes of design development and preparation of tender documentation;

S/No	Title	Experience, Qualification, and Responsibilities
		<ul style="list-style-type: none"> • Review, validate, amend existing plan/finalize the sub-projects (e.g. transmission mains and primary and secondary sewers, high service drainage networks, disposal stations, and treatment plants etc.); • Perform hydraulic analyses of wastewater systems or collection networks to model flow characteristics, test for infiltration exfiltration losses, and identify opportunities to mitigate risks and improve operational efficiency; • Analyze and recommend sludge treatment or disposal methods; • Conduct cost-benefit analyses for the construction of wastewater treatment plants, or wastewater collection systems and identify construction requirements and constructability issues; • Analyze and recommend chemical, biological, or other wastewater treatment methods to prepare water for re-use; • Design pumping systems, pumping stations, lift stations, pipelines, force mains, or sewers for the collection of wastewater; • Design wastewater treatment plants, including advanced facilities or technology, membranes, lift stations, headworks, surge overflow basins, ultraviolet or other disinfection systems, aerobic digesters, sludge lagoons or disposal, and control buildings to ensure compliance with regulatory requirements, technical standards and final effluent quality targets; • Facilitate a procurement risk workshop with operators technical and operations staff to identify preferred delivery contract model; • Facilitate workshops with operators technical and operations staff during design development including value engineering and management; • Finalize water treatment objectives, assess treatment process options and select preferred option in the context of current water treatment operations capability and operator skill levels; • Conduct environmental impact studies related to wastewater collection, treatment, or distribution or address any outstanding environmental issues and environmental assessment requirements; • While finalizing the final designs, specification and drawings, international practice and climate-resilience factors must be demonstrated; • Responsible for the preparation of detailed engineering design, drawing including engineering estimates and specification of the finalized wastewater structure, plants and facilities related sub-projects in an integrated and sustainable manner; • Prepare comprehensive tender documentation package based on FIDIC 'Conditions of Contract for the preferred procurement approach including 'Employers Requirements', detailed performance specifications and conditions of tender.
5	Drainage and Flood Control Specialist	<p>Experience He/she will be an experienced engineer with qualifications and specialization in drainage and flood control infrastructure development with preferably 15 years of experience in designing and implementing drainage and flood control projects. Experiences in working on donor-funded projects will be highly desirable. A graduate in municipal/civil engineering, with at least 10 years working experience in the drainage and flood control aspects.</p> <p>Qualification A graduate in municipal/civil engineering, with at least 10 years working experience in the drainage and flood control aspects.</p> <p>Responsibilities He/she will assist the team leader in preparing drainage and flood feasibility study, detailed designs and bidding documents incorporating climate resilience into designs under the project. His/her tasks include, but not limited to, the following:</p> <ul style="list-style-type: none"> • Conducting technical analysis of drainage and flooding in subproject areas; • Identify priority investment projects in drainage and flood control including design, costs, capacity, and operation and maintenance arrangements;

S/No	Title	Experience, Qualification, and Responsibilities
		<ul style="list-style-type: none"> • Work closely with the climate change specialist of the team to examine and incorporate climate resilience into drainage and flood control components; • Calculate the incremental costs of climate adaptation into drainage subprojects; • Assist environmental engineer in identifying places for public toilet, wash station, transfer station and sludge disposal to ensure linkage to safe drainage; • Oversee preparation of feasibility study, detailed engineering designs, including specifications, drawings, and detailed cost estimates for drainage components; • Help in preparation of bidding documents and bill of quantities and • Any other responsibilities assigned by Team Leader and Project Director.
6	Urban Planning and Development Specialist	<p>Experience He/she will have post-graduate degree in urban economics, or related degree with over 15 years of experience, of which preferably 8 years involved in economic development planning for infrastructure projects, particularly in road and drainage, and will have a preferably 5 years proven work experience and skill in similar position in developing countries. He/she will also supervise the national urban economist on the team.</p> <p>Qualification Post-graduate degree in urban economics, or related degree, preferably Masters' Degree (or equivalent degree/experience) in international development, economy, international relations or a related field including project management, urban development planning and environmental planning and control.</p> <p>Qualification Master's Degree, or post-graduate degree in Infrastructure/Project Finance, Urban Finance, Urban Planning or related disciplines</p> <p>Responsibilities Duties of the Urban Economist will include, but not limited to, the following:</p> <ul style="list-style-type: none"> • Assist the team leader in incorporating the economic potential and environment into the project design, particularly to advise on sectors/subsectors to be developed such as (but not limited to) water supply and drainage, etc.; • Assist in the design of the economic corridor and location of industry; • Identify infrastructure that will help the urban economies in the selected city regions; • Assist the PMU and CIUs in the selection of eligible subprojects using subproject selection criteria; • Review recommendations of TA works, and work closely with economists, engineers and other experts on team including urban planner, etc., to incorporate adaptation into the economic situation in the country; and • Work closely with the national economist to identify, quantify, and clearly report the economic adaptation required in the project design. • Will be responsible for all urban related tasks • Development and preparation of the Integrated Urban Development Master Plans (based on Assessment of the current development status and propose diagnostic solutions through communications/discussions with the stakeholders, i.e. government, residents, NGOs etc.) (including Economic Development and Social Development Frameworks and a Land Use Planning Strategy) that meet all the standards and best international practices; • Specifying a supporting program of investment in integrated urban development; and • Managing the preparation of policies and proposals specific to the needs of the Urban Poor
7	Environmental Specialist	<p>Experience 15 years of practical experience in conducting environmental assessments and monitoring of sanitation and solid waste management projects.</p> <p>Qualification Preferably Master's degree in Environmental Sciences or equivalent.</p> <p>Responsibilities He/she will be responsible of the following:</p>

S/No	Title	Experience, Qualification, and Responsibilities
		<ul style="list-style-type: none"> • Undertake the project environmental screening and categorization procedures for the projects to review potential environmental impacts, temporary and permanent damage to the environment, particularly forests, wildlife reservations, areas with archaeological value, and potential risks from toxic and hazardous chemicals should be included. • Prepare a schedule for the completion of the environmental assessment of the project, taking into account the environmental categorization and the level of assessment required. The schedule should also take account of ADB's public disclosure requirements. • Conduct field visits and prepare due diligence reports(s) to assess level of environmental safeguards compliance of project activities with ADB SPS 2009 as well as national safeguard requirements. • Undertake EIA(s) and/or IEE(s) for the project(s) as required under ADB Safeguards Policy Statement 2009. The EIA(s) and/or IEE(s) will study the impacts of the proposed operation(s) on the environment of the area(s) and will also recommend mitigation measures. The EIA(s) and/or IEE(s) should include an Environmental Management Plan, and an environmental monitoring plan that details the anticipated environmental monitoring costs. • The EIA(s) and/or IEE(s) should contain a baseline survey of the ambient air quality and ambient noise levels. • Prepare contractor specifications for environmental management and monitoring. • Identify risks and provide mitigating measures, where appropriate. • Coordinate and assist EA to undertake public consultations as required by ADB SPS 2009 and meet ADB's public disclosure requirements. • Conduct consultations with all stakeholders including local communities, all affected households, civil society, government and local government bodies, private sector bodies, if relevant and other institutions; • Assist PMU and PIU in selection of sanitation and solid waste management subprojects following environmental subproject selection criteria; • Develop improved mechanism and introduce the same to collect, segregate and disposal of solid waste for clean environment and public health; • Explore and identify alternative sanitation options including decentralized systems compatible with local capacity; • Identify and assist (working with drainage engineers) in the appropriate location, design, construction and management of transfer stations, pit latrines, public toilet, and wash stations; • Conduct survey to identify existing equipment and machineries of target project sites for handling solid waste, determine need for such equipment, prepare procurement plan and assist PMU and CIUs for timely procurement and distribution among project sites; • Design decentralized sanitation systems and solid waste recycle plants
B		
1	Deputy Team Leader / Senior Design Engineer (Water Supply and Sanitation)	<p>Experience Preferably 15 years' experience as Deputy Team Leader / SRE on major infrastructure projects of civil works, contract management, processing of claims and implementation.</p> <p>Qualification Bachelor's degree in Civil Engineering - preferably master's in civil engineering / Transportation Engineering / Environmental Engineering / Construction Management / Project Management or equivalent.</p> <p>Responsibilities He/she will be responsible for construction supervision and ensuring that the project is implemented in accordance with the required specifications and approved drawings. He/she will also be responsible to assist Team Leader for all issues when required.</p> <p>Responsibilities of the Deputy Team Leader/ SRE will include, but are not limited to the following:</p> <ul style="list-style-type: none"> • Act as the Team Leader during the absence of Team Leader;

S/No	Title	Experience, Qualification, and Responsibilities
		<ul style="list-style-type: none"> • Responsible for ensuring that the consulting team prepare all the designs and specifications and carries out construction supervision and contract administration of all the civil works and goods for the Project assuming the role of “the Engineer” and undertake all tasks as defined under FIDIC General Conditions of Contract for Construction and act as “Project Manager” under ADB small works contracts; • Responsible for overseeing the consultants’ activities ensuring compliance to detail provided in the construction drawings and strict adherence to the technical specifications; • Responsible for overseeing quality control methodology put in place, confirming its adequacy and ensuring that its employment is satisfactorily carried out; • Render necessary advice and assist the client in contract administration and procurement issues/assignments/contractual claims; • Assist the PMU in resolving any contractual issues; • Determine extension of time for completion and other claims in accordance with the conditions of contract in consultation with the Team Leader and PMU; • Provide assistance to the Employer in dispute resolution as per provisions in the conditions of contract; • Keeping the Employer informed of contractual and claims issues by direct contacts and through discussions or correspondence; • Responsible for holding meetings with the Contractor on contract and claims issues; and • Responsible for preparing a comprehensive Project Completion Report (PCR) and any other duty; • Participate in the Dispute Board meetings to explain and discuss issues raised by the Contractor/Employer or dispute board. • At the end of the construction activities, guide and ensure that the team prepares a comprehensive Construction Completion Report inclusive of ‘as-built drawings’ as appropriate; • Issue the completion certificates in coordination with the Employer of the completed subprojects and performance certificates upon completion of DNP period; • Assist the Employer in preparing responses to audit objections and queries of the financiers or other Government Authorities; and • Coordinate with all concerned Employer’s organizations on project issues.
2	Institutional and Capacity Development Expert	<p>Experience</p> <ul style="list-style-type: none"> • Minimum of 15 years work experience in institutional planning, business modeling, process reforms and institutional capacity building is desired. • Minimum of 05 years’ working experience in similar projects in countries with similar <p>Qualification</p> <ul style="list-style-type: none"> • Master’s degree in Urban Planning, Town Planning or a relevant discipline. <p>Responsibilities</p> <ul style="list-style-type: none"> • Lead to build the capacity of the MCs to design and implement a comprehensive diligence framework to engage, manage, monitor, report, financial oversight and service quality assurance pertaining to the proposed solution. • Facilitate in terms of Institutional systems strengthened through policies, procedures, tools and training which can assure compliance to required performance standards. • Develop institutional systems though policies, procedures, tools and training pertaining to: <ul style="list-style-type: none"> ▪ Strategic and Operational Planning ▪ Transparency ▪ Internal and External Grievances Redress Mechanisms ▪ Employee compensation & benefits policy ▪ Performance Management Systems

S/No	Title	Experience, Qualification, and Responsibilities
		<ul style="list-style-type: none"> • Lead and provide technical input to the sustainability assessment for the PSs during the last quarter of engagement with recommendations to strengthen future operations of the company.
3	Urban Planning and Development Specialist	<p>Experience He/she will have post-graduate degree in urban economics, or related degree with over 15 years of experience, of which preferably 8 years involved in economic development planning for infrastructure projects, particularly in road and drainage, and will have a preferably 5 years proven work experience and skill in similar position in developing countries. He/she will also supervise the national urban economist on the team.</p> <p>Qualification Post-graduate degree in urban economics, or related degree, preferably Masters' Degree (or equivalent degree/experience) in international development, economy, international relations or a related field including project management, urban development planning and environmental planning and control. Master's Degree, or post-graduate degree in Infrastructure/Project Finance, Urban Finance, Urban Planning or related disciplines</p> <p>Responsibilities Duties of the Urban Economist will include, but not limited to, the following:</p> <ul style="list-style-type: none"> • Assist the team leader in incorporating the economic potential and environment into the project design, particularly to advise on sectors/subsectors to be developed such as (but not limited to) water supply and drainage, etc.; • Assist in the design of the economic corridor and location of industry; • Identify infrastructure that will help the urban economies in the selected city regions; • Assist the PMU and CIUs in the selection of eligible subprojects using subproject selection criteria; • Review recommendations of TA works, and work closely with economists, engineers and other experts on team including urban planner, etc., to incorporate adaptation into the economic situation in the country; and • Work closely with the national economist to identify, quantify, and clearly report the economic adaptation required in the project design. • Will be responsible for all urban related tasks • Development and preparation of the Integrated Urban Development Master Plans (based on Assessment of the current development status and propose diagnostic solutions through communications/discussions with the stakeholders, i.e. government, residents, NGOs etc.) (including Economic Development and Social Development Frameworks and a Land Use Planning Strategy) that meet all the standards and best international practices; • Specifying a supporting program of investment in integrated urban development; and • Managing the preparation of policies and proposals specific to the needs of the Urban Poor
4	Architect	<p>Experience • Minimum of 15 years relevant Urban Planning Experience</p> <p>Qualification • BE in Architecture / Designing / Engineering or equivalent preferably Masters or equivalent</p> <p>Responsibilities He/she will be mainly responsible for assistance in planning and architecture related activities.</p> <ul style="list-style-type: none"> • Assist in working both indoors and outdoors and presenting evidence at meetings • Preparing reports and plans relating to a variety of projects • To assist architects, landscape architects, civil engineers, construction managers and surveyors • Assist in developing parks in a sustainable way • Assist in redesigning street layouts • Assist in creating energy efficient and affordable homes

S/No	Title	Experience, Qualification, and Responsibilities
		<ul style="list-style-type: none"> • Prepare landscape design and construction plans and cost estimates for proposed alignment; • Respond to citizen enquiries and complains on landscape requirements. • Recommended and assist in the implementation of goals and objectives implement approved policies and produces along the propose route. • Perform related duties as required. • To calculate angular, linear and area measurements shall identify the problematic areas in specific to landslide area and suggest proper mitigation measures. • Identification of problematic areas as regard to deposition of sand dunes and to address shifting of sand dune with cost effect remedial measure. • To prepare architectural drawing of toll plaza associated building and rest area. • Landscaping of intersections.
5	PPP Expert	<p>Experience</p> <ul style="list-style-type: none"> • Minimum of 10 years' work experience in the areas of PPP promotion and investment management, preferably related with water and sewerage investments. • Excellent verbal and written communication skills in Urdu and English are required. • ADB or other International Donor- funded project implementation experience is desirable. <p>Qualification</p> <ul style="list-style-type: none"> • Master's degree in Finance, business administration, engineering or related discipline. <p>Responsibilities</p> <p>Under the overall supervision of Institutional development expert</p> <ul style="list-style-type: none"> • Facilitate detailed Market Assessment to cover PPP opportunities and scope of partnerships, anticipated business opportunities, operational risks and external factors which may influence performance of WAS companies. • Develop PPP investment engagement strategy and PPP development plan. • Identify resource, process, equipment and skill requirements for the implementation of these plans in a phased approach. • Provide technical input to institutional systems though policies, procedures, tools and training pertaining to: <ul style="list-style-type: none"> ➤ <i>Investor coordination and engagement</i> ➤ <i>Reporting and marketing systems</i>
6	Senior Design Engineer (WS&S)	<p>Experience</p> <p>Preferably 12 to 15 years as Designer / Design Engineer for major water and wastewater projects with proven experience in urban development water and sanitation infrastructure design.</p> <p>Qualification</p> <p>Bachelor's Degree in civil engineering, preferably M.Sc. in Water Engineering / Hydrological Engineering or equivalent.</p> <p>Responsibilities</p> <ul style="list-style-type: none"> • Primary objective and responsibility is the planning, design, development and implementation of capital investment programs associated with water supply and sewerage network assets based on achieving standards of service, regulatory compliance and commercial objectives in urban areas. • Development, analysis and assessment of water supply and sewerage system network performance using computer-based systems analysis tools and key performance indicators • Liaise with internal and external Clients on issues pertaining to development impact on existing water supply and sewerage infrastructure • Investigate and evaluate from an engineering, economic and environmental perspective, improvements in water supply or sewerage systems required to achieve standards of service, regulatory compliance or commercial objectives • Assist in the preparation of asset management plans for water and sewerage infrastructure in the selected cities

S/No	Title	Experience, Qualification, and Responsibilities
		<ul style="list-style-type: none"> • Work with service providers, both internal and external, in undertaking investigations, designs, contract management and construction of water supply and sewerage assets • Carry out duties in accordance with Organization's safety, environmental and quality policy, safety principles, corporate values and strategies • Extensive technical knowledge and experience of water supply and sewerage systems, including knowledge of water network reticulation and sewerage system modeling software, high level of oral and written communication skills, liaison, and negotiation skills including the ability to interact effectively with people of a different culture • Demonstrated leadership abilities to accept responsibility, manage workloads and meet deadlines • Demonstrated ability to research, analyze systems and report accurately and concisely • Demonstrated ability to function pro-actively and positively as a team member and establish and maintain good working relationships with other personnel, customers and the general public • Demonstrated commitment and knowledge of quality assurance, safety and environment principles in reducing risk to personnel and environment • He/she will be responsible for review and validate the subproject of works and goods (e.g., water intake works and water treatment plants, transmission mains, main and secondary pipes, high service reservoirs, water distribution networks, etc.); • Prepare and finalize the ground and surface water modeling of project area • Review the prefeasibility studies and master plans being prepared for the water supply upon available during the assignment, suggest changes if required; • Lead and contribute to the preparation of detailed engineering design, drawing, and engineering estimates of the finalized subprojects.
7	WWTP Expert	<p>Experience Preferably 12 to 15 years as Designer / Design Engineer for major water and wastewater projects with proven experience in urban development water and sanitation infrastructure design.</p> <p>Qualification Bachelor's in civil engineering / Environmental Engineering / Waste management / Chemical Engineering or related subject or equivalent, preferably master's in civil engineering / Waste management or related subject or equivalent</p> <p>Responsibilities He/she will be responsible designing of the water and waste water infrastructure subprojects under the project.</p> <ul style="list-style-type: none"> • Standard process operations of maintenance of ETP (Effluent Treatment Plants) and sewage treatment plant. • Waste water treatment process (SBR, MBR, MBBR, trickling filters and conventional activated sludge process, filtration). • Installation and commissioning of wastewater projects (STP, WTP and ETP). • Design of water and wastewater treatment facilities. • Evaluation and up gradation of water and wastewater treatment plants. • Technology-commercial proposal, technical review of tenders and cost analysis. • Asset Management. • Provide expert solution septic tank system to waste water produced • Detailed design engineering review of ETP • Technical support consultancy of WTPs and WWTPs for water companies • Reviews and supervise the issuance of the standard operating procedures. • Evaluate plant operations; assures proper adjustment of plant processes; coordinates sampling operations to assure proper balance of treatment steps and meeting effluent requirements; ensures the proper conduct of laboratory tests performed by operation staff.

S/No	Title	Experience, Qualification, and Responsibilities
		<ul style="list-style-type: none"> • Supervises plant maintenance activities to ensure the safe, reliable and efficient operation of equipment; verifies proper implementation of plant preventive maintenance plan as well as the work order issuance for any corrective maintenance whenever required. • Evaluate operations and activities of assigned responsibilities. • Recommend improvements and modifications whenever required. • Fully responsible for all activities associated with operations and management and operations of all Water and Wastewater facilities and the plants management. • Coordinate and lead all communications regarding operations and management contracts executions within the internal team as well as the client and the client review and distribute all the progress reports as required. • Ensure Quality, Health, Safety, and Environment (QHSE) policy is adequately implemented. • Local staff trainings and appraisals - supervision. • Assist the client in all process engineering matters related to WTP or WWTP. • Develop assets management hierarchy and manual for asset registration and survey. Link assets with Enterprise Asset Management (eAM) and Geographic Information Systems (GIS) systems. • Developing asset management strategies, plans and implementation programs. • Develop and re-engineer processes and procedures for life cycle asset management. • Align asset management plans to organizational strategy. • Prepare, update and enhance asset management processes and procedures.
8	Sewerage Infrastructure Design Engineer	<p>Experience Preferably 12 to 15 years as Designer / Design Engineer for major water and wastewater projects with proven experience in urban development water and sanitation infrastructure design.</p> <p>Qualification Bachelor's in civil engineering / Environmental Engineering / Waste management or related subject or equivalent, preferably master's in civil engineering / Waste management or related subject or equivalent</p> <p>Responsibilities He/she will be responsible designing of the water and waste water infrastructure subprojects under the project.</p> <ul style="list-style-type: none"> • He/she will be responsible for review and validate the subproject of works and goods (e.g., water intake works, water and wastewater treatment plants, transmission mains, main and secondary sewers, high service reservoirs, water distribution networks, disposal stations, etc.); • Prepare and finalize the ground and surface water modeling of project area • Review the prefeasibility studies and master plans being prepared for the water supply and wastewater subprojects upon available during the assignment, suggest changes if required; • Lead and contribute to the preparation of detailed engineering design, drawing, and engineering estimates of the finalized subprojects.
9	Design Engineer (Electro-mechanical)	<p>Experience Preferably 12 years as Designer / Design Engineer for equipment of water, wastewater and solid waste projects with proven experience in urban development water and sanitation infrastructure design.</p> <p>Qualification Bachelor's Degree in mechanical engineering / Electrical Engineering / Mechatronics Engineering, preferably M.Sc. or equivalent.</p> <p>Responsibilities He/she will be responsible for preparing specifications of the equipment for subprojects under the project etc.</p> <ul style="list-style-type: none"> • He/she will be responsible for review and validate the subprojects of works and goods (e.g., water intake works, water and wastewater treatment plants, transmission mains, main and secondary sewers, high service reservoirs, water distribution networks, disposal stations, etc.);

S/No	Title	Experience, Qualification, and Responsibilities
10	Design Engineer (Structural)	<ul style="list-style-type: none"> • Lead and contribute to the preparation of detailed engineering specification, drawing and engineering estimates of the finalized subprojects. <p>Experience Preferably 12 to 15 years' experience as Designer and/or Design reviewer of Structures with proven credentials in Water Supply and sanitation and urban infrastructure designs and structures.</p> <p>Qualification Master's in civil engineering / Structural Engineering / Highway Engineering or equivalent, preferably PhD in Structural Engineering or equivalent</p> <p>Responsibilities He/she will be responsible for Design and Design Review of structural elements of all the design components and water and sanitation Design and Specifications on cost effective design basis.</p> <ul style="list-style-type: none"> • He/she will be responsible for designing especially on cost effective basis the structural elements of water supply and sanitation infrastructures, roads components and bridges, including detailed structural drawings and specifications. • Assist the water and sanitation design engineers and transport design engineers in preparing detailed engineering design, structural drawing, and tender documents including engineering estimates of the finalized subprojects related to structural elements of water supply, waste, wastewater, urban roads and solid waste transportation, distribution and treatment facilities • He/she will be responsible for designing especially on cost effective, multi-hazard resistant design, design the structural elements of subprojects, including detailed structural drawings and specifications. • If required by the Client, he / she will be responsible for construction supervision and of structural components of the subprojects and ensuring that the subject project is implemented in accordance with the required specification and approved drawings. • Inspect the site and collect the condition data for the detailed engineering design, design review and necessary changes if any; • Assist in preparation of technical details such as specifications and estimates; • Provide details about existing structures, damages and assessment; • Provide details about existing structures, damages, assessment; development necessity with respect to engineering parameters. • Detailed design of structural elements of subprojects on basis of analysis for different module and forecast methodology. • Structural design including electrical design of lightening for the subprojects etc. • Prepare separate drawings for subprojects and other related structure
11	Design Engineer (Storm Water Drainage)	<p>Experience Preferably 15 years as Designer/Design Engineer for drainage related equipment of water and wastewater with proven experience in urban development water and sanitation infrastructure design.</p> <p>Qualification Bachelor's in civil engineering, Masters in Hydraulic/Drainage Engineer, with sound knowledge of hydrology or master's degree in related field.</p> <p>He/she will be an experienced engineer with qualifications and specialization in drainage and flood control infrastructure development with preferably 15 years of experience in designing and implementing drainage and flood control projects. Experiences in working on donor-funded projects will be highly desirable.</p>

S/No	Title	Experience, Qualification, and Responsibilities
		<p>Responsibilities Preparing drainage and flood feasibility study, detailed designs and bidding documents incorporating climate resilience into designs under the project. His/her tasks include, but not limited to, the following:</p> <ul style="list-style-type: none"> • Conducting technical analysis of drainage and flooding in subproject areas; • Identify priority investment projects in drainage and flood control including design, costs, capacity, and operation and maintenance arrangements; • Work closely with the climate change specialist of the team to examine and incorporate climate resilience into drainage and flood control components; • Calculate the incremental costs of climate adaptation into drainage subprojects; • Assist environmental engineer in identifying places for public toilet, wash station, transfer station and sludge disposal to ensure linkage to safe drainage; • Oversee preparation of feasibility study, detailed engineering designs, including specifications, drawings, and detailed cost estimates for drainage components; • Help in preparation of bidding documents and bill of quantities and • Any other responsibilities assigned by Team Leader and Project Director.
12	Solid Waste Management (SWM) Expert	<p>Experience Preferably 12 to 15 years' experience in solid waste management planning and designing. Preferably having designed landfills sites, secondary and primary transfer equipment/vehicles design/specification and transfer stations expertise</p> <p>Qualification Bachelor's in civil engineering / Environmental Engineering / Waste management or related subject or equivalent, preferably master's in civil engineering / Waste management or related subject or equivalent.</p> <p>Responsibilities He/she will be responsible for Design and Design Review of structural elements of all the design components and water and sanitation Design and Specifications on cost effective design basis.</p> <ul style="list-style-type: none"> • He/she will be assisting in designing, management and implementation of solid waste management components of the subprojects on cost effective basis including detailed structural drawings; • Assist in the detailed engineering design, drawings and engineers' estimates including all civil, mechanical and electrical work of landfill sites and other treatment options, if any, and garbage transfer station or any other treatment option proposed; and • The consultant will support in preparing tendering and bidding documents for landfill sites and other similar components for waste storage, transportation and treatment options, including garbage lifting vehicles and priority equipment in all the SWM component.
13	Drainage and Flood Control Design Engineer	<p>Experience He/she will be an experienced engineer with qualifications and specialization in drainage and flood control infrastructure development with at least 15 years of experience in designing and implementing drainage and flood control projects, with a postgraduate degree in flood or civil engineering. Experiences in working on donor-funded projects are highly desirable.</p> <p>Qualification Bachelor's degree in Civil Engineering – preferably master's in civil engineering or equivalent.</p> <p>Responsibilities His/her tasks include, but not limited to, the following:</p> <ul style="list-style-type: none"> • Conducting technical analysis of drainage and flooding in project towns • Identify priority investment projects in drainage and flood control including design, costs, capacity, and operation and maintenance arrangements • Work closely with the climate change specialist of the team to examine and incorporate climate resilience into drainage and flood control components, • Calculate the incremental costs of climate adaptation into drainage subprojects;

S/No	Title	Experience, Qualification, and Responsibilities
		<ul style="list-style-type: none"> • Assist environmental engineer in identifying places for public toilet, wash station, transfer station and sludge disposal to ensure linkage to safe drainage; • Oversee preparation of feasibility study, detailed engineering designs, including specifications, drawings, and detailed cost estimates for drainage components; • Help in preparation of bidding documents and bill of quantities. • Any other responsibilities assigned by Team Leader and Project Director • Drainage and Flood Control Design Engineer to work with a team of engineering professionals in delivering innovative solutions for a variety of roadway, transit, and drainage projects. The candidate will have experience with feasibility studies, engineering modeling and design, and construction management. Candidates must be willing to work in a proactive team environment, mentor junior team members, and assist senior team members with delivering design and operational solutions to complex transportation problems. • Project role will include tracking of task or project budgets and progress, coordination with other colleagues, coordination with cross-discipline plan components, and client interaction. The ideal candidate will have strong written and oral communication skills. Design experience using and guiding the use of CADD and GIS software is preferable, particularly Microstation, AutoCAD, and ArcGIS. • Will assist the team leader in preparing drainage and flood feasibility study, detailed designs and specifications incorporating climate resilience into designs under the project.
14	Energy Audit	<p>Experience Preferably 10 years' experience in conducting energy audits/analysis and 5 years of urban development infrastructures energy audits and analysis. Working in similar size and complexity project will be preferred.</p> <p>Qualification Bachelor in Energy Management, Electrical Engineering/ Energy efficiency studies, auditing or equivalent. Preferably master's in electrical engineering/ Energy efficiency studies, energy management, auditing or equivalent</p> <p>Responsibilities He/she will be responsible and contribute to the design team as energy audit specialist of urban development projects, conduct the current energy analysis, consumptions and requirements and future recommendations for the planned interventions. The specialist tasks include but not limited to:</p> <ul style="list-style-type: none"> • Preliminary review of energy use: Collect and analyze the current energy utility data, calculate Energy Utilization Index (EUI) and compare to current usage and assess energy efficiency improvement potentials; • Review the current data of the existing energy (water, fuel usage, electricity etc.) and waste management for all locations and already in use the project; • Site assessment: Collect the Site data for immediate energy usage for current urban infrastructure calculate the energy wastages for each of the energy source and identify energy savings opportunities. Discuss the overall energy usage and requirements with the stakeholders based on preliminary findings and for the project need (i.e. assess the tube well site and their energy sources, analyze whether it is providing the full efficiency or not, if efficiency is full then analyze the meter whether it is correctly billing or there is gap between the inputs and outputs and the billingsetc.) • Energy and cost analysis: Based on the data collected and preliminary findings, evaluate utility and site data to analyze energy and cost savings. Develop list of recommended measures for energy savings and most economical energy efficient technologies in overall project scope; • Identifying all major energy needs (lighting, HVAC heating, ventilation, and air conditioning equipment and energy systems, on-site power generation system, water usage, fuel consumption etc.; • Prepare a comprehensive report on energy availability, future needs, and proposed improvements for energy efficiency;

S/No	Title	Experience, Qualification, and Responsibilities
		<ul style="list-style-type: none"> • Present recommendations to the client for most efficient, cost effective, environmentally acceptable and sustainable available energy options; and • Based on the final agreed recommendations design all the rehabilitation, removal and new energy sources installation of equipment / sources for the overall subprojects.
15	Geotechnical Expert	<p>Experience Preferably 12 years work experience as geotechnical expert with proven experience in geotechnical design for urban infrastructures including expertise in electrical resistivity with proven experience in carrying out electrical resistivity surveys.</p> <p>Qualification Bachelor's degree in geotechnical, geophysics, geology or equivalent. Preferably master's degree in geotechnical, geophysics, geology or equivalent</p> <p>Responsibilities Responsibilities of Geotechnical Expert will include but not limited to</p> <ul style="list-style-type: none"> • He/she will provide geotechnical recommendations based on the geotechnical investigations and secondary data for structural design of buildings, monuments, bus terminals etc.; • Provide support and carryout electrical resistivity survey for tube well sites required for water supply, parks and bus terminals; • Planning, data execution / processing / interpretation and reports preparation of geophysical investigations/groundwater exploration; and • Providing assistance in designing of tube wells and other subprojects related to geotechnical and resistivity requirements.
16	Hydrogeologist / Ground Water Expert	<p>Experience Preferably 12 years work experience as Ground Water Expert with proven experience in assessment of quality and quantity of ground water for urban development projects</p> <p>Qualification Bachelor's degree in civil engineering/ Geology/ Environmental Engineering or equivalent preferably master's in civil engineering/ Geology/ Environmental Engineering or equivalent</p> <p>Responsibilities Responsibilities of Hydrogeologist / Ground Water Expert will include but not limited to</p> <ul style="list-style-type: none"> • He/she will provide assessment of quality and quantity of ground water for usage in bus terminals, building packages under the project and parks and designing of tube wells; • Prepare cost estimate and technical specifications of tube wells and allied components; and • Prepare Designs, engineers estimate, Bill of Quantities, technical specifications and other data required for bidding documents.
17	Horticulture Expert	<p>Experience Preferably 12 years work experience as Horticulture Expert with proven experience in designing of horticulture for urban development projects.</p> <p>Qualification Bachelor's degree in agriculture preferably master in horticulture or equivalent</p> <p>Responsibilities Responsibilities of Horticulture Expert will include but not limited to</p> <ul style="list-style-type: none"> • He/she will responsible for designing of horticulture i.e. type, size, shape and number of plants in the parks, green belts and green areas of bus terminals, parking plazas and other urban spaces; • Preparing landscape drawings and O&M guidelines; and • Development and implementation of tree plantation plan and Preparation of Cost Estimates and technical Specifications for horticulture components under the project.
18	Legal/ Regulatory Framework Expert	<p>Experience Preferably 12 years work experience as legal expert in urban planning and development.</p>

S/No	Title	Experience, Qualification, and Responsibilities
		<p>Qualification Bachelor's degree in law preferably master in Institutional Reforms Policy or equivalent</p> <p>Responsibilities</p> <ul style="list-style-type: none"> • The consultant will help in reviewing the existing institutional and legal framework for origination, structuring and financing of LG&CDD to identify gaps, determine the extent of constraints on mobilization of long-term financing due to these gaps and provide recommendations and support implementation of possible reforms. • More specifically, the consultant is expected to undertake but limited to the following tasks: Review and analysis of the existing legal framework for the origination and structuring of LG&CDD transactions, including the recently enacted PLGA 2019; Review of relevant rules, regulations, and guidelines applicable to debt issuance (both listed and unlisted) for infrastructure finance; • Review and analysis of the existing institutional framework for the origination and structuring of LG&CDD transactions; • Review and analysis of the existing regulatory framework for the origination and structuring of LG&CDD transactions; • Review and analysis of the existing financial support mechanisms for the origination and structuring of LG&CDD transactions of HUD and PHED; • Identify enabling regulation, law and policy issues and concerns for the PLGA framework; • Preparation of Strategy paper on recommended reforms and implementation of the reforms in the legal, regulatory and institutional framework;
19	Senior Urban Space Developer	<p>Experience Preferably 15 years work experience as Urban Space Development Specialist</p> <p>Qualification Master's Degree, or post-graduate degree in Infrastructure/Project Finance, Urban Finance, Urban Planning or related disciplines</p> <p>Responsibilities</p> <ul style="list-style-type: none"> • Understanding population trends, to predict the demands that will be made on an area, whether urban or rural • Assist the team of consultant in better utilization of spaces • Preparing reports and plans relating to a variety of projects • Working with other professionals, such as architects, landscape architects, civil engineers, construction managers and surveyors • Liaising with the public and councilors, attending public meetings about planning issues, such as proposals for a new road or school etc. • Knowledge of the legal issues associated with land use. • Developing parks in a sustainable way • Redesigning street layouts • Creating energy efficient and affordable homes • Enforcing planning controls • Hearing concerns about planning proposals
20	Urban Planner	<p>Experience Minimum of 15-20 years relevant Urban Planning</p> <p>Qualification BSc in Town Planning / Architecture / Designing / Engineering or equivalent preferably master's or equivalent.</p> <p>Responsibilities He/she will be mainly responsible for assistance in planning.</p> <ul style="list-style-type: none"> • Understanding population trends, to predict the demands that will be made on an area, whether urban or rural • Town Planners make policies and implement them • Working both indoors and outdoors and presenting evidence at meetings • Objectively analyzing and evaluating other peoples' evidence • Preparing reports and plans relating to a variety of projects

S/No	Title	Experience, Qualification, and Responsibilities
		<ul style="list-style-type: none"> • Working with other professionals, such as architects, landscape architects, civil engineers, construction managers and surveyors • Liaising with the public and councilors, attending public meetings about planning issues, such as proposals for a new road or school etc. • Knowledge of the legal issues associated with land use. • Developing parks in a sustainable way • Redesigning street layouts • Creating energy efficient and affordable homes • Enforcing planning controls • Hearing concerns about planning proposals
21	Transport Planner (Road Infrastructure)	<p>Experience</p> <ul style="list-style-type: none"> • Minimum of 15 years relevant transport planning experience <p>Qualification</p> <ul style="list-style-type: none"> • BE in Civil Engineering or equivalent preferably Masters or equivalent. <p>Responsibilities</p> <p>He/she will be mainly responsible for assistance in planning.</p> <ul style="list-style-type: none"> • Understanding population trends, to predict the demands that will be made on an area, whether urban or rural • Town Planners make policies and implement them • Working both indoors and outdoors and presenting evidence at meetings • Objectively analyzing and evaluating other peoples' evidence • Preparing reports and plans relating to a variety of projects • Working with other professionals, such as architects, landscape architects, civil engineers, construction managers and surveyors • Liaising with the public and councilors, attending public meetings about planning issues, such as proposals for a new road or school etc. • Knowledge of the legal issues associated with land use. • Developing parks in a sustainable way • Redesigning street layouts • Creating energy efficient and affordable homes • Enforcing planning controls • Hearing concerns about planning proposals • Transport Planners will be responsible for planning, managing and improving the entire system, accountable for government transport legislation together with social and environmental road transport effects. • He/She will take a range of factors into account, such as current travel trends, expected future growth, environmental and social impact, the availability of critical resources and existing transport infrastructure. • He/She should be responsible for preparing surveys to collect data on transport use and travel habits among different areas of the public, and then analyzing the information that you gather with the help of mathematical and statistical modeling. • He/She should be writing reports and making recommendations about potential solutions to current problems, suggesting how and where improvements can be made to the transport systems in your jurisdiction. • He/She will carry out simulations for various scenarios using advanced computer software applications, before suggesting measures to improve and manage these potential situations. • He/She will evaluate the benefits and costs of different strategies • He/She will assess infrastructure requirements (access, car parking, bus stops, cycle parking, etc.) of new developments to support planning applications or to inform local authority development plans. • In order to plan and implement project effectively • He/She will be required to coordinate and communicate with other organizations on a frequent basis, such as transport authorities, representatives of local councils, residents, engineers and commercial transport providers.
22	Urban Infrastructure Engineer	<p>Experience</p> <ul style="list-style-type: none"> • Minimum of 15 years relevant transport infrastructure planning experience,

S/No	Title	Experience, Qualification, and Responsibilities
		<p>demonstrated urban infrastructure sector experience.</p> <p>Qualification</p> <ul style="list-style-type: none"> • BE in Civil Engineering / Town Planning / Architecture / Designing / Engineering or equivalent preferably master's or equivalent <p>Responsibilities</p> <ul style="list-style-type: none"> • Reviewing background documents and organizing results of the review in a matrix template. • Providing technical input and contextual knowledge into data collection instruments, a data collection plan, and a data analysis plan. • Leading the training of field data collectors. • Participating in fieldwork, including preparing notes of any interview s/he conducts. • Contributing to the analysis of qualitative and quantitative data. • Presenting results to PMU/ADB and implementing partners. • Contributing to report writing.
23	GIS / Mapping Expert	<p>Experience 12 years' experience as GIS Engineer on construction Supervision projects.</p> <p>Qualification Master's degree must be in engineering or Geography preferable Ph.D. in relevant field</p> <p>Responsibilities He/she will assist TL/DTL in performance of his duties as mentioned in TOR consulting services for preparation of design phase of PICIIP-2. Responsibilities will include but not limited to the following:</p> <ul style="list-style-type: none"> • To co-ordinate all the functions related to GIS base network planning of subprojects under this project and other activities as per TOR. • To study current issues impeding the development of master planning in connection with GIS/ Mapping. • To co-ordinate the team in connection assets Management related working focusing on Water Supply and Sanitation frame work. • Install, administer and update information / database system to ensure smooth operations of related GIS development and activities. • Identify needs and conduct surveys for the development of the required geo-network for use in subsequent activates. • Provide inputs in the implementation of various GIS development related activities <p>Provide training for staff such as:</p> <ul style="list-style-type: none"> • Global Information System. • Advance technologies in survey.
24	Smart City / IT Expert	<p>Experience 10 years of experience working in the public and/or government sector in a role that involved planning, procurement, deployment, and support of technology solutions</p> <p>Qualification Minimum Bachelor's degree in public policy, business administration, information science, communications, urban planning, or related field, strong, demonstrated commitment to public service and providing exceptional customer service; Excellent interpersonal communication, problem solving, customer relations and teamwork skills</p> <p>Responsibilities</p> <ul style="list-style-type: none"> • The Smart City Expert collaborates with project staff, City stakeholders, partners, vendors, and members of the community to develop a Smart City strategy that ensures that the City's Smart City projects are well coordinated; comply with City laws, policies, and standards; are designed and implemented to meet business needs and the goals of the City. The strategy will also ensure that Smart City solutions are supportable and appropriate City department staff, and are aligned with the community's interests and vision; The Expert is also a resource to departments who are planning Smart City projects to assist them in developing their projects; help shepherd projects

S/No	Title	Experience, Qualification, and Responsibilities
		<p>through the project governance and procurement processes; and ensure the projects can be successful;</p> <ul style="list-style-type: none"> • The Expert also serves as a technical advisor and expert resource on Smart City technologies, trends, and best practices. The Expert helps City departments envision "the art of the possible" with regard to Smart City technologies, helps them research and evaluate potential solutions, and helps them derive insights and intelligence from the analysis of data collected by Smart City projects. <p>Collaborate with City departments who are working to devise Smart City solutions to ensure that the Project is well-coordinated;</p> <ul style="list-style-type: none"> • Assist departments in managing, analysing, and interpreting data produced through Smart City implementations; Serve as a resource to help departments ensure that Smart City projects comply with City laws, policies, and standards, and are designed and implemented to meet business needs of the Cities; • Ensure City standards of enterprise architecture, project management, procurement, security, privacy, social equity, data management, and performance are factored into the design of Smart City projects. Maintain a high level of education and awareness of developments in the Smart City technology environment; • Attend meetings, demos, conferences, and other events that are relevant to maintaining a current understanding of Smart City technologies; • Work closely with the team to ensure that Smart City data is made available to the public per the Government Policies
25	Cost Engineer / Chief Quantity Surveyor	<p>Experience Preferably 10 years' experience in costing of water sector and solid waste management projects</p> <p>Qualification Bachelor's degree in Civil Engineering – preferably master's in civil engineering / Highway Engineering / Structure Engineering / Transportation Engineering / Construction Management / Project Management or equivalent</p> <p>Responsibilities Responsible for competing the costing of works and equipment, and for ensuring that costing is accurate and based on the latest available market data. The engineer provides on the job direction and knowledge transfer to the national engineer. He/she will be responsible for measurement of all type of quantities and preparation of measurement sheet in accordance with approved drawings for the purpose of preparing interim and final payment certificates. He/she will be responsible for preparing the Bills of Quantities and the Engineer's Estimates for the individual subprojects. The chief quantity surveyor shall review detailed estimates for quantities (considering designs and mass haul diagram) and project cost for the entire project (civil packages wise), including the cost of environmental and social safeguards proposed and market rate for the inputs or the local schedule of rates.</p>
26	Chief Surveyor	<p>Experience Preferably 10 years' experience in surveying of water sector and solid waste management projects or related projects</p> <p>Qualification Bachelor's degree in Civil Engineering – preferably master's in civil engineering / Highway Engineering / Structure Engineering / Transportation Engineering / Construction Management / Project Management or equivalent</p> <p>Responsibilities The Chief Surveyors shall carry out joint surveys with contractor's staff before commencement, assist the Resident Engineer in checking the correctness of</p>

S/No	Title	Experience, Qualification, and Responsibilities
		layout drawn at site by the contractors during executing for the road construction, and maintain all documentation on survey works, record of control points and bench marks and ensure that works commences according to the working drawings approved by the Resident Engineer
27	Environmental Climate Change Specialist	<p>Experience An Environmental Engineer having 15 years of experience with practical experience in conducting environmental assessments and monitoring of sanitation and solid waste management projects.</p> <p>Qualification Preferably Master's degree in Environmental Sciences or equivalent.</p> <p>Responsibilities He/she will be responsible of the following:</p> <ul style="list-style-type: none"> • Undertake the project environmental screening and categorization procedures for the projects to review potential environmental impacts, temporary and permanent damage to the environment, particularly forests, wildlife reservations, areas with archaeological value, and potential risks from toxic and hazardous chemicals should be included. • Prepare a schedule for the completion of the environmental assessment of the project, taking into account the environmental categorization and the level of assessment required. The schedule should also take account of ADB's public disclosure requirements. • Conduct field visits and prepare due diligence reports(s) to assess level of environmental safeguards compliance of project activities with ADB SPS 2009 as well as national safeguard requirements. • Undertake EIA(s) and/or IEE(s) for the project(s) as required under ADB Safeguards Policy Statement 2009. The EIA(s) and/or IEE(s) will study the impacts of the proposed operation(s) on the environment of the area(s) and will also recommend mitigation measures. The EIA(s) and/or IEE(s) should include an Environmental Management Plan, and an environmental monitoring plan that details the anticipated environmental monitoring costs. • The EIA(s) and/or IEE(s) should contain a baseline survey of the ambient air quality and ambient noise levels. • Prepare contractor specifications for environmental management and monitoring. • Identify risks and provide mitigating measures, where appropriate. • Coordinate and assist EA to undertake public consultations as required by ADB SPS 2009 and meet ADB's public disclosure requirements. • Conduct consultations with all stakeholders including local communities, all affected households, civil society, government and local government bodies, private sector bodies, if relevant and other institutions; • Assist PMU and PIU in selection of sanitation and solid waste management subprojects following environmental subproject selection criteria; • Develop improved mechanism and introduce the same to collect, segregate and disposal of solid waste for clean environment and public health; • Explore and identify alternative sanitation options including decentralized systems compatible with local capacity; • Identify and assist (working with drainage engineers) in the appropriate location, design, construction and management of transfer stations, pit latrines, public toilet, and wash stations; • Conduct survey to identify existing equipment and machineries of target project sites for handling solid waste, determine need for such equipment, prepare procurement plan and assist PMU and CIUs for timely procurement and distribution among project sites; • Design decentralized sanitation systems and solid waste recycle plants
28	Social Development & Gender Expert	<p>Experience He/she should have at least 12 years of experience in social safeguards work or social and community development, and a post-graduate degree in social science, anthropology or related fields, with previous experience in donor-funded projects.</p>

S/No	Title	Experience, Qualification, and Responsibilities
		<p>Qualification Master's in social sciences or relevant field</p> <p>Responsibilities He/she will be responsible of the following:</p> <ul style="list-style-type: none"> • Collection of gender disaggregated socio-economic baseline information for each sub-project. • Explore ways in which women participate in decisions related to the sub-project designing, implementation and monitoring and resettlement planning • To establish measurable gender-related targets and indicators for sub-projects • The consultant will assist the PMU and CIUs in identifying scope for gender mainstreaming and assist in implementation and monitoring of Gender Action Frameworks. • Develop a new gender action plan (GAP), social poverty reduction and sector strategy, C&P plan, and other social development documents prepared during the project preparatory technical assistance. • Orient PMU, CIUs in assuring clear understanding of project schedule and respective roles and responsibilities in GAP implementation and other social development activities. • Establish an effective monitoring and reporting system based on sex-disaggregated data collected during public consultation and obtained from implementation team, CIUs and its district branches, contractors and other parties, including trainers who will provide community hygiene promotion and sanitation awareness trainings. • Carry out the gender analysis of subprojects and ensure project are gender sensitive and addresses gender concern and needs of women. • To ensure that gender issues are integrated in RPs and LARPs • Ensure that women headed households have received their compensation payment including the support assistance (through allowance) • Training of PMU and CIUs staff and other Consultants deputed staff on gender areas on continues basis and prepare training and communication material in local language; • Implement the GAP with support of PMU and CIUs. • Ensure that the GAP report is included in the quarterly reports to PMU/CIUs and ADB. • carry out gender analysis in the communities of the project area that is directly related to the nature, scope and planned interventions of the project; • Look at issues such as gender division of labor, women's participation in water fetching work, women's access to and control on water resources, percentage of female headed households, women's skills and relevant training needs to participate in skilled construction labor, female/male membership and leadership in existing farmer water user communities; • collect baseline data and information on reference points in relation to all performance indicators and targets that could possibly be included in the design and monitoring framework and the GAP; • identify scope for gender mainstreaming in the proposed subprojects and prepare a Gender Action Plan based on the findings of the gender mainstreaming analysis; • propose capacity building measures for the executing and implementing agencies to develop gender inclusive subprojects; • prepare a Gender Analysis Report; • prepare a GAP with clear reference to the gender results that we intend to achieve through the GAP, and clear relationship between these results and the proposed actions to achieve these results, including clear baseline information and targets that are evidence-based, using the new GAP template; • provide inputs into all national and regional analyses, reports, workshops; • demonstration subprojects and knowledge products to ensure that all TA products are gender inclusive; • conduct community awareness programs targeting men to address social norms and stereotypes on gender roles; • assess social risks on sexual exploitation, abuse and harassment (SEAH);

S/No	Title	Experience, Qualification, and Responsibilities
		<ul style="list-style-type: none"> • identify prevention and mitigation measures of SEAH; • work closely with all international and national consultants to ensure that gender inclusive elements are well integrated into all reports and knowledge products.
29	Resettlement Expert	<p>Experience At least 12 years of relevant working experience. The specialist should have at least 10 years of relevant experience in design of resettlement plans (RP) and framework and experience in implementing resettlement plans as part of donor supported projects, preferably with the ADB. The specialist should be well conversant with laws relating to land acquisition, state procedures in implementation of resettlement packages and ADB procedures.</p> <p>Qualification Graduate in sociology, social anthropology or similar / relevant discipline</p> <p>Responsibilities Responsibilities will include but not limited to the following:</p> <ul style="list-style-type: none"> • Prepare Land Acquisition and Resettlement Framework (LARF) or Land Acquisition and Resettlement Plans (LARPs) for ensuing projects with land acquisition and involuntary resettlement based on detailed designs in accordance ADB's Safeguards Policy Statement (2009); • Undertake necessary census and socioeconomic surveys and conduct meaningful consultations with project-affected/displaced persons for drafting the social safeguard documents; • Submit implementation ready LARF/LARPs/RPs to EA and ADB for review and clearance prior to contract award; • Ensure all compensation and entitlements are paid prior to displacement (or beginning of civil works); • Monitor implementation of LARF/LARPs/RP, consolidate implementation progress, make adjustments in implementation schedule to achieve the targeted timelines and prepare qualitative social monitoring reports in collaboration with CIUs (monthly, quarterly and biannually or as provided in the ADB cleared LARF/LARPs and other project documents) and submit to PMU/ADB for review, clearance and disclosure; • Any other responsibilities assigned by Team Leader and Project Director • Screen the subprojects in term of Involuntary Resettlement (IR) and Indigenous People (IP) impact significance and eligibility of the subproject for social safeguards due diligence and preparation/updating of LARF/LARPs/IPPs for the ensuing projects; • Coordinate with design team during the design stage and discuss and explore design measure/options to avoid/minimize the resettlement impacts of subprojects and ensure involuntary resettlement impacts are minimized, if not avoided; • Based on detailed engineering design and design review, prepare social safeguards due diligence reports confirming sub-projects with and without LAR impacts including linear plans with clearly marked LAR and non-LAR sections and assist PMU, CIUs and the Engineer in notifying the LAR sections to contractors that are not open for construction until the LARP is fully implemented and consolidated through monitoring reports; • Assist and supervise in conducting detailed measurement survey of impacted assets, updating of the impact inventory, census of Displaced Persons (DPs) and shall prepare updated LARFs/LARPs for ADB's review and clearance for the ensuing project; • Assist in organizing and conducting meaningful consultations with affected/displaced persons to ensure the concerns raised and addressed adequately, the LARF/LARPs have been fully disclosed and the DPs are informed on the eligibility criteria, entitlements, compensation payment mechanism and project-based grievance redress system; • Assist PMU, CIUs and field staff to maintain updated LAR database and in the implementation of LARF/LARPs/RPs in the subproject areas before physical or economical displacement and subsequent commencement of works;

S/No	Title	Experience, Qualification, and Responsibilities
		<ul style="list-style-type: none"> • Assist PMU, CIUs to establish and operationalize the project-based grievance redress system and coordinate (on regular basis) with the grievance redress committee and assist the GRC in the delivery of its functions including but not limited to recording, review and tracking of progress on complaints, information dissemination and consultations with the complainants during complaints resolution process. • Assist PMU and CIUs in review of LAR issues that may emerge during execution of civil works, prepare and implement Corrective Actions Plan (CAP) consistent with project safeguards requirements as outlined in the LARF/LARPs/RPs; • Develop and conduct training sessions for PIU staff involved in project LAR management to improve their understanding on the ADB's safeguards requirements and ensure proper understanding and implementation of LARF/LARPs/RPs; • Assist the Project in all aspects of LARF/LARPs/RPs implementation and will also be responsible for social aspects/mitigation Measures; • Establish dialogue with the affected communities and ensure that their concerns and suggestions are incorporated and implemented in the project; • Submit all implementation readyRPs to ADB for review and clearance before contract award; • Work closely with the PMU and CIUs resettlement officer to implement the LARF/LARPs/RPs. For LARF/LARPs/RPs implementation, the consultant will be specifically responsible for implementation of proposed compensation, rehabilitation, and income restoration measures, consultations with Affected Persons (APs) during rehabilitation activities, and assisting in grievance redress; • Coordinate valuation of land by the valuation committees with close consultation with APs at Local Land Registry Office level to finalize the compensation packages; • Guide PIU resettlement officers in providing ID cards to affected persons; • Ensure smooth provision of entitlements under each LARF/LARPs/RPs to affected persons; • Provide required training (in-house and on-the-job) to the enumerators and surveyors to carry out the census survey and work closely with the PMU/CIUs resettlement officer to involve them in the project planning from the initial period; • Ensure compliance with all Government rules and regulations and ensure the RP/LARP is following ADB's latest related rules and policies; • Lead community consultation during design phase of components and as part of the preparation of the LARF/LARPs/RPs; • Assist the Resettlement Specialist in resettlement training programs and workshops for the staff of the PMU and Contractors and in accordance to the Capacity Building Program; • Facilitate in responding to any public grievances and keep the record of all the grievance; and • Any other task assigned by the Project Director in relevance to effective project implementation.
30	Hydrologist	<p>Experience Preferably 12 years work experience in hydrological studies, modeling and estimating underground and surface flows. He /She will have demonstrated ability to work in a multidisciplinary team</p> <p>Qualification Bachelor's degree in engineering/Hydrology / Water Resources engineering or equivalent. Preferably master's degree in engineering/Hydrology / Water Resources engineering or equivalent</p> <p>Responsibilities Responsibilities of Hydrologist will include but not limited to:</p> <ul style="list-style-type: none"> • Carry out hydrological studies for subprojects and update the hydrological analysis and data for the purpose of determining water availability;

S/No	Title	Experience, Qualification, and Responsibilities
		<ul style="list-style-type: none"> • In close coordination with all the concerned experts and parties, facilitate and monitor institutional operations, managing on-site data collection and processing; • Assist in modernizing engineering operations, implementing relevant regulations; • Employing statistical and hydrological modelling techniques; • Working with specifically designed computer modelling packages to assess the most effective methods of managing available water in a particular area; and • Assist in designing of all urban infrastructure subprojects based on conducted investigation and confirmed data.
31	Financial Management Expert	<p>Experience 15 years' experience in Finance and Accounting Proficient in spreadsheets, databases, MS Office and financial software applications; hands on experience with statistical analysis; proven knowledge of financial forecasting and information analysis</p> <p>Qualification Minimum BS degree in Finance, Economics or related field. Must be qualified accountant (CPA/CA/ACCA).</p> <p>Responsibilities Main responsibilities of the position will include but not limited to the following:</p> <ul style="list-style-type: none"> • Prepare project cost estimates and financing plan, project financial analysis and financial sustainability assessment; • Consolidate and analyze financial data (budgets, income statement forecasts etc.); • Assemble and summarize data to structure sophisticated reports on financial status and risks; • Develop financial models, conduct benchmarking and process analysis; • Track and determine financial status by analyzing actual results in comparison with forecasts; • Reconcile transactions by comparing and correcting data; • Consult with management to guide and influence decision making within the scope; • Providing advice on all aspects of budgetary control; • Working with other staff in the finance team; • Management accounts preparation; • Planning and budgeting; • Provide financial information service to management • Ensuring full implementation and documentation (manuals) of the system agreed with the implementing Agency; • Review and assist IA in maintaining accounting record and ensure that ADB's disbursement procedures and requirement are met; • Setting up of procedures and checklist and assist IA in processing of IPC prior to payments. • Design and prepare projects accounts and monthly financial reports. • Periodic review of field office accounting record and ensure that ADB disbursement procedures and requirements have been followed. • Provide requisite input for progress reports. • Assists IA in preparing statement of expenditure and direct with drawls Applications. • Capacity building of IA staff on ADB's disbursement procedures and requirements

Notes:

1. All consultants shall be fluent in written and spoken English;
2. All international consultants shall have experience in working in developing countries, with longer periods and experience of South Asia desirable for senior staff; and
3. For international consultants, maximum work and inputs in the field is desirable. Work and inputs from home office should remain limited in proposed working schedule

Table 5: Other “Non-Key” Staffing for Phase 1 – Indicative Qualifications, Experience and Key Tasks

S/No	Title	Experience, Qualification & Responsibilities
Non-Key Experts to be proposed by the firm		
1	SCADA Expert	<p>Experience Preferably 12 years overall experience with 5 years as a SCADA design and operational expert</p> <p>Qualification Bachelor’s in engineering or relevant subject or equivalent.</p> <p>Responsibilities He/she will be responsible for designing, management and implementation of the SCADA system. This will include all support including procurement, calibration, and integration and operationalizing the system.</p>
2	Architect / Landscape Architect	<p>Experience Preferably 12 years work experience in the building design and 5 years’ working experience in similar urban sector development projects in countries with similar geographic conditions. ADB or other International Donor-funded project implementation experience is desirable.</p> <p>Qualification Bachelor’s degree in Architecture Engineering / Architecture—or equivalent.</p> <p>Responsibilities</p> <ul style="list-style-type: none"> • Detailed design of building works • Assist/prepare technical specifications and coordinate the preparation of tender documents for the procurement for the construction of all building component based on preliminary engineering designs, due-diligence reports, assessments, surveys, procurement plans and other relevant documents. • Provide the necessary inputs for the elaboration of the guide drawings to be included in the tender documents as well as for the preparation of the detailed cost estimates. • Prepare bills of quantities to be included in the tender documents based on the engineering designs. • Prepare a list and specification of tools, equipment, and materials for maintenance and repair, kits to be included in the bill of quantities. • Elaborate a set of performance parameters to be used for monitoring the performance of the all building components. <p>The responsibility shall include but not limited to the following:</p> <ul style="list-style-type: none"> • Prepare landscape design and construction plans and cost estimates for proposed alignment; • Respond to citizen enquiries and complains on landscape requirements. • Recommended and assist in the implementation of goals and objectives implement approved policies and produces along the propose route. • Perform related duties as required. • To calculate angular, linear and area measurements shall identify the problematic areas in specific to landslide area and suggest proper mitigation measures. • Identification of problematic areas as regard to deposition of sand dunes and to address shifting of sand dune with cost effect remedial measure. • To prepare architectural drawing of toll plaza associated building and rest area. • Landscaping of intersections.
3	Assistant Design Engineers Water Supply	<p>Experience Preferably 10 years as Designer / Design Engineer for major water and wastewater projects with proven experience in urban development water and sanitation infrastructure design.</p> <p>Qualification Bachelor’s Degree in civil engineering, preferably M.Sc. in structure Engineering / Water Engineering / Hydrological Engineering or equivalent.</p> <p>Responsibilities He/she will work directly with design engineer for designing of the water and waste water infrastructure subprojects under the project.</p>

S/No	Title	Experience, Qualification & Responsibilities
		<ul style="list-style-type: none"> • He/she will be responsible to assist in review and validate the subproject of works and goods (e.g., water intake works, water and wastewater treatment plants, transmission mains, main and secondary sewers, high service reservoirs, water distribution networks, disposal stations, etc.); • Review the feasibility studies and master plans being prepared for the water supply and wastewater subprojects at the PPTA stage, suggest changes if required; • Lead and contribute to the preparation of detailed engineering design, drawing, and engineering estimates of the finalized subprojects. • Assist in the planning, design, development and implementation of capital investment programs associated with water supply and sewerage network assets based on achieving standards of service, regulatory compliance and commercial objectives in urban areas. • Assist in development, analysis and assessment of water supply and sewerage system network performance using computer-based systems analysis tools and key performance indicators • Liaise with internal and external Clients on issues pertaining to development impact on existing water supply and sewerage infrastructure • Assist in investigate and evaluate from an engineering, economic and environmental perspective, improvements in water supply or sewerage systems required to achieve standards of service, regulatory compliance or commercial objectives • Assist in the preparation of asset management plans for water and sewerage infrastructure in the selected cities • Work with service providers, both internal and external, in undertaking investigations, designs, contract management and construction of water supply and sewerage assets • Carry out duties in accordance with Organization's safety, environmental and quality policy, safety principles, corporate values and strategies • Extensive technical knowledge and experience of water supply and sewerage systems, including knowledge of water network reticulation and sewerage system modeling software, high level of oral and written communication skills, liaison, and negotiation skills including the ability to interact effectively with people of a different culture • Demonstrated leadership abilities to accept responsibility, manage workloads and meet deadlines • Demonstrated ability to research, analyze systems and report accurately and concisely • Demonstrated ability to function pro-actively and positively as a team member and establish and maintain good working relationships with other personnel, customers and the general public • Demonstrated commitment and knowledge of quality assurance, safety and environment principles in reducing risk to personnel and environment • He/she will be responsible for review and validate the subproject of works and goods (e.g., water intake works and water treatment plants, transmission mains, main and secondary pipes, high service reservoirs, water distribution networks, etc.); • Prepare and finalize the ground and surface water modeling of project area • Review the prefeasibility studies and master plans being prepared for the water supply upon available during the assignment, suggest changes if required; • Lead and contribute to the preparation of detailed engineering design, drawing, and engineering estimates of the finalized subprojects
4	Assistant Design Engineers Sewerage Infrastructure	<p>Experience Preferably 10 years as Designer / Design Engineer for major water and wastewater projects with proven experience in urban development water and sanitation infrastructure design.</p> <p>Qualification Bachelor's Degree in civil engineering, preferably M.Sc. in structure Engineering / Water Engineering / Hydrological Engineering or equivalent.</p>

S/No	Title	Experience, Qualification & Responsibilities
		<p>Responsibilities He/she will work directly with design engineer for designing of the water and waste water infrastructure subprojects under the project.</p> <ul style="list-style-type: none"> • He/she will be responsible to assist in review and validate the subproject of works and goods (e.g., water intake works, water and wastewater treatment plants, transmission mains, main and secondary sewers, high service reservoirs, water distribution networks, disposal stations, etc.); • Assist in preparation and finalization the ground and surface water modeling of project area • Assist in review the prefeasibility studies and master plans being prepared for the water supply and wastewater subprojects upon available during the assignment, suggest changes if required; • Assist and contribute to the preparation of detailed engineering design, drawing, and engineering estimates of the finalized subprojects
5	Assistant Structural Design Engineer	<p>Experience Preferably 10 years of experience as structure engineer</p> <p>Qualification Bachelor's degree in Engineering–or equivalent.</p> <p>Responsibilities Reports to the Design Engineer (Structure) and Resident Engineers and will undertake the following tasks:</p> <ul style="list-style-type: none"> • Works directly with the Structure Engineer to contribute toward design and implementation activities of the sub-projects. • Supervise day to day activities of the subprojects; • Ensure quality of work; and • Provide inputs to quarterly, semi-annual and annual reports as needed • He/she will be responsible to assist in designing especially on cost effective basis the structural elements of water supply and sanitation infrastructures, roads components and bridges, including detailed structural drawings and specifications. • Assist the water and sanitation design engineers and transport design engineers in preparing detailed engineering design, structural drawing, and tender documents including engineering estimates of the finalized subprojects related to structural elements of water supply, waste, wastewater, urban roads and solid waste transportation, distribution and treatment facilities • Assist in inspection of the sites and collect the condition data for the detailed engineering design, design review and necessary changes if any; • Assist in preparation of technical details such as specifications and estimates; • Provide details about existing structures, damages and assessment; • Provide details about existing structures, damages, assessment; development necessity with respect to engineering parameters. • Assist in detailed design of structural elements of subprojects on basis of analysis for different module and forecast methodology. • Assist in structural design including electrical design of lightening for the subprojects etc. • Prepare separate drawings for subprojects and other related structure
6	Assistant Geotechnical Design Engineer	<p>Experience Preferably 10 years work experience as geotechnical expert with proven experience in geotechnical design for urban infrastructures including expertise in electrical resistivity t with proven experience in carrying out electrical resistivity surveys.</p> <p>Qualification BSc in Civil/ Geology Environment/Geotechnical Engineering or Equitant</p> <p>Responsibilities Under the supervision of the Team Leader, / DTL the Assistant Geotechnical Design Engineer will assist the Geotechnical Design Engineer in the following tasks:</p>

S/No	Title	Experience, Qualification & Responsibilities
		<ul style="list-style-type: none"> • Assist in providing geotechnical recommendations based on the geotechnical investigations and secondary data for structural design of buildings, monuments, bus terminals etc.; • Provide support and carryout electrical resistivity survey for tube well sites required for water supply, parks and bus terminals; • Assist in planning, data execution / processing / interpretation and reports preparation of geophysical investigations/groundwater exploration; and • Providing assistance in designing of tube wells and other subprojects related to geotechnical and resistivity requirements.
7	Assistant Hydrologist	<p>Experience Preferably 10 years work experience in hydrological studies, modeling and estimating underground and surface flows. He / She will have demonstrated ability to work in a multidisciplinary team</p> <p>Qualification BSc in Civil / Geology Environment / Hydrology / Agriculture Engineering or Equitant</p> <p>Responsibilities Under the supervision of the Team Leader, / DTL the Assistant Hydrologist will assist the Hydrologist in the following tasks:</p> <ul style="list-style-type: none"> • Carry out hydrological studies for subprojects and update the hydrological analysis and data for the purpose of determining water availability; • In close coordination with all the concerned experts and parties, facilitate and monitor institutional operations, managing on-site data collection and processing; • Assist in modernizing engineering operations, implementing relevant regulations; • Employing statistical and hydrological modeling techniques; • Working with specifically designed computer modeling packages to assess the most effective methods of managing available water in a particular area; and • Assist in designing of all urban infrastructure subprojects based on conducted investigation and confirmed data.
8	Assistant Design Engineer (Mechanical)	<p>Experience Preferably 10 years' experience as Mechanical Engineer in civil works projects related to mechanical equipment and mechanical components in urban development projects</p> <p>Qualification BSc in Mechanical Engineering or Equitant</p> <p>Responsibilities Under the supervision of the TL the expert will assist and undertake the following tasks:</p> <ul style="list-style-type: none"> • The Assistant Mechanical Engineer will be responsible for quality, cost, scope, time and safety, related to all the mechanical components of the subprojects; • Assist in designing all mechanical work, parts, equipment, volume • Taking measurements and keep measurement records of mechanical equipment, machinery and mechanical components of the subprojects; • Assist in designing phase of all jobs related to mechanical. • Any other duties as assigned by TL or the Client
9	Assistant SWM Expert	<p>Experience Preferably 10 years' experience in solid waste management planning and designing. Preferably having designed landfills sites, secondary and primary transfer equipment/vehicles design/specification and transfer stations expertise</p> <p>Qualification BSc in Civil/ SWM/ Environment Engineering or Equitant</p> <p>Responsibilities He/she will be responsible in assisting to the SWM Expert for Design and Design Review of structural elements of all the design components and water and sanitation Design and Specifications on cost effective design basis.</p>

S/No	Title	Experience, Qualification & Responsibilities
		<ul style="list-style-type: none"> • Assist in designing, management and implementation of solid waste management components of the subprojects on cost effective basis including detailed structural drawings; • Assist in the detailed engineering design, drawings and engineers' estimates including all civil, mechanical and electrical work of landfill sites and other treatment options, if any, and garbage transfer station or any other treatment option proposed; and • Assistant SWM Expert will support in preparing tendering and bidding documents for landfill sites and other similar components for waste storage, transportation and treatment options, including garbage lifting vehicles and priority equipment in all the SWM component
10	Assistant Town Planner	<p>Experience Minimum of 10 years relevant Urban Planning</p> <p>Qualification BSc in Town Planning / Architecture / Designing / Engineering or equitant preferably master's or equivalent</p> <p>Responsibilities He/she will be mainly responsible for assistance in planning and architecture related activities.</p> <ul style="list-style-type: none"> • Assist in working both indoors and outdoors and presenting evidence at meetings • Preparing reports and plans relating to a variety of projects • To assist architects, landscape architects, civil engineers, construction managers and surveyors • Assist in developing parks in a sustainable way • Assist in redesigning street layouts • Assist in creating energy efficient and affordable homes • Prepare landscape design and construction plans and cost estimates for proposed alignment; • Respond to citizen enquiries and complains on landscape requirements. • Recommended and assist in the implementation of goals and objectives implement approved policies and produces along the propose route. • Perform related duties as required. • To calculate angular, linear and area measurements shall identify the problematic areas in specific to landslide area and suggest proper mitigation measures. • Identification of problematic areas as regard to deposition of sand dunes and to address shifting of sand dune with cost effect remedial measure. • To prepare architectural drawing of toll plaza associated building and rest area. • Landscaping of intersections.
11	Assistant GIS Expert	<p>Experience 10 years' experience as GIS Engineer on construction Supervision projects.</p> <p>Qualification Master's degree must be in engineering or Geography preferable Ph.D. in relevant field</p> <p>Responsibilities He/she will assist TL/DTL in performance of his duties as mentioned in TOR consulting services for preparation of design phase of PICIIP-2. Responsibilities will include but not limited to the following:</p> <ul style="list-style-type: none"> • To co-ordinate all the functions related to GIS base network planning of subprojects under this project and other activities as per TOR. • To study current issues impeding the development of master planning in connection with GIS/ Mapping. • To co-ordinate the team in connection assets Management related working focusing on Water Supply and Sanitation framework. • Install, administer and update information / database system to ensure smooth operations of related GIS development and activities.

S/No	Title	Experience, Qualification & Responsibilities
		<ul style="list-style-type: none"> • Identify needs and conduct surveys for the development of the required geo-network for use in subsequent activities. • Provide inputs in the implementation of various GIS development related activities Provide training for staff such as: <ul style="list-style-type: none"> • Global Information System. • Advance technologies in survey.
12	AutoCAD Engineer	<p>Experience 10 years' experience as AutoCAD Engineer</p> <p>Qualification Associates degree in Computer Aided Drafting or equivalent experience. Must be knowledgeable in advanced CAD techniques. Must be knowledgeable in Autodesk AutoCAD 2010 or higher; or any other equivalent combination of education, training, and experience that provides the requisite knowledge, skills, and abilities for the job</p> <p>Responsibilities</p> <ul style="list-style-type: none"> • To perform this job successfully, an individual must be able to perform each essential duty satisfactorily. Must have excellent computer knowledge and problem-solving skills. Must have knowledge of drafting and experience with CAD and Microsoft Office. Must be able to communicate clearly and effectively with team members and clients. Must have the ability to establish and maintain effective working relationships with team. • Create, edit and design electrical, structural and/or control drawings to meet specifications utilizing CAD • Experience with electric control design, or electric substation design, or electric power design >1000 volts • Create original drawings from hand sketches □ Review drawings to ensure adherence to established specifications and standards • Assist the team of Engineers with parts lists, cost estimating, and plans & specifications development • Provide backup for other employees • Strong oral and written communication skills • Initiate follow-up to update documentation when any changes may occur • Accurately complete paperwork for project tracking costs; • Classify and file engineering drawings • Ensure that all work is carried out in a safe and efficient manner • Perform other duties as assigned/needed per Engineer • Maintain a positive attitude with team • Maintain good public relations • High level of integrity and discipline with strong work ethic • To perform Computer Aided Drafting and design for Engineers as needed

Note:

1. All consultants shall be fluent in written and spoken English;
2. All international consultants shall have experience in working in developing countries, with longer periods and experience of South Asia desirable for senior staff; and
3. For international consultants, maximum work and inputs in the field is desirable. Work and inputs from home office should remain limited in proposed working schedule.

30. The implementation period for ED phase is 24 months while CM phase is 36 months. The consultants' inputs for ED will be discussed during the inception phase after the mobilization of the Consultant. It is proposed that the Consultants will identify list of subprojects and categorize them as per the due diligence, environment and social safeguard requirements and project readiness in a phased manner. For this purpose, a priority list of the subprojects will be identified, prepared agreed by the Client in consultation with ADB, so that the first priority list of sub-projects can proceed to bidding by the third quarter of 2020.

31. The consultant will establish its main office in Lahore with field offices in Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha. The mobilization of the required staff will be agreed upon and would require approval of the client before mobilization.

32. For **Phase 2** or construction management phase, the indicative inputs required are **1,524 person-months** (44 person-months international key experts; 1,480 person-months of national key experts). Besides these the indicative inputs required of support staff is 7,056 person-months. Table 6 and 7 provides the indicative team composition for CM or Phase 2, the position terms of reference will be confirmed following Phase 1.

33. Details of the requested outputs and scope of work, deliverables and reporting requirements, indicative staffing, consultant positions, qualifications and key tasks, and contract administration and reporting for Phase 2 are provided in the following sections for information only.

34. Indicative Staffing, Consultant Positions, Qualifications and Key Tasks for Phase 2 assignment:

Table 6: Phase 2 Assignment – Indicative Staffing Requirement

S/No	Expertise	Positions	Input (Person-Months)
A.	International Experts		
1.	Municipal Infrastructure Development Specialist (Team Leader)	1	24
2.	Quality Control Engineer	1	12
3.	Environmental Specialist	1	8
	Subtotal International Experts	3	44
B.	National Experts		
1.	Deputy Team Leader / Senior Construction Supervision Engineer	1	36
2.	Contract Specialist	1	24
3.	M&E / Communications Specialist	1	18
4.	Environmental Specialist	1	18
5.	Resettlement Specialist	1	18
6.	Social Development & Gender Expert	1	18
7.	Resident Engineer	7	252
8.	Assistant Resident Engineer (Water Supply)	7	168
9.	Assistant Resident Engineer (Sewerage)	7	168
10.	Assistant Resident Engineer (Solid Waste)	7	168
11.	Assistant Resident Engineer (Structure)	7	168
12.	Assistant Resident Engineer (Electromechanical)	2	36
13.	Material Engineer	7	252
14.	Chief Quantity Surveyor	1	36
15.	Chief Surveyor	1	36
16.	Hydrologist/Drainage Engineer	1	10
17.	Geotechnical Engineer	1	8
18.	Highway Engineer	1	8
19.	Horticulture Expert	1	8
20.	Energy Audit	1	12
21.	Architect / Landscape Architect	1	18
	Subtotal National Experts	58	1,480
	Total	61	1,524

Table 7: Support Staff

S/No	Expertise	Indicative Positions	Indicative Input (Person-Months)
1	Surveyors [3 per city]	21	756

S/No	Expertise	Indicative Positions	Indicative Input (Person-Months)
2	Quantity Surveyors [2 per city]	14	504
3	Site Inspector [4 per city]	28	1,008
4	Lab. Technician [2 per city]	14	504
5	Lab. Attendant [2 per city]	14	504
6	Survey Helpers [3 per city]	21	756
7	CAD Engineer [1 with TL and 1 per city]	8	288
8	Computer Operators [2 with TL & 01 per city]	9	324
9	Office / Admin Manager [1 with TL & 1 per city]	8	288
10	Office Boys [04 with TL & 02 per city]	18	648
11	Security Guard [04 with TL & 04 per city]	32	1,152
12	Cook [02 with TL & 01 per city]	9	324
Total		196	7,056

H. Documents to be Provided by the Client

35. The Client will provide the Consultant with access to available key relevant reports, studies and other documents, required to carry out the detailed engineering design, project implementation, including but not limited to the Project Agreements, PC-1, the RRP, the Operational Manual, the Environmental Management Plan and related studies, the Pre-feasibility and Feasibility Studies for the project (if available).

I. Facilities to be arranged by the Consultant

36. The Consultant shall arrange for all its own office spaces and residence with the main office in Lahore and field offices in Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha. Office hardware, such as vehicles, office furniture, communications equipment, photocopying equipment, fax machines, and computers and printers, including their software needs will also be the responsibility of the consultant. All documents, equipment, vehicles, facilities related to the works are, and will remain the Client's property after completion of works. The PMU may provide office space and assistance.

J. Office/Technical Support Staff and Logistical Arrangements by the Consultant

37. The EDCM consultant shall provide the entire administrative, technical professionals, and support staff needed to carry out their services. An adequate number of suitability skilled office support staff will be required to meet the needs of the Consultant, and all associated logistics of the consulting assignment.

K. Other out-of-pocket expenses

38. The EDCM will be responsible to include: (i) all other necessary facilities and logistic support for its staff including living accommodation and per diems; (ii) international and national travel, and miscellaneous transportation; (iii) day-to-day office communications, utilities and other miscellaneous costs which may be required for carrying out the services as per the requirement of the Contract; and (iv) printing, publishing and transmittal of all reports, drawings and deliverables.

L. Term of the Assignment

39. Experts will be based in Lahore and respective field office in Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha Cities of Punjab Pakistan for the duration of the assignment.

M. Reporting Requirement and Mode of Payment

40. The consulting team is expected to submit the required reports to PMU and ADB as per details given in the below mentioned table.

N. Reporting Requirements and Mode of Payment

41. In addition to main deliverables/ payment phases during ED, the Consultant will prepare monthly progress reports (main text of maximum 10 pages), summarizing: (i) Main technical issues encountered during the past month and major technical decisions to be taken urgently; (ii) Administrative issues such as (a) financial and physical progress of the consultancy contract; (b) arrivals and departures of each team member; (c) elapsed time and person days on the assignment in the preceding month and forecast for the coming month; (d) expenditures, billing and payments received; and (e) consultants proposed changes in personnel schedule and team composition; (iii) Minutes of important meetings with project stakeholders; (iv) social and environmental safeguards; and (v) Main challenges ahead and main recommendations for solutions from the Consultant.

Table 8: Reporting Requirements during Construction Management (Phase-2)

S/No	Report	Report Content	Date of Submission
1	Inception Report	Brief report after mobilization including staffing schedule based on started subproject and completion action plan and implementation schedule (maximum text – 10 pages excluding Appendices)	Within 4 weeks after actual mobilization
2	Monthly Contract Administration Reports	<p>The Consultant will, no later than the 10th of each month, prepare a narrative progress report summarizing: Construction progress during the month and cumulative to date for each individual contract drawing specific attention to any major causes of delay (administrative, technical or financial) with details of remedial action taken or recommended to the Employer.</p> <p>A comparison of actual and forecast expenditure both during the month and cumulative to date for each individual contract, and a record of the status of payment of the Contractors' monthly invoices, of all claims for cost or time extensions, and of actions required of PMU to permit unconstrained works implementation. The Consultant will also advise on the final estimated cost for each individual contract and draw attention to any major changes in the project budget including details of remedial action taken or recommended to the Employer.</p> <p>Brief on all correspondence exchanged with the contractors particularly relating to contractual clauses, with financial and time implications.</p> <p>Technical appreciation of any design or quality control problems for each individual contract including details of remedial action taken or recommended to the Employer.</p> <p>Status of compliance with the Monitoring, Financial, Environmental & Resettlement Plans.</p>	No later than the 10 th of each month after actual mobilization on construction supervision
3	Quarterly Progress Report	Concise reports giving more details of the project and key issues. For every year, the first two reports will be incremental reports detailing activities, progress and issues	Quarterly 15 days after the end of the quarter

S/No	Report	Report Content	Date of Submission
		during the previous trimester, and planned activities for the next trimester. These reports must present all the findings related to monitoring requirements identified in the DMF, including progress on delivering the outputs and social and environmental safeguards. The reports will also summarize the results of relevant data collected. The forth report (which will become the Annual Report) will be cumulative for the full year period. The Quarterly Report is to include that month's Monthly Report (no separate monthly report).	
4	Interim Report	<p>Scheduled approximately half way through the consultancy period (CM phase) and should be produced prior to the ADB mid-term mission (note that the number and schedule of missions may vary). The contents would include, but not be limited to:</p> <p>Summary of the progress including issues, confirmation elaboration and/ adjustments to the consultants' program; progress against the loan and the DMF; updated detailed implementation plan; status of loan covenants; updated PAM; and summary and discussion of all specialist aspects of the project including construction, capacity building, social and environmental safeguards, together with conclusions and any recommendations for adjustment.</p> <p>The content of the report will be agreed with the PMU and ADB prior to its preparation.</p>	Submitted first month of every year (after mobilization on CM phase) of project implementation of the project and/or as agreed with PMU and ADB, during project implementation.
5	Draft Final Report	Detailed report on the project completion (Project Completion Report), outcome of the project. It will present a summary of all aspects of project implementation and comparison with the expectations of the loan and the DMF. The report will summarize and discuss the results of specialist aspects of the project including construction, capacity building, social and environmental safeguards, together with conclusions, recommendations and lessons learned for future projects. The content of the report will be agreed with the PMU and ADB prior to its preparation.	1 month prior to project completion
6	Final Report	Revised detailed report on the project completion and outcome of the project incorporating comments from ADB, Government of Punjab, and other stakeholders.	Within 1 month after project completion

II. OPERATIONAL DESIGN AND BUSINESS MODEL (ODBM) CONSULTANT

A. Introduction

42. The Government of Pakistan (the Government) has requested the Asian Development Bank (ADB) to process a Project Readiness Financing (PRF) facility loan to support: (i) operational design and business modeling, (ii) detailed engineering design and advance procurement for the ensuing procurement packages; (iii) completion of social and environmental safeguards due diligence and pre-implementation activities; and (iv) capacity building to improve operation performance and levels of service for the ensuing Punjab Cities Improvement Project. The PRF loan represents the transition to the second phase of the Punjab Intermediate Cities Infrastructure Improvement Program (PICIIP) which will assist urban operations performance improvements, infrastructure investments and capacity support for five Punjab cities, namely Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha.

43. The PRF will allow the Government to finance consulting services to help complete preliminary and detailed engineering designs and tender documentation for the ensuing PICIIP. Consulting services required to support implementation of the ensuing project will be financed from a different source. There are a total of four (4) consulting services packages required for the PRF facility: (i) engineering design and construction management (EDCM) contract for Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha; (ii) the operational design and business model (ODBM) contract for Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha; (iii) engineering design and construction management (EDCM) contract for Multan and Rawalpindi; and (iv) the operational design and business model (ODBM) contract for Multan and Rawalpindi. Besides these consulting services packages, individual consultants will also be hired under PRF.

44. A consulting firm recruited under City Development Initiative Asia (CDIA) has prepared pre-feasibility studies (PFS), sector assessments and has identified requirements for improving climate resilience and promoting planned economic growth of four initial cities which will be covered under the PRF facility.¹⁰ An additional small-scale technical assistance is assisting with the preparation of the PRF facility.¹¹

B. Background

45. Cities are the economic, social and innovative core of Pakistan. They generate most wealth and are home to about 40% of the country's population¹² Pakistan's cities, particularly the intermediate cities, are developing at a fast rate and this has led to the rapid expansion of the urban environment in an uncoordinated, unplanned and unregulated manner. Water supply, wastewater collection and treatment, storm water drainage, and the urban road networks are increasingly unable to respond to population pressures and economic demands. Furthermore, the residents are suffering from a severe lack of open spaces and civic amenities. There is therefore a growing demand to make Pakistan's cities more livable to promote better living standards, improve public health and to develop the country's economy in a more appropriate and sustainable manner. While in other Asian countries the focus is often on attracting large firms to provincial capitals, in Pakistan, most of urban jobs are created by small and medium firms that rely heavily on the collective resources of urban infrastructure and services in the intermediate cities.¹³

46. The Government of Pakistan has prioritized the importance of making its cities more livable and is at the forefront of its national development strategy. Pakistan's Vision 2030 and Framework for Economic Growth envisage livable cities as engines of national growth and centers of economic activity, culture, and knowledge.¹⁴ The latter framework acknowledges the advantage of local governments managing urban development on the ground, as they are closer to the beneficiary population with an informational advantage in identifying citizens' preferences, as well as essential flexibilities to respond rapidly to evolving city's needs. Under these circumstances,

¹⁰ City Development Initiative for Asia (CDIA). 2019. *TA-8556 REG: Punjab Intermediate Cities Improvement Investment Project Phase II Final Report*. Manila.

¹¹ ADB. 2017. *Small-Scale Transaction Technical Assistance*. Manila.

¹² Finance Division, Government of Pakistan. 2016. *Pakistan Economic Survey 2015–16*. Islamabad.

¹³ The Urban Unit of Punjab stipulates that a large city is a city with population size between 1.9 to 9.0 million while an intermediate city is defined as a city with population size between 0.25 to 1.9 million. See also paragraph 10.

¹⁴ Government of Pakistan, Planning Commission 2007 *Pakistan in 21st Century, Vision 2030* Islamabad Government of Pakistan, Planning Commission 2011 *Framework for Economic Growth* Islamabad

the government amended its constitution to decentralize the role of urban services to the provincial governments.¹⁵

47. The Government of Pakistan and Government of Punjab requested ADB to provide a PRF to conduct detailed engineering design and assist in the procurement of civil works and equipment, ahead of ensuing project loan which is expected to be approved in 2020. The government also requested ADB to select on its behalf all consultants to undertake consulting services under the PRF facility, while it will retain its authority to negotiate and engage the consultancy services.

48. There are total of three (3) consulting services firm packages required for the PRF. The ADB will evaluate Expressions of Interest (EOI) submissions for all of the consulting services packages to enable shortlisting of suitably qualified and experienced consultants.

49. **Package 1:** Detailed Engineering Design including Master Planning and Procurement Support [preparation of detailed specifications of Works, Goods and Plant along with Bill of Quantities (BOQs)], followed by Construction Management (Contract Administration and Construction Supervision) on satisfactory performance during the design phase for Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha.

50. **Package 2:** Operations Design and Business Model (ODBM) for Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha.

51. **Package 3:** Urban Transportation (Detailed Design) for public transportation initiatives for Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha.

52. All consultants will be selected in accordance with ADB's Procurement Policy (2017, as amended from time to time) and Procurement Regulations for ADB Borrowers (2017, as amended from time to time). ADB will engage consulting firms using the quality-cost based selection (QCBS) method with a standard quality-cost ratio of 90:10. Lump-sum or output-based contracts will be considered for the proposed consulting services to reduce administrative burden and improve the economy, efficiency and value for money.

C. Scope of Services

53. The following terms of reference relates to the services for: Operational Design and Business Model (ODBM) such as:

1. Implementation Arrangements

54. The Local Government and Community Development Department (LG&CDD) Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha (municipal corporations) will be the implementing agencies. A Project Management Unit (PMU) has been established to support LG&CDD, and five City Implementation Units (CIUs) will be established to support these five cities. Under the guidance of the project steering committee, LG&CDD will be responsible for the overall execution of the project. The Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha. City governments will be responsible for day to day project implementation. Four consultancy firms

¹⁵ The 18th Amendment to the Constitution of Pakistan 2010 Islamabad

will be engaged to assist with project implementation, audit monitoring, and institutional strengthening.

55. The consultant is expected to provide computers and software for its own use. Other type of equipment and services needed include, but not limited to: (i) printers and photocopiers for report production; (ii) vehicle for local transportation; (iii) secretarial support; (iv) technical support for survey work; (v) communication tools such as video and exhibition panels; and (vi) international study tours; are to be provided by the consultant as needed and funded by provisional sums / reimbursable expenses or contingencies under the consultant's contract with prior approval of the LG&CDD and ADB. All equipment(s) purchased under the contract will be handed over to the LG&CDD upon completion of the services.

2. Objectives and Scope of the Assignment

56. The project requires recruiting an ODBM consultant (the consultant) to provide technical and operational support. The consultant will assist the respective city water and sanitation services provider in (i) improving water and sewerage services to customers utilizing the additional asset base created in the selected cities; (ii) improving technical and commercial efficiency of water utility, sanitation, solid waste management operations; (iii) enhancing human resource management and productivity; and (iv) ensure full cost recovery and financial sustainability of the respective city water and sanitation service provider; (v) conduct gap analysis and design a business and operational model for municipal services for water supply, sewerage services, traffic management, transport management, disaster risk management; (vi) to design an overall integrated city management solution; and (vii) design a mechanism for forecasting of return of investment for the Government.

57. The duration of the assignment is 24 months. The Consultant is expected to be fielded from Q2 of 2020.

58. The ODBM consultants shall be responsible for identifying, supporting the decision-making process and implementation of the preferred solution to ensure sustainable provision of quality municipal services. Such solutions may involve direct outsourcing arrangement through public-private partnership concessions and/or private sector partnership) or establishing a public sector special purpose vehicle or institution which may be either a regulatory or service delivery entity. ODBM consultant would facilitate the selection of the feasible option and support its implementation in the cities of Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha.

a. Exploring Most Suitable Business Model Situation Analysis

- (i) Review the adequacy of the current institutional structure, legal framework, and political dynamics of municipal services delivery, identify and document the gaps in organizational mechanism, legal framework, and governance issues.
- (ii) Assess the adequacy of the current organizational capacity in terms of human, financial, and technical resources;
- (iii) Asses the current level of services being provided by the MCs with respect to water supply and sanitation, wastewater, and solid waste management, and challengers in delivery of these services efficiently and on sustainable basis. Establish base line and clear benchmarks against key performance indicators for service delivery for each type of service. As a minimum the benchmarking would include; (i) current level of non-revenue water, (ii) billing and collection system, (iii) water quality

monitoring, (iv) storage capacity, (v) current unit cost of providing each type of services including water supply and sanitation, waste water disposal, and solid waste management, (vi) employee's productivity (selected performance ratios), (vii) complaint management and resolution, and (ix) information dissemination and outreach for customers. For this purpose, using benchmarking indicators of International Benchmarking Network (IBNET) is highly recommended;

- (iv) Review existing consumers ability and willingness-to-pay surveys (if any), and conduct fresh willingness-to-pay surveys for the services which would be used in demand assessment and financial projections;¹⁶
- (v) Understand how and why some consumers (mainly in the poorer section of the community) are not connected to water supply service, and the circumstances (e.g., connection policy, tariff, service levels) which will encourage their connection;
- (vi) Determine the relative willingness and capacity of residents and corporations in the target jurisdictions to pay for solid waste management services;
- (vii) Validation reports on the technology, operational viability and economic analysis of proposed project activities in coordination with the Engineering Design and Construction Management (EDCM) Consultant.

b. Water Supply, Wastewater and Solid Waste Management System

- (i) Carry out an assessment of the water market through the review of existing studies (including the master plans developed for Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha) demand and population projections, water supply data; and results of willingness to pay surveys conducted during situation analysis. Based on these reviews prepare realistic consumption statistics per category of consumer. The review should include forecast of demand and water supply (at least up to next 10 years);
- (ii) Assess the existence of any standards or requirements set out for municipal services and recommend standards for an efficient and effective provision of water supply, sanitation and solid waste management services, and draft necessary legal amendments in the related laws if so required;
- (iii) Examine existing organizational and institutional arrangements for water supply, mixed municipal waste, including their technical capacity, strategic planning ability, financial self-sustainability, accountability, and transparency; and propose amended institutional arrangements that would fully support project implementation and, over the longer term, cost-effective municipal services delivery;
- (iv) Examine the legal, regulatory, and enforcement systems for solid waste management; and propose institutional arrangements, and legal amendments if so required, for moving towards a cost-effective and sustainable solid waste management;
- (v) Establish baseline and prepare a benchmarking report for each city (Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha) on the service levels and key performance indicators in operational areas for all kind of municipal services – preferably using the indicators of IBNET.

¹⁶ Services include water supply, drainage of sewage, solid waste, and parks

c. Assessment of Operational Costs for Tariff Revision

- (i) Review the operations and maintenance cost of the existing municipal services infrastructure (including the administrative, operational, and logistics costs) - separated by the type of services to reasonably establish separate cost for water supply and sanitation, waste water disposal, and solid waste management services in Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha.
- (ii) Review the city master plans of Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha and the identified investment programs by the design consultants, (in water production, transmission, and distribution; wastewater facilities; on-site sanitation servicing facilities/sewage treatment plant, and solid waste management), and estimate the operational and O&M cost of the proposed subprojects.
- (iii) Based on the above reviews, and to ensure sustainability of commercial operations, recommend a pricing policy for: (i) water supply and sewerage services, including cost of water production, filtration, and transmission, (ii) cost of connection to piped water and to sewerage, (iii) waste water disposal system, and sewerage treatment plant, and (iv) solid waste collection, and transfer to landfill site. This would be done in conjunction with and in justification of the assessment of projected demand for all types of services.
- (iv) While recommending the tariff policy, also assess 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.
- (v) Include a gender analysis as part of an affordability analysis for tariff revision.
- (vi) Based on the above, propose a formula for tariff for all types of municipal services, based on cost-recovery approach.¹⁷ The tariff revision formula will include variables like staff costs, energy costs, fuel costs, inflation, regular O&M expenses, and ability to pay that is based on capacity to pay accounting for social and vulnerability aspects.
- (vii) The tariff schedule should reflect different customer categories (residential, commercial and industrial), reflect gender dimensions, and should take into consideration the poor's ability to pay.

d. Business Model

- (i) Carry out a diagnosis of the water supply, sewerage and solid waste management sector, conduct gap analysis and design a business & operational model for other municipal / government services like traffic management, transport management, disaster risk management to design an overall Integrated city management solution / mechanism and an assessment of the technical, financial, operational and management situation of the Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha. The study would examine also existing organizational and institutional arrangements for mixed water supply, waste water disposal, and municipal waste, including their technical capacity, strategic planning ability, financial viability/sustainability, accountability,

¹⁷ Propose comprehensive tariff options/types like: Fixed charges, Volumetric charges, Uniform Volumetric Charges Block Tariff, Two-Part Tariffs, Out-based Tariffs for the government to finalize and make an informed decision on tariff. This will also include levy of aquifers charges where customers are directly withdrawing water from ground and don't have MC connection.

and transparency; and propose amended institutional arrangements that would fully support project implementation and, over the longer term, ensure cost-effective and sustainable municipal services delivery;

- (ii) Carry out a service delivery assessment by (a) undertaking a baseline study (building on work done by other development partners) to identify operational and financial issues impacting on performance, (b) identify and evaluate acceptable utility service levels, (c) establish the costs (operating and capital) to achieve those service levels, (d) develop a performance improvement plan incorporating short and medium term measures, taking into account consumers capacity to pay (e) examine preliminary institutional options for agreement for further evaluation, including public-private partnerships, and (f) subject to and following endorsement by the government, prepare detailed specification of agreed institutional options and recommendations to the government on reform together with an implementation plan. The Consultant must take into account transactional and implementation issues when specifying and evaluating options.
- (iii) Make recommendations on which type of municipal service(s) should continue to be delivered under existing institutional framework, what can be outsourced to private sector, what can be done under public-private sector modality and examine the need to create a special purpose vehicle (public-sector utility company).
- (iv) Review the existing legal and institutional framework and identify the options for changes which need to be taken prior to considering outsourcing some of the municipal services to private sector, going for public-private partnership, or creating utility companies.
- (v) Following a diagnosis of the water supply and sanitation, sewerage, and solid waste management sector, and of the MC's operational and financial aspects, the consultant will present various options / business models, also exploring avenues for private sector participation in the municipal services delivery and assess the feasibility of various private sector participation options including the public-private partnership and creating a municipal services company (MSC).
- (vi) Consult widely with key stakeholders on the acceptability of the proposed operations model, including various private sector participation options, and the recommendations on the preferred private sector participation should be based on the findings of the stakeholders' consultation.
- (vii) Assess various risks involved, including political, regulatory, technical, commercial, and financial risks, while recommending the best option for private sector participation and prepare risk management plans for mitigation of all identified risks.
- (viii) The consultant is required to work out a sustainable business model for all government services in a city; including product development, pricing, placements and positioning of the government products and services.

e. Legal

- (i) Establish and document the financial, labor and environmental obligations and liabilities of the Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha. This should include a review of existing financial obligations; a review of employee related liabilities; estimation of cost of any staff optimization program in the privatization option recommended; and a review of environmental obligations (e.g., from solid waste dump sites, etc.), if any.
- (ii) Review of the legal framework and provisions in relation to the recommended institutional arrangement for municipal service delivery. If required, the Consultant

will make recommendations of the required changes or amendments to the legal framework/statutes to ease out the process of the recommended private sector participation option.

- (iii) Review existing legislation related to, among others, (i) surface water resource management and abstraction, (ii) groundwater resource management and abstraction, (iii) competition for and in the water and sewerage services including the role of small scale independent private operators, (iv) regulation of privately provided water and sewerage services, (v) setting of tariffs, (vi) tax regimes, and make all relevant recommendations for the implementation of the selected private sector participation options, including new legislation.

f. Financial

- (i) Develop a long-term financial model (3–5 and 7 years scenario) for the water and sanitation, sewerage and solid waste management system. In particular, this would include incremental reduction of provincial subsidy and projected enhancement of local revenue (based on the willingness-to-pay findings) from the proposed subprojects.
- (ii) Utilize the financial model to consider the attractiveness of various private sector participation options, including the public-private partnership, or creation of a public sector utility company. The Consultants would present a fully developed financial model and forecast for the recommended preferred private sector option to demonstrate the economic and financial viability of the recommended option(s).
- (iii) Preparation of formula based fiscal policy for transfer of funds (under one-line grant) to new companies with performance-based incentives.

g. Consultations

- (i) The consultants will consult all stakeholders on the acceptability of the proposed business model(s) including various private sector participation options before making recommendations. The Consultants will organize a series of consultations (Consultant shall propose the number and format of these consultations) with the various stakeholders with the main objectives of assessing:
 - (a) The 'political' acceptability of the various options being envisaged (this would include consultations of how the needs of the various consumers, including poor consumers, would be addressed and met under the different private sector participation options). The stakeholders who need to be involved are central and local politicians, union councils, municipal corporations, city district governments, consumer associations or groups, the media, local and international NGOs, management and staff of the LG&CDD.
 - (b) The 'technical' acceptability of the options among potential private sector operators. The consultants will establish contacts and interview all parties concerned and/or interested by the semi or full privatization of the municipal services.
- (ii) In all consultations, the Consultant will ensure meaningful participation of the relevant stakeholders, through education of the various private sector participation options (using summary descriptions of concessions, lease, outsourcing etc., description of contractual arrangements, and incentives in the various options, and regulatory arrangements, etc.).

- (iii) The Consultant would prepare a Phase I Options Report, incorporating the findings of all the activities stated above. The consultant is expected to present various possible scenarios i.e., continuing under existing institutional arrangements with some capacity building measures proposed for improvement, public-private partnership, private sector participation / outsourcing, establishing of public sector utility companies, (at a minimum – management contracts, lease, and concession, outsourcing), and their relative costs and benefits (economic, financial and social).
- (iv) In making the recommendations, the consultant will describe the institutional arrangement relating to:

59. The ownership of the assets in all scenarios...

- (i) *the consultant should take into account the provisions of the various legal statutes, the autonomous management of the assets, and the operations of the services*
- (ii) form of agreement between the various parties above
- (iii) responsibility for the financing of the development of the assets
- (iv) responsibility for signing the contract(s) with the operator(s)
- (v) setting up of service level standards
- (vi) responsibility for monitoring the performance of the party's signatory to the contract(s), and
- (vii) The responsibility for tariff monitoring, recommendation and revision.

60. The Consultant will also recommend any transitional arrangements such as transfer of assets and liabilities and identify all constraints and opportunities which might deter or attract private investors. The Phase I report should also describe detailed time-bound road-map and action plan, for the private sector participation in particular: (i) List of required amendments to existing legislations, or legislation being prepared to provide a solid legal basis to the preferred option, and (ii) proposal of a realistic timetable for the implementation of the preferred option including approval of amendments to legislations, preparation of all transaction documents, selection of private sector operator, or establishment of a special purpose vehicle. The Consultant would organize a one-day stakeholders' workshop to present its findings and the draft options report. This workshop would be held in Lahore.

3. Phase II. Preparation of Transaction Documents System Development Support

61. For the Phase II, the Consultant will:

- (i) Prepare and complete all the necessary documents for the private-sector participation in the municipal service delivery for all private sector participation options which were recommended in the Consultant's Phase I report.
- (ii) Prepare the documentation package to be made available to potential investors, including, but not limited to: (i) the prospectus, tender documents, (ii) minimum qualification requirements of investors, (iii) all technical specifications, (iv) the content and format of the bidding documents, and (v) criteria which will be used to evaluate the bids. (vi) the main legal documents governing the institutional arrangement; contract between the owner of assets and operator, contract between owner of assets and agency responsible for financing new assets; contract between operator and customer.
- (iii) Draft contracts/concession agreements of Public Private Partnership projects identified under PICIIP especially waste-water treatment plant, waste to energy in solid-waste management sector, and operation of bus terminals etc.

- (iv) Provide transaction advisory services on potential PPP subprojects, and prepare all necessary documentation required for this.
- (v) In case of approval of establishing a public sector utility company, the consultant will help the EA in:

a. Establishment and Organization

- (i) Study, evaluate and submit options for the approval of the proposed Water & Sanitation Company with decentralized extension to union council level organogram.
- (ii) Prepare all necessary documentation of the Company for incorporation with SECP under Companies Act 2017, including Article of Association (AoA) and Memorandum of Association (MoA) and incorporation of company with SECP after approval from competent authority.
- (iii) New legal statutes and amendments in existing laws for providing legal cover for sustainable operations of the municipal services company.
- (iv) Propose a balanced composition of the BoD membership and suggest criteria for BoD members from private sector/independent directors
- (v) Support in identifying qualified and skilled BoD members and their orientation on corporate governance.
- (vi) Propose an organizational structure for the company and propose staff positions. Also, draft job descriptions and required qualification and experience for each of the key staff positions.
- (vii) Draft performance-based contracts for newly hired and transferred staff.
- (viii) Draft HR policy for smooth transition of existing staff from TMAs and hiring of new staff
- (ix) Preparation of Services and Asset Management Agreement (SAMA) between TMAS and company.
- (x) Support the municipal services companies in Sargodha, Rahim Yar Khan, Muzaffargarh, Bahawalpur, Dera Ghazi Khan, Multan & Rawalpindi., in hiring of the quality professionals for the key positions.
- (xi) Introduce best utility services practices, and more effective and results-oriented personnel management. The consultants will carry out evaluations of the all existing municipal corporation staff and prepare a human resources development plan and assist in implementation;
- (xii) Develop robust rewarding and incentivizing framework and assist the Company in implementing these measures after approval;
- (xiii) Prepare a comprehensive Performance Assessment System and setting up Key Performance Indicators (KPIs) for BoD, Key management staff and various wings of company.
- (xiv) Develop systems, manuals, procedure and guidelines on:
 - (a) human resource management policy and action plan (including transfer of staff to new institution and hiring of new staff)
 - (b) financial management
 - (c) environmental and social monitoring system (ESMS)
 - (d) public communication policy
 - (e) gender policy, (vi) anti-sexual harassment policy
 - (f) procurement manual
 - (g) code of conduct
 - (h) anti-corruption policy
 - (i) grievance redressal mechanism

- (j) Conflict of interest and disclosure policy.
- (xv) Prepare a comprehensive training plan for the staff of the municipal committees covering all functional areas including:
 - (a) human resources management;
 - (b) financial management
 - (c) technical training on operating, and maintaining treatment plants, distribution networks; pumping stations; solid waste equipment; communication; complaint handling; and information systems in management – to name a few.

b. Improved Municipal Services

- (i) Study and evaluate the existing and new operating regimes. Special focus should be on new capital work, develop best practices, and measures for improving the management, operations and maintenance of the new and existing Infrastructure facilities. In this regard assist the Company in improving:
 - (a) The production, treatment, transmission and distribution of drinking water;
 - (b) Billing, collections and customer service functions;
 - (c) Piloting the customer meters' installation in distribution network improvement zones;
 - (d) Implementing the transition from non-metered consumption and normative billing to metered consumption and volumetric billing of all customer categories in accordance with the approved Tariff by GoPb and Municipal Corporations;
- (ii) Define service targets, service level standards, work deliverables, and other performance measures, as well as performance monitoring procedures and propose monitoring mechanism, to promote cost-effective, accountable, transparent, and sustainable municipal services delivery.
- (iii) Establish a computerized user-friendly management information system to track performance data and conduct useful performance analysis;

c. Operational Support

- (i) Study the current operating regime of water, wastewater and solid waste management services and develop a detailed operating plan. Assist and engage top management of the Companies for the successful implementation of the same. The operating plan shall clearly elucidate the different operating tasks, functions, responsibilities and monitoring mechanism and the related organization structure and inter relationships;
- (ii) Develop for the municipal services, a safety and monitoring program for the raw drinking water sources, treated drinking water in the transmission and distribution systems, sewage conveyance network, and wastewater treatment plant, and collection and dumping of solid waste at landfill sites, with particular regard to ensuring and measuring compliance;
- (iii) Develop and implement a maintenance program for water and sewer networks and installations and train operations staff accordingly;
- (iv) Assist the Companies in completing the bulk meter installation program. Design and establish the bulk meters' maintenance, operation and production monitoring system;

- (v) Review the current program of leak detection including practices of leak-repair in transmission, feeder and networks service areas, and suggest actions by applying modern equipment and technologies;
- (vi) develop and implement a distribution reservoir washing, sanitary protection and repair program;
- (vii) prepare and assist in implementing a drinking water and sewerage network management plan to control network pressure and reduce hydraulic losses, and sewerage system cleaning particularly and, when necessary, through zoning of distribution networks and setting up metering areas;
- (viii) Develop, calibrate and establish a working hydraulic network model for water networks;
- (ix) Prepare, update and establish internal procedures for a regular updating of digitized maps of the drinking water and sewerage networks and the hydraulic network model.
- (x) Prepare detailed operating procedures for collection and disposal of solid waste, its transfer to the land fill sites, and sustainable operation of the entire solid waste management system.
- (xi) develop and establish Standard Operating Procedures (SOPs) for each of the task and function covering all areas of operations of the Company
- (xii) develop an emergency action plan detailing the protocols, responsibilities and actions required to be undertaken by the operating staff in times of emergencies;
- (xiii) Develop and assist in implementing water safety plans, particularly for minimizing, monitoring and managing waterborne disease outbreaks.
- (xiv) Develop a leak detection program and workout SOPs for monitoring and repair of leakages.
- (xv) Propose staffing requirements for operating MCs Sewerage Treatment plant, its annual budgetary requirements for O&M, and develop SOPs and operational plan for it.

d. Energy Efficiency Program

- (i) Conduct energy audit of the water and wastewater services facilities and develop and implement a program for monitoring and increasing the electricity efficiency of pumping stations and treatment plants;
- (ii) Prepare a plan for optimizing the performance of sewage pumping stations to reduce surcharging of sewers and effect energy savings wherever possible.

e. Asset Management Program

- (i) Evaluate the asset conditions of Municipal Corporations of Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha, and prepare GIS based asset inventory of all municipal assets (Moveable and Immoveable). The inventory would include all basic attributes like; an inventory number, name of item, date purchased, name of user unit/individual, cost of purchase, current book value, condition of asset, location (GPS coordinates) in case of municipal infrastructure.
- (ii) The asset management system would also include record of land holdings and ownership rights of all municipal land assets
- (iii) Develop and assist in implementing and maintaining a data base of major components of the facilities and infrastructure as available at the effective date of

- the contractual agreements, and set up program for updating the same as any additions or rehabilitation or replacement of assets is implemented;
- (iv) Develop and implement a robust asset management program for the facilities and infrastructure which shall include but not be limited to:
 - (a) A program for maintenance activities comprising of timely maintenance, rehabilitation and replacements required to maintain or improve the performance of various components of the facilities and infrastructure;
 - (b) A vehicle and equipment repair and maintenance record system;
 - (c) Full planning and scheduling of maintenance activities; and a schedule of implementation for the maintenance program.

f. Financial Management and Sustainable Operations

- (i) Develop accounting policy, manual, and chart of accounts, based on financial management system and reporting structure using double entry accounting method. The accounting will be on accrual basis.
- (ii) The consultants shall also develop a medium-term business plan (3-5 years) of the municipal services companies in consultation with all stakeholders.
- (iii) Find out the ways and means to reduce expenses incurred on municipal services without comprising on quality of the services; enhance the revenue base of the MCs especially by developing a program for reduction in non-revenue water; introducing solid waste charges and proposing tariff revision using cost-recovery approach.
- (iv) Identify the business opportunities in Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha for the enhancement of municipal income based on the available assets and develop a comprehensive business plan for next five years based on projected human resources costs, O&M expenditures of the existing and new municipal infrastructure created under the project, projected revenue from water supply and sanitation, as well as solid waste management services.

g. Data Management Information Systems

- (i) the consultants shall prepare a Base Year Data Report (the "Base Year Data Report") which describes the operations and performance of the MCs in the one year period immediately preceding the Starting Date of the Contract including, but not limited to, details of the operations and maintenance activities for the facilities and infrastructure, the billings, collections and customer service functions and the service levels and key performance indicators;
- (ii) The ERP would include Geographical Information System (GIS) -based MIS module of the municipal services facilities, and assets, that will be rolled out across the cities of Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha.
- (iii) Identify and help procure the appropriate hardware and software for maintaining the GIS-based MIS.

h. Establishing Baseline Service Standards and Organizational Performance

- (i) The Consultants shall develop a baseline performance report of the existing MCs for all municipal services to establish service level benchmarks in different service

areas using various key performance indicators preferably the ones used by the International Benchmarking Network. This baseline benchmarking will be used to assess the level of improvement in municipal services after the Project facilities are completed and become operational. The Consultants will also undertake one-time update of the baseline study using the same key performance indicators - in the last year of the Project and document any changes in quality of service delivery and organizational performance, compared to the baseline. Output of this

- (a) Study, evaluate and submit for the approval of the MSC, a decentralized union council level organogram. Develop robust rewarding and incentivizing framework and assist MSCs in implementing these measures after approval;
- (b) Introduce best utility services practices, and more effective and results-oriented personnel management. The MC will carry out evaluations of the all existing company and city government staff and prepare a human resources development plan and assist in implementation;
- (c) Organize issue specific on-the-job trainings for exposure to best national and international exposure to the concerned staff in all the service improvement areas.

(ii) **Reporting:** The consultant would:

- (a) Report to PMU PICIIP on monthly basis on pre-agreed work plans.
- (b) Prepare and maintain comprehensive monthly records and reports
- (c) Facilitate and participate in management meetings to review operations and financial performance and the forward plan for the upcoming period and provide necessary input where required.
- (d) In collaboration with key stakeholders, review strategic and policy matters of operations and financial performance;
- (e) Within sixty (30) days after the last business day of each quarter, prepare and submit a comprehensive report in English that describes the activities of the consultant in the previous quarter and its plan for the following quarter.

D. Qualification of Key Personnel/Staff and their Responsibilities

62. The Consultant must have extensive institutional development experience with urban sector institutions covering areas of strategic management, business process analysis, PPP modeling, change management, performance measurement, business and operational planning and developing policies, procedures, tools, designing marketing campaigns, product development and other covering above mentioned areas of operations. Experience in financial management and commercial planning of utility companies, preparing contract documents, supervising operations of water and sanitation companies, management of water supply and sanitation systems; and operation and management of urban public spaces as well as experience in Central and West Asia countries or similar geographical countries would also be considered for selection of consultant.

63. The Consultants shall provide sufficient qualified and experienced staff for the assignment to ensure required level of technical and management input to the PS as envisaged under the scope of work section. Excellent verbal and written communication skills in English and experience with water and sanitation companies would be preferred for all positions.

64. The personnel requirement for the consulting works as outlined above is estimated to be as follows:

Table 9: Consulting Requirements

S/No	Experts	Positions	Person-Months
A.	International Key Experts		
1.	Municipal Business Development Specialist (Team Lead)	1	24
2.	Institutional Development Specialist	1	10
	Subtotal International Key Experts	2	34
B	National Key Experts		
1.	Institutional Development Specialist (DTL)	1	24
2.	Urban and Municipal Planning Specialist	1	8
3.	Water Supply Operations & Maintenance Specialist	1	10
4.	Sanitary and Sewerage Operations & Maintenance Specialist	1	10
5.	Solid Waste Management & Operation Specialist	1	10
6.	Performance & Change Management Expert	1	10
7.	Financial Management/Tariff Specialist	1	18
8.	Legal and Contracts Management Specialist	1	9
9.	Asset Management Specialist	1	8
10.	Customer Services Specialist	1	6
11.	Billing and Collection Specialist	1	6
12.	Public Private Partnership Specialist	1	14
13.	Chartered Accountant	1	12
	Subtotal National Key Experts	13	145
B.	National Non-Key Experts		
1.	Human Resource Management Specialist	1	12
2.	Communication & Community Specialist	1	12
3.	Marketing Specialist	1	12
4.	IT/ERP Specialist	1	8
5.	MIS Specialist	1	10
6.	Energy Efficiency Specialist	1	10
7.	Geographical Information Systems Specialist	1	10
8.	Gender Specialist	1	16
	Subtotal National Non-Key Experts	8	90

Table 10: Preferred Qualifications, Roles and Responsibilities

Positions	Preferred Qualification*	Tasks / Responsibilities
International Consultant		
Municipal Business Development Specialist (Team Leader)	<ul style="list-style-type: none"> • Preferably Master's degree in Management, business administration (Marketing) or a relevant discipline. • Minimum of 20 years work experience in institutional planning, business modeling, process reforms and institutional capacity building is desired. • Minimum of 10 years' working experience in similar projects in countries with similar geographic conditions is expected. • Expertise in strategic planning, performance management, sustainable municipal service delivery and institutional reforms are highly desirable. • Knowledge of international best practices, laws and policies for optimizing municipal services delivery would be considered an advantage. • Experience with municipal services providers would be preferred. 	<ul style="list-style-type: none"> • Lead the team to obtain desired outputs of the consultancy and develop new business opportunities for the MCs to achieve sustainable municipal service delivery • Build the capacity of the MCs to design and implement a comprehensive diligence framework to engage, manage, monitor, report, financial oversight and service quality assurance pertaining to the proposed solution. • Facilitate in terms of Institutional systems strengthened through policies, procedures, tools and training which can assure compliance to required performance standards. • Developing comprehensive business and operational plans to achieve the set targets • Manage and integrate input of specialist consultants for the formulation of institutional systems (policies, procedures, tools and training) which can assure compliance to required performance standards envisaged under the business model. • Critical review and evaluation of the existing operating regime and develop system for new operating regime based on new capital works, best management practices and measures, operations and maintenance of the new and existing Infrastructure facilities • Review and evaluate the business models under water supply, wastewater, solid waste management and other allied municipal services. • Include the international experience in suggesting the municipal services models under operations for municipal services • Review the potential investments for the sustainability of the municipal corporation Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha. • Manage the coordination between the engineering team and management team to reach a well-accepted model of delivering municipal services including operational & maintenance • Review all systems developed under Finance, Engineering and Management using advance and innovative information technology solutions for operations and measuring the performance of services. • Develop policies, procedures, tools and training pertaining to procurement management building upon the guidelines of relevant authorities. • Develop procurement framework, procurement manual, procurement documents for the municipal services companies in Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha. • Provide orientation to the procurement staff of the municipal services companies about procurement principles, methods, and documentation • Define the role of Procurement Unit of the MSCs and develop job descriptions of

Positions	Preferred Qualification*	Tasks / Responsibilities
Institutional Development Specialist	<ul style="list-style-type: none"> • Preferably Master's degree in Management, business administration or a relevant discipline. • Minimum of 20 years work experience in institutional planning, business modeling, process reforms and institutional capacity building is desired. • Minimum of 10 years' working experience in similar projects in countries with similar 	<p>the key procurement staff. Contribute to the legal aspects of a business and operational plans to achieve the set targets during next three years.</p> <ul style="list-style-type: none"> • Lead to build the capacity of the MCs to design and implement a comprehensive diligence framework to engage, manage, monitor, report, financial oversight and service quality assurance pertaining to the proposed solution. • Facilitate in terms of Institutional systems strengthened through policies, procedures, tools and training which can assure compliance to required performance standards. • Develop institutional systems though policies, procedures, tools and training pertaining to: <ul style="list-style-type: none"> ➢ Strategic and Operational Planning ➢ Transparency ➢ Internal and External Grievances Redress Mechanisms ➢ Employee compensation & benefits policy ➢ Performance Management Systems • Lead and provide technical input to the sustainability assessment for the PSs during the last quarter of engagement with recommendations to strengthen future operations of the company.
National Consultants*		
Institutional Development Specialist (Deputy Team Leader)	<ul style="list-style-type: none"> • Preferably Master's degree in Management, business administration or a relevant discipline. • Minimum of 20 years work experience in institutional planning, business modeling, process reforms and institutional capacity building is desired. • Minimum of 10 years' working experience in similar projects in countries with similar geographic conditions is expected. • Expertise in strategic planning, performance management, change management and institutional reforms are highly desirable. • Knowledge of international best practices, laws and policies for institutional reforms would be considered an advantage. • Experience with urban services providers would be preferred. 	<p>Support International Consultant in relevant technical areas as well as understanding local context for the following outputs:</p> <ul style="list-style-type: none"> • Build the capacity of the MCs to design and implement a comprehensive diligence framework to engage, manage, monitor, report, financial oversight and service quality assurance pertaining to the proposed solution. • Facilitate in terms of Institutional systems strengthened through policies, procedures, tools and training which can assure compliance to required performance standards. • Developing comprehensive business and operational plans to achieve the set targets during next three years. • Manage and integrate input of specialist consultants for the formulation of institutional systems (policies, procedures, tools and training) which can assure compliance to required performance standards envisaged under the business model. • Provide technical input to institutional systems though policies, procedures, tools and training pertaining to: <ul style="list-style-type: none"> ➢ Strategic and Operational Planning ➢ Transparency ➢ Internal and External Grievances Redress Mechanisms ➢ Employee compensation & benefits policy ➢ Performance Management Systems • Provide technical input to the sustainability assessment for the PSs during the last

Positions	Preferred Qualification*	Tasks / Responsibilities
		<p>quarter of engagement with recommendations to strengthen future operations of the company.</p> <ul style="list-style-type: none"> • Facilitate periodic performance reviews of the PSs, providing a detailed diagnostic report as well as corrective measures. The review would also assess the effectiveness of newly introduced policies, procedures and tools as well as the capacity of professionals practicing them. • Facilitate preparation of proposal for establishment of Spatial Land Use Authority Punjab outlining its mandate, organizational structure, staffing, job descriptions, and required qualification and experience for the key personnel of the authority.
Urban and Municipal Planning Specialist	<ul style="list-style-type: none"> • Master's degree in Urban Planning, Municipal Engineering & Operations, or equivalent field with extensive experience. • Minimum of 15 years of work experience in urban municipal services. • Expertise in water supply (including drinking water) and sewerage operations as well as integrated city planning are desired. 	<p>Support International Consultant in relevant technical areas as well as understanding local context for the following outputs:</p> <ul style="list-style-type: none"> • Technical input to detailed institutional assessment and report on key performance dynamics including suitable organizational structure, resource and capacity needs, anticipated business opportunities, operational risks and external factors which may influence performance of SPVs. • Establishing realistic performance parameters and targets for the PSs for the next three years by establishing services benchmarks (IPPMS). • Development of a comprehensive business and operational plans to achieve the set targets during next three years. • Identification of resource, process, equipment and skill requirements for the implementation of these plans in a phased approach. • Technical input to institutional systems through policies, procedures, tools and training which can assure compliance to required performance standards envisaged under the business model pertaining to: <ul style="list-style-type: none"> ➢ Operational Manuals ➢ Water Supply & Management ➢ Improved service delivery (including Drinking Water Management) ➢ Progress Monitoring and Reporting systems ➢ Performance standardization and management system • Provide technical input to the sustainability assessment for the PSs during the last quarter of engagement with recommendations to strengthen future operations of the company. • Facilitate periodic performance reviews of the PSs, providing a detailed diagnostic report as well as corrective measures. The review would also assess the effectiveness of newly introduced policies, procedures and tools as well as the capacity of professionals practicing them. • Develop job description of his counterpart functional staff for the SPVs.
Water Supply and Maintenance Operations Specialist	<ul style="list-style-type: none"> • Master's degree in Civil Elec/ Mech / Env / Hydraulic Engineering or equivalent field with extensive experience. • Minimum of 20 years' work experience in the organization and implementation and 	<p>Provide Technical input to</p> <ul style="list-style-type: none"> • detailed institutional assessment and report on key performance dynamics including suitable organizational structure, resource and capacity needs, anticipated business opportunities, operational risks and external factors which may influence performance of WAS SPVs.

Positions	Preferred Qualification*	Tasks / Responsibilities
	<p>operations of water supply projects is required.</p> <ul style="list-style-type: none"> • Expertise in water supply (including drinking water) and sewerage operations, hydraulic systems as well as integrated city planning are highly desired. 	<ul style="list-style-type: none"> • Establishing realistic performance parameters and targets for the PSs for the next three years by establishing services benchmarks (IPPMS). • Development of a comprehensive business and operational plans to achieve the set targets during next three years. • Identification of resource, process, equipment and skill requirements for the implementation of these plans in a phased approach. • Develop job description of his counterpart functional staff for the MSCs. <ul style="list-style-type: none"> ➢ Institutional systems though policies, procedures, tools and training which can assure compliance to required performance standards envisaged under the business model pertaining to: ➢ Operational Manuals ➢ Water Supply & Management ➢ Improved service delivery (including Drinking Water Management) ➢ Progress Monitoring & Reporting ➢ Performance standardization and management system • Embed repair and maintenance components in broader business plan and operational plans provided for SPVs. • Provide improved methodologies, SOPs and policies for operation and maintenance and infrastructure conditions to enable/improve maintenance management. • Train relevant operations and maintenance staff on newly introduced methodologies, SOPs and policies. • Develop formats for informed capital planning process through improved access to timely and accurate information on asset condition, asset utilization and performance, cost of maintenance and recapitalization and/or alternatives; • Overall support to improved effectiveness of repair maintenance activities through improved integration of work orders with utilization of relevant best practices; • Provide the foundation for the implementation of O&M system in alignment with the WAS strategic, business and operational plans. • Study the current operating regime of water supply services and develop a detailed operating plan. • Assist and engage top management of the SPVs for the successful implementation of the same. • The operating plan shall clearly elucidate the different operating tasks, functions, responsibilities and monitoring mechanism and the related organization structure and inter relationships.
<p>Sanitary and Sewerage Operations and Maintenance Specialist</p>	<ul style="list-style-type: none"> • Masters' degree in civil Elec/ Mech / Env / hydraulic engineering or equivalent field with extensive experience. • Minimum of 15 years' work experience in the organization, implementation, and operations of sewerage and wastewater treatment projects. 	<ul style="list-style-type: none"> • Provide Technical input for: • Detailed institutional assessment and report on key performance dynamics including suitable organizational structure, resource and capacity needs, anticipated business opportunities, operational risks and external factors which may influence performance of WAS SPVs. • Establishing realistic performance parameters and targets for the PSs for the next three years by establishing services benchmarks (IPPMS). • Development of a comprehensive business and operational plans to achieve the set

Positions	Preferred Qualification*	Tasks / Responsibilities
		<p>targets during next three years.</p> <ul style="list-style-type: none"> • Identification of resource, process, equipment and skill requirements for the implementation of these plans in a phased approach. • Institutional systems though policies, procedures, tools and training which can assure compliance to required performance standards envisaged under the business model pertaining to: • Operational Manuals • Water Supply & Management • Improved service delivery (including Drinking Water Management) • Progress Monitoring & Reporting • Performance standardization and management system • Develop job description of his counterpart functional staff for the MSCs. • Embed repair and maintenance components in broader business plan and operational plans provided for SPVs. • Provide improved methodologies, SOPs and policies for operation and maintenance and infrastructure conditions to enable/improve maintenance management. • Train relevant operations and maintenance staff on newly introduced methodologies, SOPs and policies. • Develop formats for informed capital planning process through improved access to timely and accurate information on asset condition, asset utilization and performance, cost of maintenance and recapitalization and/or alternatives; • Overall support to improved effectiveness of repair maintenance activities through improved integration of work orders with utilization of relevant best practices; • Provide the foundation for the implementation of O&M system in alignment with the WAS strategic, business and operational plans. • Study the current operating regime of sewerage services and develop a detailed operating plan. • Assist and engage top management of the SPVs for the successful implementation of the same. The operating plan shall clearly elucidate the different operating tasks, functions, responsibilities and monitoring mechanism and the related organization structure and inter relationships • develop and establish Standard Operating Procedures (SOPs) for each of the task and function covering all areas of operations of the SPV • develop an emergency action plan detailing the protocols, responsibilities and actions required to be undertaken by the operating staff in times of emergencies; • Develop and assist in implementing water safety plans, particularly for minimizing, monitoring and managing waterborne disease outbreaks in coordination with Water supply operations and maintenance specialist. • develop a leak detection program and workout SOPs for monitoring and repair of leakages in sewage conveyance network, and wastewater treatment plant, and collection and dumping of solid waste at landfill sites, with particular regard to

Positions	Preferred Qualification*	Tasks / Responsibilities
		<p>ensuring and measuring compliance;</p> <ul style="list-style-type: none"> Propose staffing requirements for operating Sahiwal Sewerage Treatment plant, its annual budgetary requirements for O&M, and develop SOPs and operational plan for the Sahiwal Sewerage Treatment Plant.
<p>Solid Waste Management Operation and Maintenance Specialist</p>	<ul style="list-style-type: none"> Masters' degree in Civil / Elec/ Mech / Env / Hydraulic Engineering or hydraulic engineering or equivalent field with extensive experience. Minimum of 15 years' work experience in the organization, implementation, and operations of solid waste management projects. Financially viable SWM approach including 3R principles (Reduce, Reuse, and Recycling) and various SWM technologies including composting, biogas, Reduced Derived Fuels (RDFs) etc. shall be needed. Experience in periodic Plan, master plan, environmental management plan, physical infrastructure development plan etc. will be beneficial. 	<ul style="list-style-type: none"> Review existing solid waste management system of the municipalities, and propose appropriate system for waste collection systems, waste reduction, reuse and recycling facilities, appropriate solid waste management technologies and landfill sites etc., Assess the investment options from the private sector through PPP, for waste management activities. Develop solid waste management long term strategic plans and short-term action plans in Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha. municipalities through participatory approach in coordination with concern municipalities and other stakeholders. In doing the above, the consultant shall review all potential options for the solid waste management in the long term. It will contain recommendations for future programs, policies, capital investments and other options, as well as the social, environmental and economic implications for the solid waste management of the said municipalities The potential options may be comprehensive review of any new and emerging source separation techniques, mechanical biological treatment and other waste treatment technologies, energy from waste, public/private partnerships, etc. Assess the existing level of solid waste generation in Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha, future projected waste generation (for at least next 10 years), current capacity of the municipalities in waste collection and disposal, the required capacity for effective solid waste management of the projected waste, identify capacity gap and make recommendations to fill the gaps. In collaboration with the financial management / tariff specialist, workout a formula for determining the waste collection fee. The formula should be based on a cost-recovery approach and should take into account, all variables that may affect the cost of service delivery, Develop standard operating procedures for the solid waste management component of the municipal services companies in Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha. Define role and responsibility of the Solid Waste Management Unit of the SPV and in prepare job descriptions of the key staff involved in solid waste collection. Detailed institutional assessment and report on key performance dynamics including suitable organizational structure, resource and capacity needs, anticipated business opportunities, operational risks and external factors which may influence performance of SWM SPV Establishing realistic performance parameters and targets for the PSs by establishing services benchmarks (IPPMS).

Positions	Preferred Qualification*	Tasks / Responsibilities
		<ul style="list-style-type: none"> • Development of a comprehensive business and operational plans to achieve the set targets during next three years. • Identification of resource, process, equipment and skill requirements for the implementation of these plans in a phased approach. • Institutional systems though policies, procedures, tools and training which can assure compliance to required performance standards envisaged under the business model pertaining to: <ul style="list-style-type: none"> ➢ Operational Manuals ➢ Solid Waste Management ➢ Improved service delivery ➢ Progress Monitoring & Reporting ➢ Performance standardization and management system • Develop job description of his counterpart functional staff for the MSCs. • Embed repair and maintenance components in broader business plan and operational plans provided for SPVs. • Provide improved methodologies, SOPs and policies for operation and maintenance and infrastructure conditions to enable/improve maintenance management. • Train relevant operations and maintenance staff on newly introduced methodologies, SOPs and policies. • Develop formats for informed capital planning process through improved access to timely and accurate information on asset condition, asset utilization and performance, cost of maintenance and recapitalization and/or alternatives; • Overall support to improved effectiveness of repair maintenance activities through improved integration of work orders with utilization of relevant best practices; • Provide the foundation for the implementation of O&M system in alignment with the WAS strategic, business and operational plans. • Study the current operating regime of sewerage services and develop a detailed operating plan. • Assist and engage top management of the SPVs for the successful implementation of the same. The operating plan shall clearly elucidate the different operating tasks, functions, responsibilities and monitoring mechanism and the related organization structure and inter relationships • develop and establish Standard Operating Procedures (SOPs) for each of the task and function covering all areas of operations of the SPV • develop an emergency action plan detailing the protocols, responsibilities and actions required to be undertaken by the operating staff in times of emergencies; • Prepare a detailed operating procedure for collection and disposal of solid waste, its transfer to the land fill sites, and sustainable operation of the entire solid waste management system.
Performance & Change Management Expert	<ul style="list-style-type: none"> • Master's degree in Business Administration, Management, Change Management, Social Science, Development, Knowledge Management, or similar field 	<p>Under the overall supervision of Institutional development expert:</p> <ul style="list-style-type: none"> • Facilitate detailed institutional assessment and report on key performance dynamics including suitable organizational structure, resource and capacity needs, anticipated business opportunities, operational risks and external factors which may influence

Positions	Preferred Qualification*	Tasks / Responsibilities
	<ul style="list-style-type: none"> • Over 15 years of senior level experience in Change management and performance management is required. • Proven experience in organizational change management and business process reviews across the private and/or public sectors as well as an understanding of municipal services issues. • Experience in working with, or supporting, the development of new and innovative approaches, particularly in all areas relating to human resource management; • Track record in performance management, human resource development, innovative learning strategies and incentive programme, knowledge management; • Expertise in developing performance management systems and or institutional reforms for water and sanitation companies is essential. • Knowledge of local culture, best practices, laws and policies for institutional reforms is desired. • Ability to translate strategic thinking and innovative ideas into practical operational recommendations; and • Solid analytical, presentation, interpersonal, communication, and negotiation skills. 	<p>performance of WAS companies.</p> <ul style="list-style-type: none"> • Develop realistic performance parameters and targets for the PSs for the next three years by establishing services benchmarks (IPPMS). • Contribute to development of comprehensive business and operational plans to achieve the set targets during next three years. • Identify resource, process, equipment and skill requirements for the implementation of these plans in a phased approach. • Manage and integrate input of specialist consultants for the formulation of institutional systems (policies, procedures, tools and training) which can assure compliance to required performance standards envisaged under the business model. • Provide technical input to institutional systems though policies, procedures, tools and training pertaining to: <ul style="list-style-type: none"> • Performance standardization and management system • Progress Monitoring and Reporting systems • Project Management • Provide input for the sustainability assessment for the PSs during the last quarter of engagement with recommendations to strengthen future operations of the company • Support periodic performance reviews of the PSs, providing a detailed diagnostic report as well as corrective measures. The review would also assess the effectiveness of newly introduced policies, procedures and tools as well as the capacity of professionals practicing them. <p>The Consultant will:</p> <ul style="list-style-type: none"> • Develop a customized, focused and responsive change management coaching and mentoring program for the managerial and operational staff to optimize the existing wealth of expertise as well as develop additional relevant competencies for transition of operational paradigm of municipal services delivery from the conventional public sector utility services provider into a strategic thinking professional entity operating on sustainable basis. • map out the current strengths and gaps in strategic thinking and management capacities of the MC staff • develop customized individual and group coaching and mentoring approaches with substantial opportunities for actual practice depending on staff needs and identified priorities in areas of issue identification, negotiations, creative problem-solving, facilitating skills and synthesizing critical information; and • Maintain and sustain high level of motivation among MSCs to apply learning and skills in day to day work and strategizing sessions. • Conduct critical baseline organizational and individual assessment and the formulation of recommendations and costed options for MCs to consider and select the most suitable approaches. The consultant will that the team will have to undertake the following activities: <ul style="list-style-type: none"> ➤ conduct entity change readiness assessment and identify gaps and potential

Positions	Preferred Qualification*	Tasks / Responsibilities
		<p>options to address these in MCs of Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha;</p> <ul style="list-style-type: none"> ➤ Study the routine way of functioning and recommend changes to respond to the new environment that would require use of ICT tools and modern systems. ➤ An depth assessment of the technical capacities available within the MCs to undertake the evolving role and identify critical capacity gaps and technical requirements that will need to be addressed, if the MCs are is to move forward in an effective manner in efficient delivery of municipal services in Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha. ➤ Make recommendations to MCs of Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha, actions that can be taken up as part of an overall change management strategy. The recommendations would be accompanied by a costed menu of options that will enable MCs to both select the most suitable approaches, and to mobilize resources for its operationalization. <ul style="list-style-type: none"> • Develop revised/adjusted functional structure of the MCs, a transition plans, training/mentoring plans; and • Define/establish new roles and responsibilities and training needs, systems, and processes changes for all possible business models of the MCs.
Financial Management / Tariff Expert	<ul style="list-style-type: none"> • Master's degree in finance, business administration or equivalent field with extensive experience. • Minimum of 10 years' work experience in urban water supply and sanitation of donor-funded projects. • Knowledge in financial analysis and reporting of public utility, tariff formulation particularly in the water supply and sanitation sector is desired. • Should have worked on similar position for at least three similar projects. 	<p>Under the overall supervision of Institutional development expert</p> <ul style="list-style-type: none"> • Facilitate detailed institutional assessment and report on key finance related performance dynamics, financial planning and management concerns as well as operational risks and external financing opportunities which may influence performance of WAS companies. • Develop realistic financial performance parameters and targets for the PSs for the next three years in relation with the services benchmarks (IPPMS). • Contribute to development of finance related aspects of business and operational plans to achieve the set targets during next three years. • Identify finance related resource, process, equipment and skill requirements for the implementation of these plans in a phased approach. • Provide technical input to institutional systems though policies, procedures, tools and training pertaining to: <ul style="list-style-type: none"> ➤ Financial Management Systems ➤ Financial performance parameters and reporting systems ➤ Audit and transparency systems ➤ Tariff Planning and Implementation • Provide input for the financial sustainability assessment for the PSs during the last quarter of engagement with recommendations to strengthen future financial operations of the company. • Support periodic performance reviews of the PSs, providing a detailed diagnostic report as well as corrective measures related to financial operations. The review would also assess the effectiveness of newly introduced policies, procedures and

Positions	Preferred Qualification*	Tasks / Responsibilities
		<p>tools as well as the capacity of professionals practicing them.</p> <ul style="list-style-type: none"> • develop and implement a maintenance program for water and sewer networks and installations and train operations staff accordingly; • assist the Companies in completing the bulk meter installation program. Design and establish the bulk meters' maintenance, operation and production monitoring system; • Review the current program of leak detection including practices of leak-repair in transmission, feeder and networks service areas, and suggest actions by applying modern equipment and technologies; • develop and implement a distribution reservoir washing, sanitary protection and repair program; • prepare and assist in implementing a drinking water and sewerage network management plan to control network pressure and reduce hydraulic losses, and sewerage system cleaning particularly and, when necessary, through zoning of distribution networks and setting up metering areas; • Develop, calibrate and establish a working hydraulic network model for water networks; • prepare, update and establish internal procedures for a regular updating of digitized maps of the drinking water and sewerage networks and the hydraulic network model.
<p>Legal and Contracts Expert</p>	<ul style="list-style-type: none"> • A combination of academic degrees and professional certifications covering areas of engineering, project management, Law or related discipline is desired. • Minimum of 10 years' work experience in the areas of urban governance, planning and management. • Contract development and management preferably related with water and sewerage investments. 	<ul style="list-style-type: none"> • Review the existing legal and institutional framework and identify the required changes which need to be taken prior to considering outsourcing some of the municipal services to private sector, going for public- private partnership, or creating utility companies. • Examine the legal, regulatory, and enforcement system for solid waste management; and propose institutional arrangements, and legal amendments if so required, for moving towards a cost-effective and sustainable solid waste management. • Establish and document the financial, labor and environmental obligations and liabilities of the Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha. MCs. This should include a review of existing financial obligations; a review of employee related liabilities; estimation of cost of any staff reductions program in the privatization option recommended; and a review of environmental obligations (e.g. from solid waste dump sites, etc.), if any. • Review of the legal framework and provisions in relation to the recommended institutional arrangement for municipal service delivery. If required, the Consultant will make recommendations of the required changes or amendments to the legal framework/statutes to accommodate the recommended private sector participation option. • Review existing legislation related to, among others, (i) surface water resource management and abstraction, (ii) groundwater resource management and abstraction, (iii) competition for and in the water and sewerage services including the role of small scale independent private operators, (iv) regulation of privately

Positions	Preferred Qualification*	Tasks / Responsibilities
		<p>provided water and sewerage services, (v) setting of tariffs, (vi) tax regimes, and make all relevant recommendations for the implementation of the selected private sector participation options, including new legislate</p> <ul style="list-style-type: none"> • Identify required amendments to existing urban government legislations, or legislation being prepared to provide for reforms, and (ii) proposal of a realistic timetable for the implementation of the preferred option including approval of amendments to legislations, preparation of all transaction documents, selection of private sector operator, or establishment of a special purpose vehicle. • Draft legal agreements (contracts, concessional agreements) required for PPP, and outsourcing of functions, • assist in preparation of documents for creation of a Section 42 company including; the application documents for incorporation with SECP, Article of Association/Memorandum of Association, • Prepare Service and Assets Management Agreements (SAMA) for Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha. for signing between the municipal services companies and the LG&CDD.
Asset Management Expert	<ul style="list-style-type: none"> • Bachelor's degree in Engineering with master's degree in Business or Finance. • Minimum of 10 years' work experience in urban water supply and sanitation projects. • Experience in developing and/or implementing Infrastructure Asset Management best practices, ideally in a municipal government setting. 	<ul style="list-style-type: none"> • Embed asset management plan in broader business plan and operational plans provided for WAS companies. • Provide Improved methodologies, SOPs and policies for measuring service performance and tracking asset condition to enable/improve life cycle maintenance management • Develop formats for informed capital planning process through improved access to timely and accurate information on asset condition, asset utilization and performance, cost of asset maintenance and recapitalization and availability of detailed asset plans; • Increased efficiency in the capital planning process by improving access to data to conduct "what if" analysis; • Improved effectiveness of asset maintenance activities through improved integration of work orders with assets and services and utilization of asset management best practices; • Provide the foundation for the implementation of asset management system in alignment with the WAS strategic, business and operational plans.
Customer Services Expert	<ul style="list-style-type: none"> • Bachelor's degree in the relevant field (business, management, marketing etc.). • Minimum of 10 years' work experience in the areas of customer services is required. • Experience in customer services and complaints management areas pertaining to utility services especially water supply and sewerage operations is highly desired 	<ul style="list-style-type: none"> • Under the overall supervision of Institutional development expert • Develop customer services-based performance parameters and targets for the PSs for the next three years in relation with the services benchmarks (IPPMS). • Contribute to development of customer services related aspects of business and operational plans to achieve the set targets during next three years. • Identify customer services related resource, process, equipment and skill requirements for the implementation of these plans in a phased approach. • Provide technical input to institutional systems though policies, procedures, tools and training pertaining to: <ul style="list-style-type: none"> ➢ Customer services systems ➢ Complaint management and feedback framework

Positions	Preferred Qualification*	Tasks / Responsibilities
		<ul style="list-style-type: none"> ➤ Customer experience indicators and reports • Support periodic performance reviews of the PSs, providing a detailed diagnostic report as well as corrective measures related to customer services. The review would also assess the effectiveness of newly introduced policies, procedures and tools as well as the capacity of relevant professionals.
Billing and Collection Specialist	<ul style="list-style-type: none"> • Bachelor's degree in the relevant field (business, management, marketing etc.). • Minimum of 10 years' work experience in the areas of billing and collection is required. • Experience in billing and collection areas pertaining to utility services especially water supply, sewerage and solid waste collection and disposal operations is highly desired 	<ul style="list-style-type: none"> • Under the overall supervision of Institutional development expert • Develop billing and collection distribution and collection performance parameters and targets for the PSs in relation with the services benchmarks (IPPMS). • Contribute to development of customer services related aspects of business and operational plans to achieve the set targets. • Identify billing and collection related resource, process, equipment and skill requirements for the implementation of these plans in a phased approach. • Provide technical input to institutional systems through policies, procedures, tools and training pertaining to: <ul style="list-style-type: none"> ➤ Billing Distribution systems ➤ Billing Collection framework ➤ Performance indicators and reports • Support periodic performance reviews of the PSs, providing a detailed diagnostic report as well as corrective measures related to billing and collection mechanism. The review would also assess the effectiveness of newly introduced policies, procedures and tools as well as the capacity of relevant professionals.
PPP / Investment Specialist	<ul style="list-style-type: none"> • Master's degree in Finance, business administration, engineering or related discipline. • Minimum of 10 years' work experience in the areas of PPP promotion and investment management, preferably related with water and sewerage investments. • Excellent verbal and written communication skills in Urdu and English are required. • ADB or other International Donor- funded project implementation experience is desirable. 	<ul style="list-style-type: none"> • Under the overall supervision of Institutional development expert • Facilitate detailed Market Assessment to cover PPP opportunities and scope of partnerships, anticipated business opportunities, operational risks and external factors which may influence performance of WAS companies. • Develop PPP investment engagement strategy and PPP development plan. • Identify resource, process, equipment and skill requirements for the implementation of these plans in a phased approach. • Provide technical input to institutional systems through policies, procedures, tools and training pertaining to: <ul style="list-style-type: none"> ➤ Investor coordination and engagement ➤ Reporting and marketing systems
Chartered Accountant	<ul style="list-style-type: none"> • A degree in accounting from a nationally/Inter-nationally recognized institution. ACCA/CPA/CIMA qualification will be an asset. • At least seven (7) years' experience after acquiring stipulated qualification in financial management, or accounting. Prior experience with Bank and/or donor funded and public sector projects will be an advantage. 	<ul style="list-style-type: none"> • Prepare the accounting chart and an accounting policy and auditing manual for the proposed MSC in Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha. • Develop internal controls and put in place a robust financial management system within the MSCs in Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha. • Define role of the Finance and Account section of the MSCs and develop job descriptions of the CFO, the Internal Auditor, and other Financing and Accounting staff of the MSCs. • Work closely with the ERP development team for development/deployment of the

Positions	Preferred Qualification*	Tasks / Responsibilities
	<ul style="list-style-type: none"> • Excellent writing and communication skills. • Proficiency in using accounting software and computer business desktop application • Proficiency in use of MS Office Suit and contemporary accounting software is required. 	<ul style="list-style-type: none"> • finance and accounts module of the ERP. • Prepare a financial management risk and mitigation plan for the MCSs.
Non-Key Experts		
HR Management Expert	<ul style="list-style-type: none"> • Master's degree in Business Administration, Management, Human resource or another relevant field required. • Over 10 years of senior level experience in developing compensation and benefits is required. 	<ul style="list-style-type: none"> • Develop a comprehensive HR manual with detailed policies, procedures and tools pertaining to various HR functions including <ul style="list-style-type: none"> ➢ Detailed Job Descriptions ➢ Compensation and benefits policy ➢ Recruitment systems ➢ Grievances Redress Mechanism ➢ Performance Appraisal system based upon departmental performance indicators. • Train HR staff on all areas of HR management covered under the HR Manual.
Communication and Community Engagement Expert	<ul style="list-style-type: none"> • Master's degree in Social Sciences, Mass communication or another relevant field required. • Over 10 years of senior level experience in developing communication and/or • community engagement is required. 	<ul style="list-style-type: none"> • Conduct services expectations and willingness to pay study for the local community. • Engage local community for consultations on issues and highlight community expectations in business and operational plans. • Identify resource, process, equipment and skill requirements for community engagement • Develop community engagement strategy, policies and procedures for general operations. • Facilitate development of job descriptions for the external relations/communication staff of the MSCs.
Marketing Specialist	<ul style="list-style-type: none"> • Master's degree in Marketing, Business Administration or another relevant field required. • Over 10 years of senior level experience in developing marketing strategies • Experience of working in municipal sector services is required 	<p>Under the overall supervision of municipal business development specialist</p> <ul style="list-style-type: none"> • Develop, carry out and track a comprehensive marketing strategy for municipal services with detailed policies, procedures and tools pertaining to various services provided by MCs including but not limited to <ul style="list-style-type: none"> ➢ Water Supply ➢ Sewerage ➢ Solid Waste Collection and Disposal
MIS Development Specialist	<ul style="list-style-type: none"> • A University Degree in Computer Science, Databases, Artificial Intelligence Systems • Minimum ten years' experience in developing Management Information Systems. Experience in undertaking at least two similar assignments in the past and working with diverse organizations. 	<p>The Consultant will:</p> <ul style="list-style-type: none"> • Contribute in preparation of the scoping document for the ERP /MIS. • Provide support in design or selection of and implementation of a comprehensive Enterprise Resources Program (ERP) covering all areas of management, operations and monitoring. The operational module / MIS of the ERP would include financial management, asset management and operation information particularly reliable monitoring of water volumes abstracted from the environment, supplied to distribution reservoirs and distributed to end-users, and of electricity consumption including setting up a benchmarking system for monitoring the performance of the outsourced entities, private sector operators, or MSCs.

Positions	Preferred Qualification*	Tasks / Responsibilities
		<ul style="list-style-type: none"> • Collaborate with GIS Specialist in developing GIS-based MIS of the municipal services facilities, and assets, that will be rolled out across the cities of Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha. • Identify and help procure the appropriate hardware and software for maintaining the GIS-based MIS. • In collaboration with the ERP Architecture Specialist, oversee the process of ERP development, by the third-party developers. • Develop any ad hoc modules of MIS till complete development of the ERP. • Ensure that MIS is capable of providing quick analysis of trends and comparisons against defined
IT/ERP Specialist	<ul style="list-style-type: none"> • A 16 years education with a degree in computer sciences, databases • At-least ten years of professional IT development experience – mainly development / deployment of ERPs. 	<ul style="list-style-type: none"> • Based on the various institutional arrangements (proposed options i.e. private sector involvement through PPP, outsourcing some of the municipal service(s), or creation of a municipal services company), propose an integrated solution for automation of the functional areas and operations of the municipal services delivery. • Propose an optimum Enterprise Architecture reflecting the integration and standardization requirements of the municipal services companies' operating model. • Prepare a scoping document in consultation with the stakeholders, outlining the overall scope of the ERP system; modules; reporting; and system security etc. The scoping document will also analyze the possibility of using the existing ERPs available in the market and tailoring for specific operational needs. It will also analyze the available existing ERP solutions of different platforms, and establish the resource requirements (hardware, software, human, finance) • Help the clients in procurement or development of an ERP, and tailoring (if an already developed ERP is purchased) the system to fit clients' needs. • throughout the process of development / enhancement and deployment of the ERP, oversee and technically guide the process, on behalf of the clients
Energy Efficiency Expert	<ul style="list-style-type: none"> • Master's degree in electrical engineering, energy efficiency or related discipline. • Minimum of 10 years' work experience in the areas of electrical engineering, maintenance and management of electrical equipment preferably related with water and sewerage systems. • At least 5 years' experience in energy efficiency review and energy footprint mapping is required preferably with utility services companies (especially water supply and sewerage operations) is highly desired. 	<ul style="list-style-type: none"> • Conduct energy audit of the water and wastewater services facilities and develop and implement a program for monitoring and increasing the electricity efficiency of pumping stations and treatment plants; • Prepare a plan for optimizing the performance of sewage pumping stations to reduce surcharging of sewers and effect energy savings wherever possible. • Develop energy efficiency-based performance parameters and targets for the PSs for the next three years in relation with the services benchmarks. • Contribute to development of energy efficiency related aspects of business and operational plans to achieve the set targets during next three years. • Identify energy efficiency related strategies, process, monitoring systems for the implementation of energy efficiency across the business process areas.
GIS Specialist	<ul style="list-style-type: none"> • Master's degree in space science, GIS or 	Assist the Team Leader in the follow activities

Positions	Preferred Qualification*	Tasks / Responsibilities
	<p>related discipline.</p> <ul style="list-style-type: none"> • Minimum 10 years' experience in survey and mapping GIS of city infrastructure projects. • Excellent verbal and written communication skills in English. • ADB or other International Donor-funded project implementation experience is desirable. 	<ul style="list-style-type: none"> • Develop GIS maps for MC/SPV and identify plans to integrate it with the MIS; • Review the available resources of GIS, • If required identify and help procure the appropriate additional hardware and software for a maintaining a GIS database.
Gender Specialist	<ul style="list-style-type: none"> • Master's degree in Social Sciences or another relevant field required. • Over 10 years of senior level experience in Social safeguard. • Well versed with environmental concerns with water and sanitation dynamics as well as applicable government regulations. 	<ul style="list-style-type: none"> • Conduct gender mainstreaming keeping in line with the PSs in selected cities based upon local stakeholders and relevant regulations for compliance. • Provide recommendations on integration of social safeguard agenda in business and operational plans. • Develop gender safeguard policies, strategy and procedures for general operations.

*Experience with water and sanitation operations would be preferred for all above positions. Excellent verbal and written communication skills in English remain desirable for all above positions.

65. All experts engaged under the contract, whether key or non-key expert must be citizens of ADB member countries.

- **Facilities to Be Provided by the Client**

66. The Client will provide the Consultant with access to key relevant reports, studies and other documents, required to carry out project implementation.

- **Facilities to be Arranged by the Consultant**

67. The Consultant shall arrange for its office spaces (at spaces provided by PMU) in Lahore, office hardware, 8 vehicles (up to 1300 cc cars/jeep), office furniture, communications equipment, photocopying equipment, fax machines, computers and printers, including their software needs. All documents, equipment, vehicles, facilities related to the assignment will remain with the Client after completion of services.

- **Facilities to be Provided by the PMU/CIUs**

68. The Consultant shall arrange for all its own office spaces in Lahore, office hardware, such as vehicles, office furniture, communications equipment, photocopying equipment, fax machines, and computers and printers, including their software needs. All documents, equipment, vehicles, facilities related to the services are, and will remain the Client's property after completion of works.

- **Office Support Staff and Logistical Arrangements**

69. The Consultant shall provide the entire administrative, technical professionals, and support staff needed to carry out their services. An adequate number of suitability skilled office support staff will be required to meet the needs of the Lahore office and CIUs of Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha. Suggested positions and number of staffs in each position are shown in Table 11. However, the positions and actual numbers at the discretion of the ODBM and will cost them accordingly as out-of-pocket, fixed-rate expenses in their financial proposal. The ODBM is not required to submit CVs for supporting staff as part of their technical proposal since they will not be evaluated.

Table 11: Indicative Office Support Staff

Position	Indicative No.
Office Manager	1
Accountant & Bookkeeper	1
Assistant Office Manager / Secretary	1
Computer Operators / Office Assistants	2
Office Caretaker / Messenger / Guard	2
Drivers	8

70. Other out-of-pocket expenses the ODBM will be responsible for to include: (i) all other necessary facilities and logistic support for its staff including living accommodation and per diems; (ii) international and national travel, and miscellaneous transportation; (iii) day-to-day office communications, utilities and other miscellaneous costs which may be required for carrying out the services as per the requirement of the Contract; and (iv) printing, publishing and transmittal of all reports and deliverables.

▪ **Procurement of Additional Studies, Equipment and Training**

71. Goods and works for ADB-financed contracts will be procured in accordance with ADB's Procurement Guidelines (March 2013, as amended from time to time). Provisional sums have been included in the consultancy agreement for procurement of various requirements that will support the project. The ODBM will be responsible for preparing the exact implementation arrangements, TORs, specifications, and detailed cost estimates of the procurement which will be approved by the Program Director of PMU before initiating procurement. Procurement procedures will follow ADB's Procurement Guidelines. Supporting surveys and specific studies, such as social-economic will be financed under the ODBM contract.

▪ **Terms of the Assignment**

72. Experts will be based in Bahawalpur, Dera Ghazi Khan, Lahore, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha cities for the duration of the intermittent assignment for a period of two years with possibility of extension of the contract. The terms will be revised based on consultations between the parties involved in the assignment per changes and or additional requirements identified during implementation.

▪ **Reporting Requirements**

73. The consulting team is expected to submit the required reports to LG&CDD, PMU and ADB as per Table 12.

Table 12: Reporting Requirements

No.	Report name	Report content	Date of Submission
1	Inception Report	Brief report after mobilization including action plan and implementation (maximum text – 10 pages excluding Appendices)	Within one month
2	Quarterly Progress Report	Concise reports giving more details of the project and key issues. For every year, the first two reports will be incremental reports detailing activities, progress and issues during the previous trimester, and planned activities for the next trimester. These reports must present all the findings related to procurement and to monitoring requirements identified in the DMF, including progress on delivering the outputs. The reports will also summarize the results of relevant data collected. The forth report (which will become the Annual Report) will be cumulative for the full year period.	Quarterly. 15 days at the end of the quarter.
3	Assignment Outputs	<ul style="list-style-type: none"> • Situation Analysis Report • Benchmarking report for Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodha cities • Willingness-to-pay survey for municipal services in selected cities • 5-10 years forecasts for demand of water supply, wastewater disposal and solid waste management • Financial forecasts of operations, revenues and subsidy requirements for next 10 years 	3 rd Month after mobilization 4 th Month after mobilization 5 th Month after mobilization 6 th Month after mobilization 8 th Month after mobilization

No.	Report name	Report content	Date of Submission
		<ul style="list-style-type: none"> Report on Review of existing legal framework, and legislation on municipal services and proposed amendments to facilitate the proposed business model including PPP and outsourcing of functions. 	9 th Month after mobilization
		<ul style="list-style-type: none"> Methodology of Tariff Revision for Sustainable Operations 	11 th Month after mobilization
		<ul style="list-style-type: none"> Report on Organizational Performance of MCs, Gaps and Recommendations 	12 th Month after mobilization
		<ul style="list-style-type: none"> A Communication Strategy for MSCs 	13 th Month after mobilization
		<ul style="list-style-type: none"> Qualitative assessment including focus group discussions with women and girls to reflect gender-differential perceptions, mobility patterns, needs and priorities related to public space and public transport system in the detailed designs. 	13 th Month after mobilization
		<ul style="list-style-type: none"> Report on Various Proposed Operational Models for Municipal Services Delivery 	13 th Month after mobilization
		<ul style="list-style-type: none"> Proposed Business Models 	14 th Month after mobilization
		<ul style="list-style-type: none"> All Transaction Documents PPP model, including concessional agreements, Contracts, Draft bidding documents, RFPs, etc. 	14 th Month after mobilization
		<ul style="list-style-type: none"> Complete Documentation for Incorporation of MSCs for Bahawalpur, Dera Ghazi Khan, Multan, Muzaffargarh, Rahim Yar Khan, Rawalpindi, and Sargodhawith SECP. 	15 th Month after mobilization
		<ul style="list-style-type: none"> For the MSCs, develop: <ol style="list-style-type: none"> Human resource management policy and HR Manual Accounting Policy and Manual Audit Manual Public communication policy Gender policy, Anti-sexual harassment policy, Procurement framework and manual Code of conduct Anti-corruption policy Grievance redress mechanism, Conflict of interest and disclosure policy. Training and Capacity Building Plan Conceptual Design of ERP and Systems Requirement (Hardware / Software) Complete database of all municipal assets. Report on lead detection and reduction in Non-revenue Water A comprehensive database of water supply and sanitation, and solid waste consumers Standard operating procedures in all functional areas of municipal services delivery Emergency Action Plan and Protocols – in case of Emergencies Report on Energy Efficiency Comprehensive Report on Organizational Structure, and Job Descriptions of the MSCs. Report and Recommendations on Institutional Reforms in LG&CDD. Performance Appraisal System for Employees Employees' Compensation and Benefit Policy 	16 th – 22 nd Month after mobilization

No.	Report name	Report content	Date of Submission
		24. Baseline Report on Service Level Standards	
4	Draft Final Report	Detailed report on the project completion (Project Completion Report), outcome of the project. It will present a summary of all aspects of project implementation and comparison with the expectations of the loan and the DMF. The report will summarize and discuss the results of specialist aspects of the project including construction, capacity building, social and environmental safeguards, together with conclusions, recommendations and lessons learned for future projects. The content of the report will be agreed with the PMU and ADB prior to its preparation.	1 months prior to project completion
5	Final Report	Revised detailed report on the project completion and outcome of the project incorporating comments from ADB, Government of Punjab, and other stakeholders.	Within 1 months after project completion

III. URBAN TRANSPORT (DETAILED DESIGN)

A. Introduction

1. Current conditions

74. **Urbanization in Pakistan.** Cities are the core of economic growth and social development in Pakistan. Currently 53% of Pakistan's urban population lives in Punjab cities, and the intermediate cities²⁹ are growing at a fast speed. However, what accompanies the expansion of urban areas and population are often degraded and inadequate infrastructure, lack of capacity for urban climate change resilience, and unequal opportunities in accessing social services. Basic services, such as water supply, urban road networks and public green spaces, are increasingly unable to respond to population pressures and economic demands. Certain groups of urban population in Pakistan, especially the poor, women, children, the elderly, and persons with disabilities are excluded from enjoying the potential benefits of urban development.

2. Project background

75. **Urban transport in Punjab.** Recognizing the crisis of traffic conditions in Punjab cities, the Government of Pakistan has embarked upon an investment program to significantly improve the quality and performance of public transport. The Government has created a vision for inter-city bus terminals to connect in an integrated manner with municipal public transport networks. The Provincial Government of the Punjab has identified quality bus services as a principal mechanism to quickly and cost-effectively transform mobility in Punjab cities. Quality bus services represent a "light" version of the investments made under bus rapid transit (BRT) schemes. In particular, quality bus services seek to optimize some form of prioritization for buses while at the same time recognizing the spatial and financial limitations of many Punjab cities, especially the smaller and medium-sized cities of the province. A quality bus service thus seeks to maximize the potential for travel time reductions and customer amenity while at the same time reaching the goal of financial sustainability both in terms of the initial investment and the long-term operations.

²⁹ The Urban Unit of Punjab categorizes cities by population size---large: 1.9 million---9.0million; intermediate: 0.25 million---1.9 million.

B. Project Impact, Outcome, and Outputs

1. Impact and outcome

76. The project's impact will be the enhancement of economic development and quality of life for inhabitants of Punjab's cities. The project outcome will be improved accessibility to jobs, education, health care, and leisure for residents.

2. Outputs

77. The principal outputs of the project are: (i) institutional capacity to manage the new integrated sustainable transport system; (ii) high-quality bus system; (iii) improved accessibility through quality walking and cycling facilities; (iv) improved traffic management; and, (v) a formal parking management system. In addition, the project will promote gender mainstreaming, greenhouse gas emission reduction, and public-private partnership (PPP). The following paragraphs summarize each of the principal outputs.

78. **Output 1: Institutional development.** The project will ensure the institutional structures are in place to develop, implement, and manage the sustainable transport systems in Punjab cities. These structures may take the form of: i) Enhancing existing agencies or authorities; and/or ii) Creating new entities with the skills and capacity to achieve system sustainability. The primary functions of the agency will be: (i) management of private sector firms providing services for bus operations, parking management system, and others; (ii) ensuring that services provided are of high quality; (iii) daily operational oversight of the public transport operators, (iv) planning for and implementation of future development of the system; (v) quality control on the condition of sustainable transport infrastructure; and (vi) communications with the public and other key stakeholders.

79. **Output 2: Quality bus systems.** The project will deliver the planning and design activities to ensure the ensuing investment establish the first phase of a quality bus system for Sialkot. The project will finance the construction of some priority infrastructure for efficient bus operations. Operation of the buses will be tendered out to private-sector operators. The inclusion of existing public transport service owners in the system's operations will be a priority as part of the industry transition process. A public-private partnership (PPP) structure is envisioned to leverage the value of land and property development as a means to support the bus system's investment package.

80. **Output 3: Pedestrian and cycling facilities.** The project will improve accessibility through investment in pedestrian and cycling facilities. For a distance of 200 meters around each bus stop/station, the pedestrian conditions will be improved to provide safe, secure, and universally accessible connectivity. Project activities to accomplish this include installation of signalized pedestrian crossings, street lighting, pavement upgrades, universal accessibility measures, bicycle parking facilities, and feeder e-vehicle staging facilities. In conjunction with this project, an integrated greenway network will be provided that will link major origins and destinations, including residential areas, business centers, commercial centers, public services, and public transport hubs.

81. **Output 4: Traffic management system.** The project will finance measures to improve traffic management so that both the bus system and general mixed traffic moves more efficiently. These interventions will include installing new traffic signals at some currently unsignalized intersections and the upgrading of existing traffic signals at other key intersections and providing new road markings and signage.

82. **Output 5: Parking management system.** The project will provide a demonstration of a new parking scheme for the city, including the possible implemented of paid parking zones. The system may also use on-street occupancy sensor technology to indicate area parking availability. In addition, the project will investigate a parking levy mechanism that could assist in funding the broader sustainable transport package.

C. Implementation Arrangements

83. The Local Government and Community Development Department (LG&CDD) of Punjab and the Municipal Corporation of Sialkot. A Project Management Unit (PMU) has been established to support LG&CDD, and a City Implementation Unit (CIU) will be established. Under the guidance of the project steering committee, LG&CDD will be responsible for the overall execution of the project. The Sialkot City government will be responsible for day-to-day project implementation. One consultancy firm will be engaged to assist with project implementation, audit monitoring, and institutional strengthening.

84. The consultant is expected to provide computers and software for its own use. Other type of equipment and services needed include, but not limited to: (i) printers and photocopiers for report production; (ii) vehicle for local transportation; (iii) secretarial support; (iv) technical support for survey work; (v) communication tools such as video and exhibition panels; and (vi) international study tours; are to be provided by the consultant as needed and funded by provisional sums / reimbursable expenses or contingencies under the consultant's contract with prior approval of the EA and ADB. All equipment(s) purchased under the contract will be handed over to the EA upon completion of the services.

D.

D. Scope of Work, Tasks, and Deliverables

1. Objectives of assignment

85. The overall primary objective of the services is to provide project implementation assistance and professional services to the Government for the detailed design planning of a sustainable and integrated urban transport system. The Consultant is to hold a fundamental role in ensuring the overall project implementation process is delivered in a timely and efficient manner. The Consultant will first verify, update, and finalize the project concepts, recommendations and designs included in the Feasibility Studies of the systems. The principal activities of the Consultant will then be to develop the detailed planning of the project.

86. The services to be provided by the Consultant are divided into three overlapping and inter-dependent divisions of work streams:

- (i) Project Management, Communications, and Marketing
- (ii) Business, Institutional, and Operational Planning
- (iii) Engineering Design.

87. Each of these work streams will be under the direction of the Team Leader / Senior Project Manager. The tasks to be carried out by each part of the services are summarized in Part B below.

88. As part of the detailed design, the Consultant will prepare the technical specifications and tender documentation for the civil works and the system equipment, which include:

- (i) Civil works for bus system, stops/stations, depot, and control center

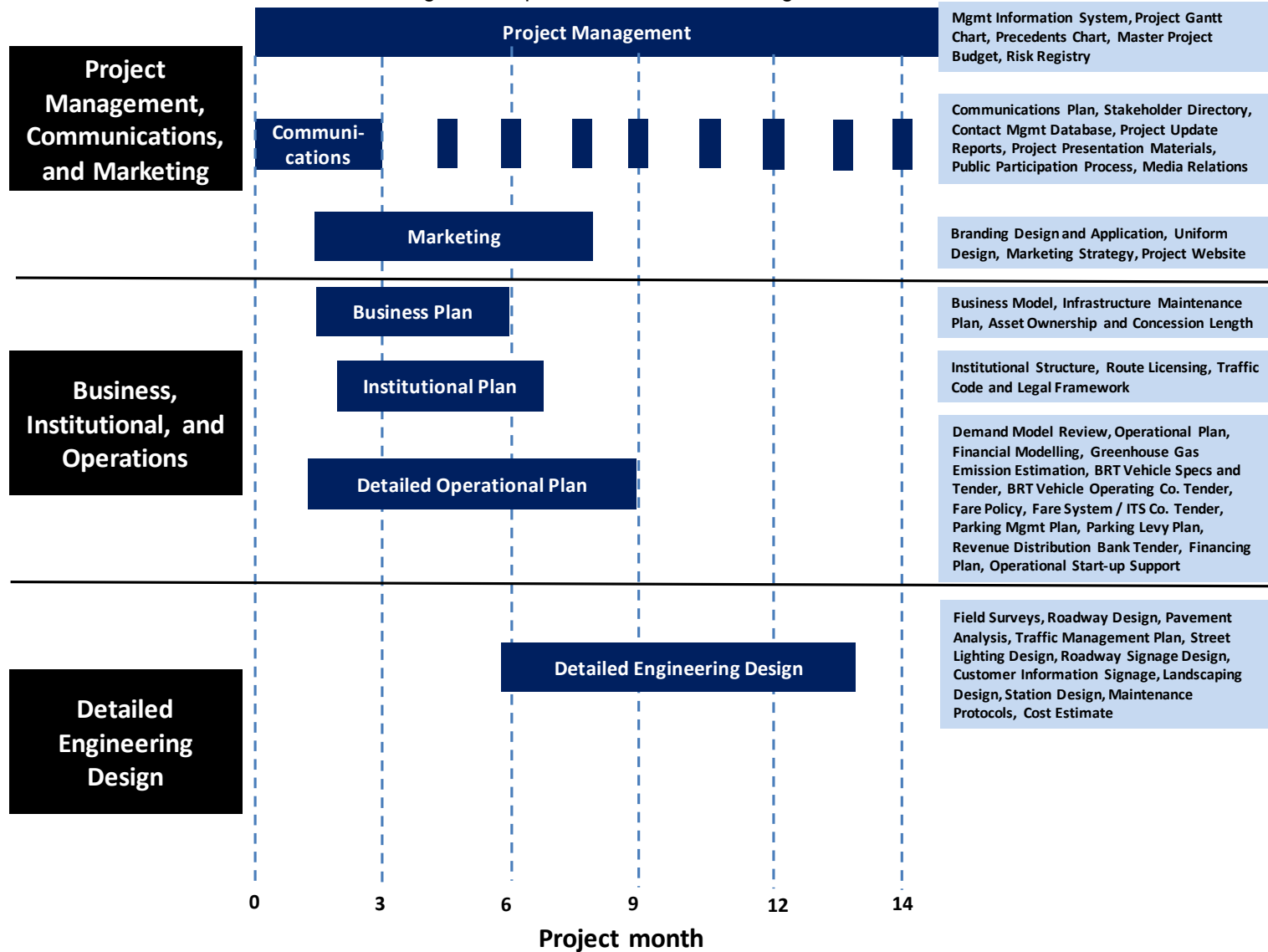
- (ii) Vehicles
- (iii) Civil works for pedestrian and cycle way facilities
- (iv) Modern e-vehicles as feeder services
- (v) Fare system, control center, and ITS equipment
- (vi) Parking management equipment and civil works
- (vii) Traffic management equipment and civil works.

89. The Consultant will also prepare the tender documentation and contracts for each of the service providers who will operate the system. The service providers are expected to be:

- (i) Bus operating company(ies)
- (ii) System control company (Fare system / ITS / station services)
- (iii) Parking management company
- (iv) Fund management company
- (v) Advertising and project management company.

90. It shall be noted that the design and advisory services provided are to be conducted under the supervision of the Executing Agency, Implementing Agencies, and the PIU. No activity of the Consultant shall supersede the role and responsibility of the Government in core project decision-making and in the establishment of institutions and legal frameworks.

Figure 1. Expected structure and timing of tasks.



2. Scope of system network

91. The quality bus network and associated greenway will connect the inter-city bus terminal, as financed through the PICIIP I initiative, with key destinations throughout the core city area. The network is being defined through a feasibility study being undertaken with funding from the ADB Urban Climate Change Resilience Trust Fund (UCCRTF). The full feasibility study will be made available at the time of tendering the detailed design consultancy for the project.

3. Tasks

92. **Project Management, Communications, and Marketing.** The Consultant will develop and implement project management tools to ensure project quality and the timely delivery of outputs. This will include developing and maintaining outreach and communications with key project stakeholders to ensure full engagement in the process. The Consultant will also develop the marketing and branding package for the system.

93. Specific Project Management tasks, responsibilities and deliverables include, but are not limited to, the following:

(i) Project management information system

The Consultant will establish and maintain a web-based project management information system (MIS) for the protection of project data and information.

[The draft form of the MIS is to be completed by the end of month 1. The full MIS will be operable within 30 days of receiving comments on the draft MIS.]

(ii) Master project schedule

The Consultant will prepare and maintain a master project schedule, in a standard Gantt chart format. The Gantt chart is to cover all activities, tasks and milestones necessary for the successful completion of the project, including activities managed by the EA and the IA, and any activities to be carried out by external entities including utility relocation and safeguard related activities. The Gantt chart will cover the period from the notice to proceed of the Consultant through commissioning of the quality bus services, and all other project components, and completion of warranty/defects liability periods on construction works, equipment and vehicles.

[The draft form of the master project schedule is to be prepared by the end of month number 2. The master project schedule is then to be fully operable within 30 days after receiving comments on the draft document. The master project schedule will be updated on a quarterly basis and included in the quarterly project progress report.]

(iii) Precedents chart

The Consultant will prepare a project precedents chart in which the interdependence of each output is related visually to each project activity. The precedents chart is intended to show critical project pathways in the delivery process.

[The precedents chart is to be operable by the end of month number 2 and updated monthly.]

(iv) Master budget and cost control program

The Consultant will prepare and maintain a master budgeting and cost control program using an appropriate cost management software package, making the necessary configurations/changes of the software as required for the specifics of the project. When implemented the budget and cost control spreadsheet will provide a complete and accurate picture of all incurred, programmed and projected project costs.

[The draft master budgeting and cost control program is to be completed by the end of month number 2. The full master budgeting and cost control program is to be operable within 30 days after receiving comments on the draft program.]

94. Specific Project Communications tasks, responsibilities and deliverables include, but are not limited to, the following:

(i) Overall communications plan

The Consultant will prepare an overall communications plan that will identify all key stakeholders, note the types of interactions sought with each stakeholder, and prepare the principal messages to be targeted at the stakeholders. The communications plan will principally focus on the governmental, business, and community stakeholder engagements during the project development stages.

[The draft communications plan is to be completed by the end of month number 2. The final communications plan is to be completed within 30 days of receiving comments on the draft plan.]

(ii) Stakeholder directory

The Consultant will maintain a project stakeholder directory that includes relevant contact information and project role details of organizations and individuals. The project stakeholder directory will be produced in a format that is accessible to the Government of Pakistan, project team members, and financing organizations. Among the type of stakeholders to be included in the directory are national Government officials, local Government officials, traffic police, existing public transport operators, affected land and business owners along the corridors, business associations (e.g. Chamber of Commerce), civil society, news media, and international organizations.

[The draft project stakeholder directory is to be completed by the end of month number 2. The final project stakeholder directory is to be completed within 30 days of receiving comments on the draft directory. The project stakeholder directory will be updated on a quarterly basis thereafter.]

(iii) Contact management database

The Consultant will maintain a contact management database in which the principal meetings and interactions with the key stakeholders are recorded, including information on the date, time, location, principal discussion points, and

any resulting action items. The Consultant will ensure that all the identified key stakeholders are briefed on project progress on a regular basis.

[The initial version of the contact management database is to be completed by the end of month number 3. The contact management database will be updated and distributed on a quarterly basis.]

(iv) Project update reports

The Consultant will produce and maintain all required project update reports to Government and funding organizations. The Consultant will produce brief (one page) project updates on a monthly basis with more detailed reporting at quarterly milestone points.

[Formal progress reports are to be provided on the basis of the regularity requested by the PIU and the financing organizations.]

(v) Project presentation materials

The Consultant will develop a set of project presentations, including a project overview presentation as well as more detailed presentations on the core project components (i.e. communications, branding and marketing, operational plan, business model, institutional arrangements, and infrastructure design).

[The draft set of presentations is to be completed by the end of month number 4. The final initial set of presentations is to be completed within 30 days of receiving comments on the draft set. The presentations will then be updated as appropriate.]

(vi) Public participation process

The Consultant will undertake a public participation process to inform the general public, businesses and related stakeholders of the new project systems. The public participation process will include workshops with presentations and colored hand-out brochures on the system, a system video as well as the provision of a question and answer period.

[A draft public participation workshop schedule is to be completed by the end of month number 2. A final public participation workshop schedule is to be completed within 30 days of receiving comments on the draft schedule.]

[The draft program and information package for the public participation workshops are to be completed by the end of month number 5. The final program and information package for the public participation workshops are to be completed within 30 days of receiving comments on the draft documents.]

(vii) Media relations

The Consultant will directly assist the PIU with media relations during the project development phase. The Consultant will prepare press releases to announce major project milestones. The Consultant will assist the PIU in responding to media inquiries, including the preparation of responses to questions and the preparation of public officials prior to media interviews.

[The Consultant will prepare project releases as required during the project development process. The Consultant will assist in preparing media inquiry responses on an as needed basis.]

95. Specific Marketing and Branding tasks, responsibilities and deliverables include, but are not limited to, the following:

(i) Branding development

The Consultant will develop the full branding package for the sustainable urban transport system encompassing the quality bus system, NMT network, and parking management system. A single branding and livery package will be developed to enable the public identification of the new system. The system “brand” will address the development of the system name, logo, and slogan, and the manner of the brand’s application to the vehicles, fare cards, stations, cycle way corridors, and employee uniforms.

The Consultant will develop concepts for the system name, logo, and slogan (i.e. tag-line). This work will include the selection of the colors and typeface of the brand. The Consultant will generate a long list of options for the system name. Through workshops with local and national officials and focus groups including both public transport and private vehicle users, the options will be evaluated and further developed. From this iterative process, the Consultant will narrow the naming options to short-listed recommendations. The team will develop several logo options associated with each of these short-listed names. Separately, the team will also develop a long list of options for the system slogan / tagline. These options will also be evaluated through the workshop and focus group process to reach a short list of options. The short-listed system names, logos, and taglines will be presented to the PIU, who will make the final decision in selecting the branding elements for the system. The branding process and options will be documented in a branding report, and this report will include a description of the branding development process, long list of branding options, summary of workshop and focus group encounters, and short list of branding options.

[The draft branding report will be completed by the end of month number 3. The final branding report is to be completed within 15 days of receiving comments on the draft report.]

(ii) Application of brand

The Consultant will provide renderings of the chosen system brand as applied to each of the project’s components that will display the brand. For the bus system, the aspects of the system that will likely display the brand are:

- Vehicle exterior
- Vehicle interior
- Fare cards
- Station totem
- Station entrance
- Station interior
- Route and network map signage
- Roadway signage
- Way-finding signage.

For the non-motorized transport system, the aspects that will likely display the brand are:

- Feeder e-vehicle
- E-vehicle staging points
- Cycle way and greenway signage.

For the parking management system, the aspects that will possibly display the brand are:

- Payment cards
- Electronic meters (if applicable)
- Parking space availability signage (if applicable).

For each of the above components, the Consultant will produce both renderings and branding descriptions that will then be incorporated into the appropriate specification and tender documents (e.g. vehicle specifications, station infrastructure specifications, signage specifications, parking system specifications, etc.).

[The branding inputs to each applied component will be summarized into a draft branding application report to be completed by the end of month number 4. A final branding application report is to be completed within 15 days of receiving on the draft branding application report.]

(iii) Employee uniforms

The system brand will also be applied to the uniforms to be utilized by the various employees in the system. The style and appearance of the uniforms will be important in defining the public's perception of the system's quality. In consultation with the PIU, the Consultant will identify all project positions that will involve a public interface, which will require the use of a uniform. The list of employee types will likely include:

- Bus drivers
- Bus kiosk and fare system employees
- Station customer service staff
- Security staff
- Station cleaning staff
- Landscaping staff
- Control center staff
- Quality control staff
- Depot vehicle maintenance staff
- E-vehicle drivers
- Parking management street staff.

The Consultant will recommend the extent to which there will be uniform variations between the different staff types. The Consultant will develop several design options for each uniform type. The uniforms will incorporate the system's branding identity. Each uniform should include both a male and female version if the uniform is to be gender differentiated (or a single unisex design). Both material and style options will be developed. Seasonal differences may also be reflected in the uniform design options. The uniform design options shall be reviewed during workshops with the Government and provided to the PIU for a final decision. The

uniform design report will include a description of the uniform development process, a summary of workshops, and the short list of options.

[The draft uniform design report is to be completed by the end of month number 5. The final uniform design report is to be completed within 15 days of receiving comments on the draft report.]

The PIU will select the uniform design (including choice of style, variations, colors, and material). The Consultant will then produce the detailed specifications and tender document for the uniforms. The results from the operational plan will then determine the order quantity of each uniform required (noting that at least double sets are required for each employee since one set may be placed in washing for any given day).

[The draft uniform specifications and tender document will be completed by month number 6. The final uniform specifications and tender document is to be completed within 15 days of receiving comments on the draft specifications.]

(iv) Overall marketing strategy

The Consultant will develop and produce the overall marketing strategy for the system, including the general design of the pre-opening campaign, launch event, and post-opening campaign. The overall marketing strategy will identify the key target audiences for the marketing outreach. The strategy will also develop key messages as part of the outreach plan. The Consultant will determine the appropriate medium for disseminating these messages, including options such as the project website, seminars, one-on-one sessions, community sessions, brochures, videos, newspaper and magazine editorials, and advertisements through radio, television, and billboards.

[The draft marketing strategy is to be completed by the end of month number 5 and presented to the PIU for approval and endorsement. The final marketing strategy is to be completed within 15 days of receiving comments on the draft strategy.]

(v) Project website

The Consultant will develop and implement a project website, including management of the website from project month number 7. The website will as a minimum contain: system home page, description of project, bus and non-motorized transport route maps, station and bus stop location descriptions, traffic management changes, new parking restrictions, paid on-street parking areas, and parking enforcement procedures. The website will also include common questions and answers (FAQs), user information such as operating hours, contact information and user input and feedback.

[The draft layout and content of the project website is to be completed by the end of month number 6. The project website is then to become operable within 30 days of receiving comments on the draft website layout and content.]

96. **Business, Institutional, and Operations Planning.** These services encompass the planning and design activities to develop the detailed operational design of the system as well as establish the prescribed business structure between the contracted and managerial entities.

97. Specific Business Plan tasks, responsibilities and deliverable include, but are not limited to the following:

(i) Overall business model

The Consultant will develop and produce the overall Business Model for the components of the project. The Business Model will encompass the following components: i) Listing of all contracted parties in the system and show the managerial and supervisory links between the contracted parties and the oversight agency; ii) Outline the procurement process details of each contract; and, iii) Describe and chart the intended flow of revenues and payments between the contracted parties. The contracted parties are expected to include, but are not limited to, the following:

- (a) Bus Vehicle Operating Company(ies)
- (b) Fare System / ITS / Station Services Company
- (c) Parking Management and Enforcement Company
- (d) Advertising and Property Development Company
- (e) Infrastructure Maintenance Company
- (f) Revenue Distribution Bank¹.

(ii) Infrastructure maintenance services

The Consultant will determine the business model for the provision of infrastructure maintenance. Infrastructure maintenance encompasses various aspects of the system, including: a) Roadway components; (b) Bus station/stop environment; (c) pedestrian access facilities, (including street lighting, pavement upgrades, street furniture and CCTV cameras, etc.); (d) bicycle parking facilities and e-vehicle staging areas; (e) pedestrian facilities in the immediate access area of stations; and, (f) any associated infrastructure with the traffic management system, such as roadway markings and signage. There are at least two options for the provision of the infrastructure maintenance services:

- (a) Dedicated infrastructure maintenance company
- (b) Civil Works Construction Firm also provides infrastructure maintenance.

In many systems, it is advantageous to assign the infrastructure maintenance contract to the Civil Works Construction Firm for at least a first concessional period. This business structure ensures there is a strong incentive for the construction firm to deliver quality infrastructure in the first instance. In subsequent infrastructure maintenance concessions, it is possible to shift responsibility to other entities. The Consultant will evaluate the options and make recommendations to the PIU on the appropriate business and contractual model for the provision of infrastructure maintenance.

(iii) Asset ownership and length of concession

The Business Model should also make clear who "owns" particular assets and who is financially responsible for their replacement if the asset fails during the concession period. The Consultant will also put forward recommendations on the length of the concession period for each contract.

¹ The Revenue Distribution Bank is expected to be engaged through a letter of agreement rather than a commercial contract.

[The draft Business Model report is to be completed at the end of month number 6. The final Business Model report is to be completed within 15 days of receiving comments on the draft report.]

98. Specific Institutional Plan tasks, responsibilities and deliverables include, but are not limited to the following:

(i) Institutional structure

As an advisory role to the PIU, the Consultant will evaluate the options for the long-term institutional arrangements for the management of the sustainable urban transport system.

The Consultant will develop a recommendation on the legal form to create any required new entity. The Consultant will also detail the legal steps in carrying out the formation of the entity, if needed.

The institutional plan will also contain recommendations on the structure and staffing of the proposed management entity. The Consultant will prepare the detailed position descriptions which will be utilized to recruit the staff. The Consultant will advise the PIU on how to carry out the staff recruitment process.

[The draft institutional plan is to be completed by the end of month 6. The final institutional plan is to be completed within 15 days of receiving comments on the draft plan.]

(ii) Route licensing

The Consultant will conduct a study on the licensing requirements for the bus route operation in the city. The Consultant will then provide the required technical assistance to enable the route licenses to be awarded. However, the actual fulfillment of the route licensing process will be enacted by the Government.

[The draft route license plan is to be completed by the end of month 7. The final route license plan is to be completed within 15 days of receiving comments on the draft plan.]

(iii) Traffic code and legal framework

The Consultant will provide the legal assistance to help define any traffic code changes to enable the sustainable urban transport system to effectively function within the legal framework of Pakistan. The Consultant will identify the appropriate passages of the existing regulatory structure and traffic code that pertains to or is affected by the suggested changes introduced by the project. Among the issues that may affect the existing regulatory and legal code are: introduction of metered parking and parking fees, the use of private sector entities for parking management and partial enforcement, construction of bus stations/stops, penalties for illegal parking and unauthorized operation of a private vehicle on a dedicated busway, role of traffic police in relation to the new traffic signal systems and the control of intersections, and conversion of urban streets to bus-and-pedestrian only areas.

The Consultant will assist in developing potential revised text for amendments to the legal framework and traffic code with respect to parking and traffic management in support of the project. The Consultant will also identify the

regulatory and possible legislative amendments required to implement a parking levy system. The Consultant will also assist in developing the revised text for the amendments to the legal framework with respect to a parking levy system. However, any actual adoption of legal text and any related legal decision on the traffic code or legislation will be exclusively the role of the Government. The Consultant will only fulfill an advisory role in this regard.

The Consultant will lead workshop knowledge sharing sessions with national and local authorities (including the traffic police) to understand current policies, practices, and regulations and to introduce the proposed changes to the legal code.

The Consultant will detail the administrative process required for official approval and codification of the suggested regulatory changes to the traffic and legal codes. The Consultant will then provide technical assistance to the implementation of the process to enact the changes to the traffic and legal codes, including the changes required for the enactment of a parking levy.

[The draft analysis of the traffic code and legal framework for the system is to be completed by the end of month 7. The final analysis and recommendations on the traffic code and legal framework is to be completed within 15 days of receiving comments on the draft analysis and recommendations. The provision of the legal technical assistance to enact the proposed changes to the traffic and legal code is to be delivered during the regulatory process.]

(iv) Knowledge sharing program

The Consultant will design a knowledge sharing program for the executing and implementing agencies related to the project, including the PIU team and related agencies at both the national and local levels. The knowledge sharing program will build upon the capacity development program defined in the Conceptual Business and Institutional Plan. Among the likely topics to be included in the knowledge sharing program are:

- (a) Media training and communications
- (b) Managing the transportation demand model
- (c) Procurement of service companies to system
- (d) Procurement of equipment and civil works
- (e) Bus system planning
- (f) Non-motorized transport
- (g) Traffic and parking management
- (h) Institutional and legal frameworks
- (i) Business models and financial analysis
- (j) Monitoring of environmental performance of construction
- (k) Quality control monitoring and reporting.

The Consultant will develop the appropriate training materials and deliver at least two of these modules.

[Knowledge sharing modules are to be developed over a period of between month 3 and month 18 of the project. The delivery of the knowledge sharing program is to take place between month 3 and month 24 of the project, including the delivery of the four study tours.]

99. Specific Operational Plan tasks, responsibilities and deliverable include, but are not limited to the following:

- (i) Demand model review
- (ii) Operational plan
- (iii) Financial modeling of operations
- (iv) Traffic management plan and micro-simulation analysis
- (v) Estimation of greenhouse gas emission reductions
- (vi) Specifications, tender document, and contract for buses
- (vii) Specifications, tender documents, and contract for Bus Vehicle Operating Companies
- (viii) Fare policy and fare structure plan
- (ix) Specifications, tender, and contract for Fare System / ITS / Station Services Company
- (x) Operational plan, specification, tender, and contract for NMT vehicle components
- (xi) Parking management plan
- (xii) Specifications, tender, and contract for Parking Management Company
- (xiii) Operational and implementation plan for parking levy system
- (xiv) Specifications and letter of agreement for Revenue Distribution Bank
- (xv) Summary financing plan.

100. **Engineering Design and Construction Supervision.** These services will in general coordinate and manage all aspects of the engineering, civil works procurement and construction management aspects of the Consultant. The specific tasks, responsibilities and deliverables include, but are not limited to, the following:

- (i) Field surveys. The Consultant will conduct the requisite field surveys to enable the preliminary and detailed designs
- (ii) Preliminary roadway design
- (iii) Pavement analysis
- (iv) Intersection and junction design
- (v) Preliminary design of street lighting
- (vi) Preliminary design of roadway signage and pavement markings
- (vii) Preliminary design of customer information signage
- (viii) Preliminary landscaping design
- (ix) Preliminary bus station/stop design
- (x) Preliminary design of vehicle-platform interface
- (xi) Depot location selection and preliminary designs of depots and staging areas
- (xii) Infrastructure maintenance protocols, specifications, tender, and contract
- (xiii) Preliminary control center design
- (xiv) Preliminary project bill of quantity (BoQ) and engineer's cost estimate
- (xv) Final detailed engineering design
- (xvi) Final bill of quantity (BoQ) and engineer's cost estimate
- (xvii) Construction impact plan
- (xviii) Specifications, tender, and contract for system construction.

E. Logistics and Timing

101. The Consultant activities will take place in two locations: i) Field work in cities of Punjab Province, Pakistan; and ii) Home office. The task description and experts' profile will indicate the amount of Consultant time allocated at each location.

102. The duration of the Consultant services shall be 14 months, commencing approximately in September 2020.

F. Personnel Requirements

1. Personnel

103. The Consultant international staffing will require approximately 38.0 person-months of inputs. A total of 12 international specialists of specific expertise and qualifications are expected for the accomplishment of these terms of reference. The Consultant national staffing will require approximately 111.5 person-months of inputs. A total of 27 national specialists of specific expertise and qualifications are expected for the accomplishment of these terms of reference.

104. **Key experts.** Seven key experts will be evaluated for purposes of the selection process in this recruitment. It is expected that all international key experts will spend at least 35% of their project time in the Punjab project cities, working collaboratively with provincial and local Government staff. National key experts are expected to be spend at least 70% of their time in the Punjab city project sites. Table 13 specifies the requirements for the four international key experts. Table 14 specifies the requirements for the four national key experts.

Table 13: International key experts

	Position	Person-months	Experience requirements
1	Team Leader / Senior Project Manager	5.0	<p>The Team Leader/Senior Project Manager will possess at least bachelor's degree in civil engineering, transport engineering, transport / urban planning, project management, or a related field, and preferably the expert will also possess a post-graduate degree. The expert will possess a minimum 15 years of relevant experience in implementing sustainable urban transport projects, including a minimum 10 years in developing and implementing quality public transport systems. The expert will also have at least 10 years of experience in a position managing large sustainable urban transport projects as the Team Leader. The expert shall spend at least 35% of their project time based in the Punjab project city.</p> <p>Among the key responsibilities of the Team Leader / Senior Project Manager are:</p> <ul style="list-style-type: none"> ▪ Project reporting ▪ Project team management ▪ Stakeholder engagement ▪ Technical inputs to each planning component ▪ Inputs and preparation to the MIS system ▪ Timely development and updating of project Gantt chart ▪ Timely development and regular updating of the Precedents chart ▪ Production of the project risk registry ▪ Provision of procurement support
2	Senior Bus Operations Specialist	4.0	<p>The Senior Bus Operations Specialist will possess a university degree in transport / urban planning, engineering, or a related field. The expert will possess at least 10 years of relevant experience in developing bus operational plans.</p> <p>Among the key responsibilities of the Senior Bus Operations Specialist are:</p> <ul style="list-style-type: none"> ▪ Preparation of detailed bus operational plan ▪ Operational plan optimization ▪ Inputs to physical design ▪ Capacity development support

	Position	Person-months	Experience requirements
3	Senior Transport Institutional Specialist	4.0	<p>The Senior Transport Institutional Specialist will possess a university degree in transport/urban planning, governance, public policy, business, or a related field. The expert will possess at least 10 years of relevant experience in developing urban transport institutional structures and providing capacity building assistance, including experience with institutional structures for quality bus systems.</p> <p>Among the key responsibilities of the Transport Institutional Specialist are:</p> <ul style="list-style-type: none"> ▪ Business model ▪ Institutional plan ▪ Position descriptions for management entity ▪ Capacity development support

Table 14: National key experts

	Position	Person-Months	Experience requirements
1	Deputy Team Leader / Project Manager	10.0	<p>The Deputy Team Leader will possess a university degree in project management, engineering, business, transport planning, or a related field. The expert will possess at least 10 years of relevant experience in managing the major urban transport infrastructure projects, including specific experience in managing quality bus systems. The expert will be based in the Punjab project city for at least 75% of the person-months.</p> <p>Among the key responsibilities of the Deputy Team Leader / Project Manager are:</p> <ul style="list-style-type: none"> ▪ Project reporting ▪ Team management ▪ MIS oversight ▪ Gantt and precedent chart management ▪ Risk registry management ▪ Technical inputs design and planning ▪ Capacity development
2	Public Transport Specialist	6.0	<p>The Public Transport Specialist will possess a university degree in transport / urban planning, engineering, or a related field. The expert will possess at least 7 years of relevant experience in developing sustainable urban transport initiatives.</p> <p>Among the key responsibilities of the Public Transport Specialist are:</p> <ul style="list-style-type: none"> ▪ Provision of inputs to the detailed bus system operational plan ▪ Assistance with the integration design of non-motorized transport components ▪ Inputs to physical design ▪ Capacity development support
3	Bus Industry Transition Specialist	5.0	<p>The Bus Industry Transition Specialist will possess a university degree in business, transport / urban planning, engineering, or a related field. The expert will possess at least 7 years of relevant experience in managing or developing quality bus-based public transport systems, including the facilitation of existing operators into a quality system.</p> <p>Among the key responsibilities of the Bus Industry Transition Specialist are:</p> <ul style="list-style-type: none"> ▪ Manage the relationship of the project with the existing bus, minibus, and informal transit operators ▪ Develop strategic plan for engaging the operators and for implementing the transition process ▪ Provide inputs to the development of the bid documents for the bus operating companies ▪ Oversee survey of existing industry

	Position	Person-Months	Experience requirements
			<ul style="list-style-type: none"> ▪ Develop the vehicle scrapping and compensation funds for the transition process
4	Road Design Engineer	7.0	<p>The Road Design Engineer will possess a university degree in civil engineering or a related field. The expert will possess at least 10 years of relevant experience in designing quality urban public transport systems, including experience with bus systems.</p> <p>Among the key responsibilities of the Road Design Engineer are:</p> <ul style="list-style-type: none"> ▪ Road layout design ▪ Pavement design ▪ Oversight of survey work

105. In addition to the seven key experts noted above, the Consultant will also include additional required experts in order to deliver the project activities in a timely and quality manner. While these additional required experts will not be evaluated for purposes of the selection scoring, the Contracting Authority reserves the right to request the replacement of any expert should they be deemed inadequate for the described tasks. Table 15 describes the additional required international experts. Table 16 describes the additional required national experts.

Table 15: Additional required international experts

	Title	Person-months	Experience requirements
Project Management and Communications			
1	Senior Legal Specialist	2.0	<p>The Senior Legal Specialist will possess a university degree in law and will be licensed as a legal professional. The expert will possess at least 10 years of relevant experience on contract law, including experience with major urban infrastructure projects.</p> <p>Among the key responsibilities of the Senior Legal Specialist are:</p> <ul style="list-style-type: none"> ▪ Development of the contractual language for the bid documents ▪ Inputs to required regulatory modifications ▪ Project legal advice as required during course of the PRF
Business, Institutional, and Operational Planning			
2	Financial Modeler	3.0	<p>The Financial Modeler will possess a university degree in transport / urban planning, finance, business, engineering, or a related field. The expert will possess at least 7 years of relevant experience with the financial modeling of public transport operations.</p> <p>Among the key responsibilities of the Financial Modeler are:</p> <ul style="list-style-type: none"> ▪ Development of financial model of sustainable transport system's operations ▪ Cost input analysis ▪ Model scenarios ▪ Model optimization ▪ Capacity development support
3	Senior Traffic Engineer	3.0	<p>The Senior Traffic Engineer will possess a university degree in civil engineering, transport / urban planning, or a related field. The expert will possess at least 10 years of relevant experience with urban transport systems and traffic management.</p> <p>Among the key responsibilities of the Traffic Engineer are:</p> <ul style="list-style-type: none"> ▪ Traffic signal system upgrades ▪ Intersection and u-turn point designs ▪ Micro-simulation of intersections and u-turn points
4	Bus Vehicle Specialist	2.0	<p>The Bus Vehicle Specialist will possess a university degree in engineering, transport / urban planning, or a related field. The expert will possess at least 7 years of relevant experience in developing quality bus systems, including experience in developing the specifications of vehicles.</p> <p>Among the key responsibilities of the BRT Vehicle Specialist are:</p> <ul style="list-style-type: none"> ▪ Development of the technical bus specification ▪ Provide additional inputs to the bid documents

	Title	Person-months	Experience requirements
			<ul style="list-style-type: none"> ▪ Support the bid evaluation process ▪ Provide vehicle procurement support
5	Fare and ITS Specialist	2.5	<p>The Fare and ITS Specialist will possess a university degree in information technology, intelligent transportation systems, engineering, transport / urban planning, or a related field. The expert will possess at least 7 years of relevant experience in developing and specifying fare and ITS systems for public transport applications.</p> <p>Among the key responsibilities of the Fare and ITS Specialist are:</p> <ul style="list-style-type: none"> ▪ Fare policy development ▪ Fare study report ▪ Fare system specifications ▪ ITS system specifications ▪ Fare and ITS system procurement support ▪ Capacity development support
6	e-Vehicle Specialist	2.5	<p>The e-Vehicle Specialist will possess a university degree in engineering, transport / urban planning, environmental management, or a related field. The expert will possess at least 7 years of relevant experience in developing electric vehicle applications, especially with regard to public transport.</p> <p>Among the key responsibilities of the e-Vehicle Specialist are:</p> <ul style="list-style-type: none"> ▪ E-Vehicle specifications ▪ Inputs to the vehicle bid documents ▪ Development of operational and business plan for e-vehicles ▪ Capacity development support to e-vehicle operators ▪ Procurement support
Detailed Engineering Design			
7	Senior Drainage Design Engineer	4.0	<p>The Senior Drainage Design Engineer will possess a university degree in engineering, transport planning, or a related field. The expert will possess at least 10 years of relevant experience in developing roadway drainage systems, including experience with drainage systems for public transport corridors.</p> <p>Among the key responsibilities of the Senior Drainage Design Engineer are:</p> <ul style="list-style-type: none"> ▪ Oversight of hydrological/drainage survey ▪ Drainage system design ▪ Bioswale development
8	Senior Road Design Engineer	10.0	<p>The Senior Road Design Engineer will possess a university degree in civil engineering or a related field. The expert will possess at least 10 years of relevant experience in designing quality urban public transport systems, including experience with BRT.</p> <p>Among the key responsibilities of the Road Design Engineer are:</p> <ul style="list-style-type: none"> ▪ Road layout design ▪ Pavement design ▪ Oversight of survey work ▪ Road signage and road markings
9	Senior NMT Design Specialist	2.3	<p>The Senior NMT Design Specialist will possess a university degree in transport / urban planning, engineering, environmental management, or a related field. The expert will possess at least 10 years of relevant experience in designing pedestrian and bicycle infrastructure.</p> <p>Among the key responsibilities of the NMT Design Specialist are:</p> <ul style="list-style-type: none"> ▪ Pedestrian facility design ▪ Bicycle parking design ▪ Greenway design ▪ e-Vehicle staging design

Table 16: Additional required national experts

	Title	Person-months	Experience requirements
1	Communications Specialist	10.0	<p>The Communications Specialist will possess a university degree in communications, journalism, marketing, or a related field. The expert will possess at least 7 years of experience in providing communications and stakeholder engagement support to infrastructure projects, including experience in the transport sector.</p> <p>Among the key responsibilities of the Communications Specialist are:</p> <ul style="list-style-type: none"> ▪ Project stakeholder directory ▪ Communications plan ▪ Contact management database ▪ Project presentations ▪ Management of media relations ▪ Stakeholder sessions ▪ Project team communications ▪ Capacity development support
2	Contract and Procurement Specialist	4.0	<p>The Contract and Procurement Specialist will possess a university degree in business, finance, accounting, law, engineering, or a related field. The expert will possess at least 7 years of relevant experience in managing procurement for infrastructure projects, including specific experience with projects financed through international financial institutions.</p> <p>Among the key responsibilities of the Contract and Procurement Specialist are:</p> <ul style="list-style-type: none"> ▪ Procurement development support ▪ Tender development ▪ Specification review
3	Public Participation Specialist	2.0	<p>The Public Participation Specialist will possess a university degree in public policy, communications, planning, development studies, or a related field. The expert will possess at least 7 years of experience in designing and implementing public participation processes for large infrastructure projects, including projects in the transport sector.</p> <p>Among the key responsibilities of the Public Participation Specialist are:</p> <ul style="list-style-type: none"> • Design of public participation program • Public participation materials • Public participation sessions • Inputs to media relations
4	Marketing and Branding Specialist	3.0	<p>The Marketing and Branding Specialist will possess a university degree in marketing, communications, business, or a related field. The expert will possess at least 5 years of experience in developing marketing plans and branding for public transport services.</p> <p>Among the key responsibilities of the Marketing and Branding Specialist are:</p> <ul style="list-style-type: none"> • Marketing strategy • Branding development • Vehicle livery development • Inputs to uniform design • Project website development • Capacity development support
5	Uniform Designer	2.0	<p>The Uniform Designer will possess a polytechnic or university degree in fashion design, industrial design, or a related field. The expert will possess at least 5 years of relevant experience in developing clothing design.</p> <p>Among the key responsibilities of the Uniform Designer are:</p> <ul style="list-style-type: none"> ▪ Determination of uniform requirements and types ▪ Analysis of material options ▪ Design of seasonal variations to uniform ▪ Preparation of uniform specifications and tender documents ▪ Procurement assistance
6	Website Developer	3.0	<p>The Website Developer will possess a polytechnic or university degree in information technology, communications, design, or a related field. The expert will possess at least 5 years of experience in developing websites for</p>

	Title	Person-months	Experience requirements
			<p>organizations, including experience with websites for services-type organizations.</p> <p>Among the key responsibilities of the Website Developer are:</p> <ul style="list-style-type: none"> ▪ Architecture of institutional website ▪ Development of initial content for the website ▪ Delivery of the initial website for the urban transport system
Business, Institutional, and Operational Planning			
7	NMT Specialist	4.0	<p>The NMT Specialist will possess a university degree in transport / urban planning, engineering, environmental management, or a related field. The expert will possess at least 7 years of relevant experience in developing sustainable urban transport projects and must possess experience with NMT implementation.</p> <p>Among the key responsibilities of the NMT Integration Specialist are:</p> <ul style="list-style-type: none"> • Integration of pedestrians, cyclists, and pedicabs into the bus station environment • Inputs to the physical engineering design of the NMT components • Capacity development support
8	Transport Modeler	2.0	<p>The Transport Demand Modeler will possess a university degree in computing, statistics, transport / urban planning, engineering, or a related field. The expert will possess at least 5 years of relevant experience with the demand of public transport systems.</p> <p>Among the key responsibilities of the Transport Modeler are:</p> <ul style="list-style-type: none"> • Review of existing model • Survey planning • Survey supervision ▪ Model management and optimization
9	Three-Wheeler Industry Specialist	14.0	<p>The Three-Wheeler Industry Specialist will possess a university degree in business, communications, transport / urban planning, or a related field. The expert will possess at least 5 years of relevant experience in working on transport planning.</p> <p>Among the key responsibilities of the Three-Wheeler Industry Specialist:</p> <ul style="list-style-type: none"> ▪ Identification of key stakeholders in the motorized and non-motorized three-wheeler transport services ▪ Development of outreach messaging to the three-wheeler industry ▪ Delivery of negotiating sessions with the industry ▪ Development of summary findings on integrating three-wheelers with the new system
10	Advertising and Property Development Specialist	3.0	<p>The Advertising and Property Development Specialist will possess a university degree in business, economics, or a related field. The expert will possess at least 5 years of relevant experience in working the advertising and / or property development industry, including specific experience with public-private partnerships (PPPs).</p> <p>Among the key responsibilities of the Advertising and Property Development Specialist are:</p> <ul style="list-style-type: none"> ▪ Identification of advertising opportunities in the new system (inside stations, inside buses, shelters, etc.) ▪ Estimation of advertising value for system, as an input to the operational financial analysis ▪ Estimation of the property value at key transit-oriented development sites of the corridors ▪ Preparation of the bidding documents for the advertising and property development PPP
11	Traffic Engineer	4.0	<p>The Traffic Engineer will possess a university degree in civil engineering, transport / urban planning, or a related field. The expert will possess at least 7 years of relevant experience with urban transport systems and traffic management.</p> <p>Among the key responsibilities of the Traffic Engineer are:</p> <ul style="list-style-type: none"> ▪ Traffic signal system upgrades

	Title	Person-months	Experience requirements
			<ul style="list-style-type: none"> ▪ Intersection re-designs ▪ Micro-simulation of intersections and u-turn points ▪ Traffic road markings and signage ▪ Analysis and recommendations on traffic enforcement
12	Legal Advisor	4.0	<p>The Legal Advisor will possess a university degree in law and will be licensed as a legal professional in Pakistan. The expert will possess at least 7 years of relevant experience on contract law, including experience with the regulatory statutes of Pakistan.</p> <p>Among the key responsibilities of the Legal Advisor are:</p> <ul style="list-style-type: none"> ▪ Review of project requirements relative to the legal statutes in Pakistan ▪ Development of suggested regulatory changes, if required ▪ Inputs to project contracts ▪ Project legal advice as required during course of the PRF
13	Parking Management Specialist	4.0	<p>The Parking Management Specialist will possess a university degree in transport / urban planning, engineering, or a related field. The expert will possess at least 5 years of relevant experience in developing urban parking management and enforcement systems.</p> <p>Among the key responsibilities of the Parking Management Specialist are:</p> <ul style="list-style-type: none"> • Parking specifications and tender • Parking contract • Supervision of parking survey • Development of parking levy • Procurement support • Capacity development support
14	Transport Institutional Specialist	20.0	<p>The Transport Institutional Specialist will possess a university degree in transport/urban planning, governance, public policy, business, or a related field. The expert will possess at least 5 years of relevant experience in developing institutional structures and providing capacity building assistance in Pakistan.</p> <p>Among the key responsibilities of the Transport Institutional Specialist are:</p> <ul style="list-style-type: none"> • Contribute to the detailed Institutional plan • Position descriptions for designated agency • Route licensing development • Capacity development support
Engineering Design and Construction Supervision			
15	Drainage Design Engineer	5.0	<p>The Drainage Design Engineer will possess a university degree in civil engineering or a related field. The expert will possess at least 7 years of relevant experience in developing roadway drainage systems.</p> <p>Among the key responsibilities of the Drainage Design Engineer are:</p> <ul style="list-style-type: none"> • Support to hydrological/drainage survey • Drainage system design • Bioswale development
16	Geotechnical / Foundation Engineer	5.0	<p>The Geotechnical / Foundation Engineer will possess a university degree in civil engineering, soil mechanics, or a related field. The expert will possess at least 7 years of relevant experience in developing roadway and structural foundations, including specific experience with public transport systems.</p> <p>Among the key responsibilities of the Geotechnical / Foundation Engineer are:</p> <ul style="list-style-type: none"> • Oversight of topographical survey • Foundation design
17	Cadastral Analyst	2.0	<p>The Cadastral Analyst will possess a university degree in business, planning, property development, or a related field. The expert will possess at least 5 years of relevant experience on urban development and/or property development.</p> <p>Among the key responsibilities of the Cadastral Analyst are:</p>

	Title	Person-months	Experience requirements
			<ul style="list-style-type: none"> ▪ Mapping of property boundaries along the corridors ▪ Mapping of property boundaries along pedestrian access ways to the stations ▪ Identification of property development opportunities along the corridor
18	Landscape Architect	3.0	<p>The Landscape Architect will possess a university degree in landscape architecture, urban design, or a related field. The expert will possess at least 7 years of relevant experience in applying landscape designs to urban public spaces.</p> <p>Among the key responsibilities of the Landscape Architect are:</p> <ul style="list-style-type: none"> • Identification of appropriate plant and tree species • Landscape detailed plan • Landscape maintenance plan
19	Structural Design Engineer	4.0	<p>The Structural Design Engineer will possess a university degree in civil engineering, architecture, or a related field. The expert will possess at least 7 years of relevant experience with the design of public transport structures.</p> <p>Among the key responsibilities of the Structural Design Engineer are:</p> <ul style="list-style-type: none"> • Station structural design • Depot structural design
20	Electrical Design Engineer	4.0	<p>The Electrical Design Engineer will possess a university degree in electrical engineering, physics, or a related field. The expert will possess at least 7 years of relevant experience in developing electrical design plans for urban transport applications, including specific experience with energy-efficient street lighting.</p> <p>Among the key responsibilities of the Electrical Design Engineer are:</p> <ul style="list-style-type: none"> • Assistance in oversight of utility survey • Station electrical design • Street lighting design
21	Architect	5.0	<p>The Architect will possess a university degree in architecture, design, or a related field. The expert will possess at least 7 years of relevant experience in designing top structure elements for urban projects.</p> <p>Among the key responsibilities of the Architect are:</p> <ul style="list-style-type: none"> • Analysis of station components • Stop/station architectural design • Depot design • Staging area design • Inputs to renderings
22	Quantity Surveyor	3.0	<p>The Quantity Surveyor will possess a university degree in civil engineering or a related field. The expert will possess at least 7 years of relevant experience in cost estimation of urban transport civil works, including specific experience with public transport projects.</p> <p>Among the key responsibilities of the Quantity Surveyor are:</p> <ul style="list-style-type: none"> • Infrastructure quantity estimate • Infrastructure cost estimate
23	CAD Specialist	4.0	<p>The CAD Specialist will possess a university degree in design, engineering, or a related field. The expert will possess at least 7 years of relevant experience in developing CAD drawings and renderings for transport projects, including specific experience with public transport projects.</p> <p>Among the key responsibilities of the CAD Specialist are:</p> <ul style="list-style-type: none"> • Rendering perspective identification • Rendering design • Cross-sectional roadway drawings • Utility drawings • Top structure drawings

2. Office accommodation, facilities, equipment

106. A limited amount of office space will be available to the Consultant from the PIU. This space will only provide sufficient temporary space for approximately two team members of the Consultant. The Consultant will thus be responsible for providing the office space for the majority of its team in Sialkot.

107. The PIU will provide all relevant existing reports and available documents to the Consultant during the implementation of the consultancy. The PIU will facilitate access of the Consultant to other government agencies for communications, collecting of relevant information, data, documents, etc. and other activities related to the Consultant's assignment.

108. The Consultant is expected to provide for their own domestic and international travel, insurance, subsistence, computer equipment, and all consumables, and make provision for the cost of office operation, including electricity and telephone, and all other costs to fulfill the consultancy services.

109. The Consultant shall ensure that experts are adequately supported and equipped. In particular it shall ensure that there is sufficient administrative, secretarial, translation and interpreting provision to enable experts to concentrate on their primary responsibilities. It must also transfer funds as necessary to support its activities under the contract and to ensure that its employees are paid regularly and in a timely fashion.

G. Reporting Requirements

110. **Format and language of reports.** All reports and other deliverables shall be submitted in the English language. Project technical reports, both drafts and final reports, shall be distributed to the Project Director of the PIU and the project lead of any international financing institutions involved in the project. All deliverables and project progress reports shall be submitted as 5 hard copies to the PIU and as an electronic copy to the Project Director of the PIU and the project leads of the international financing institutions.

111. **Inception Report.** This report shall be submitted within three weeks after the start of the assignment, and shall contain a detailed work program, a brief description of the updated working methods proposed for carrying out the services in accordance with the Terms of Reference and clearly identify all project milestones. The report shall identify all major issues and constraints encountered, or likely to be encountered in the carrying out of this consultancy and provide suggested mitigation measures in order to overcome such identified constraints. This work program shall identify all deliverables required under the Consultant services including the verification of the scheduled date of submission of each deliverable. The report shall also include a status report on Consultant work to date concerning the first overall objective of the Consultant services: to verify, update and finalize the project concepts, recommendations and designs included in the conceptual studies.

112. **Mid-term Review Report.** This report shall be submitted at the end of approximately month number 5. This Report should include: (i) progress achieved by output as measured through the indicator's performance targets, (ii) key implementation issues and solutions, (iv) updated procurement plan, and (v) updated implementation plan for remaining contract period. An executive summary, not to exceed 2 pages, shall be included at the beginning of the report. It is anticipated that this mid-term review report will be submitted after completion of the mid-term mission to be carried on project site by ADB and will reflect the recommendations and comments received during the mid-term mission.

113. **Draft Final Report.** This report shall be submitted at the end of approximately month number 10. This report will summarize information on project completion including all contract events and other pertinent information for the duration of the consultancy contract. The report will also detail the extent to which the Project outcome has been accomplished.

114. **Final Project Completion Report.** This report shall be submitted within two weeks of receiving comments on the Draft Final Report from the PIU and ADB.

115. **All reports shall** be written in concise, clear, and well-edited standard English. For the hard **copy** version to be provided to the PIU, reports will be produced in A4 size and printed on both sides of the paper. Spreadsheets and schedules will be produced in a maximum of A3 size for reporting purposes and may be printed single-sided. File origins will be clearly identifiable in a header or footer. A list of essential contact persons/authors is to be included. The reports should have a title page, which should include project name, project code or reference, report title, date issued and period covered, and the name and address of the Consultant. The following disclaimer should also be included: *“The authors take full responsibility for the contents of this report. The opinions expressed do not necessarily reflect the view of the Government of the Pakistan or the Asian Development Bank”.*

H. Individual Consultants

S/No	Title	Experience, Qualification, and Responsibilities
International Consultants		
1	Technical Advisor/ Auditor	<p>Experience: Technical Advisor/Auditor with at least 15 years experience. The ideal candidate should have relevant experience in urban development and/or construction projects. He/she should be fully conversant with project preparation, urban and water sector development, construction, and rehabilitation practices, experience in the supervision of works, and the management of contracts. Previous work on ADB and externally financed projects is desirable. Fluency in spoken and written English is required.</p> <p>Qualification: Bachelor’s degree in civil engineering, environmental engineering or equivalent (internationally recognized professional qualification). The consultant should possess knowledge on procurement, FIDIC and other related tender conditions, value management, project management and contract management in design and delivery roles in the water sector.</p> <p>Responsibilities:</p> <ul style="list-style-type: none"> • The Consultant is expected to provide services which will assist the PMU in managing the PRF to ensure that the ensuing project preparation are of the required standard and quality and the project is implemented efficiently. • Reporting: Assist the PMU to obtain the necessary information from the PRF consultants and work with the EA to provide the necessary progress reports in accordance with the PRF legal agreements. • Coordination: Attend Project Steering Committee meetings with the PMU to discuss progress on project and assist PMU with resolution of issues that may arise. • Contract Management: Assist the PMU with contract management, including but not limited to reviewing invoices from PRF consultants to the PMU; reviewing payment approvals from the PRF consultant for services; review of variation orders; etc.

S/No	Title	Experience, Qualification, and Responsibilities
		<ul style="list-style-type: none"> • The Consultant shall conduct regular scheduled technical audits, as well as unannounced and unscheduled audits. These audits shall be designed to evaluate the effectiveness of PRF implementation through: <ul style="list-style-type: none"> • Readiness Audits: Before specific activities commence to ensure that procedures, personnel, equipment, materials, and facilities are appropriate and in accordance with the Project QA Plan; • System Audits: Auditing the degree to which the agreed processes in the Project Administration Manual are being implemented; and they are in accordance with the technical specifications and contract documents.
2	Contract Specialist	<p><u>Experience:</u> A minimum of 8 years' experience in a similar role. The ideal candidate should have relevant experience in urban development and/or construction work projects. He/she should have in-depth knowledge of procurement regulations, contract documents, and legal specifications and have experience in the supervision of works and contract management. Previous work on ADB and externally financed projects is desirable. The consultant should possess knowledge on procurement, FIDIC and other related tender conditions, value management, project management and contract management in design and delivery roles in the water sector. Fluency in spoken and written English is required.</p> <p><u>Qualification:</u> Bachelor's degree in construction management, law, or relevant field.</p> <p><u>Responsibilities:</u></p> <ul style="list-style-type: none"> • Assist the PMU assess PRF consultant performance to identify the need for amendments of existing contracts. • Handle breach of contracts in a timely manner. • Advice on relevant procurement delivery models. • Prepare a procurement risk management strategy based on workshop and discussions with the relevant stakeholders. • Review regulations to ensure contracts are in compliance with Pakistan's laws and ADB's Procurement Policy (2017, as amended from time to time).
National Consultants		
1	Resettlement Specialist	<p><u>Experience:</u> Preferably 15 years' experience with practical experience in conducting Capacity Building, Consultations and Information Disclosure and Dissemination, LARP implementation, Grievance Redress Mechanism and Complaints Handling, Internal Monitoring and Evaluation and Social Safeguard assessments of donor funded projects. The specialist should be well conversant with laws relating to land acquisition, state procedures in implementation of resettlement packages and ADB Safeguard Policy Statement (2009) procedures.</p> <p><u>Qualification:</u> Bachelor's degree in sociology, anthropology or related field, and preferably professional experience on externally financed development projects and familiarity with ADB's Safeguard Policy Statement (2009). Demonstrated experience in social assessment and community development consultations for various project types such as water supply, sanitation, solid waste management and community facilities, etc.</p> <p><u>Responsibilities:</u> He/she will be responsible of the following:</p> <p>A. Capacity Building:</p>

S/No	Title	Experience, Qualification, and Responsibilities
		<ul style="list-style-type: none"> • Prepare information, communication, consultation and internal monitoring tools and provide training to the staff and consultants involved in preparation and implementation of LARPs; • Organize and facilitate training program for PMU, MCs and contractors and consultants; • Provide guidance and hands on capacity development LAR support to urban unit, CIUs and MCs, and provide on-the-job training to social safeguard consultants at CIUs and MCs, and • Document training reports and share with participants, and report capacity building activities in periodic reports. <p>B. Consultations and Information Disclosure and Dissemination:</p> <ul style="list-style-type: none"> • Develop a system of consultations with male and female DPs including vulnerable affected households and other stakeholders and information disclosure to ensure DPs are well aware of the project impacts on land, structures, income and other assets; LAR policy, eligibility, entitlements and obligations, compensation and allowances, schedules of compensation disbursement, complaints and grievance redress procedures, internal and external monitoring and evaluation of LARPs and all other relevant project related information. This shall include communication with displaced persons of formal businesses and roadside vendors about the need for their eviction, the timeframe for their shifting/removal and their entitlements as per the LARP; • Ensure formation of consultation committees (male and female) of representatives of DPs of all categories and ensure regular monthly meetings are held and as and when required; • Ensure effective and meaningful consultations with male and female DPs and other stakeholders on LARPs; • Facilitate DPs consultation meetings with the project staff and other stakeholders; • Disseminate information to the DPs on the possible consequences of the project on their livelihoods and the options available in LARP for their livelihood restoration; • Ensure and confirm disclosure of the draft and final LARPs to DPs and include arrangements to disclose any subsequent updates; • Ensure accurate recording of DPs concerns through face-to-face interaction and offer viable remedial measures to address their concerns, document the consultations and share copies with all concerned, focus specifically on the following: <ul style="list-style-type: none"> ➢ Project stakeholders, especially primary stakeholders; ➢ Consultation and participation of stakeholders throughout the project cycle; ➢ Results of consultations with affected persons and how DPs concerns are addressed; • Ensure assistance to vulnerable DPs in opening bank accounts and preparation of documents required for issuance of compensation vouchers/cheques; • Ensure information sharing with DPs about the process of compensation and disbursement and facilitate DPs in receiving compensation; • Ensure verification and maintenance of all LARP related record of ongoing payments; • Ensure all activities are documented in monthly, quarterly and bi-annual progress reports, submitted to EA: PMU CIUs and MCs, and ADB etc.

S/No	Title	Experience, Qualification, and Responsibilities
		<p>C. LARP implementation</p> <ul style="list-style-type: none"> • Supervise and support, as and when required, the preparation and finalization of LARPs to confirm compliance with key procedural requirements of the Safeguard Policy statement and the Land Acquisition Act (LAA); • In case of any gaps in land acquisition process and ADB SPS, coordinate with the District Revenue Department to address gaps and seek support from District Land Acquisition Collector office (Deputy Commissioner) as and when required; • Ensure physical verification of data in the field on land acquisition and resettlement in coordination with District Revenue Department and other agencies involve in LARP; • Update information and inform Consultants and ADB about Changes in the LARPs; • Develop schedules for timely payments of compensation, and how and when compensation and resettlement assistance will be provided; • Guide CIUs and MCs staff in preparation and issue DPs identification cards for non-titled holders and vulnerable and facilitate DPs in collecting claims related documents from District Revenue Department and support them in submitting their completed claims to the LAC; • Ensure that CIUs and MCs assist DPs in receipt of compensation cheques in close coordination and collaboration with District Revenue Department and ensure efficiency and transparency in compensation payments; • Ensure effective coordination and work closely with the Land Acquisition Collector (LAC) in verifying and processing claims; • Ensure valuation of land and all other assets at full replacement costs as per SPS 2009; • Establish and maintain an up to date MIS of the census, inventory of losses and the different categories of displaced persons, GRM and compensation payments; • Maintain an up to date record of compensation and resettlement related payments and include details in the monthly, quarterly and bi-annual progress reports; • In case of delays in compensation payments, identify causes of delays and recommend actions to speed up compensation payments, and record such delays and actions recommended in the progress reports. <p>D. Grievance Redress Mechanism and Complaints Handling:</p> <ul style="list-style-type: none"> • Establish a context specific and effective grievance redress mechanism at the project and field level and prepare an outreach program for the DPs on how the mechanism will work and ensure it is accessible to DPs including vulnerable and women; • In case of complaints, identify root causes of the complaints and assist IA in preparation of detailed action plans on the steps to be taken to address the complaints; • Facilitate DPs in resolving their grievances/complaints, and if require, play the role of an arbitrator; • Inform DPs about the status of their complaints and maintain an up to date gender disaggregated detailed record of the issues raised/complaints addressed and complaints handled, action plans/recommendations made, and measures adopted to address the concerns/complaints and related issues throughout implementation of LARPs/RPs;

S/No	Title	Experience, Qualification, and Responsibilities
		<ul style="list-style-type: none"> • Maintain an up to date record of complaints that could not be addressed within the project level grievance mechanism, and if requested, assist DPs in availing other remedies; • Document progress on functioning of GRM in the periodic reports on regular basis, including complaints resolved or outstanding. <p>E. Internal Monitoring and Evaluation:</p> <ul style="list-style-type: none"> • Responsible to conduct internal monitoring of LARPs, LRP and GAP implementation with the help from CIUs, MCs and urban unit; • Establish internal monitoring system and monitoring indicators benchmarking the LARPs and other safeguard instruments; • Based on the findings of internal monitoring, prepare and implement any corrective action plans; • Prepare monthly, quarterly and bi-annual internal monitoring reports, summarizing the LARP implementation status and recommendations, and share these reports with all concerned; • Disclose quarterly monitoring reports on LG&CD project website and to the DPs; • Submit bi-annual reports to ADB; • Support the external monitor by providing all required up to date and accurate information, to facilitate external monitoring; and • Perform any other tasks that may assign.
2	Data Management Specialist	<p><u>Experience:</u> 15 years' experience as Data Management Expert on Water Supply, Sanitation and Solid Waste Management projects, planning, design and supervision as well as experience in Database development and management provision of hands on IT support (hardware / software services) to technical special groups.</p> <p><u>Qualification:</u> Bachelors, preferable Master's degree in information Technology, Computer science, Computer Engineering. Specialized training in database management</p> <p><u>Responsibilities:</u> The Data Management Specialist has primary responsibility for the capture, management, analysis, and reporting of data relative to Investment Funding and Initiatives. Provides data, training, and technical assistance to increase the impact of investments, Initiatives and ensures alignment with the Project outcomes.</p> <p>He/she will assist in performance of his duties as mentioned in TOR. Responsibilities will include but not limited to the following:</p> <ul style="list-style-type: none"> • Oversee the process of program reports including standard reports through the online system and development of non-standard reports in line with what is appropriate for program size, duration and funding; • Work closely with support staff on reporting logistics and database maintenance; • Prepare funded program and reports including: mid-year and yearend report analysis, including collating data points by common measures, program performance and issues to staff; • Prepare aggregate demographic, financial, and outcome reporting for management; • Assist in the development of comprehensive reporting format for funded partners;

S/No	Title	Experience, Qualification, and Responsibilities
		<ul style="list-style-type: none"> • Serve as a resource person PMU/ADB and other partners by providing data and other data resources for decision making; • Provide training and technical assistance as needed to staff; • The data base will develop and operationalize (using commercial software) database to support implementation of TOR; • Will provide technical advice in setting up and operating necessary information system; • To upkeep and maintenance of the database; • Provide training for staff involved in the projects such as Global Information System and any other related training necessary for skill development; and • Perform any other tasks that may assign.
<p>3</p>	<p>Community Liaison and Communication Specialist</p>	<p><u>Experience:</u> 10 years' experience in communications and public relations; will have qualifications in a relevant social science discipline; the Community Liaison and Communications Specialist will also have a good understanding of gender issues, and preferably experience in gender mainstreaming.</p> <p><u>Qualification:</u> The consultant will have qualifications in a relevant social science discipline.</p> <p><u>Responsibilities:</u></p> <ul style="list-style-type: none"> • Conduct advocacy campaign to raise awareness of the PRF; • Prepare development of Communications Plan for PRF; • Interface with Consultant tasked with developing the system branding on different subprojects and guide a development of a Brand Design Manual and Toolkit for PRFs to be followed for all subprojects; • Ensure brand is incorporated into design activities of other project units; • Handle all media and public relations queries in respect to all the subproject. • Reviewed and provided inputs to the finalization of the communication strategy for the inception phase of the subproject; • Monthly E-Newsletter is being regularly produced covering the various themes and progress of the PRF. • Review and provide inputs to the finalization of concept note talking points for interviews of various stakeholders for the project promotional video with 3D animation/simulation; • Provided regular inputs/comments on the production of each milestones (Interim Reports) submitted by the relevant consultant. • Facilitate public workshops and capacity development trainings. • Review and provide detail inputs/ comments to the finalizing of draft Branding and Marketing and its sub outputs i.e. System Branding, Design of Staff Uniform, Marketing Strategy, Customer Service Strategy) under ODBM • Any other relevant task assigned by the ADB, PMU and P&DD etc
<p>4</p>	<p>Financial Management Specialist</p>	<p><u>Experience:</u> 15 years' experience in finance and accounting, proficient in spreadsheets, databases, MS Office and financial software applications; hands on experience with financial analysis; proven knowledge of financial forecasting and modeling</p> <p><u>Qualification:</u> The consultant will hold a master's degree in accounting and/or finance, or related field, and be registered Certified Public Accountant, and/or</p>

S/No	Title	Experience, Qualification, and Responsibilities
		<p>Chartered Accountant and/or be a member of the Association of Certified Chartered Accountants or a recognized international institute.</p> <p>Responsibilities: The major objective is to facilitate efficient and effective financial management, transparency in use of funds and use of advanced financial management software for the efficient management of the project funds. Effectively implement ADB guidelines for internal controls in financial management of all EAs and IAs of the project.</p> <p>Financial Management Specialist will provide support to PMU and City Governments/MCs in the project districts in financial planning, fund flow and smooth implementing the project, assist the PMU and City Governments/MCs in preparing annual and quarterly financial plans, financial monitoring and financial reporting and financial management of the project. The major tasks/activities to be performed by the Financial Management Specialist include but not limited to the following:</p> <p>Detailed Tasks and/or Expected Output</p> <ul style="list-style-type: none"> • Provide support and guidance in the implementation and monitoring of the Financial Sustainability Action Plan. This includes assistance in the preparation of financial monitoring reports; • Lead to support PMU and City Governments/MCs in the preparation of ADB's disbursement related documents withdrawal applications, and documents for imprest accounts; • Identify, procure, develop, and set up a financial management system (FMS), including Project Performance Monitoring System (PPMS), project financial information and accounting system to be used during the implementation of the Project; • Provide Guidance to develop and implement accounting software and conduct training for recording of financial transactions, maintaining proper books of accounts for PMU and City Governments/MCs; • Prepare and implement strong internal financial control systems as per ADB guidelines; • Work closely with Finance and Accounting staff of PMU (Manager Finance & Budget (PMU), Budget Officer and Accounts Officer); • Elaborate and propose procedures for setting-up and maintaining consolidated project accounts throughout the implementation of the project; • Provide assistance for the preparation of the first annual work plan and budget and of work plan and budget for the subsequent Project's years as well as in updating of detailed cash flow projections; • Lead the periodical review of the work plan and budget of the Project; • Provide assistance to PMU in preparing terms of reference (acceptable to ADB) for auditing all project accounts, recruit project auditor, and following up on the comments/recommendations of the auditor; • Assist the PMU in preparing the Project's financial progress reports as required by ADB; provide required inputs and information necessary for the preparation of periodical progress reports and completion report. • Provide advice on capacity building needs of PMU and City Governments/MCs staff, review financial management capacity building programs proposed by the suppliers of the FMS software, and provide assistance during the delivery of training sessions;

S/No	Title	Experience, Qualification, and Responsibilities
		<ul style="list-style-type: none"> • Monitor project expenditures and supervise the quarterly and annual financial reports during the first Project' year; • Assist and provide support to PMU and City Governments/MCs to maintain regular book keeping and accounting; • Provide input to PMU on carrying out review and consolidating monthly financial statements and requests for payment by contractors and service providers and assist the PMU in the process of approval for payment release; • Undertake financial and economic analysis, as required, of the subprojects; • Work for development of tariffs models for water and other municipal services targeting O&M cost recovery/ community's willingness to pay or per capita income of the community; • Review financial sections of the PICIIP-II PC-I to ensure that the financial sections meet Government of Punjab requirements; • Review PICIIP-II financial projections and business plan and advise PMU on how realistic the business plan is and if it conforms to financial requirements in the project documents; • After first year of project implementation carry out a review and update the Financial Management Assessment (under ADB guidelines) of the EA and IA; • Provide inputs to quarterly, semi-annual and annual reports as needed; and • Any other relevant task assigned by the ADB, PMU and P&DD etc
5	Procurement Specialist	<p>Experience: 15 years' experience as a procurement specialist on major donor funded projects. Experience and knowledge of ADB's procurement procedures, FIDIC and other related tender conditions, value management, project management and contract management in design and delivery roles in the water sector. Proven credentials in contract administration, evaluating contractor's claims and dispute resolution.</p> <p>Qualification: Bachelor's degree with a major in civil engineering, law, contracts, supply chain management – preferably with a master's degree.</p> <p>Responsibilities: The procurement specialist will assist the executing agency and implementing agencies in improving the efficiency of procurement processes of the urban infrastructure schemes to be financed under PRF. The consultant will be responsible for assisting the Client in all procurement, reporting and progress matter.</p> <p>Detailed Tasks and/or Expected Output</p> <ul style="list-style-type: none"> • Prepare bidding documents for the procurement of subproject (goods and civil work) related to ensuing projects in accordance with ADB Procurement Policy (2017, as amended from time to time) and Procurement Regulations for ADB Borrowers (2017, as amended from time to time). In preparation of such documents, ensure that the scope of bid, evaluation and qualification criteria and employer's requirements are adequately covered in the bidding documents. Assist PMU in seeking ADB's approval of the bidding documents; • Conduct pre-bid meetings, prepare clarification of bid documents; and amendments to the bid documents;

S/No	Title	Experience, Qualification, and Responsibilities
		<ul style="list-style-type: none"> • Assist PMU / procurement committees in bid evaluation process, from bid opening, bid evaluation and preparation of bid evaluation reports (BER); • Assist PMU in seeking ADB's approval of the BER for procurement of subprojects (Works and Goods); • Assist PMU in preparing submissions for engaging individual consultant(s) and firms under PRF and provide technical guidance and advice, as appropriate, in accordance with ADB Procurement Policy (2017, as amended from time to time) and Procurement Regulations for ADB Borrowers (2017, as amended from time to time); • Assist the PMU to procure office vehicles, supplies and equipment; • Assist PMU in preparation of the necessary documentation for contract signing; and consultant and contractor / supplier mobilization; • Assist the PMU in annual review of the Procurement Plan and updating; • Provide inputs to periodical and annual reports as required; • Prepare capacity building program to strengthen the PMU capacity undertaking procurement and provide support in contracts management related matters; and • Any other relevant task assigned by, and mutually agreed by the ADB, LG&CDD, PMU and P&DD etc.
6	Environment Specialist	<p><u>Experience:</u> Preferably 15 years' experience with practical experience in conducting environmental assessments and monitoring of sanitation and solid waste management projects.</p> <p><u>Qualification:</u> Preferably Master's degree environmental economics, natural resource management, energy studies, or other relevant fields.</p> <p><u>Responsibilities:</u> He/she will be responsible of the following:</p> <ul style="list-style-type: none"> • Assess climate change risks and disaster risk management, suggest adaptation measures to climate proof infrastructure, and prepare climate risk assessment report; • Design climate proofing interventions for subprojects and estimate cost in collaboration with hydrologists and hydraulic design engineers; • Prepare a knowledge product focusing on integrating climate resilience considerations for water, sanitation and solid waste management investments; • Coordinate/liaise with concerned ministries / departments to incorporate lessons and capacity building measures for gender, climate change and disaster risk management from other ADB funded projects in the project design • Undertake the project environmental screening and categorization procedures for the projects to review potential environmental impacts, temporary and permanent damage to the environment, particularly forests, wildlife reservations, areas with archaeological value, and potential risks from toxic and hazardous chemicals should be included. • Prepare a schedule for the completion of the environmental assessment of the project, taking into account the environmental categorization and the level of assessment required. The schedule should also take account of ADB's public disclosure requirements. • Conduct field visits and prepare due diligence reports(s) to assess level of environmental safeguards compliance of project activities with ADB SPS 2009 as well as national safeguard requirements; • Undertake EIA(s) and/or IEE(s) for the project(s) as required under ADB Safeguards Policy Statement 2009. The EIA(s) and/or IEE(s) will study the

S/No	Title	Experience, Qualification, and Responsibilities
		<p>impacts of the proposed operation(s) on the environment of the area(s) and will also recommend mitigation measures. The EIA(s) and/or IEE(s) should include an Environmental Management Plan, and an environmental monitoring plan that details the anticipated environmental monitoring costs;</p> <ul style="list-style-type: none"> • The EIA(s) and/or IEE(s) should contain a baseline survey of the ambient air quality and ambient noise levels; • Prepare contractor specifications for environmental management and monitoring. • Identify risks and provide mitigating measures, where appropriate; • Coordinate and assist EA to undertake public consultations as required by ADB SPS 2009 and meet ADB's public disclosure requirements; • Conduct consultations with all stakeholders including local communities, all affected households, civil society, government and local government bodies, private sector bodies, if relevant and other institutions; • Assist PMU and PIU in selection of sanitation and solid waste management subprojects following environmental subproject selection criteria; • Develop improved mechanism and introduce the same to collect, segregate and disposal of solid waste for clean environment and public health; • Explore and identify alternative sanitation options including decentralized systems compatible with local capacity; • Identify and assist (working with drainage engineers) in the appropriate location, design, construction and management of transfer stations, pit latrines, public toilet, and wash stations; • Conduct survey to identify existing equipment and machineries of target project sites for handling solid waste, determine need for such equipment, prepare procurement plan and assist PMU and CIUs for timely procurement and distribution among project sites; • Design decentralized sanitation systems and solid waste recycle plants; and • Perform any other tasks that may assign.
7	Project Advisor	<p><u>Experience:</u> Preferably 15 years' experience with practical experience in modern engineering techniques and technologies; knowledge of policies and rules of development donors and international financing institutions and experience with implementation of such projects and programs</p> <p><u>Qualification:</u> Bachelor, preferably Master degree in Public Management or related field (master's degree preferred).</p> <p><u>Responsibilities:</u> The Project Advisor will assistant to plan, coordinate, and lead activities of PICIIP-2 PRF to ensure that goals, objectives and all elements of the KPCIP are accomplished within the prescribed timeframe, quality and funding parameters. The Project Advisor will support the Government to plan and implement the project in the Cites of Punjab.</p> <p>Detailed Tasks and/or Expected Output</p> <ul style="list-style-type: none"> • Assistance in managing staff of the PMU and overseeing the day-to-day activities of the PMU related to the management and implementation of the Project, including procurement, project monitoring and evaluation, financial management, progress and financial reporting;

S/No	Title	Experience, Qualification, and Responsibilities
		<ul style="list-style-type: none"> • Overall coordination of project activities and public consultations as required; • Participate and represent the PMU as non-decision-making member in the Project Steering Committee (PSC); • Draft Terms of References and manage local and foreign consultants, seek progress from CIUs on deliverables under those contracts and provide feedback as necessary, and coordination of the work of the consultants consistent with the overall project implementation plan; • Assist in undertaking external communication; • Prepare, or as appropriate supervise the preparation of progress reports, quarterly reports, annual reports, project completion report and other reports that may be required by the stakeholders; • Prepare or, as appropriate, supervise the preparation of, annual work plans and budgets and assistance in presenting to the PSC for approval; • Participate in building and implementing the detailed concept and approaches as part of the overall framework and methodology of the project; • Lead the development of work plans, workshops and periodical work sessions and meetings for the unit and hold orientation seminar for his team members from the project to clarify the project's objective and methodology; • Identify implementation arrangements and needed resources to implement the project and ensure proper management of funds, including accounting, financial control and audit procedures acceptable to the Asian Development Bank as well as the procurement of goods, works and services in accordance with Asian Development Bank guidelines; and • Perform any other tasks that may assign.
8	Project Support Officer	<p>Experience: The Project Support Officer will have a background appropriate to the tasks set out in the TORs, with 15 years successful experience in water, sanitation and infrastructure/building projects; adequate knowledge of engineering and project management practices. Comprehensive knowledge of modern engineering techniques and technologies; knowledge of policies and rules of development donors and international financing institutions and experience with implementation.</p> <p>Qualification: Bachelor preferably master's degree in civil engineering, water and sanitation engineering, project management or the equivalent from a recognized university.</p> <p>Responsibilities: The Project Support Officer will support the government to plan and implement the project. The Project Support Officer will assist the team in planning, strategy development, systems strengthening and implementation, and operations of the Project Management Unit (PMU) to ensure that compliant, efficient, and effective actions are taken to achieve the planned PICIIP objectives, outcomes and outputs.</p> <p>Detailed Tasks and/or Expected Output Assist the team in planning and scheduling PICIIP-2 annual work plan and identify financial and personnel resource and system needs.</p> <ul style="list-style-type: none"> • Assist in managing technical assistance so that the consultants and experts are mobilized as and when needed and planned mission/project outputs are achieved.

S/No	Title	Experience, Qualification, and Responsibilities
		<ul style="list-style-type: none"> • Utilize systems for planning (including asset management), design (including gender responsive features), implementation, supervision and quality assurance of civil works, according to required guidelines and operations manuals. • Assist the team in development and monitoring of annual budgets. • Liaison with the relevant provincial and district administration officers for managing subprojects. • Ensure sound management in collaboration with the team including administration, integration of work processes across functions (e.g. engineering, safeguards and finance), project implementation, and monitoring, recording and reporting of progress. • Assist in development of reports for monthly progress of subprojects against plan, as well as environmental, social, and gender aspects. • Assist in ensuring project monitoring and compliance with donor reporting requirements. • Assist the team in achieving and demonstrating the following outputs: • Advice and assistance provided on strategy and management. • Management systems implemented to improve processes and decisions. • Consultants are well managed, respond to PICIIP-2 needs and achieve contracted requirements. • Effective project management, monitoring and reporting. • Achievement of annual work plan targets, and PICIIP-2 DMF milestones. • Improved systems for evidence-based monitoring and evaluation. • Systems developed for monitoring and evaluating processes, products and outcomes for maintaining the required national and ADB standards. • Assist in improving efficiency, effectiveness, accountability, transparency and value for money in the expenditure of PICIIP-2 funds; • Any other relevant task assigned and mutually agreed by the ADB, LG&CDD, PMU and P&DD.
9	Urban Planner	<p><u>Experience:</u> Minimum of 15 years relevant urban planning experience; and understanding of urbanization and management issues.</p> <p><u>Qualification:</u> Bachelor in town planning, architecture, engineering or equivalent preferably Master's Degree, or post-graduate degree in infrastructure, urban planning, urban finance, or related disciplines.</p> <p><u>Responsibilities:</u> He/she will be mainly responsible for assistance in urban planning:</p> <ul style="list-style-type: none"> • Understanding population trends, to predict the demands that will be made on an area, whether urban or rural; • Town Planners make policies and implement them; • Working both indoors and outdoors and presenting evidence at meetings; • Objectively analyzing and evaluating other peoples' evidence; • Preparing reports and plans relating to a variety of projects; • Working with other professionals, such as architects, landscape architects, civil engineers, construction managers and surveyors; • Liaising with the public and councilors, attending public meetings about planning issues, such as proposals for a new road or school etc; • Knowledge of the legal issues associated with land use; • Developing parks in a sustainable way; • Redesigning street layouts; • Creating energy efficient and affordable homes; • Enforcing planning controls;

S/No	Title	Experience, Qualification, and Responsibilities
		<ul style="list-style-type: none"> • Hearing concerns about planning proposals; • Assist in incorporating the economic potential and environment into the project design, particularly to advise on sectors/subsectors to be developed such as (but not limited to) water supply and drainage, etc.; • Assist in the design of the economic corridor and location of industry; • Identify infrastructure that will help the urban economies in the selected city regions; • Assist in the selection of eligible subprojects using subproject selection criteria; • Review recommendations of EDCM works, and work closely with economists, engineers and other experts on team including urban planner etc, to incorporate adaptation into the economic situation in the country; • Work closely with the other experts to identify, quantify, and clearly report the economic adaptation required in the project design; • Will be responsible for all urban related tasks; • Specifying a supporting program of investment in integrated urban development; and • Managing the preparation of policies and proposals specific to the needs of the Urban Poor; and • Perform any other tasks that may assign.

116. **Panel of Experts.** Detailed terms of reference for the international Urban Rejuvenation, international Water Supply and Sanitation Expert, international Wastewater Treatment Plant, national Urban Rejuvenation, national Water Supply and Sanitation Expert, and national Wastewater Treatment Plant are as follows:

S/No	Title	Experience, Qualification, and Responsibilities
1	Urban Rejuvenation (International)	<p>Experience: The expert will have at least 15 years of professional experience in integrated planning projects in urban setting, urban design, water and sanitation, solid waste management system and facilities design. ADB or other international donor-funded project implementation experience would be an added advantage.</p> <p>Qualification: Bachelor in town planning, architecture, engineering or equivalent preferably master's degree, or post-graduate degree in infrastructure, urban planning, urban finance, or related disciplines.</p> <p>Responsibilities: He/she will be mainly responsible for assistance but not limited to the following:</p> <ul style="list-style-type: none"> • To assist the project team in assessment of capacity of infrastructure (such as water supply, sewerage, solid waste management) their leveraging synergies and encompassing environmental impacts; • To assist the project team in resolving the issues associated with the dis-balance in urban growth and service provision shifting the city management towards productivity, efficiency and quality of life; • To identify issues, policies and options which may be taken to cities for consideration on the urban lifecycle - stages of growth (urbanization), decline (suburbanization), and rejuvenation (reverse urbanization) to better manage the cumulative social, economic and environmental impacts; • To propose a cohesive vision and systemic approach to cities' revitalization founding on unidirectional approach and increased participation of all stakeholders for environmental and social sustainability;

S/No	Title	Experience, Qualification, and Responsibilities
		<ul style="list-style-type: none"> • To assist to prepare and achieve master plan for short, medium and long term options for sustainable management of cities’ services focusing on urban rejuvenation in the utilities’ sectors of water supply, sanitation, solid waste management; • To assist to identify options to manage immediate and short term growth through resolution of asset quality concerns; • To support in project implementation design in a way that the timing and sequencing of development options results in managing growth, which may also influence a correction in the scientific portfolio of construction and management of services; • To assist in devising a mechanism for city utilities to consider medium and long term issues and ensure sustainable management of urban services in order to drive transformations change through better asset utilization, redevelopment, rejuvenation, and restructuring; • To propose technology driven management of the current expansion of municipal services and their operations and any future plans of infrastructure initiatives for expansion of operations in close proximity to city boundaries; • To assist in developing appropriate communication strategies and providing timely information on operations to enable discussions on developing sustainable response plans and strategies; • To work closely with communities to provide opportunities for active involvement in planning and decision-making processes to enable tangible outcomes to be pursued for communities, local governments and services entities; and • Perform any other tasks that may assign.
2	<p>Water Supply and Sanitation Expert (International)</p>	<p>Experience: He/she will have a post-graduate degree in hydrology or civil engineering with specialization in drinking water supply and source development (ground and surface water) with over 15 years of experience in water supply investment planning and design, and a minimum of 10 years proven work experience and skill in similar position in developing countries, and expertise in salinity intrusion. He/she will also work closely and oversee the work of the national water supply and sanitation expert on the team. ADB or other international donor-funded project implementation experience would be an added advantage.</p> <p>Qualification: Bachelor’s in civil engineering, environmental engineering, public health engineering, solid waste engineering or equivalent, preferably master’s in environmental engineering, urban engineering or equivalent. The expert should possess extensive knowledge on procurement, FIDIC and other related tender conditions, value management, project management and contract management in design and delivery roles in the water sector.</p> <p>Responsibilities: He/she will be mainly responsible for assistance but not limited to the following:</p> <ul style="list-style-type: none"> • Project management and monitoring arrangements for design and implementation of the subproject, including preparing a computerized critical path schedule (or similar) and a simple benchmark information system for the water supply subprojects; • Identify problems and opportunities for the provision, operation and management of a sustainable water supply system in selected project areas, city corporations; • The nature, direction and outputs of the proposed preparatory studies for the water supply subproject, including the proposals related to alternative water supply sources, and implementation through detailed design;

S/No	Title	Experience, Qualification, and Responsibilities
		<ul style="list-style-type: none"> • Prepare detailed cost estimates and specifications for proposed water supply capital works and equipment; • The operation and maintenance (O&M) options and a preferred option for implementing the proposed improvements to the water supply; • Preparation of O&M manuals for hand & production tube wells, production tube well pumps (submersible pumps) and other aspects of the proposed water supply system; • Participation in the proposed Community Consultation Plan and consulting with any Stakeholder Committees that may be established during the subproject implementation; • Reviewing existing studies, documents and other information available; regarding in sanitation system options in the country generally and the project areas/city corporations; • Assessing the reviewing existing studies, documents and other information available; regarding in sanitation system options in the project areas generally; • Assessing the existing current sanitation systems; and the projected quantity and quality of effluent from households, commercial and industries; • Identify problems and opportunities for the provision, operation and management of a sustainable sanitation system in the project areas/city corporations; • Selection of sanitation technology options and preferred options for selected project areas/city corporations for domestic, commercial and industries, and including: (a) design criteria for septic tanks, and de-sludging; (b) design criteria for pit latrines and de-sludging; • Detailed design for sludge disposal site and for maximizing opportunities for sludge after-use; • Prepare detailed cost estimates and specifications for proposed sanitation equipment (e.g. de-sludging vehicles and pit latrines/septic tanks); • The O&M options and a preferred option for implementing the proposed improvements to the sanitation system; • Preparation of Sanitation System Manual for sustainable sanitation system septic tanks and pit latrines and other aspects of the proposed sanitation system; and • Participation in the proposed Community Consultation Plan and Community Awareness Program and consulting with any Stakeholder Committees that may be established during the subproject implementation; and • Perform any other tasks that may assign.
3	Wastewater Treatment Plant Expert (International)	<p><u>Experience:</u> The consultant should have 15 years in wastewater treatment plant design as a design engineer for complex wastewater projects with proven experience in urban development water and sanitation infrastructure design. ADB or other international Donor-funded project implementation experience would be an added advantage.</p> <p><u>Qualification:</u> Bachelor's in civil engineering, environmental engineering, wastewater management, chemical engineering or related subject. Preferably master's in civil engineering, wastewater management or related subject or equivalent. The Wastewater Treatment Plant Expert should possess extensive knowledge on procurement, FIDIC and other related tender conditions, value management, project management and contract management in design and delivery roles in the water sector.</p> <p><u>Responsibilities:</u> He/she will be mainly responsible for assistance but not limited to the following:</p>

S/No	Title	Experience, Qualification, and Responsibilities
		<ul style="list-style-type: none"> • Standard process operations of maintenance of ETP (Effluent Treatment Plants) and sewage treatment plant. • Wastewater treatment processes (SBR, MBR, MBBR, trickling filters and conventional activated sludge process, filtration). • Installation and commissioning of wastewater projects (STP, WTP and ETP). • Design of wastewater treatment facilities. • Evaluation and up gradation of water and wastewater treatment plants. • Technology-commercial proposal, technical review of tenders and cost analysis. • Provide asset management, value engineering advice to improve overall O&M and sustainability. • Provide expert solution septic tank system to wastewater produced • Detailed design engineering review of ETP • Technical support consultancy of WTPs and WWTPs for water companies • Reviews and supervise the issuance of the standard operating procedures. • Evaluate plant operations; assures proper adjustment of plant processes; coordinates sampling operations to assure proper balance of treatment steps and meeting effluent requirements; ensures the proper conduct of laboratory tests performed by operation staff. • Supervises plant maintenance activities to ensure the safe, reliable and efficient operation of equipment; verifies proper implementation of plant preventive maintenance plan as well as the work order issuance for any corrective maintenance whenever required. • Evaluate operations and activities of assigned responsibilities. • Recommend improvements and modifications whenever required. • Fully responsible for all activities associated with operations and management and operations of all Water and Wastewater facilities and the plants management. • Coordinate and lead all communications regarding operations and management contracts executions within the internal team as well as the client and the client review and distribute all the progress reports as required. • Ensure Quality, Health, Safety, and Environment (QHSE) policy is adequately implemented. • Local staff trainings and appraisals - supervision. • Assist the client in all process engineering matters related to wastewater treatment plant design and operation. • Develop assets management hierarchy and manual for asset registration and survey. Link assets with Enterprise Asset Management (eAM) and Geographic Information Systems (GIS) systems. • Developing asset management strategies, plans and implementation programs. • Develop and re-engineer processes and procedures for life cycle asset management. • Align asset management plans to organizational strategy. • Prepare, update and enhance asset management processes and procedures; and • Perform any other tasks that may assign.
4	Urban Rejuvenation (National)	<p>Experience: The expert will have at least 15 years of professional experience in integrated planning projects in urban setting, urban design, water and sanitation, solid waste management system and facilities design. ADB or other International Donor-funded project implementation experience would be an added advantage.</p> <p>Qualification:</p>

S/No	Title	Experience, Qualification, and Responsibilities
		<p>Bachelor in town planning, architecture, engineering or equivalent preferably master's degree, or post-graduate degree in infrastructure, urban finance, urban planning or related disciplines.</p> <p>Responsibilities: He/she will be mainly responsible for assistance but not limited to the following:</p> <ul style="list-style-type: none"> • To assist the project team in assessment of capacity of infrastructure (such as water supply, sewerage, solid waste management) their leveraging synergies and encompassing environmental impacts; • To assist the project team in resolving the issues associated with the imbalance in urban growth and service provision shifting the city management towards productivity, efficiency and quality of life; • To identify issues, policies and options which may be taken to cities for consideration on the urban lifecycle - stages of growth (urbanization), decline (suburbanization), and rejuvenation (reverse urbanization) to better manage the cumulative social, economic and environmental impacts; • To propose a cohesive vision and systemic approach to cities' revitalization founding on unidirectional approach and increased participation of all stakeholders for environmental and social sustainability; • To assist to prepare and achieve master plan for short, medium and long term options for sustainable management of cities' services focusing on urban rejuvenation in the utilities' sectors of water supply, sanitation, solid waste management; • To assist to identify options to manage immediate and short term growth through resolution of asset quality concerns; • To support in project implementation design in a way that the timing and sequencing of development options results in managing growth, which may also influence a correction in the scientific portfolio of construction and management of services; • To assist in devising a mechanism for city utilities to consider medium and long term issues and ensure sustainable management of urban services in order to drive transformations change through better asset utilization, redevelopment, rejuvenation, and restructuring; • To propose technology driven management of the current expansion of municipal services and their operations and any future plans of infrastructure initiatives for expansion of operations in close proximity to city boundaries; • To assist in developing appropriate communication strategies and providing timely information on operations to enable discussions on developing sustainable response plans and strategies; • To work closely with communities to provide opportunities for active involvement in planning and decision-making processes to enable tangible outcomes to be pursued for communities, local governments and services entities; and • Perform any other tasks that may assign.
5	Water Supply and Sanitation Expert (National)	<p>Experience: He/she will have a post-graduate degree in hydrology or civil engineering with specialization in drinking water supply and source development (ground and surface water) with over 15 years of experience in planning and designing these activities, and a minimum of 10 years proven work experience and skill in similar position in developing countries, and expertise in salinity intrusion. He/she will also work closely and oversee the work of the national water supply and sanitation expert on the team. ADB or other International Donor-funded project implementation experience would be an added advantage.</p> <p>Qualification:</p>

S/No	Title	Experience, Qualification, and Responsibilities
		<p>Bachelor's in civil engineering, environmental engineering, public health engineering, solid waste engineering, chemical engineering or equivalent, preferably master's in environmental engineering, urban engineering or equivalent. The expert should possess extensive knowledge on procurement, FIDIC and other related tender conditions, value management, project management and contract management in design and delivery roles in the water sector.</p> <p>Responsibilities: He/she will be mainly responsible for assistance but not limited to the following:</p> <ul style="list-style-type: none"> • Project management and monitoring arrangements for design and implementation of the subproject, including preparing a computerized critical path schedule (or similar) and a simple benchmark information system for the water supply subprojects; • Identify problems and opportunities for the provision, operation and management of a sustainable water supply system in selected project areas, city corporations; • The nature, direction and outputs of the proposed preparatory studies for the water supply subproject, including the proposals related to alternative water supply sources, and implementation through detailed design; • Prepare detailed cost estimates and specifications for proposed water supply capital works and equipment; • The operation and maintenance (O&M) options and a preferred option for implementing the proposed improvements to the water supply; • Preparation of O&M manuals for hand & production tube wells, production tube well pumps (submersible pumps) and other aspects of the proposed water supply system; • Participation in the proposed Community Consultation Plan and consulting with any Stakeholder Committees that may be established during the subproject implementation; • Reviewing existing studies, documents and other information available; regarding in sanitation system options in the country generally and the project areas/city corporations; • Assessing the reviewing existing studies, documents and other information available; regarding in sanitation system options in the project areas generally; • Assessing the existing current sanitation systems; and the projected quantity and quality of effluent from households, commercial and industries; • Identify problems and opportunities for the provision, operation and management of a sustainable sanitation system in the project areas/city corporations; • Selection of sanitation technology options and preferred options for selected project areas/city corporations for domestic, commercial and industries, and including: (a) design criteria for septic tanks, and de-sludging; (b) design criteria for pit latrines and de-sludging; • Detailed design for sludge disposal site and for maximizing opportunities for sludge after-use; • Prepare detailed cost estimates and specifications for proposed sanitation equipment (e.g. de-sludging vehicles and pit latrines/septic tanks); • The O&M options and a preferred option for implementing the proposed improvements to the sanitation system; • Preparation of Sanitation System Manual for sustainable sanitation system septic tanks and pit latrines and other aspects of the proposed sanitation system; and

S/No	Title	Experience, Qualification, and Responsibilities
		<ul style="list-style-type: none"> • Participation in the proposed Community Consultation Plan and Community Awareness Program and consulting with any Stakeholder Committees that may be established during the subproject implementation; and • Perform any other tasks that may assign.
6	Wastewater Treatment Plant Expert (National)	<p><u>Experience:</u> Preferably 15 years as a design engineer for complex wastewater projects with proven experience in urban development water and sanitation infrastructure design. ADB or other International Donor-funded project implementation experience would be an added advantage.</p> <p><u>Qualification:</u> Bachelor's in civil engineering, environmental engineering, chemical engineering or related subject or equivalent, preferably master's in civil engineering or related field.</p> <p><u>Responsibilities:</u> He/she will be mainly responsible for assistance but not limited to the following:</p> <ul style="list-style-type: none"> • Standard process operations of maintenance of ETP (Effluent Treatment Plants) and sewage treatment plant. • Wastewater treatment process (SBR, MBR, MBBR, trickling filters and conventional activated sludge process, filtration). • Installation and commissioning of wastewater projects (STP and ETP). • Design of wastewater treatment facilities. • Evaluation and up gradation of water and wastewater treatment plants. • Technology-commercial proposal, technical review of tenders and cost analysis. • Asset Management. • Provide expert solution septic tank system to wastewater produced • Detailed design engineering review of ETP. • Technical support of WWTPs for water companies. • Reviews and supervise the issuance of the standard operating procedures. • Evaluate plant operations; assures proper adjustment of plant processes; coordinates sampling operations to assure proper balance of treatment steps and meeting effluent requirements; ensures the proper conduct of laboratory tests performed by operation staff. • Supervises plant maintenance activities to ensure the safe, reliable and efficient operation of equipment; verifies proper implementation of plant preventive maintenance plan as well as the work order issuance for any corrective maintenance whenever required. • Evaluate operations and activities of assigned responsibilities. • Recommend improvements and modifications whenever required. • Fully responsible for all activities associated with operations and management and operations of all Water and Wastewater facilities and the plants management. • Coordinate and lead all communications regarding operations and management contracts executions within the internal team as well as the client and the client review and distribute all the progress reports as required. • Ensure Quality, Health, Safety, and Environment (QHSE) policy is adequately implemented. • Local staff trainings and appraisals - supervision. • Assist the client in all process engineering matters related to wastewater treatment plants.

S/No	Title	Experience, Qualification, and Responsibilities
		<ul style="list-style-type: none">• Develop assets management hierarchy and manual for asset registration and survey. Link assets with Enterprise Asset Management (eAM) and Geographic Information Systems (GIS) systems.• Developing asset management strategies, plans and implementation programs.• Develop and re-engineer processes and procedures for life cycle asset management.• Align asset management plans to organizational strategy.• Prepare, update and enhance asset management processes and procedures; and• Perform any other tasks that may assign.