REQUEST FOR EXPRESSIONS OF INTEREST
(CONSULTING SERVICES – FIRMS SELECTION)

PAKISTAN
PUNJAB INCLUSIVE CITIES PROGRAM (PICP)
Loan No./Credit No./ Grant No.

Assignment Title: HIRING OF ENGINEERING FIRM FOR DETAILED DESIGN AND RESIDENT SUPERVISION OF WATER SUPPLY, SEWERAGE & STORM WATER DRAINAGE SUB-PROJECTS IN 07 CITIES OF PUNJAB (PACKAGE – 2)

Reference No.: PK-PMDFC-514993-CS-QCBS

The Govt. of Punjab (hereinafter called "Borrower") intends to apply for financing from the World Bank in the form of a "Loan" (hereinafter called "Loan") towards the cost of "Punjab Inclusive Cities Program (PICP)". Punjab Municipal Development Fund Company (PMDFC), hereinafter referred to as 'Client' intends to apply part of the proceeds for consulting services for HIRING OF ENGINEERING FIRM FOR DETAILED DESIGN AND RESIDENT SUPERVISION OF WATER SUPPLY, SEWERAGE & STORM WATER DRAINAGE SUB-PROJECTS IN 07 CITIES OF PUNJAB (PACKAGE – 2) UNDER PUNJAB INCLUSIVE CITIES PROGRAM (PICP) as under.

The Consultancy Services for the following 07 cities are required as mentioned below.

S. No	Package 2
	MCs
1	Ahmedpur East
2	Shujabad
3	Jatoi
4	Khanpur
5	Sadiqabad
6	Jampur
7	Rajanpur

The Consulting Services ("the Services") include detailed design of infrastructure sub-projects and resident supervision in 07 cities of Punjab as given above. The overall objectives of Hiring of the Engineering Consultant Services have been mentioned in detail in the TORs.

The Punjab Municipal Development Fund Company (PMDFC) now invites eligible engineering consulting firms ("Consultants") to indicate their interest in providing the Services. Interested Engineering Consultants should provide information demonstrating that they have the required qualifications and relevant experience to perform the Services. Key Experts will not be evaluated at the shortlisting stage.

The **short-listing criteria** are:

1. General Experience in Detailed Design & Resident Supervision (Weightage: 20%)

Minimum 10 years' experience in the field of designing infrastructure projects and resident supervision of public and private sectors infrastructure.

2. Specific Experience in Detailed Design & Resident Supervision (Weightage: 80%)

2.1 Specific experience of a minimum of 03 projects with consultancy cost of PKR 100 million or above for public/private sectors/donor agencies/multilateral development banks involving **detailed design** of infrastructure projects in relevant sectors such as Water Supply / Waste Water Treatment Plant / Sewerage/ Storm Water Drainage Systems in the last 10 years. Consultant shall furnish documentary evidence of substantial completion of the consulting services indicating the cost of the consulting services and person month input. **(Weightage: 60%)**

2.2 Specific experience of a minimum of 03 projects with consultancy cost of PKR 100 million or above for **resident construction supervision** of infrastructure projects in relevant sectors such as Water Supply / Waste Water Treatment Plant / Sewerage/ Storm Water Drainage Systems in the last 10 years. Consultant shall furnish documentary evidence of substantial completion of the consulting services indicating the cost of the consulting services and person month input. **(Weightage: 20%)**

3. Statement indicating portfolio of clientage along with details of nature of organization be attached.

The detailed Terms of Reference (TORs) for the assignment can be found at the following website: https://pmdfc.punjab.gov.pk/

The attention of interested Consultants is drawn to Section III, paragraphs, 3.14, 3.16, and 3.17 of the World Bank's "Procurement Regulations for IPF Borrowers" July 2016 [Revised February 2025] ("Procurement Regulations"), setting forth the World Bank's policy on conflict of interest. The Consultant will be selected in accordance with the **Quality and Cost Based Selection Method (QCBS)** set out in the Procurement Regulations of the World Bank (Revised February 2025).

Consultants may associate with other firms to enhance their qualifications but should indicate clearly whether the association is in the form of a Joint Venture and/or a sub-consultancy. The Consultant shall clearly describe the anticipated role of each JV partner as well as Sub-Consultant within the association. In the case of a Joint Venture, all the partners in the joint venture shall be jointly and severally liable for the entire contract whereas each partner within the JV shall meet the qualification and experience requirement for the assigned role in the JV, if selected.

The firms shall submit supporting documents i.e. copies of contract agreements indicating cost agreed with each activity invariably. In case the supporting documents are not found attached along with submission of EOI as mentioned, no weightage will be awarded against the shortlisted criteria.

Further information can be obtained at the address below during office hours i.e. 0900 to 1700 hours.

Expressions of interest must be delivered in a written form to the address below (in person, or by e-mail) up to **November 3, 2025 by 16:00 hours**. Name of Package must be mentioned on the envelope clearly and in bold letters intending to be participated.

Punjab Municipal Development Fund Company (PMDFC)
Attn.: Syed Zahid Aziz, Managing Director / Program Director (PD)
Address: Building No.184 Scotch Corner, Upper Mall Scheme, Lahore – 54500 Pakistan
Tel: +92 42 99204386-89
E-mail: info@pmdfc.org.pk
Website: https://pmdfc.punjab.gov.pk/

TERMS OF REFERENCE

"DETAILED DESIGN AND RESIDENT SUPERVISION OF WATER SUPPLY, SEWERAGE & STROM WATER DRAINAGE SUB-PROJECTS IN 07 CITIES OF PUNJAB"

PACKAGE-2

1. Introduction & Brief Background

a) A Program captioned as Punjab Inclusive Cities Program (PICP), introduced as a Program for Results (P4R), funded by World Bank through soft loan of USD 400.00 million and gestation period of 5 years, is being launched in 16 MCs of Punjab. Each MC will contribute 20% of the total cost of the sub-projects being executed in its jurisdiction. The development objective of the Program is to strengthen the performance of participating Municipal Committees (MCs), focusing on urban management and improvement of municipal services infrastructure for satisfactory service delivery. The operation is financed through a hybrid of Investment Project Financing (IPF) and Program-for-Results (PforR) instruments of the World Bank.

b) The PforR (Window-1) will be targeting the MCs of tentative 16 selected cities as given below:

PAKPATTAN	JAMPUR	ARIF WALA
SAMMUNDRI	SHUJABAD	JATOI
KASUR	RAJANPUR	HAROONABAD
CHINIOT	SADIQABAD	AHMEDPUR EAST
MANDI BAHAUDDIN	CHISHTIAN	KHANPUR
CHAKWAL		

c) The IPF (Window-2) will support provincial government agencies i.e. Local Government & Community Development Department (LG&CDD), Punjab Municipal Development Fund Company (PMDFC) and Capacity building of MCs in municipal service delivery along with developing and implementing gender responsive systems for human resource management, grant management, reporting, audit and MC performance assessment.

2. Objective of the Assignment

The TORs of the subject assignment have been framed to carry out following functions:

(i) Identification of sites for the respective work and conducting feasibility studies for the integrates provision pf water supply and sanitation services including water supply, sewerage and storm water drainage interventions.

(ii) Detail Designs and Drawings, preparation of Bill of Quantities, Sub-Scheme Documents (PC-Is), Bidding Documents and Construction Supervision of the entire sub- projects via detailed Topographic Surveys, authentication of technically suitable and hydraulically viable water supply and sewerage and storm water drainage system systems,

(iii) Preparation of Environment and Social (E&S) instruments for the subprojects:

a. Environmental and Social Impact Assessment (ESIA)
b. Environmental and Social Management Plan (ESMP)/Initial Environmental Examination (IEE)
c. Resettlement Action Plans (RAPs)
d. Abbreviated Resettlement Action Plan (ARAPs)
e. Any other E&S instrument required like Gender Action Plan, E&S screening checklist etc.

These instruments will be prepared as per the requirements of local/provincial regulations including, Punjab Environmental Protection Amendment Act2017, Good International Industrial Practices, applicable international conventions, Environmental and Social Systems Assessment (ESSA)/Environmental and Social Compliance Framework (ESCF) and Environmental and Social Core Principles of the World Bank's Program for Results Policy.

(iv) Supervise and regularly report on the implementation status of the site-specific E&S instruments including but not limited to: Contractors-Environmental and Social Management Plan, Environment and Social Screening Report (ESSR), Environment and Social Management Plan (ESMP), E&S Impact Assessment (ESIA), and Resettlement Action Plan (RAP)/ Abbreviated Resettlement Action Plan (RAP/ARAP) (as and where required) and any other E&S instrument prepared for the program.

(v) Resident construction supervision of the sub-projects for Efficient Project Execution, Quality Assurance and Control, Safety Management and Progress Monitoring and Reporting.

The Consultancy Services for the following 07-cities are required as mentioned below;

S. No	Name of Cities
1	SHUJABAD
2	JAMPUR
3	JATOI
4	RAJANPUR
5	AHMADPUR EAST
6	KHANPUR
7	SADIQABAD

The cities included in the above-mentioned package have been selected based on geographical proximity. All selected cities are located in the southern regions of Punjab, with a maximum distance of 250 kilometers between the farthest points.

3. Scope of Consultancy Services

The consultant shall perform, but not limited to, the following tasks in close coordination with the Client:

3.1: PLANNING, FEASIBILITY STUDY AND DETAILED ENGINEERING DESIGN, DRAWINGS, SPECIFICATIONS AND BILL OF QUANTITIES:

The Consultant's inputs shall include but not limited to the following tasks, to be carried out for each city:

(i) PLANNING

(a) Identify key stakeholders and ensure that they are aware about the planning initiative and are willing to engage with it,

(b) Collect and validate available secondary information, including reports, existing maps and plans etc. and information on planned activities,

(c) Prepare a detailed GIS base map based on satellite imagery (0.6 m resolution) which will be acquired from an authentic source and shall be used to develop an updated land cover base map of the city and its surrounding areas. Prepare an updated GIS map of the cities based on field surveys, which includes all major features, such as, existing built-up area, infill sites, brown fields, agricultural land, forests, water bodies and open land available for future development for the study area/ planning boundary. Administrative boundaries should also be added to this base

map,

(d) Prepare overlays showing existing municipality services (water supply system including sources, storage tanks, tubewells, distribution network etc, drainage and sewerage systems showing network as well disposal stations, electricity, gas lines, telephone lines, water courses, canals etc.),

(e) Engage with all stakeholders, to (a) collect local knowledge through focus groups discussions, and (b) collect information on their concerns and priorities,

(f) Prepare situational analysis report, with the findings about existing conditions, current growth trends, any planned work to be undertaken, ongoing works, and an estimate of future growth trend/visions,

(g) Assess options for meeting priority needs and forecasting the implementation of the masterplans and develop preliminary proposal/strategy for the schemes, which meet the requirements and facilitate implementation of the plan,

(h) Present the Plan and possible options for meeting priority needs to local stakeholders and modify it accordingly in response to their suggestions and concerns,

(i) Conduct E&S scoping and screening of all activities and accordingly prepare, E&S instruments as required, proportionate to the nature and risks of the activities, sustainability and climate resilience of the sub-projects.

(j) Capacity Assessment of MCs as well as the contractors including E&S management capacity.

(k) Land acquisition and resettlement requirements

(l) Availability of state-owned unencumbered land for wastewater treatment plant

(m) Finalize the plans and list of priority sub projects,

(n) Liaise with the Client and relevant stakeholders to ensure that the plan and priority list of sub projects are formally approved and agreed upon,

(o) Presentation of Final Report.

(ii) FEASIBILITY STUDY

(a) Detailed verification of data of gap analysis prepared by PMDFC and situation analysis as per site status carried out by the consultant and up-dation of the descriptive maps

(b) Assess the sub projects relevancy showing their relationship with existing infrastructure under integrated urban development concept,

(c) Identification and assessment of alternative technical and operational options with comparative cost effectiveness. The technical option includes exploration of a sustainable water source and optimization of wastewater treatment.

(d) To ensure infrastructure optimization and cost-efficiency, a modular development approach will ebe followed:

- Primary Infrastructure (e.g., main distribution networks, sewer trunks): Designed for a 25-year horizon (up to 2050)
- Secondary Infrastructure (e.g., stabilization ponds, tubewell augmentation): Dimensioned to meet the demand by year 2035. These typologies of infrastructure can be then expanded to meet future demands

(e)

(f) Propose innovative solutions with a focus on reducing costs – these should relate to type of pipes, motors, pumps, OHRs etc.

(g) Explore means to maximize benefits and to ensure sustainability of groundwater over the life of the project.

(h) Collect and evaluate all new data needed to produce a robust study and will make no assumptions drawn from the Previous Report or Study,

(i) The consultant will be tasked with developing selection criteria for the proposed intervention in a city. These criteria will be carefully crafted to ensure the effectiveness and suitability of the intervention. Following development, the

Criteria will be submitted for approval from the client prior to implementation.

(j) Produce an appropriate tentative cost estimate of each sub project, based on typical sections and details using appropriate unit rates,

(k) Assess the relevance and feasibility of each sub project ensuring that:

- It fulfills a clear need of the city,
- 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 additional flow resulting from proposed schemes, likewise existing drains are utilized for storm water),
- The O&M of the proposed technology is manageable by the MCs and services related to long term maintenance is available in the local market,
- Carry out financial viability analysis and relevant indicators, including a financial model and value for money analysis

(l) Based on the assessment, produce a brief feasibility report for each sub project and present this for clearance (a clustering exercise for similar sub-projects is recommended in the report),

(m) Carrying out the Economic and Financial Analysis for determination of EIRR

(n) Possibilities of a Public-Private-Partnership (PPP) set-up for operation and maintenance,

(o) The consultant is tasked with identifying suitable sites and determining the land area necessary for constructing various infrastructure components, including but not limited to tubewells, overhead water reservoirs, disposal works and waste water treatment plants.

(p) The Consultant shall prepare detailed plantation plan for each city. The plan should take into account the unique geography and climatic conditions of each site, aiming to effectively mitigate environmental issues while enhancing the overall aesthetics of the area.

(q) Additionally, the consultant is expected to provide comprehensive

assistance to the client throughout the process of obtaining necessary No Objection Certificates (NOCs) from government departments and facilitating Voluntary Land Donation (VLD) procedures.

(r) The consultant is required to present a detailed analysis comparing the cost- benefit ratio and life cycle costing for the wastewater treatment plant.

(s) The Consultant shall prepare detailed tree plantation plan for buffer zone of wastewater treatment plants.

(t) The consultant is responsible for overseeing and executing the geotechnical investigation of the proposed sites for Overhead Water Reservoirs (OHRs) and

Disposal Works and Waste Water Treatment Plants.

(u) The Consultants are tasked with conducting Electric Resistivity Surveys (ERS) at potential sites for tubewell installation. Moreover, the consultant will perform trial bores to a suitable depth to ascertain the viability of water sources in terms of both quantity and quality as when required.

(v) The consultant will be responsible for developing design criteria and design parameters for the water supply and sewerage and storm water drainage scheme, as well as the wastewater treatment plant if the assumed values of various parameters are different than that of already established design criteria of PHED / PMDFC. These parameters will be subject to approval from the client before proceeding with the design process.

(w) Problem analysis / problems to be addressed. Present organizational and financial situation of the service providers comprised by the project and other project financially involved parties; non-autonomous (departmental)/ semi- autonomous/ autonomous; organizational set-up; tariff system and rates; income and cost recovery

(x) Provision of coasted O&M plan of most feasible option.

The consultant is tasked with developing a comprehensive strategy to engage the community throughout all stages of project planning, implementation, and ongoing operation and maintenance. This involves establishing effective mechanisms for consultation and participation. Key responsibilities include:

i. Prepare detailed manuals for operational, maintenance, and repair procedures for water supply and sanitation infrastructure. These manuals will be tailored to suit the needs of both technical staff and community members.
ii. Designing a plan to conduct training and capacity-building activities for relevant stakeholders, encompassing contractors, MCs, community members, water management authorities, and maintenance personnel.
iii. Formulating a transparent and accountable plan for community involvement in the collection of consumer charges.
iv. Identifying potential risks and uncertainties associated with the project and devising strategies for risk mitigation and contingency planning.
v. Developing a framework for monitoring project progress, evaluating outcomes, and making necessary adjustments to ensure project success and long-term sustainability.

(iii) DEMOGRAPHIC AND SOCIO-ECONOMIC DATA

(a) Based on survey, prepare local level statistical information and reconcile it with government records, where possible. Disaggregated data on most vulnerable groups will be preferred) on; (a) Population, (b) Income, (c) Occupation, (d) Poverty, (e) Economic growth and growth potentials,

(b) Prepare and forecast (20-25 years) demand for the services (extension of service area; increase of population and per capita income; industrial, commercial and institutional development, affordability index). Design is expected to be phased to extend services during the lifetime of infrastructure,

(c) Collect & assess Socio-economic situation of main project beneficiaries.

(iv) OPERATIONAL DESIGN AND BUSINESS MODEL

(a) Asses the current level of services being provided by the MCs with respect to water supply and sanitation, wastewater, and storm water drainage, and challenges in delivery of these services efficiently and on sustainable basis.
(b) Develop a long-term financial model for the water and sanitation, sewerage and storm water drainage system. In particular, this would include incremental reduction of provincial subsidy and projected enhancement of local revenue.
(c) Following a diagnosis of the water supply, sewerage, and storm water

drainage sector, and of the MCs operational and financial aspects, the consultant will present various options / business models, also exploring avenues for private sector participation in the municipal services.

(d) Study the current operating regime of water, wastewater and storm water drainage services and develop a detailed operating plan. Assist and engage with community members and MCs 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.

(v) DETAILED ENGINEERING DESIGN

(a) Review, conduct and ensure that all the available surveys data are correct (amend if required) and meet the best international practices,

(b) Undertake field surveys (geotechnical [(field investigations along with in-situ & lab testing) to arrive at the geotechnical parameters required for the design], engineering, site investigations, topographic etc.) and studies to establish firm basis for design. The geotechnical investigations should explore the underground salinity lens and make every attempt to propose sustainable water source devoid of salinity. In addition, yield tests must demonstrate adequate quantity of abstract able water for meeting the needs of the communities connected to the network,

(c) Undertake environmental and social assessment studies (including but not limited to EIA, IEE, land acquisition and resettlement plans (RAP/ARAP), Occupational/Community Health and Safety (OHS/CHS) management plans, gender action plan and any other E&S instruments required for the proposed investments. Support PMDFC in preparation of Environmental and Social Compliance Framework (ESCF) to be prepared as per recommendation of ESSA.

(d) Conduct energy requirement analysis for the overall project and the best suitable solutions must be recommended (inclusive of solarization), which will be used for cost calculation of O&M,

(e) Description and assessment of the project's adherence to legal agreements of Project, including the Guiding Principles for sustainable Infrastructure and suitability for sustainable Infrastructure Finance funding,

(f) Description and assessment of the project's adherence to the government policies and laws,

(g) Undertake technical due diligence and geotechnical assessment, for the proposed priority sub-projects,

(h) Prepare and finalize the detailed engineering designs of priority sub-projects, technical specifications, detailed market-based cost estimates (including costs for addressing environmental and social concerns based on E&S instruments), climate resilience measures, as per international best practices. The detailed engineering designs of the priority sub-projects should be prepared using integrated urban planning approach keeping the future needs in mind sustainability and new technologies.

(i) The design should include both piped options for the larger settlements and non- piped options for smaller settlements, for both water and sewage solutions,

(j) The consultant shall develop a modular and standardized structural design for overhead reservoirs of varying capacities, disposal works, waste water treatment plants, etc., ensuring the most economical and secure structures.

(k) Identify the infrastructure (if any) to be replaced/ removed in relation to any priority sub-projects and prepare its detailed implementation/relocation plan(s),

(l) Assist Client in appropriate packaging/ repackaging of activities,

(m) The consultant is tasked with submitting technical specifications and conducting a cost analysis for solar systems intended for water supply and sewer systems, as well as water meters for house connections. This analysis will ensure efficient selection and implementation of appropriate equipment for the project.

(n) Assist in preparing the subproject(s) PC-1 or other client required documents/requirements for administrative/ management approvals for starting of the procurement process. The Consultant will be responsible for the costing of the detail engineering design of priority sub-projects to be finalized by the client and the relevant Competent Approval Forum. Consultant will also ensure that the relevant costs and inputs of ESIAs/ESMPs and RAPs/ARAPs are included in relevant PC1.

(o) Evaluate and report the OHS aspects of the sub-project works in the light of ESMP/ESIA and other E&S tools (e.g., OHS Plan), and suggest additional corrective/supplementary measures as and when necessary, as per the ground situation.

(p) Monitor and report as delineated in the E&S instruments, including but not limited to ESSR and ESIA/ESMP in ensuring mitigation of potential environmental and social impacts and prepare field visit reports on the basis if daily visits, which will be compiled in the form of weekly report for the Design and Supervision Firms management record and further collate these reports and share on amonthly and quarterly basis to the PMDFC.

(q) Review the C-ESMP's submitted by the contractor prior to submission to PMDFC for their approval and initiation of civil works.

(r) Monitor and validate whether the social and resettlement objectives have been met during the implementation of E&S instruments, if and when requires, such as ARAPs/ RAPs;.

(s) Continuously track and document progress related to environmental and social and objectives, paying close attention to any changes or challenges that may arise during the subproject implementation phase.

(t) Maintain clear and concise records of the monitoring and assessment activities, including any identified issues, actions taken, and outcomes observed.

(u) Regularly communicate with the PMDFC and other relevant project stakeholders to keep them informed about the progress and findings of the monitoring and assessment process.

(v) Continuously seek opportunities for improvement by identifying best practices and lessons learned, and incorporate them into the monitoring and assessment framework to enhance its effectiveness.

The following documents will be prepared by the Consultants for detailed design of each sub-project;

- Inception Report
- Feasibility Report
- Environmental and Social instruments (ESIA, ESMP, IEE) report of the subprojects
- Resettlement Action Plan (RAP)/ Abbreviated Resettlement Action Plan (ARAP)

- Gender Action Plan and any other E&S instruments needed for the Program
- Detailed design report and drawings of the sub-projects
- Cost Estimate
- Economic and Financial Analysis
- Sensitivity Analysis
- PC-I
- Bidding Documents including but not limited to;
  - Instruction to Bidders & Conditions of the Contract (COC)
  - Special Conditions of the Contract
  - Bill of Quantities (BOQ) including the cost of implementation of E&S mitigations, monitoring and reporting
  - Contract Data
  - Specifications
  - Form of Agreement and detailed draft contract (general and specific conditions)
  - All other standard format used for execution of a Pakistan Engineering Council based contract
- Revised PC-I and detailed cost estimate, whenever required.

(vi) PROCUREMENT OF WORKS

(a) Prepare draft bidding documents for each subproject to be identified in the procurement plan as per PPRA Rules using appropriate procurement documents. Bidding documents shall include detailed design/construction/working drawings, technical specifications, BOQs, Environmental and social instruments, or any other documents required as per legal agreements and associated documents,

(b) Provide necessary support to the Client in all aspects of the procurement process for civil works contracts in accordance with the PPRA Rules. The support shall include but not limited to the following:

- Assist in the pre-bid meetings (as per requirement) and site visits of interested bidders (if applicable), preparation of responses for bidders;

- Assist the Client in preparing and finalization of contracts submission for review by concerned agencies including the Client and awarding,

3.2. RESIDENT CONSTRUCTION SUPERVISION

Core Team of Consultants:

- A Chief Resident Engineer/Team Leader will be appointed who will be responsible for overall package.
- Two REs will be appointed who will be responsible to overall supervision duties of the sub-projects.
- One Assistant Resident Engineer (Qualified Graduate Engineer Civil in the respective discipline with sufficient experience as given below) and three Inspectors (DAE Civil with experience as given below) will be stationed in each Program MC, and will be responsible for resident supervision of the works & goods and shall perform their duties with due diligence, efficiency and in accordance with the best engineering professional and consulting standards.
- One Environmental Specialist (Degree in Environmental Engineering, Environmental Sciences or relevant field) for each zone with five-year experience.
- One Occupational Health and Safety Specialist for each zone with Master's degree in Environmental Sciences or relevant field experience with professional certification in Occupational Health and Safety (OHS) such as OSHA, NEBOSH IOSH etc. and a minimum of 7 years of practical OHS field experience.
- One Social and Resettlement Specialist for each zone (Master's Degree in Social Sciences/Sociologist or relevant field with ten-year experience.
- One Gender Specialist (Master's Degree in gender or relevant field with ten-year experience.
- Environmental and Social Field Officers deployed during the implementation/supervision phase of the project with Degree in Development Studies or relevant field with three years of experience. The final composition of junior field E&S staff will be further refined as per the number of project sites and their locations at a given time frame.

The Consultants will undertake Resident Supervision of the Sub-Projects per the following:

(i) Consultants will devise a program progress report format and submit to the Client along the inception report for approval.

(ii) Consultant will devise a separate E&S progress report format and submit to the Client for approval.

(iii) The Consultants shall supervise the works being executed by the contactors in all matters concerning implementation of ESMP and E&S compliances with Punjab Environmental Protection Act 2012, gender aspects and occupational health and safety and report to MC Project

Manager and the client.

(iv) The Consultants shall certify that construction material brought at site by the contractor for use in construction, in accordance with the specifications and the material should be tested from any approved government laboratory in line with Contract Documents duly approved by the Client (MC).

(v) The Consultants will be responsible for checking the quality of works and machinery & equipment installed by the contractors at site of work and will issue notice to the contactor for their replacement if these do not conform to the laid down specifications. One copy of this notice will be submitted to the Project Manager.

(vi) The Consultants will verify the quantities of work carried out by the Contractor at site and recommend payment to the relevant MC.

(vii) None of the substandard works, equipment and machinery will be verified for payment to the contractor by the Consultants. Similarly, no excess quantity over and above that actually measured at site by the Consultants, will be verified and paid.

(viii) Consultant will provide complete SOPs of Contract Implementation particularly, Processing of Variations / deviations in the quantities and specifications of works, Processing of Contractors IPCs, Check Request System, and Laboratory Testing etc. with their inception report. SOPs of processing of contractors IPCs should delineate the role of E&S section of the client for inclusion of E&S budget as part of the BOQs and further processing the E&S implementation budget.

(ix) IPCs will be verified and certified by the Chief Resident Engineer and concerned field staff. Consultant will ensure that all necessary documents are appended with the IPCs before recommendation to Project Manager under intimation to the Client. One copy of IPC will also be provided to the Client. The E&S implementation amount claimed by the contractor in IPCs will be checked by the CRE and E&S team of the consultant and verified by the E&S section head of the client.

(x) The Consultant will update the list of E&S monitoring and evaluation indicators as provided in the ESCF, on the basis of the ESSRs/ESMPs, Physical/ Cultural Resource Management Plans (PCRMP) and RP/ARP of the sub-projects and develop indicators where required to:

- Identify whether recommended mitigation measures have been

successfully implemented;

- Identify reasons for unsuccessful mitigation; and
- Develop and recommend alternative mitigation measures or plans to replace unsatisfactory ones.

(xi) The monitoring indicators as per ESCF of PICP can include but not limited to the following – the list will be updated as mentioned above. These will be monitored using an EPA certified laboratory:

1. TSPM, PM_{10}, $PM_{2.5}$ at construction sites, vehicular routes and nearby communities
2. Stack Monitoring of Generators (CO, NOx, SOx)
3. Vehicular Emissions (CO, NOx, SOx, Pb)
4. Noise levels (dBA) at construction sites
5. Vehicular noise at about 7.5 m distance
6. Noise levels at nearby communities / sensitive receptors (if any)
7. Quality of drinking water provided to the workers
8. In addition to the above listed monitoring indicators, the periodic IMC report will also include evaluation of the following indicators – with the list of indicators to be further updated as mentioned above:
9. Proper stockpiling of topsoil
10. Tree plantation as per Tree Plantation Plan
11. Distance of construction activities from any ecological sensitive resources and the precautionary measures taken
12. Fencing of the ecologically sensitive resources
13. construction activities whether occurring during prime nesting season or not
14. protection of Physical and Cultural Resources
15. Water sprinkling and other dust suppression measures
16. Provision and Use of dust masks, ear plugs and other PPEs
17. Fitness certificates / maintenance records of vehicles and machinery
18. Compliance of waste management plan including hazardous waste
19. Workers training records

20. Soil Pollution prevention
21. Spill response procedures and availability of relevant equipment
22. Compliance of noise abatement plan
23. Compliance of Health and Safety Management Plan including accident records, first aid boxes, medical facilities, safety measures, hygiene conditions at work place and labor camps etc.
24. Compliance of Traffic Management Plan
25. Pre and post scenario of campsites and Camp site restoration Plan
26. Black water diversion management.
27. Availability and compliance of SOPs for preventive maintenance, complaints records, schedules of various activities including training.

(xii) The test reports from nearest government laboratory (C&W, PCSIR, PITAC, UET Lahore and UET Taxila or any other Government approved laboratory etc.) will be attached with the contractors' IPCs.

(xiii) The Consultant will monitor the approved implementation schedule and report delays if any with proper analysis of delays particularly early warning of such events to MO (I), the Engineer in Charge.

(xiv) The Consultants shall keep the record of daily inspection reports (including E&S) and hand them over to the concerned Project Manager i.e. MO (I&S) on fortnightly basis. One copy of this record shall be retained by the consultants for record at site offices and the summary of such notes shall become part of Monthly Progress reports to be submitted to the Client. The Consultants will submit progress pictures through an android application attached with a dashboard through Google map providing GPS with date and time and progress in % at site.

(xv) The Consultant will keep pictorial evidence of each and every stage of work before, during and after completion of the work. This pictorial evidence will be systematically & chronologically arranged and will be submitted to the Client on weekly basis or as required by the Client.

(xvi) The required decisions shall be made at site by Assistant Resident Engineers. Decisions requiring major change in scope of work liable to change the project cost substantially, will be referred to the Team Leader who will process such cases in line with contract agreement signed

between MC and the Contractor and recommend to MO (I), the Engineer for approval.

(xvii) The consultant will be responsible for the overall supervision and implementation of the Environmental and Social (E&S) management plans. To ensure effective oversight, the consultant shall assign three dedicated personnel—one Environmental, one Occupational Health and Safety Specialist and one Social and Resettlement Specialist—to each zone for the daily supervision and implementation of ESMP. These zonal teams will be supplemented by E&S Officers, who will cover the construction works across the field, including close liaison with the community and develop reports accordingly. The attendance sheets of the E&S staff in each zone, duly verified by the Team Leader or Chief Resident Engineer, must be included in the consultant's monthly E&S progress report.

(xviii) The Consultant shall submit separate E&S monthly and quarterly progress report for the Client on implementation of environmental, social, occupational health and safety management plans/SOPs, trainings of contractor's staff, stakeholder's consultations, grievances received and reported to the MCs, pointing out the deficiencies in the works & identify E&S non compliances and provide suggestions for its remedial measures.

(xix) No payment to the Contractor will be made till submission of the certification by its Chief Resident Engineer/Team Leader that the work has been completed in accordance with Contract Documents and approved Drawings for Construction and the quality and quantities of the works have been verified. The Completion Certificate must explicitly state that, following the completion of civil works, the site has been fully cleared and restored, with no outstanding social issues or unresolved complaints registered with the Contractor. The Site Clearance and Restoration Certificate will be the part of the overall completion documentation.

(xx) Consultant will include MC stationed field office attendance sheet of every month in the Monthly Progress Report duly attested by the Team Leader/Chief Resident Engineer.

(xxi) Due to various types of variations in quantities and specifications of the actual work required / executed in the field with those provided in the BOQ /letter of award, the revision in the PC-I and detailed cost may be needed. In such cases the Consultants will prepare Revised Cost Estimates on the format specified by Government of Punjab and PC-Is, present these before the competent forum for Approval and subsequently prepare the detailed cost estimate and drawings for seeking Technical Sanction from the

competent authority.

(xxii) One month prior to the expiry of the defect liability period of the work, the Consultant shall carryout a detailed final inspection of the works along with MCs and Contractors concerned authorised staff and submit a report to the concerned Project Manager pointing out the defects if any in the works along with remedial measures mentioning specified time lines with one copy endorsed to the Client.

(xxiii) If subsequently, at any stage after the expiry of the defect liability period and during the service life of the work, the quality of any item of work passed by the consultant is found substandard, defective or its quantity excess over that actual quantity in field, the consultant shall also be liable to pay the compensation to the concerned MC for the defective work. The liability shall be to the extent of two times the fee charged for consultancy.

4. Staffing:

The quality of staff, expertise and their numbers, shall be the key factors in evaluation of the consultant's proposal. The firm may propose inputs required to complete the assignment within the contractual time. The Consultancy firm must be specialized and have capacity to carry out Design, Construction Supervision, Contract Management and Environment & Social Management Services of the proposed works. However, an indicative staff requirement with expertise, is given hereunder:

S #	Personnel	Qualification
Design Phase (Key Experts)		
1	Team Leader / Chief Resident Engineer	BSc;/BE in Civil Engineering from HEC approved University with minimum 20 years' professional experience and 5 years' experience on similar assignments; or MSc; Civil Engineering/Public Health Engineering/Environmental Engineering with Bachelor's in Civil Engineering with minimum 15 years' experience and 5 years' experience on similar assignments on urban planning, designing and construction supervision assignments. He must have served as head of various engineering and planning assignments for at least 10 years.

2	Water Supply Expert	BSc; Civil Engineer with Master's in Public Health Engineering /Environmental Engineering from HEC approved University and possessing minimum experience of 10 Years for designing water supply systems
3	Sewerage Expert	BSc; Civil Engineer with Master's in Public Health Engineering /Environmental Engineering from HEC approved University and possessing minimum experience of 10 Years for designing Sewerage Systems
4	Wastewater Treatment Expert	BSc; Civil Engineer with Master's in Public Health Engineering /Environmental Engineering from HEC approved University and possessing minimum experience of 10 Years for designing Wastewater Treatment Plants
5	Design Engineer (Structure Engineer)	Master's Degree or above in Civil Engineering/ Structure Engineering or relevant discipline. In general, 10 years of professional experience in project designing pertaining to water supply, Overhead Reservoirs, sewer and disposal works structures. Working experience in World Bank/Foreign Funded Projects will be an added advantage. Registered with relevant professional bodies.
6	Procurement & Contract Management Expert	BS/MS Management degree/ BSc;/B.E Engineering Degree minimum 16 Years of Education with 8 Years' experience in procurement of various projects at least 1 donor funded projects
7	Environmental Specialist (One for each Zone)	He/she should hold the Degree in Development Studies or relevant field with three years of experience in related fields which includes experience in disaster management and, managing cities' environmental issues. The person will be stationed in the field.
8	Social and Resettlement Specialist (One for each zone)	He/she should hold the master's degree in /Social Sciences /engineering/or relevant field with 10 years' work experience in related fields. Experience on urban sector will be an added advantage. The person will be stationed in the field.
Supervision Phase-Key Experts		

9	Team Leader / Chief Resident Engineer	BSc;/BE in Civil Engineering from HEC approved University with minimum 20 years' professional experience and 5 years' experience on similar assignments; or MSc; Civil Engineering/Public Health Engineering/Environmental Engineering with Bachelor's in Civil Engineering with minimum 15 years' experience and 5 years' experience on similar assignments on urban planning, designing and construction supervision assignments. He must have served as head of various engineering and planning assignments for at least 10 years.
10	Resident Engineers	BSc/BE Civil engineering with minimum 12 years' relevant design experience or MSc Engineering/Civil/ Public Health Engineering/Environmental Engineering and 5 years on similar assignments in both cases
Design Phase (Non-Key Experts)		
11	Geotechnical Expert	Master degree in Civil Engineering/ Geotechnical Engineering, or equivalent. 10 years of work experience as Geo-technical engineer with proven experience in geotechnical design for structural design of overhead reservoir, disposal works and ABR projects etc. Registered with relevant professional bodies.
12	GIS Expert	Should hold master's degree in GIS/Spatial Sciences from HEC approved University with 10 experience of GIS related projects and should have led at least three municipal mapping projects. He/she should has knowledge of land management systems. Base and Land Use mapping experience would be an added advantage. Should be able to develop requirements for efficient GIS database with attributes based on best international/national practice.
13	Occupational Health and Safety Specialist (One for each Zone)	He/she should hold an OHS related certification such as OSHA, NEBOSH, IOSH etc. with 7 years of work experience in related field. The person will be stationed in the field.
14	Sr. Surveyor	Diploma in Surveying (2 Years) with minimum 10 years' experience in site Surveying on projects of similar nature.

15	Field Surveyors	Diploma in Surveying (2 Years) with minimum 5 years' experience in site Surveying on projects of similar nature.
16	Quantity Surveyors	DAE in Civil with minimum 08 years' experience for projects of similar nature as QS.
17	Data Operators	Diploma in MS Office and good in MS Word and MS Excel with work experience of more than 1 year.
18	CAD Operators	DAE in Civil with a minimum of 10 years' experience for preparation of drawings in CAD particularly civil engineering infrastructure projects.
Supervision Phase (Non-Key Experts)		
19	Assistant Resident Engineers	Bachelor Degree in Civil engineering with minimum 8 years' experience in site supervision and execution for projects of similar nature.
20	Site Inspectors	DAE in Civil with a minimum of 08 years' experience in site supervision for projects of similar nature.
21	Quantity Surveyors	DAE in Civil with minimum 08 years' experience for projects of similar nature as QS.
22	Environmental and Social Field Officers (Supervision)	Bachelor Degree in Environmental Engineering, Environmental Sciences, Social Sciences or relevant field with minimum 03 years' experience in Environment, Social compliance during project implementation
23	Health Safety Supervisor	(Bachelor Degree in Environmental Engineering, Environmental Sciences, Social Sciences or relevant field with minimum 03 years' experience in Environment, Health, Safety and Social compliance during project implementation. Preference will be given to NEBOSH IGC certified expert.
24	Gender Specialist (Supervision)	(Bachelor Degree in Gender Studies or relevant field with minimum 03 years' experience in development projects.
25	Data Operators	Diploma in MS Office and good in MS Word and MS Excel with work experience of more than 1 year.

26	CAD Operators	DAE in Civil with a minimum of 10 years' experience for preparation of drawings in CAD particularly civil engineering infrastructure projects.
	Support Staff	-

- Any other related staff will be quoted by the Consultant in line with the methodology submitted
- CVs will not be evaluated at the stage of EOI
- Team Leader / Chief Resident Engineer in the design and construction supervision phase is similar position.

The detail tentative input of key & non-key Experts is given below:

Tentative Man-Months of Key and non-Key Experts for Design Phase (12-months)				
S. No	**Position**	**No of Persons**	**Person Months**	**Total Person Months**
	Key Experts			
1	Team Leader / Chief Resident Engineer	1	12	12
2	Water Supply Expert	1	12	12
3	Sewerage Expert	1	12	12
4	Waste Water Treatment Expert	1	12	12
5	Design Engineer (Structure Engineer)	1	12	12
6	Procurement & Contract Management Expert	1	6	6
7	Environmental Specialist	1	6	6
8	Social and Resettlement Specialist	1	6	6
	Non-Key Experts			
9	Geotechnical Expert	1	6	6
10	GIS Expert	1	6	6
11	Occupational Health and Safety Specialist	1	6	6
12	Senior. Surveyor	3	6	18
13	Field Surveyors	6	6	36

14	Quantity Surveyors	4	12	48
15	Data Operators	4	12	48
16	AutoCAD Operators	4	12	48
	Total	**32**		**294**

Tentative Man-Months of Key and non-Key Experts for Resident Construction Supervision Phase (30-months)				
S. No	**Position**	**No of Persons**	**Person Months**	**Total Person Months**
	Key Experts			
1	Team Leader / Chief resident Engineer	1	30	30
2	Resident Engineers	3	30	90
	Non-Key Experts			
3	Assistant Resident Engineers	7	30	210
4	Procurement & Contract Management Expert	1	10	10
5	Environmental and Social Field Officers	1	30	30
6	Health Safety Supervisor	1	30	30
7	Gender Specialist	1	30	30
8	Quantity Surveyor	4	30	120
9	Site Inspectors	28	30	840
10	Data Operators	4	30	120
	Total	**51**		**1510**

5. Duration of the Contract

Feasibility and Detailed Design is likely to be completed in **12-months** and supervision in **30-Months**:

6. Deliverables / KPIs with Timelines

Detailed Design (Water Supply, Sewerage i/c Sewage Treatment & Storm Water

Drainage)

Sr. No.	Description	Proposed Time (Calendar months from contract signing) months Water Supply, Sewerage i/c Sewage Treatment & Storm Water Drainage	Hard Copies	Soft Copies
1	Mobilization, Inception reports, all initial works as per scope of work, GIS base maps updating & preparation of subprojects priority lists	01	03	01
2	**Preparation of the Detailed Design**	Period starts from contract signing		
a	Feasibility, E&S Assessment reports/ tools, Design and Drawings	04	03	01
b	Engineer's Cost Estimates	06	03	01
c	Draft PC – Is	07	03	01
d	Final PC – I including E&S instruments and budgeting	08	15	01
e	Detailed Cost estimates	10	10	01
f	Draft Bidding Documents Including • BOQ (including the cost of E&S implementation) • COC • Detailed Drawings • Specifications (All above documentation is a parallel activity except BOQ)	11	02	01
g	Final Bidding Documents including BOQ, COC, Detailed Drawings and Specifications, E&S provisions.	12	06	01
Total time per project		**12**		

Resident Construction Supervision (Water Supply, Sewerage i/c Sewage Treatment & Storm Water Drainage)

Sr No.	Deliverables	Hard Copies	Soft Copies (MS Word/Excel/PDF)
1	Inception Report	03	01
2	Monthly Progress Reports	03	01

3	Revised PC-I (when required)	03	01
4	Final Report along with PC-IV	03	01
5	E&S monthly and quarterly progress report of the consultant	02	01
6	Daily and Weekly E&S compliance reports	02	01

Note:

1. All **first priority sub-projects** in each MC will be taken up simultaneously. For this purpose, parallel teams will be deployed by the Consultants in all MCs.
2. The contract type shall be time based, however, the payment for design services shall be on lump sum basis.

7. Performance Monitoring & Reporting

The Consultant shall be required to:

i) Establish a baseline reporting format in consultation with the Client for monitoring the project and E&S performance;

ii) Establish systems for recording data and statistics for such monitoring;

iii) Review and verify document which clearly and accurately describes the total verified work done and payment due for the Contractor, in order to process interim certificates for payment to the Contractor on the basis of measured / verified work items and certify the completion of the works or parts thereof;

iv) Make presentations on digitized/ multimedia systems and progress reports on computer-based techniques to be displayed in meetings & conferences; and

v) Prepare the reports mentioned here-in-after and distribute the Client each in three copies along-with soft records.