

Terms of Reference for Project Development and Management Consultancy Services (PDMC)

A. Background Information

1. The Government of India has approved a loan to implement an infrastructure program to improve urban conditions of Jammu and Srinagar cities including major towns. The expected impact of the Infrastructure Program is improved environment and well-being of urban residents in the two capital cities. The expected outcomes of the Infrastructure Program will be an increased access to better urban services in the areas of Drinking Water, Sewerage and Drainage, Road Communication and all other social sectors by the year 2030. To this end, the Programs will (i) improve urban infrastructure and services, (ii) strengthen urban institutions for better service delivery and build project management and implementation capacity
2. The Program will comprise two parts: **Part A** will cover urban infrastructure and services improvement including the rehabilitation, improvement and expansion of (i) Drinking Water Supply, (ii) Sewerage, Drainage and Sanitation, (iii) Transport and Communication (VI) Solid Waste Management and **Part B** will cover Infrastructure Program management and implementation support and a comprehensive capacity building assistance for the accomplishment of urban institutional and financial reform agendas, and enhance planning, operation and maintenance (O&M), revenue mobilization, and financial management capabilities of service providers.
3. The GoJK has successfully implemented two multi-sector urban investment Programs in the past decade, covering two major cities under the first and the second Program. While the investments have helped in substantial improvements in the living standards of the people of these two cities, the service delivery is still in dire need of improvement to cater to the basic requirements of the people of these two cities which will certainly bring a big change in the socio-economic setup of the society.
4. In the twin cities of Jammu and Srinagar, the JKIDP will specifically support water supply source augmentation, rehabilitation and expansion of the water distributions systems and to ensure its supply (24*7), treatment plant, storage, transmission and secondary distribution systems and comprehensive non-revenue water (NRW) program, which will include

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installation or replacement of domestic and bulk water meters as well as a leak detection program for rehabilitation and strengthening of the existing distribution network. In addition the program will also support the Government of Jammu and Kashmir in (i) improving sanitation facilities, including sewerage and sewage treatment in most congested parts (ii) developing solid waste management facilities, including composting facilities, an engineered landfills sites, improvements to primary and secondary collection as well as beneficiary awareness.

5. The program is proposed to support the infrastructure needs and the reform program of the GoJK for sustainable urban infrastructure development and service delivery. The reform program will focus on strengthening institutions and implementing reforms that entail large scale adjustments in policy, institutional, legal, financial, and regulatory framework. The program will provide financial support to the GoJK to implement these reforms that will unlock the potential of various stakeholders, including municipal bodies, individual households, and private sector investors. The program will support catalytic infrastructure that enhance productivity and leverage finances from various other sources in the two project cities. The program will also introduce innovations in water supply and wastewater management, such as 24x7 water supplies, long-term operation and maintenance (O&M) embedded construction contracts for nonrevenue water (NRW) reduction and operational sustainability.
6. The proposed JKIDP will complement the past and ongoing efforts of the government of Jammu and Kashmir (GoJK) to improve water supply and wastewater services to the residents of the State of Jammu and Kashmir. The JKIDP comprises supporting policy reforms, institutional development and governance improvement in the urban sector of the State.
7. The impact of the program will be sustainable urban development in Jammu and Srinagar. The outcome will be improved urban service delivery in Jammu and Srinagar. The outputs will be:

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Output 1: Urban institutions strengthened. This output will include:-

- a. Creation of a sustainable corporatized state-level structure for urban Development.
- b. Modernizations of water supply and wastewater operations in the capital cities of Jammu and Srinagar;
- c. Long-term performance-based management contracts in two cities of the state;
- d. Delegation of water supply and sewerage functions, along with adequate resources and tariff-setting authority, to municipal and PHED.

Output 2: Urban governance improved. This output will include:-

- a. formulation and approval of a long-term urban development policy;
- b. human resource development plan for urban governance, including Conduct of a state-level training programs;
- c. water sector reforms such as reduction of NRW, 24x7 water supply, individual household connections to residents in slum areas, benchmarking of urban services, development of geographic information system (GIS) and customer databases, and water and wastewater quality monitoring systems; and
- d. Rationalization of water and sewerage tariffs for O&M cost recovery, and improvement of collection efficiencies.

Output 3: Water supply system rehabilitated and expanded in two capital Cities. This output will include:-

- a) Distribution network improvement on district metering area basis for NRW reduction;
- b) Provision of individual property connections to residents, especially the poor and households headed by women;
- c) Provision of 24-hour water supply; and
- d) Efficiency improvement in water supply through reduction of NRW and energy losses in electromechanical machinery.

Output 4: Wastewater system rehabilitated and expanded in two capital Cities. This output will include:-

- a. Rehabilitation and expansion of the sewerage network, including property connections;
- b. modernization and expansion of wastewater treatment plants;

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- c. energy generation through sludge digestion and gasification; and
- d. Septage management and decentralized wastewater treatment systems in suitable areas.

Output 5: Capacity building and efficient project management. This output will include:-

- a. capacity building of urban institutions and municipal bodies;
- b. project management;
- c. Gender equality and social inclusion action plan and Community awareness and participation plan.

B. Objectives of the Assignment

1. JKIDP will try to establish 24-hour water supply system in the two cities under the program and work with the Public Health Engineering Department (PHED) and municipal bodies to establish similar service delivery in other identified towns in addition to these cities. Most part of the cities in Jammu and Srinagar has intermittent water supply and high NRW. Lack of proper metering compounds the problem of NRW assessment. To ensure operational sustainability, the Program will implement a comprehensive NRW management plan using the district metering areas approach and ensure proper network management during operations.
2. The Program will implement a comprehensive asset management plan focusing on an integrated approach to repair, maintain, rehabilitate, and replace assets with the objective of minimizing lifecycle costs.
3. Some efforts have been made in the past to develop GIS databases. The Program will support updating and operationalizing the existing GIS, which will also improve Operationalization of the NRW reduction plan and asset management plan.
4. Adoption of energy efficient treatment processes and energy generation from sludge, and focus on Septage Management. Under the program, wastewater Treatment plants (WWTPs) will be constructed with energy efficient and Mechanized treatment processes. The program will also support (i) energy

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generation from sludge digestion or gasification, wherever feasible, and (ii) Septage management.

9. Operation and maintenance embedded construction contracts for operational Sustainability. The project will include O&M embedded construction contracts combining design, construction, and O&M for water supply and wastewater Contracts for a sufficiently long period (7-10years). This will mitigate the PHED lack of O&M capacity; improve the quality of construction by providing continuity in system operation, and obligate the PHED to allocate adequate O&M budget. Special contract conditions for monitoring NRW reduction will be developed and incorporated in the bidding documents to provide incentives for NRW reduction.
10. Integrated planning and development of water and wastewater treatment plant sites. The program will support integrated planning and development of water treatment plant and WWTP sites and surrounding areas, which will focus on (i)landscaping, plantation, and gardens; (ii) solid-waste management; (iii)development of water bodies; and (iv) Establishment of information center, etc.
11. The proposed program will support the ongoing efforts of the Government of Jammu and Kashmir towards (a) distribution network improvement on district metering area (DMA) basis for NRW reduction; (b) provision of individual property connections to citizens, (c) provision of 24-hour water supply; and (d)efficiency improvement in water supply through, reduction of NRW, and reduction of energy losses in electromechanical machinery. The water management in the towns through prioritizing the need of distribution network improvement (DNI) works on district metering area (DMA) approach and non-revenue water
12. To focus on sewerage network and waste water treatment with energy generation from sludge, recycling of wastewater, water management through proper drainage; Rain water harvesting etc to improve efficiency and maximize the impact infrastructure program.
13. Possibility of a long-term concession or performance-based management contract or any other suitable form.

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14. Economic Reconstruction Agency (ERA) is the executing agency (EA) for the Program. Project Management Unit (PMU), headed by Directors for both the regions and supported by other senior officials, will manage the project activities, will liaise with ADB on all issues, implement institutional reforms, prepare Periodic Finance Request (PFR) and disbursement applications etc. PMU will be supported by the Project Implementation Units (PIUs) in each City.
15. PMU will be responsible for identification, formulation, appraisal and Implementation of all sub-projects including ensuring conformance with state, National and ADB social and environmental safeguards policies. A City Level Committee will identify the subprojects and will ensure proper support from the line department in implementation of reforms and subprojects in field. PIUs in close coordination with PDMC will be responsible for identification and implementation of works in the city.
16. PMUs and PIUs at city level will be provided with necessary Consulting services through the Project Development & Management Consultants (PDMC) to strengthen their program management capacity and implementation of subprojects in field including surveys, engineering design, procurement, construction supervision, measurement and billing, contract management etc.
17. PDMC comprising of National level experts and associated Support staff will assist the PMU in Program Management and implementation.
18. Consultancy contract will be for entire program period. PDMC will have office at Jammu/Srinagar (based on Contract Allotment).
19. PDMC Design experts will be stationed at office as per requirement and will travel to the subproject sites as per the work requirement.
20. PDMC will work in close coordination with Project Management Unit of JKIDP at central level and Project Implementation Units (PIUs).
21. Consultancy contracts will initially be for duration of **60 months (5 years)** and maybe extended with mutual consent as per the requirements.

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C. Scope of Services, Tasks (Components) and Expected Deliverables

1. Consultant will be responsible for preparation of all required documents like Detailed Project Reports, Detailed design reports; review of designs if already available with ERA/Government of Jammu and Kashmir; preparation of bid documents, IFBs, BID Evaluation Reports, Construction supervision, quality monitoring and contract management. The Consultant will work as an Engineer for the Sub-Projects taken up during implementation.
2. The team will comprise of 906 man-months of National Level Experts. A more detailed breakdown of the type of consultants, and individual inputs is given in Table 1. Specific tasks of the team members and expertise required is mentioned in Table 2. The overall responsibility to deliver the outputs will be of the Consultant through the Team Leader. Consultant's services will be used for preparing document for all the proposed sub-projects. The consulting firm will have a Project Coordinator to coordinate with client, consultant and ensure timely delivery of the documents, coordination within field and office activities, scheduling mobilization/demobilization of team members and to interact with the client on regular basis. Project coordinator will be fully acquainted with the ADB policy procedures and project requirements.
3. Consultant will follow the holistic approach in doing the surveys and Investigation in such a way that it can be used for GIS/Data base and requirements of all sectors without any repetition of efforts. As far as possible, piecemeal approach will be avoided to have duplicity of surveys. The surveys where duplicity is observed will not be considered for payment. Consultant will keep proper record of all surveys in hard and soft copies and will be used for all sectors where ever required.
4. Sub-Project documents will be prepared adopting finance plus criteria of Gol which includes but not limited to Systemic and Transformational Innovations, piloting of new approaches, Impact Innovations in financing and leveraging etc. Project activities will include pro-poor and social inclusive activities without any discrimination in service delivery levels. Consultant will prepare policy and Documents for pro-poor and social inclusiveness etc.

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5. The scope of PDMC under various activities will include but not necessarily be limited to the following:

A. Surveys, Studies and Investigations

- Identify requirements of surveys, studies and investigations.
- Carry out all the required engineering surveys and investigations such as total station/LiDAR survey, geo-technical investigation, soil survey, leak detection survey, construction material survey, groundwater investigation i.e. hydro-geological investigations, rainfall data collection, identification of underground utilities and their mapping, water sampling and analysis etc.
- Carry out any other survey required for the subproject including for environmental clearances etc.

B. Detailed Engineering Design

- Review the documents if already available with ERA and update wherever required. Prepare conceptual plans and preliminary design reports.
- Once the conceptual plans and preliminary designs are approved, prepare detailed designs in accordance with sound & established engineering practices; tender drawings and; cost estimates etc. The design shall meet the techno economic aspects for best possible solution after consideration of various available alternatives and shall sufficiently be detailed to ensure clarity and understanding by all stake holders. The costs estimate shall be prepared on the basis of Schedule of Rates (SOR). For Non- SOR items, if any, adopting market rate, proper rate analysis will be carried out through market enquiry; Carry out detailed design in water supply sector including source where required; distribution network improvement (DNI) works on district metering area (DMA) approach and; non-revenue water reduction in water supply sector etc. Carry out Detailed Designs for Transport Sector Projects.
- Carry out detailed design in Sewerage Sectors including design of sewerage system; proposing best suited treatment process and; reuse of waste water and energy generation etc.
- Review/revise/modify & Updation of the existing DPRs available with

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- ERA, Assessment of utility shifting requirement and costs estimations; preparing document required for statutory clearances and other clearances like BSNL, Railway, Forest, and National Highways etc.
- Assess land requirement; preparation of land acquisition requirements and acquisition documents; assess each site's environmental aspects for detailed design of the project component;
- Undertake design, preparation, planning and management of the
- Community participation components; in particular, undertake workshops for the implementation and monitoring of poverty alleviation components;
- Preparation of bidding documents using ADB approved standard bidding documents, with due consideration to appropriate procedures - National Competitive Bidding (NCB), International Competitive Bidding(ICB) etc.
- Preparation of performance based bidding documents for water supply and sewerage operations and also Projects in Transportation Sector.

C. Bidding process and contract award:

- Assist JKIDP in issuing bid invitation, addendum/corrigendum, and Clarifications to the bidder's queries, bid evaluation, award of contract and signing of contract.
- Prepare contract documentation to include Letter of invitation, conditions of contract, specifications, design parameters; bills of quantities, etc. for all sub-projects components in close coordination with PIUs.
- Prepare a detailed implementation schedule and management plan covering all stages of the implementation process for each component from field survey and investigations to acceptance of finished work, to ensure coordination and minimization of disruption to the general public.
- Prepare construction drawings with sufficient details to permit contractors to carry out construction work effectively and unambiguously and with highest standards of quality.

D. Construction Supervision and Contract Management:

- PDMC will be responsible for working as an Engineer to the work contracts.
- Checking and approving drawings of contractor for implementation.

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- Checking the line level, layout of the construction to ensure conformity with the contract, proposed and presentation for approval any changes in the plans that may be deemed necessary indicating effect due to the change on contract and preparation of variation orders accordingly.
- supervision of construction, monitoring and quality assurance of sub-projects components, certification that quality is conforming to all relevant specifications and drawings, assess the adequacy of the contractors' inputs in material, labour and construction methodology and provide advisories when required.
- Ensure safety of the works including project personnel and general public and avoid disruptions.
- Address all revisions and detailed drawings required during execution of contract.
- Arrange and witness third party inspections ,Proof checking and issuance for execution of contractors' design and drawings for lump sum turnkey contracts,
- Preparation of planned maintenance procedure, checking installation and commissioning, recording measurements of works executed at site from beginning to completion of project; sector experts will ensure that work is
- Carried out as per the approved design/drawings & specification and shall supervise pre construction, construction activities and commissioning tests at works.
- Resolution of contractual issues including review, evaluation and confirmation of contract Variation Orders; issue contract variation with the approval of Employer as required overall contract management and preparation of the "as built" drawings.
- PDMC will be responsible for measurement and certification of the works completed and for certifying and recommending payments to the contractors.

E. Social, Environmental, Archaeological, Occupational Health and Safety issues:

- Collect baseline data; Prepare, review and update the Resettlement Plan for the project based on detailed designs: review the already prepared resettlement framework (RF) based on newly identified packages and prepare/update; collect gender related data as per the requirement of the

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project/sub-projects; conduct meaningful public consultations with displaced persons/general public; carry out disclosure as necessary after the detailed designs.

- Prepare livelihood restoration plan if required; Identify any further resettlement requirements and costs that may be required and provide all information required in relation to right-of-way access as well as the relocation of existing utilities, if required, and other obstructions at the proposed work sites.
- Support in establishing grievance redress mechanism acceptable to ADB under the program.
- Ensure that all bidding and contract documents contain provisions requiring contractors to adopt gender targets viz., equal wages for equal work and the provisions of core labour standards.
- Propose and implement mechanism for coordination among all stakeholders such as traffic police, roads department, user committees, etc, for smooth construction execution.
- Prepare, Review and update the Initial Environmental Examination (IEE) for the sub-projects; review the already prepared EARF based on newly identified packages and prepare/update IEE accordingly: carry out disclosure as necessary during and after detailed designs.
- Assist in obtaining all necessary permissions and complying with statutory requirements as required prior to construction, such as permissions from Railway, National Highway, Department of Archaeology, Department of Forests and National Parks, and tree-cutting etc.
- Ensure that all bidding and contract documents contain the Environmental Management Plan (EMP) and such items are included in BOQ; also monitor the implementation of the EMP during construction and pre/post construction phases.
- In compliance with the EMP, develop a strategy to overcome the difficulties of construction/traffic management in narrow streets and also prepare detailed plans for detour of traffic during excavation for pipe laying.
- Adequate special measures will be taken for working near buildings and structures of cultural significance and in heritage zones involving close coordination with the Department of Archaeology etc.
- Lead design of surveys and investigations required for the protection of archaeological sites and heritage areas and prepare Archaeological Impact Assessments, or other agreed upon document to be approved by the

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Department of Archaeology (DOA) for the sections that are classified as archaeologically sensitive.

- Ensure that all bidding documents contain specific measures for working and excavating in archaeologically sensitive areas;
- As part of the EMP, prepare a project focused Occupational Health and Safety Plan (OHS) to be adopted by PIU on project work sites.
- Provide awareness training on OHS, environmental impacts and mitigation measures to PIU and contractors including workers.

F. Project Management and Monitoring

- Planning and managing the sub-projects, and assisting JKIDP on the project management, including risk management, cost control, scheduling, monitoring, auditing, reporting, and compliance monitoring for the project required under both the government and ADB rules and guidelines.
- Planning, scheduling and monitoring of the projects using MS project office software.
- Assist JKIDP in conducting regular meetings with all stakeholders, PHED, municipality, contractors, and other government entities, etc, to discuss progress and issues related to implementation, and prepare minutes for recording and circulation.
- Establish all necessary records and the procedures of maintaining/updating such records for each package and for the entire program.
- Develop and implement procedure for timely payments to the contractors and monitor for compliance.
- Assist JKIDP in ensuring compliance with all Program covenants during sub-Conduct on the job training to the staff of RUIDP and ULBs etc
- Conduct study tours for the good performing projects and to learn the best practices in India and abroad project implementation.
- Plan in advance and assist JKIDP in obtaining, in a timely manner, the required clearances, permits, approvals, sanctions or any other information from relevant competent authorities so that the project activities are not unduly delayed.
- Monitor implementation of mitigation measures and compliance with the Governance Risk Assessment and Management Plan for the Sub-projects, and update the Plan as per requirement.

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G. Other Important activities:

- Identify need of training to JKIDP, line agency and ULBs person, Conduct training to the PIU, PMU, ULB and line department personnel in design, use of software's, construction supervision activities etc.
- Conduct on the job training to the staff of JKIDP and ULBs etc Conduct study tours for the good performing sub-projects and to learn the best practices in India and abroad.
- Prepare or update the maps using the GIS based software's; mark the utilities and infrastructure works in the maps; create consumer data base and link with GIS maps.
- Establish Project performance monitoring system (PPMS) as per the project's Design and Monitoring Framework (DMF); updating the PPMS on quarterly basis in accordance with ADB guidelines and loan agreement for the program. In doing so, the PDMC will carry out all necessary benchmark survey, and subsequent monitoring and evaluation surveys as required.
- Advise and assist the Urban Local Bodies (ULBs) in establishing upto date system; provide necessary support to the ULBs in financial reforms; prepare or update the municipal accounting manual; conduct necessary trainings for the financial reforms etc.

H. General Support Tasks

- Identify the possibility of private / public participation in water supply operations in both the cities, as outlined in the Infrastructure Program, and prepare contract document.
- To provide all necessary support to the EA in project implementation.
- In case of casual requirements, provide services of input based experts for other projects under JKIDP or other consultancy package of JKIDP.

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Team Composition & Qualification Requirements for the Key Experts

Table 1-Team Composition

S. No.	Name of Position	Man Months
1	Team Leader cum Urban Development Specialist	60
2	Deputy Team Leader (Water Supply)	48
3	Deputy Team Leader (Transport)	48
4	Bridge Expert	18
5	Structural Expert	24
6	Environmental Specialist	36
7	Resettlement and Social Safeguard Specialist	24
8	Electrical & Instrumentation Expert	12
9	Mechanical Expert	12
10	Contract Specialist	30
11	Procurement Specialist	30
12	Project Performance and Management Specialist	36
13	Solid Waste Management Expert	24
14	Sewerage/Drainage Expert	24
15	Construction Manager (Transport)	48
16	Construction Manager (Urban)	48
17	Sr. Quantity Surveyor	60
18	Geo-tech Expert	18
19	GIS, MIS & Mapping Specialist	36
20	Ground Water cum Tube Well Expert	24
21	Economic Analyst	24
22	Urban Finance/ Accounts specialist	24
23	Quality Control Specialist	48
	Total (A1)	756

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Team Composition - Non Key personnel

S. No.	Name of Position	Man- Months
1	Sr. Support Engineer (4 Nos)	240
2	Junior Engineer (08 Nos)	480
3	Assistant Quantity Surveyor(02)	120
4	Assistant Quality Control Engineer (04)	240
5	Environmental/Safeguard Support Staff (2 Nos.)	72
6	CAD cum Data Entry Operator (4 Nos)	240
7	Office Manager/Secretary (2 Nos)	120
8	Data Entry Operator (08 Nos)	480
9	Field Investigators (8 No)	480
10	Office Assistant / Utility Persons (12 Nos)	720
	Total Man-Months	3192

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Table 2: Qualification Requirements for the Key experts

S. No.	POSITION	Qualification Requirement	Responsibility
1.	Team Leader cum Urban Development Specialist	Post Graduate in Civil Engineering with experience of 20 years in management of similar Projects, in which there should be at least 10 years experience in working as i) TL/DTL for Urban Projects or ii) working in Urban Projects at Senior Positions. Age limit 65 years at the time of Submission of Proposals.	Team leader will be responsible for Project Development, Overall Management and administration of the project components during Design and Construction. Appraisal of Subprojects if required; Monitor Procurement, Bidding Process, Construction/ Supervision, Quality Control & Contract Management as "Engineer". Establishment of Construction Management & Project Performance Monitoring & Reporting System. Ensure Execution of work on all Sub-Projects as per Works Programme. Developing Training Programs, Advice on Institutional reforms and maintain proper coordination with the Employer, Resolving contractual issues during implementation, Certify work done IPCs, Submission of Quarterly & other Progress /Monthly Reports & other required documents. Preparation of Project Completion Reports.
2	Deputy Team Leader – (Water Supply)	Post Graduate in Hydraulics with 15 years Experience in Construction/ Supervision of Hydraulic Projects including Water Supply, STP/WTP, OHTs, Pipelines and Sewerage Projects. Age limit 60 years at the time of Submission of Proposals.	Assist Team Leader during the Execution of works, Responsible for overall Construction Management, Quality assurance and administration of the contracts under the Hydraulic Projects, Supervise the construction activity appropriately as "Engineer". Implementation of works as per Design, IS Codes, Provide Training on best practices in construction Management, Contract Management and Performance Monitoring of the Contractor, Preparing Project Completion Reports and Progress reports, Assist in resolving Contractual issues during implementation.
3	Deputy Team Leader – (Transport)	Post Graduate in Transportation Engineering with 15 years experience in Construction /Supervision of all Transport Projects incl. Bridges, Flyovers, Buildings, Parking's, Underpasses etc. Age limit 60-years at the time of	Assist Team Leader during the Execution of works,, Responsible for overall Construction Management, Quality assurance and administration of the contracts under the Transport projects, Supervise the construction activity appropriately as "Engineer". Implementation of work as per Design, IS Codes. Provide Training on best practices in Construction management, Contract

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		Submission of Proposals.	Management and Performance Monitoring of the Contractor, Preparing Project Completion Reports and Progress reports, Assist in resolving Contractual issues during implementation.
4	Bridge Expert	Post Graduate in Bridge Engineering with 10 years Experience in Construction / Supervision, Design of Major Bridge Projects. Age limit 60-years at the time of Submission of Proposals.	To Ensure complete Construction/Supervision of Bridge & its Components in accordance with Design, IRC specifications. Performance Monitoring of the Contractors during & after execution.
5	Structural Expert	Graduate in Civil with Post Graduate in Structural Engineering with 7 years Experience in Design of all types of Structures incl. Bridges, flyovers, Underpass, Parking & water retaining structures. Age limit 55-years at the time of Submission of Proposals.	Carrying out Structural Design of all Hydraulics & Transport Sub-Projects in accordance with Standard Practice Conforming to IS Codes, Review of Structural Designs submitted by the contractor, if required. Planning and Supervising Geotechnical investigations. Ensuring the construction activities are implemented as per Design on field.
6	Environmental Specialist	Post Graduate in Environmental Engineering with 10-years experience & capacity of dealing with Environmental Issues & preparing of IEE, EMP. Age limit 55-years at the time of Submission of Proposals.	Preparation of Environmental & Safeguards Action Plan, Monitoring as per ADB guidelines, Preparation of EIA/IEE, Structuring Environment Management and Monitoring Programs, Sub Project Appraisal Reports, Communication strategy ,Public grievance redressal, Ensuring effective implementation of EMPs & Safeguard action Plan at Site during execution work of Sub-Projects. Shall be responsible for Training, Project Completion and Progress Reports.
7	Resettlement and Social Safeguard Specialist	Post Graduate in Sociology having Experience of 12 years in dealing with the Social, Gender and Resettlement issues. Age limit 55-years at the time of Submission of Proposals.	Preparation of Resettlement plans for the dislocated persons, Holding Public Consultations, Effective Resettlement & Safeguard Monitoring. Report Gender Action Plan Formulation and Implementation of Communications Strategy and Public Relations as per ADB guidelines. Public grievance redressal, IEC activities, Training and Project Completion and Progress Reports.
8	Electrical / & Instrumentation Expert	Post Graduate in Electrical / Instrumentation Engineering with 10 years' Experience & Specialization in Design &	Responsible for ascertaining the Correctness & efficiency of instruments to be used in the works, Testing of Materials & Equipments during execution & witnessing the tests during Pre

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		Execution of HT/LT Pumping Equipments & STP/WTP Installations with Street Lighting & Power System Projects.. Age limit 55-years at the time of Submission of Proposals.	commissioning.
9	Mechanical Expert	Post Graduate in Mechanical Engineering with 20 years experience in design & execution of HT/LT Pumping equipment & STP/WTP installations. Age limit 55-years at the time of Submission of Proposals.	Design of Mechanical Equipments, Checking specifications for Procurement, Review of Contractors Design, Drawings, if reqd., Performance Monitoring of the Contractor, Ensure the Construction activities are implemented as per design on field.
10	Contract Specialist	Post Graduate in Contract Management with 10-years experience in Contract Management System with FIDIC Contracts. Age limit 60-years at the time of submission of Proposals.	Developing performance based contracts on different models, To monitor & ensure Contractors performance in the field in accordance with the terms & Conditions of Contract agreement, attending & helping in resolving the Contractual issues during & Post –Execution in accordance with FIDIC Conditions of Contract, Assisting in Legal Matters, arbitrations, etc. Dealing with Contractors & Employers claims in accordance with the Contract Conditions.
11	Procurement Specialist	Post Graduate in Civil Engineering with at least 10 Years experience in all Procurement related activities for external aided Projects incl. Preparation of IFBs, Evaluation of Technical/Financial Bids, Preparation of Evaluation Reports, etc. Age limit 60-years at the time of Submission of Proposals.	Procurement activities of Major projects, Preparing of IFB, Evaluation of Technical/Financial Bids, Preparation of Evaluation Reports & drawing of Agreement, Procurement of Machinery & Equipments through Shopping Mode as per ADB Guidelines.
12	Project Performance and Management Specialist	Degree in Engineering with Post Graduation in Project Management & 8 years Experience in Project Performance & Management of Projects. Age limit 55-years at the time of Submission of Proposals.	Structuring mid term and final evaluation, Preparing baseline report, Preparation of PPMS Template and Reporting. Appraisal of Sub Project progress and completion reports. Prepare / update accounts manual; Project finance details.

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13	Solid Waste Management Expert	<p>Post Graduate in PHE or Environmental Management with Experience of at least 10 years in Municipal Solid Waste Management.</p> <p>Age limit 55-years at the time of Submission of Proposals.</p>	<p>Identify the potential areas for Sanitation Management, Implementation and develop the scheme; prepare proposal supervise the septage works and explore a public-private partnership scheme to increase financial and operational sustainability. Shall be responsible for Mechanism of Monitoring for reduction of Solid Waste. Submit Robust Management Plans for Monitoring Effective Control & proper Disposal of Solid Waste. Design disposal System in a proper & effective Manner. Has to be aware of the International/National regulations about the Treatment & Disposal of Solid Waste.</p>
14	Sewerage / Drainage Expert	<p>Master's Degree in PHE / Urban Water Management with 15-years Experience in carrying out Design & Execution of Sewage Treatment Plant, Water Treatment Plant, OHTs, Pipelines & major Drainage Projects.</p> <p>Age limit 55-years at the time of Submission of Proposals.</p>	<p>Will be responsible to provide support in Management and administration of the related project; preparation and appraisal of related Sub- Project Documents as required, assist in Preparation of SAR/DPRs. Complete Supervision & Execution of all Sewerage/Drainage Projects as per Design & IS Codes.</p>
15	Construction Manager (Transport)	<p>Post Graduate in Construction Management with 15 years Experience out of which 7 years should be in Construction/Supervision of Transport Projects incl. Roads, Buildings, Bridges, Flyovers, Under Ground Parking and Underpass etc.</p> <p>Age limit 55-years at the time of submission of Proposals.</p>	<p>Responsible for overall Construction/Supervision of Transport Projects, Checking Quality assurance and implementation of works as per Drawings, Design & in accordance to IS Codes</p>
16	Construction Manager (Urban)	<p>Post Graduate in Construction Management with 15 years Experience out of which 7 years should be in Construction/Supervision of Urban Projects incl. Water Supply, OHTs, Pipelines, Sewerage works, STP/WTP &</p>	<p>Responsible for overall Construction/Supervision of Urban Projects, Checking Quality assurance and implementation of works as per Drawings, Design & in accordance to IS Codes.</p>

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		major Drainage Projects etc. Age limit 55-years at the time of Submission of Proposals.	
17	Sr. Quantity Surveyor	Graduate in Civil Engineering having Experience not less than 10-years with Specialization in Preparing of Estimates / Rate analysis / BOQ / Specifications/ Schedule of rates for all Urban & Transport Projects. Age limit 55-years at the time of submission of Proposals.	Preparation of Analysis of rates, Quantity Surveying, Estimates, BOQs, checking of IPCs for all Sub-Projects, Checking of Specifications in assignments allotted for the preparation of DPR's and bid documents.
18	Geo –Tech Expert	Post Graduate in Civil Engineering having Experience not less than 10-years in Total Station Surveying, Utility mapping on State of the art Computer mapping. Age limit 55-years at the time of submission of Proposals.	Survey, Investigation, Utility Mapping on State of art computer Mapping, Monitoring for carrying out boring for Geo-Technical Investigations.
19	GIS, MIS & Mapping Specialist	Graduate Engineer with at least 10 years experience in the field of development of GIS mappings for urban areas and expertise in using latest GIS Software's like Arc-info, AutoCAD Map, Map-info etc. Age limit 55-years at the time of submission of Proposals.	Mapping, Surveys and Developing project Management system, GIS based distribution/collection system mapping, Establishment of Project Management and Monitoring System, Structuring baseline Surveys.
20	Ground Water cum Tube well Expert	Post Graduate in Hydrology having experience not less than 10 years in survey, investigation and construction of deep tube wells in the same geographic areas. Age limit 55-years at the time of submission of Proposals.	Will be responsible for Ground Water Exploration, Studying of Satellite imaging in respect of ground Water, Complete Construction & Monitoring of deep tube wells, etc.

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21	Economic Analyst	<p>Master's Degree in Economics with 10 years Experience in Economic & Financial analysis, Budgeting & Accounting, Financial Projections & Modelling in Urban Infrastructure.</p> <p>Age limit 55-years at the time of Submission of Proposals.</p>	<p>To research & analyze data using a variety of soft ware programmes incl. Spread sheets, Statistical analysis & data base Management Plan, Gather Data for Microeconomic analysis. To discern Potential outcome of economic or financial decisions, preparation of Sub project appraisal reports, etc....</p>
22	Urban Finance / Accounts Specialist	<p>Master's degree in Finance / Chartered Accountant / Commerce / ICWA / Post Graduate in Economic with specialization in dealing with Financial Management issues.</p> <p>Age limit 55-years at the time of Submission of Proposals.</p>	<p>Financial forecasting, Reporting & analyze Financial Data & create financial models for decision support, planning, performance variance analysis, Identify trends & make recommendation for improvements, Preparation of Sub-Project appraisal reports, etc...</p>
23	Quality Control Specialist	<p>Post Graduate in Civil Engineering with 15-years Experience out of which 7 years should be in Laboratory testing of all Construction Materials as per IS Codes/ Specification, etc on similar Projects.</p> <p>Age limit 55-years at the time of submission of Proposals.</p>	<p>Responsible for Quality Assurance of all Sub-projects, Carrying out testing of Materials used in the Construction work in accordance to the recommendation of IS Codes & ensure the work is executed as per the tested & approved material at site.</p>

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Qualification Requirements for the Non Key personnel

S. No.	Position	Qualification Requirement	Responsibility
1	Senior Support Engineer	Graduate in Civil Engineering with at least 10 years Experience in Supervision of Urban / Transport Projects. Age limit 45 years at the time of Submission of Proposals.	Construction/Supervision of entire Construction activity of a Sub-Project at Site, incl. Surveying, Testing, Checking Quality Control, Measurement of Works, Billing, Ensuring daily activity is as per works Program & Coordinating with Contractor to get the work done on scheduled time line of each activity.
2	Junior Engineer	Graduate in Civil Engineering with at least 2 years Experience in Supervision of Urban / Transport Projects. Age limit 35 years at the time of Submission of Proposals	Complete Supervision of each activity of a Sub-Project at ground level, Assist Senior Engineer in his responsibilities
3.	Assistant Quantity Surveyor	Degree in Civil Engineering having experience not less than 5 years in Quantity Surveying / analysis of rates / BOQs / specifications . Age limit 35 years at the time of Submission of Proposals	Assist Sr. Quantity Surveyor in preparing analysis of Rates , BOQs, checking IPCs, Specifications in assignments allotted for the preparation of DPR's and Bid documents
4.	Assistant Quantity Control Engineer	Graduate Civil Engineer having Experience not less than 5 years in checking testing, Quality assurance as per specifications of Similar Projects. Age limit 35 years at the time of Submission of Proposals	Checking Quality of materials on Sub-projects, Carrying out testing of Materials used in the Construction work in accordance to the recommendation of IS Codes & ensure the work is executed as per the tested & approved material on site. Record & Maintain all the documents & Test results of tested material on site.
5.	Environmental/Safeguard Support Staff	Graduate in Social science/ Environmental science with at least 2 years experience in preparing safeguard documents & capacity of dealing with Environment issues. Age limit 30 years at the time of Submission of Proposals	Assist Environment/Social Safe Guard Specialist in their work, Preparation of Environmental & social Safeguards document, Implementation of gender action Plan monitoring as per ADB guidelines. Public grievance redressal and assist in Project Completion Report.

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6.	CAD cum Data Entry Operator	Diploma in AutoCAD with at least 2 years' experience in preparing the drawings and maps on AutoCAD. Age limit 30 years at the time of Submission of Proposals	Preparation/updation of computer aided drawings and maps for all the Sub- Project works. Printing of all reports related to Sub-Project. Assist PIUs in office works
7.	Office Manager/Secretary	Graduate with 3 years of Experience in Office Management activities of Similar Projects with the consultant. Age limit 35 years at the time of Submission of Proposals	Office Management activities. Preparing Reports.
8.	Data Entry Operator	Secondary with 2 years of experience in computer applications. Age limit 30 years at the time of Submission of Proposals	Printing of Reports. All Computer works pertaining to the Sub-Projects & other required documents.
9.	Field Investigator	Degree or Diploma in Civil Engineering. Age limit 30 years at the time of Submission of Proposals	Complete Supervision of each activity of a Sub-Project at ground level, Assist Senior / Junior Engineer in their job responsibilities.
10.	Office Assistant / Utility Persons	Matriculation with experience of at least 2 years in office works. Age limit 30 years at the time of Submission of Proposals	Maintaining of all official records & Documents properly/ Handling of all Dak /mail .

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I. Reporting Requirements and Time Schedule for Deliverables

As a minimum, following are the deliverables:

- Inception Report in 30 days time of mobilization of consultant containing approach, methodology, work plan and staffing schedule for the project activities and schedule for deliverables etc in hard and one soft copy; draft and final feasibility and subproject appraisal reports including.
- Engineering feasibility; social and Environmental safeguard document; economic and financial analysis etc in three hard and soft copies in an agreed time frame.
- draft and final Detailed Project Reports (DPRs) supported by design reports for each sector and town including design criteria; population projections, detailed designs; costs estimates etc in hard and soft copies in the agreed time frame.
- Draft and final bid document for each contract package in hard copies and soft copies in an agreed time frame.
- Monthly, quarterly progress reports; semi-annual/biannual environmental and RP implementation reports in hard and soft copies.
- Monthly contract performance and management reports using MS project for each contract during entire program period.
- Draft/Final contract/project completion reports in hard and soft copies any other reports as required by JKIDP.
- All reports will be submitted to PMU and PIU in an agreed time frame.

Note:

Since the Services consist of the supervision of civil works, the following action will require prior approval by the Client: Taking any action under a civil works contract designating the Consultant as “Engineer”, for which action, pursuant to such civil works contract, the written approval of the Client as “Employer” is required.”

J. Client’s Input and Counterpart Personnel

- Services, facilities and property to be made available to the Consultant by the Client: Office accommodation with power and water supply facility for central office at Jammu.
- Professional and support counterpart personnel may be assigned by the

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- Client to the Consultant's team: Client may provide the counterpart staff for supervision of works in field as available with the client; it will be discussed during contract negotiations and agreed quantities in the contract will be adjusted accordingly.
- Data, reports, maps etc as available for all sub-projects with the Government.
- Draft DPRs as available with the client and Government of Jammu and Kashmir.