

POST-FLOOD 2022 RECONSTRUCTION PROGRAM: RESILIENCE ENHANCEMENT AND LIVELIHOOD DIVERSIFICATION IN BALOCHISTAN

TERMS OF REFERENCE

CONSULTANCY SERVICES FOR PREPARATION OF ASSESSMENT STUDY, PREPARATION OF DETAILED DESIGNS, PROCUREMENT ASSISTANCE AND SUPERVISION OF WORKS

1 BACKGROUND

Over the past two decades, Pakistan significantly reduced poverty, but human development outcomes have lagged, and severe economic challenges put past gains at risk. Pakistan made significant progress towards reducing poverty between 2001 and 2018 when the expansion of off-farm economic opportunities and increased inflow of remittances allowed over 47 million Pakistanis to rise out of poverty. However, this rapid poverty reduction has not fully translated into improved socio-economic conditions, as human capital outcomes have remained poor and stagnant, with high levels of stunting at 38% and learning poverty at 75%. The deterioration of economic conditions, in combination with non-economic shocks such as the COVID 19 pandemic and the devastating floods of 2022, are expected to reduce household incomes and increase their vulnerability to fall below the national poverty line.

The recent floods have had enormous human and economic impacts. Pakistan experienced heavy monsoon rains between June and September 2022, severely affecting millions of households, mainly in Sindh and Balochistan. Roughly 33 million people have been displaced, and more than 13,000 km of roads destroyed. The flooding has damaged 2.2 million houses, flooded around 9.4 million acres of crops, and killed an estimated 1.2 million livestock, adversely affecting rural livelihoods. Limited access to input and output markets and temporary disruptions to supply chains have driven up food prices and added to existing price pressures resulting from reduced agricultural yields and the global rise of food prices. Due to significant crop and livestock losses, food shortages have intensified in the fall and winter, with food price inflation increasing to more than 50%. With the destruction of infrastructure and disrupted access to schools, medical facilities, and sanitation systems, the floods have negatively impacted health and education outcomes especially for rural areas, potentially affecting long-term human capital accumulation. Preliminary estimates suggest that the national poverty rate may increase by up to 4 percentage points as a direct consequence of the floods, potentially pushing around 9 million people into poverty. The recently completed Post-Disaster Needs Assessment (PDNA)¹ estimated that the need for rehabilitation and reconstruction is at US\$ 16.3 billion, not including much-needed new investments to strengthen Pakistan's resilience to future shocks.

At a national level, the PDNA shows that housing, agriculture, water supply and sanitation, and irrigation sectors bear the brunt of the damage. The provinces of Sindh and Balochistan account for approximately 50% and 15% of recovery and reconstruction needs, respectively. Table 1 shows the damage, loss, and needs² breakdown by region.

¹ Government of Pakistan (2022) *Pakistan Floods 2022 Post-Disaster Needs Assessment*. Ministry of Planning Development and Special Initiatives.

² **Damage** is defined as direct costs of destroyed or damaged physical assets. It is valued in monetary terms with costs estimated based on replacing or repairing physical assets and infrastructure, considering the replacement price prevailing before the crisis. **Loss** is defined as changes in economic flows resulting from the disaster and valued in monetary terms. Together, damage and loss constitute the effects of the crisis. Needs costing draws on the monetary value of damage and loss but is not equal to the sum of those estimates. Recovery and reconstruction needs are calculated in terms of replacement costs according to current prices and include a premium linked to building-back-better principles and needs associated with the recovery of the sector. The reconstruction and recovery needs include short (up to 12 months) and intermediate to long-term (up to five years) activities.

Table 1 Total damage, loss and needs in Pakistan (source: Government of Pakistan, 2022)

Region	Damage		Loss		Needs	
	PKR billion	US\$ million	PKR billion	US\$ million	PKR billion	US\$ million
Balochistan	349	1,625	541	2,516	491	2,286
Khyber Pakhtunkwa	201	935	141	658	168	780
Punjab	111	515	122	566	160	746
Sindh	1,948	9,068	2,444	11,376	1,688	7,860
Cross-provincial*	587	2,731	14	67	975	4,540
Special regions**	7	32	11	49	10	48
Grand total	3,202	14,906	3,272	15,233	3,493	16,261

* Cross-provincial includes assets that affect more than one province or are calculated at the national level (e.g. railways, roads, telecommunications, etc.). The classification is in line with the public budget.^o

** Special regions include districts outside of the four main provinces that have been affected by the floods and declared “calamity-hit”.

Extreme weather events have increased in frequency and intensity, impacting ecosystems, people, settlements, and infrastructure. Heatwaves, heavy precipitation events, droughts, and cyclones are prevalent risks. Attribution research on the 2022 floods has shown that the 5-day maximum average rainfall of Balochistan and neighboring Sindh was around 75% more intense than it would have had the climate not warmed by 1.2°C³. Climate projections have been predicting such a shifting trend for years. Historical records show that heavy rainfall has significantly increased in the region alongside the increase in greenhouse gas emissions, strongly suggesting climate change played a central role in the event. The floods came on the heels of a severe heatwave and saw temperatures continuously above 45°C, resulting in crop losses, power outages, and forest fires. These changes in climate and extreme events are likely to disproportionately affect the most disadvantaged groups, among these low-income businesses, those engaged in manual labor jobs, poorer farmers, women, and children.

In addition, Pakistan’s climate vulnerability and uncertainty surrounding annual glacial melt, average precipitation, and extreme temperature changes highlight the need for ex-ante disaster preparedness and resilience building.

The Ministry of Planning, Development and Special Initiatives (MoPDSI) has developed the Resilient Recovery, Rehabilitation and Reconstruction Framework (4RF) to guide the Government’s response to the 2022 floods based on the needs identified across the 17 sectors covered in the PDNA. The 4RF defines measures to ensure a resilient recovery and prevent multi-generational impacts that may manifest through reduced developmental gains. Through the 4RF, Government of Pakistan (GoP) recognizes the importance of long-term resilience in the aftermath of the unprecedented flooding and is committed to consolidating ongoing efforts and undertaking new measures toward improved resilience. The proposed operation responds to immediate emergency recovery needs in Balochistan province while contributing to building flood resilience.

The Government of Pakistan (GoP) with the financial Assistance of the World Bank has initiated US\$ 213 m Integrated Flood Resilience and Adaptation Project (P180323). The amount of US\$ 50 million

³ World Weather Attribution (2022) <https://www.worldweatherattribution.org/wp-content/uploads/Pakistan-floods-scientific-report.pdf>

equivalent to PKR 11 billion (at an exchange rate of 1 US\$ = 220 PKR has been allocated for reconstruction of road infrastructure damaged by the flood of 2022. The whole reconstruction/rehabilitation project is sequenced as Series of Phases (SoP) in total amounting to 50 million USD. SoP-1 comprises of the design and supervision of only \$10 million of the schemes within this range of cost.(provided at annexure-7)

As per advice of the GoP, Government of Balochistan (GoB) and contents of approved PC-I, followed by project preparatory meetings held in the GoB Planning and Development Department, the BIWRMD Project Implementation Unit Client has taken steps towards the assessment for renovation/rehabilitation of flood-affected roads.

The BIWRMD/PIU-IFRAP (Client) intends to conduct detailed assessment for reconstruction/rehabilitation of the damaged roads caused by floods in 2022 (as reported in PDNA) in the reported districts of Balochistan through a consultancy agreement against the US\$ 50 million allocated share in the umbrella PC-I for the project titled “Resilience, Enhancement, and Livelihood Diversification in Baluchistan” through ranking on the basis of cost effectiveness. The Communications and Works Department (CW&PPH) of GoB, be in the coordination with the implementing agency of the project (Client) and necessary staff will be deployed to the Client that has already been established for BIWRMDP headed by a Project Director (Client’s Representative).

The consulting assignment is divided into two phases lasting a total of 28 months, with the first phase of design taking about 4 months, 24 months of & supervision phase of sub projects (2 sub Projects only) with the total costing up to 10 Million USD including DNP. The consultant is required to prepare designs, secure the design review and submit the bidding documents so that the execution of the projects will expeditiously be started.

Phase-I will comprise with the design of the 2 sub schemes. The detailed activities for Phase I will comprise:

- (i) Comprehensive assessment level study for the roads networks and Schemes proposed are provided at section 7 as Annexure-I.
- (ii) Feasibility level study of CW&PPH roads network with necessary technical engineering studies level;
- (iii) Identify the underlying causes, prepare detailed engineering designs, and develop a plan for restoration /rehabilitation of the damaged roads with estimated cost;
- (iv) Preparation of tender documents for procurement, construction planning/supervision arrangement modality and provide procurement support;
- (v) Preparation of site-specific ESMPs that are fully compliant with the World Bank’s safeguards requirements.

The detailed activities for Phase II will comprise:

- (i) Construction supervision and contract administration as Engineer, including post-construction activities, to ensure that high-quality construction is completed on time and within budget and that all works are completed in full compliance with the approved engineering designs, technical specifications, agreed-upon work schedule, and all other contract documents and sound engineering principles;
- (ii) Project safeguards management and supervising implementation of environmental and social management plans (ESMPs) during the implementation phase, including monitoring and evaluating the Contractor’s and Employer’s implementation of ESMPs, resettlement plans, and other social safeguard measures.

The assessment report will include all necessary aspects covering technical, institutional, and economics, social/environmental assessments, procurement, and financial management etc. required for appropriate decision making-

2 OBJECTIVE OF THE SERVICES

The primary objectives of the consulting services are to:

- (i) Provide a detailed assessment of the flood-affected roads,
- (ii) Enable efficient and resilient construction through the preparation of detailed engineering designs,
- (iii) Support the Client in conducting project procurement, and
- (iv) Provide overall supervision and technical support during the construction phase.

To achieve these objectives, the Consultant may need to conduct a detailed survey of the sites, assess the damage caused by the floods, and develop a comprehensive plan for rehabilitation and improvement that considers environmental and safety standards (ESS). The Consultant should also collaborate with relevant stakeholders to ensure that the design and implementation phases are aligned with the project goals, budgets, and timelines. Ultimately, the consulting services should result in a sustainable road network that sustainably improves the community roads network to ensure durability and credibility.

3 SCOPE OF SERVICES

The scope of services, grouped in two phases, consists of the following major tasks.

3.1 PHASE I (Design and Supervision FOR SOP-1)

3.1.1 Assessment of damaged roads and feasibility analysis

Initial assessment of damaged roads will follow a series of activities to enable the preparation of feasibility studies and improvement of detailed design as presented in the below list:

- (i) Assess the extent and severity of the damage caused by floods. This evaluation will help to determine the scope of the rehabilitation work and to identify specific areas and sections of the road network that require attention;
- (ii) Conduct a geotechnical analysis to understand the soil conditions in the affected areas. This includes evaluating soil stability, bearing capacity, and any potential risks such as liquefaction or settlement. The geotechnical assessment provides essential data for designing appropriate foundations and earthworks;
- (iii) A traffic survey should be conducted to determine the volume and nature of traffic that the road is expected to handle. This survey will enable identification of the design parameters such as road width, pavement thickness, and other geometric and pavement design features;
- (iv) Pavement condition survey to determine the current condition of the impacted road networks and gather data to support the design review and improvement process;
- (v) Evaluate the hydraulic characteristics of the area, including flood patterns, water flow rates, and drainage systems. The analysis will provide input data to determine the flood-prone areas and to design effective drainage systems and flood management measures;
- (vi) Assess the structural integrity of the road infrastructure components, such as bridges, culverts, retaining walls, and embankments. This evaluation will help in identifying the need for repairs, replacements, or reinforcement to ensure the structural stability and safety of the road;
- (vii) Estimate the costs associated with the rehabilitation project. This includes considering materials, labor, equipment, and any additional costs such as environmental mitigation measures. Accurate cost estimation will ensure that the project remains within budgetary constraints;
- (viii) An economic analysis shall be carried out to determine the project's financial viability, including the project's costs and benefits;
- (ix) Evaluate the potential environmental impacts of the rehabilitation activities. This assessment shall consider factors such as soil erosion, water contamination, and disruption to ecosystems. It will help to identify mitigation measures to minimize adverse environmental effects and ensure compliance with environmental regulations;

- (x) Evaluate the social and economic implications of the damaged roads and the proposed rehabilitation. This assessment shall consider factors such as improved connectivity, reduced travel time, enhanced access to services, and economic benefits for the local communities. It will help in demonstrating the projects positive impact and potential returns on investment;
- (xi) A social impact assessment should be conducted to identify and evaluate the potential social impacts of the project on the local communities and stakeholders;
- (xii) Identify potential risks and challenges associated with the rehabilitation project. This analysis will consider risks related to construction, funding, natural disasters, and community engagement. It will support development of risk mitigation strategies and contingency plans to address potential obstacles.

Based on the above analyses, a feasibility report shall be prepared, including the project's technical and economic viability, environmental and social impacts, risk analysis, monthly progress reports along with quality assurance reports and a project implementation plan. Once the feasibility report is prepared, it will be used as a basis for the detailed engineering design of the road rehabilitation project along with the bidding documents.

3.1.2 Detailed engineering designs

Based on field surveys and assessment (as described above in 3.1.1), including data collected through the traffic survey and forecast, topographic surveys, soil investigations, hydrological studies, and design criteria for the proposed candidate roads and bridges, the Consultant shall prepare detailed climate resilient designs for roads, structures, drainage and other allied infrastructure. Specific emphasis during the design review shall be given to the design of road cross sections and accommodating all road users through the space-sharing concept (where applicable). Detailed engineering designs should incorporate the latest engineering standards and best practices, and result in climate-resilient designs for roads, structures, drainage, and other allied infrastructure.

Major conditions that need to be reflected through the detailed designs comprise the following:

- provide all road users with a comfortable, safe, and stress-free environment;
- accommodate existing and future traffic and climate resilience needs, including the new design or redesign of intersections;
- accommodate pedestrian infrastructure such as sidewalks and crossings in urban and tourist spots with adequate capacity;
- accommodate local traffic taking into consideration the needs of the local population and their activities (agricultural vehicles, cattle carts, livestock, animal crossings, etc.);
- accommodate landscaping and street arrangement within the road design for urban areas;
- accommodate local weather, terrain, soil, and hydrological conditions;
- meet international design standards;
- minimize future maintenance requirements;
- minimize adverse community and environmental impacts.

The design will include right-of-way plans, geometric design, pavement design, structural design, intersection design (where required), drainage system design, structural design, bill of quantities (BoQ), and cost estimate. The Consultant shall also prepare design calculations, detailed technical specifications, and drawings for the road rehabilitation project. These specifications and drawings shall be comprehensive and clear, ensuring that all bidders understand the project requirements, as well as unambiguously supporting construction works.

The following design rules are applicable for the preparation of detailed designs:

- Geometric design of road facilities shall generally be by the requirements and recommendations given in "A Policy of Geometric Design of Highways and Streets" - AASHTO Guidelines (2003);
- Design of pavement structures, meeting safety, and serviceability requirements to avoid any distress during the design life of pavement shall follow the AASHTO-93 guide, British Road Note No. 31, and latest SHRP recommendations with load factor from NTRC;
- Road drainage elements shall be under the requirements of AASHTO "Highway Drainage Guidelines" (1989);

- Uniform Building Code (UBC) with the latest seismic zoning map for Pakistan.

3.1.3 Climate change assessment

A climate change assessment for road restoration works involves the following elements:

- (i) **Climate Projections:** Assessing future climate projections for the project area to understand how temperature, precipitation patterns, and extreme weather events may change over the project's lifespan. This information will help in designing road infrastructure that can withstand and adapt to future climate conditions;
- (ii) **Vulnerability Assessment:** Identifying the vulnerability of the road infrastructure to climate change impacts, such as increased flood risks, erosion, or thermal stress. This assessment will help in identifying the areas and components of the road that require specific adaptation measure;
- (iii) **Risk Assessment:** Evaluating the risks associated with climate change impacts on the road infrastructure, including the potential for damage, disruptions, and increased maintenance costs. This assessment will support prioritization of adaptation measures and allocating resources effectively;
- (iv) **Adaptation Strategies:** Developing adaptation strategies and measures to enhance the resilience of the road infrastructure to climate change impacts. This may include measures such as improving drainage systems, reinforcing embankments, using climate-resistant materials, or incorporating flexible design features;
- (v) **Integration with Land Use Planning:** Considering the potential changes in land use patterns and development that may result from climate change when designing road restoration projects. This integration will ensure that the road infrastructure aligns with future land use and will minimize risks associated with increased urbanization or changes in traffic patterns;
- (vi) **Long-Term Maintenance and Monitoring:** Including provisions for regular maintenance and monitoring of the road infrastructure to ensure its continued resilience and adaptability to changing climate conditions.

The Consultant shall undertake the following tasks to ensure that the project road designs properly incorporate climate adaptation measures that suite the project areas:

- (i) Collect and review relevant documents of baseline (historical) levels of key parameters (temperature, precipitations, flood/disaster records) at national and provisional levels (at least), and identify any potential climate-related risks (floods, landslides, and/or hazards) that may occur in future along each road and its surrounding areas and develop a profile of each road;
- (ii) Examine the proposed design measures, including those potentially remaining for the operation phase, in consultation with the Client and other stakeholders;
- (iii) Assess and present appropriate adaptation options in consideration of each project road site and design objectives, including physical and non-physical approaches, and estimate the climate adaptation cost.

The results of the assessment shall be documented in a Climate Change Risk Report.

3.1.4 Technical review meetings

The Consultant shall hold the relevant number of technical review meetings with the Client during the review of delivered detailed designs to understand the principles applied and solutions adopted, and to agree on the steps forward to meet the requirements for launching the procurement process and for works implementation.

3.1.5 Road Safety Audit

The Consultant will assist the Client in arranging and performing a road safety audit (RSA) of the road designs through an independent detailed systematic and technical safety check relating to the design characteristics of a road infrastructure. The road safety auditor shall be an independent person/entity outside the team of experts who were involved in the design or design review of the subject project. The Client will hire an independent road safety auditor under a separate contract. The third-party RSA would be practically performed in three stages, namely:

- (i) RSA of the road designs to evaluate final geometric design features, traffic signing and pavement marking plans, lighting plans, landscaping, intersections' details, facilities for other all participants in traffic, drainage, guardrails, and other roadside objects;
- (ii) RSA of the executed work during the construction stage to evaluate execution of geometric design features, traffic signing and pavement marking plans, lighting plans, landscaping, intersections' details, facilities for all other participants in traffic, drainage, guardrails, and other roadside objects;
- (iii) RSA post completion of construction work to suggest further improvements in the as build infrastructure which the Contractor shall rectify during the defect notification period (DNP).

Principally, the audit will follow the Road Safety Audit Guideline issued by the World Road Association (2007).

The Consultant will ensure that results from RSA are reflected in the engineering design and operation.

3.1.6 Procurement assistance

The Consultant shall provide all necessary procurement assistance to the Client to ensure that the materials and services procured are of high quality and meet the project specifications. The Consultant shall provide necessary support to the Client in selection of contractors by assisting in:

- preparation of bidding documents;
- advertising invitations to bid;
- responding to questions by potential bidders;
- conducting pre-bid conference and site visits;
- opening of proposals;
- evaluation of proposals;
- preparation of evaluation reports;
- contract award;
- responding to bidders' appeals, if any;
- any negotiations/clarification with the successful bidder.

All procurement activities will be done using the World Bank Procurement Regulations for IPF Borrowers for Goods, Works, Non-Consulting, and Consulting Services. The bidding documents will include specific requirements that minimize the use of expatriate workers and encourage the hiring of local workers.

Bidding documents will comprise the following:

- Volume I Request for Proposal using the World Bank standard bidding documents (including an invitation to bid, instructions to bidders, qualification requirements, bid forms, and conditions of contract);
- Volume II Technical Specifications (general and specific);
- Volume III Bill of Quantities;
- Volume IV Drawings.

Bidding documents will be subject to the Client's as well as the World Bank's review.

3.2 PHASE II (Comprising of Implementation and Supervision of Works Under Sop-1) Limited to 10 Million USD

3.2.1 Engineering supervision

The Consultant shall perform the duties and authority of "the Engineer" as specified in or as necessarily implied by the works contracts, as well as administer the works contracts. Taking due regard of all relevant circumstances, the Consultant shall perform his duties or act:

- proactively, where the initiative lies with the Employer/Consultant in administering the works contracts;
- reactively, in response to the Contractor's or the Employer's requests; and
- passively, in observing the requirements of the works contracts;

Wherever appropriate and not in conflict with the works contracts, the Consultant shall exercise every reasonable care to protect the interests of the Employer. In order to fulfill the above objectives, the Consultant (in the capacity of the Engineer for the works contracts) shall at all times take necessary measures and provide appropriate advice to the Client to enable the works contracts to be completed in timely and cost-effective manner, in conformity with the contracts' conditions and specifications.

During the construction period the Consultant shall:

- (i) Satisfy himself as thoroughly as possible to the nature and scope of the works, of all information available and of documents and materials to be used by the Contractors in executing the works, so as to enable him to perform his duties satisfactorily, study and check all documents associated with the works contract, foresee possible problems and advise the Client appropriately during the construction;
- (ii) Monitor the implementation of contractual conditions/clauses in letter and spirit and timely advise Employer of any lapses. All submissions made by the Contractors, with respect to the works contracts shall be scrutinized, get corrected from the Contractors and submitted to the Employer with appropriate recommendations under the provisions of the works contracts. Such recommendations must carry contractual and legal qualifications;
- (iii) Set up and establish the system of managerial control for the works contracts with provision of assistance to the Client maintaining control over activities' prices and contracts outcome costs, in monitoring the progress of the works, the disbursements and technical records;
- (iv) Obtain a copy and keep a file of any applicable standards, rules, or regulations of all the relevant authorities and public bodies and companies, whose property or rights are affected or may be affected in any way by the Client. Monitor and report to the Client on obtaining compliance with the specified consents by the Contractors;
- (v) Supervise the construction of the works with due diligence and efficiency and in accordance with sound technical, administrative, financial, and economic practice. The Consultant shall perform all duties associated with such tasks to ensure that only the best construction practices are followed, and that the final product is in all respects equal to, or better than that specified, and is carried out in full compliance with the governing specifications. The Consultant shall vigilantly monitor the quality of works and advise the Employer through brief weekly reports;
- (vi) Verify that the progress of the works is following the time program and milestone schedule approved under the works contracts. Notify the Employer as early as possible in advance of any possible failure to attain a milestone by the applicable date or non-compliance with the program. If for any cause other than those listed in the works contracts, the rate of progress of the works is at any time, in the Consultant's opinion, too slow to ensure the completion of the works within time for completion, instruct the Contractors in accordance with the works contracts in writing with a copy to the Employer;
- (vii) Issue acceptance and/or approval, as appropriate, of submissions required from the Contractors, including, but not limited to: staff appointments, insurances, guarantees, licenses, programs, method statements, traffic management plan (TMP), safety measures, suppliers and materials for incorporation in the works, quality assurance and control plans, laboratory provisions and execution of the testing program, subcontractors, plant, equipment and Contractors' ESMP (CESMP);
- (viii) Coordinate actions and activities of all the stakeholders concerned with the project through appropriate meetings, which are to be recorded. The minutes shall report on the actions to be taken by all parties. Thereafter, the Consultant will check that the actions to be taken by the parties are implemented. The Consultant will act on behalf of the client in this matter and will be responsible for enforcing quality criteria, including safety measures, actions identified in the CESMP and TMP, time schedule, and all other conditions included in the works contracts;
- (ix) Ensure that the day-to-day construction activities are carried out in an environmentally and socially sound and sustainable manner, and monitor compliance with environmental and social impact mitigation measures during the works implementation in consultation with the environmental and social staff in the Client;

- (x) Jointly with the Contractors, identify and mark all utilities with the help of competent authorities and assist the Client in effecting removal/relocation/protection (where necessary) of utilities within the construction sites;
- (xi) Jointly with the Contractors, identify and locate all beacons and benchmarks to enable the Contractors to set out and perform the works;
- (xii) Liaise with the respective authorities to ensure that the assessment and compensation for properties if any, within the construction sites is done before the Contractor is given possession of site;
- (xiii) Inspect, test or have tested by competent entities and approve all materials to be incorporated into the works to ensure compliance with technical specifications requirements. A system of formal testing procedures must be set up covering the frequency of testing, type of tests to be carried out and methods and formats of reporting the result. According to the provisions of the laws and regulations regarding control of the quality of the works, the Consultant shall: (i) prepare the program of testing the quality of the executed works, (ii) order any investigations and testing to determine the cause of defects and instructing the removal of improper work, (iii) take samples from the site, (iv) supervise performance of the test work, (v) issue reports regarding the observed quality of the executed works, and (vi) recommend actions to be taken in the case of unsatisfactory result;
- (xiv) Prepare and maintain a diligent record of all records and correspondences in a scanned digital archiving database. Keep updated all records including reports, works diaries, correspondence, instructions given to the Contractors, test records, payment records and all other relevant documents pertaining to the works performance and their supervision;
- (xv) Maintain site diaries daily with the contents and format to be agreed with the Client. Site diaries will record all events pertaining to administration of works contracts, instructions issued to the Contractors, pertinent requests from the Contractors and any other information which will be of assistance in resolving any dispute or claims. The site diaries will include the daily diary sheets from members of the supervision staff, and instructions and observations made by the representative of the Client during any of his site visits;
- (xvi) Prepare consolidated monthly reports on physical and financial status, site meetings and contractual matters with a specific reference to variation orders and Contractors' claims. Monthly reports shall deal specifically with monitoring and follow-up of agreed environmental and social mitigation measures and with the Contractors' adherence to health and safety standards and anti-corruption measures as applicable under the contract. Specifically, report will include a breakdown of non-compliances and rectification by the Contractors, and the summary of testing and monitoring results. Each monthly report should include recommendations if any, for action by the Client;
- (xvii) Provide immediate notification to the Client should any incident in the following categories occur while carrying out the services: confirmed or likely violation of any law or international agreement, any fatality or serious (lost time) injury, significant adverse effects or damage to private property, or any allegation of gender-based violence (GBV), sexual exploitation or abuse (SEA), sexual harassment or sexual misbehavior, rape, sexual assault, child abuse or defilement, or other violations involving children. Full details of such incidents shall be provided to the Client within the timeframe agreed with the Client;;
- (xviii) Immediately inform and share with the Client any notification related to ESHS incidents provided to the Consultant by the Contractors, and as required of the Contractors as part of the monthly and quarterly reporting;
- (xix) In collaboration with the Contractors, monitor the creation of employment opportunities resulting from the works, by recording month by month the number of people employed by the Contractors and sub-contractors, and calculate the number of person-days of work created by the works contracts (separately for men and women). As much as possible and reasonable, estimate the creation of employment opportunities also through businesses indirectly related to the works;
- (xx) Prepare control charts of main activities and a project master schedule, indicating both past performance and forecasts for completion including time involved in each case. The methodology will involve development of a hierarchy of programs, including a summary

program for overall control, Contractors' mobilization, construction activities including key dates, completion and commissioning, and defects liability requirements. It will also cover document review and formal contract documentation. Representation of progress on individual elements will depend on the nature of the works. The progress of each major operation will be reported individually and marked-up diagrams used to show the comparison of work actually completed with programmed completion. This clear diagram presentation supplements the activity progress information given in the tabular schedule reports and bar charts. The Consultant shall to the extent possible link and generate the progress and all status reports and monitoring of the work program using multi software for clear understanding.

- (xxi) Check and ascertain the Contractors' interim and final payment certificates for consideration by the Client. Monthly payment certificates for the works executed should clearly indicate the foreign exchange costs, the local costs and taxes and duties. Monthly payment certificates to be submitted to the Client for payment purposes shall include the total cost of the works executed in foreign exchange and local costs (net of taxes and duties). Resolve with the Contractors, where possible, any mistakes and queries which may arise in conjunction therewith, and advise the Employer of any adjustments considered necessary;
- (xxii) Record, examine and evaluate all claims submitted by the Contractors and submit timely recommendations thereof for consideration by the Client;
- (xxiii) Negotiate with the Contractors the price of additional works in the contract, if any, subject to the approval of the Client;;
- (xxiv) The Consultant may, with prior consultation with the Client, effect changes in design or specifications where required, which will improve the quality of the works. Such changes shall not increase the contract time, nor shall increase in contract price resulting from such changes exceed a percentage to be agreed with the Client;;
- (xxv) The Consultant shall monitor and keep an inventory of all shop drawings for each works contract. A digital computer-based archiving database in this regard shall be developed. The Consultant shall advise the Employer that the material and specifications used conform to the agreed conditions of contract as depicted from the shop drawings. 10% sampling of fixtures shall be tested for compliance;
- (xxvi) Prepare and submit to the Client the final account for the executed works;
- (xxvii) Foresee potential problems and advise the Client appropriately during the construction period;
- (xxviii) The Consultant shall assist the Employer in settling of the audit observations and objections raised (if any) by any department/ authority/agency and prepare replies in this regard, related to the project and provide available relevant documents/papers/letters etc. to support the replies;
- (xxix) Where applicable, the Consultant shall continuously review condition of the existing traffic infrastructure in the area of works used as construction transport routes, and order necessary repairs of damage due to such traffic to the appropriate quality standards;
- (xxx) Supervise Contractors' work on preparation of as-built drawings and maintenance manuals. The Consultant shall validate the drawings as per construction done. The Consultant shall develop the firmed-up estimate as per final completion of the project;
- (xxxi) Prepare a final construction report for each works contract;
- (xxxii) Prepare complete set of documents for technical acceptance procedure with the relevant authorities, as well as complete set of documents to enable entry into official records;
- (xxxiii) Participate in the semi-annual project supervision missions, which may take place in Pakistan or in neighboring countries, upon the request of the Client or the World Bank;
- (xxxiv) The Consultant shall assist the Employer during the dispute adjudication board (DAB) proceedings and assist Employer in submission of response to DAB queries and attend meetings alongside Employer whenever required during the DAB proceedings.

3.2.2 Post-construction activities

The Consultant shall supervise any corrective repairs and other works (including the administrative aspects of the works) during the DNP for both the sub schemes works contract. For the purpose of carrying out these services the Engineer shall assign his personnel to carry out quarterly inspections of the works and send a team of his personnel to the final inspection, preparation and issuing of final certificate. During this period, the Consultant shall be expected to draw the attention of the Contractors

to any defects as soon as such defects are noticed and shall supervise the subsequent remedial works by the Contractor, as well as report to the Client on defects and remedial works.

4 REPORTING

The Consultant shall prepare and submit designs, documents and reports described in this section. All reports will be submitted in English in hard copy to the Client and in electronic form as PDF files through an appropriate large file transfer application. The Client shall review draft reports within 2 weeks of submission upon which the Consultant will have two additional weeks for submission of the final versions.

4.1 PHASE I REPORTS

The Consultant is required to deliver the reports listed in the following Table as per the specified schedule.

Table 2 Phase I deliverables

No.	Report	Number of copies	Delivery schedule
1	Feasibility Assessment Report	5	30 days after commencement of the services
2	Site specific ESMPs	5	50 days as a whole, schemes are to be submitted in phases starting from 30 th day of contract award
3	Quality Assurance Plan	5	90 days after commencement of the services
4	Monthly Progress Report	5	10 days after completion of each month
5	Detailed Engineering Design Documents	5	100 days for schemes are to be submitted in phases starting from 30 th day of contract award
6	Bidding Documents	5 & electronic	110 days for schemes are to be submitted starting from 30 th day of contract award

4.2 PHASE II REPORTS

The Consultant is required to deliver the following reports. All reports will be submitted in English in hard copy to the Client and in electronic form as PDF files through an appropriate large file transfer application.

4.2.1 Works commencement report

Works Commencement Report shall be prepared separately for each road restoration project damaged by floods, and shall include the following essential information:

- Project Overview - A concise summary of the road restoration project, including its location and extent of damage caused by the flood;
- Objectives - Primary objectives of the restoration project, such as restoring road connectivity, ensuring safe transportation, and mitigating future flood risks;
- Scope of work - Scope of the project, specifying the sections of the road to be restored, key infrastructure components to be repaired or reconstructed, and any additional features or considerations unique to the flood-affected area;
- Implementation plan - High-level implementation plan, including key milestones and timelines for the restoration works;
- Technical specifications - A brief overview of the technical specifications and standards to be followed during the restoration, ensuring compliance with relevant engineering guidelines;
- ES considerations - A highlight of any specific ES considerations related to the restoration, such as measures to minimize environmental impacts and engage with local communities;

- Budget and financing - Summary of the project's budget and sources of funding, including any financing arrangements or partnerships that have been established;
- Roles and responsibilities - Identification of the main stakeholders involved in the project and brief outline of their roles and responsibilities to ensure effective coordination;
- Health and safety - Importance of health and safety measures during the restoration works to protect workers and the public;
- Monitoring and evaluation - Brief description of the monitoring and evaluation plan, including key performance indicators to assess the progress and quality of the restoration works.

4.2.2 Monthly progress reports

The Consultant shall prepare regular Monthly Progress Reports for each road to provide the Client with a clear and transparent update on the project's progress, challenges, and achievements during the reporting period.

Monthly Progress Report shall include the following information:

- Project overview - A brief overview of the project, including its objectives, scope, and purpose;
- Project status - An update on the project's status, including progress made during the reporting period;
- Milestones - List of any milestones achieved during the reporting period and any upcoming milestones;
- Schedule - A status update on the project's schedule, including any delays, changes, or adjustments made during the reporting period;
- Budget - An update on the project's budget, including any changes or adjustments made during the reporting period;
- Resources - An update on the resources allocated to the project, including equipment, materials, and labor;
- Quality control - An update on the project's quality control measures, including any issues or concerns that arose during the reporting period;
- Safety - An update on the project's safety measures, including any incidents, accidents, or near-misses that occurred during the reporting period;
- ES safeguards - An update on the project's ES safeguards, including any measures taken to mitigate negative impacts on the environment or local communities;
- Stakeholder communication - An update on stakeholder communication and engagement during the reporting period, including any issues or concerns raised by stakeholders;
- Risks and issues - Identification of any risks or issues that arose during the reporting period and outlining any measures taken to address them;
- Recommendations - Any recommendations or suggestions for improving the project's progress, schedule, budget, or quality.

4.2.3 Quality Assurance Plan

The Consultant must provide the Quality Assurance Plan in a comprehensive manner that outlines the Consultant's quality control and quality assurance procedures, to meet the consultant's work standards and regulations, and that the project is completed successfully. It must include the following:

- Introduction - Purpose of the document, the scope of the Consultant's services, and the standards and regulations that the Consultant will adhere to;
- Organizational structure - The organizational structure of the Consultant's team, including the roles and responsibilities of each team member;
- Quality control procedures - Outline of the consultant's quality control procedures, including how the Consultant will ensure that all work meets the required standards and regulations. This should include procedures for design review, documentation review, and testing;
- Quality assurance procedures - Description of the Consultant's quality assurance procedures, including how the Consultant will monitor and evaluate the quality of the work being performed. This should include procedures for audits, inspections, and reviews;
- Document control procedures - Outline of the Consultant's document control procedures, including how the Consultant will manage and store all project-related documents, such as drawings, specifications, and reports;

- Training and development - Description of the Consultant's training and development procedures, including how the Consultant will ensure that all team members are properly trained and qualified to perform their duties;
- Subcontractor management - Outline of the Consultant's procedures for managing subcontractors, including how the Consultant will ensure that all subcontractors meet the required standards and regulations;
- Health and safety – Description of the Consultants health and safety procedures, including how the Consultant will ensure that all work is performed safely and in compliance with applicable regulations;
- Non-conformance reporting - Defining procedures for reporting and addressing any non-conformances or deficiencies that are identified during the project;
- Performance monitoring and reporting - Outline on how the Consultant will monitor and report on the performance of the quality control and quality assurance procedures.

4.2.4 Annual and semi-annual progress report

The Annual and Semi-annual Progress Report shall summarize major achievements and issues for all individual contracts and shall include the following information:

- Introduction - Explanation of the purpose of the document, the scope of the project, and the standards and regulations that the project is adhering to;
- Project overview - An overview of the project, including its objectives, scope, and purpose;
- Physical progress - An update on the physical progress of the project, including the status of construction work, any delays or obstacles encountered, and any changes or adjustments made to the project schedule;
- Financial progress - An update on the financial progress of the project, including the budget status, any expenditures made during the reporting period, and any changes or adjustments made to the project budget.
- Milestones - Any milestones achieved during the reporting period and any upcoming milestones.
- Resources - An update on the resources allocated to the project, including equipment, materials, and labor;
- Quality control - An update on the project's quality control measures, including any issues or concerns that arose during the reporting period;
- Safety - An update on the project's safety measures, including any incidents, accidents, or near-misses that occurred during the reporting period;
- ES safeguards - An update on the project's ES safeguards, including any measures taken to mitigate negative impacts on the environment or local communities;
- Stakeholder communication - An update on stakeholder communication and engagement during the reporting period, including any issues or concerns raised by stakeholders;
- Risks and issues - Identifying any risks or issues that arose during the reporting period and outline any measures taken to address them;
- Lessons learned - Outline any lessons learned during the reporting period, including any improvements that can be made to the project's progress, schedule, budget, or quality;
- Recommendations - Recommendations or suggestions for improving the project's progress, schedule, budget, or quality;
- Conclusion - A summary of the project's progress during the reporting period and an overview of any upcoming activities or milestones.

4.2.5 Works completion report

Works Commencement Report shall be prepared separately for each road restoration projects damaged by floods at its completion, and shall include the following essential information:

- Project overview - A brief overview of the project, including its objectives, scope, and purpose;
- Project status - Complete inventory of works and activities completed;
- Milestones - List of all milestones achieved during the implementation;
- Schedule - Summary of the project's schedule, including any delays, changes, or adjustments made during the implementation;

- Budget - Summary of the project's budget, including any changes or adjustments made during the implementation;
- Resources - Summary of resources allocated to the project, including equipment, materials, and labor;
- Quality control - Summary on the project's quality control measures, including any issues or concerns that arose during the implementation;
- Safety – Summary of safety measures, including any incidents, accidents, or near-misses that occurred during the implementation;
- ES safeguards - Summary of ES safeguards, including any measures taken to mitigate negative impacts on the environment or local communities;
- Stakeholder communication - Summary of stakeholder communication and engagement during the implementation, including any issues or concerns raised by stakeholders;
- Risks and issues – Summary of risks or issues that arose during the implementation and measures taken to address them;
- Planning Commission Proforma IV (PC-IV) - Official project completion report;
- Recommendations - Any recommendations or suggestions for improving the future performance.

4.2.6 DNP reports

DNP Reports shall be prepared by the second consultant or the same if selected/hired for the overall assignment, which will be determined meanwhile this activity of design and supervision for the schemes are underway. It shall include the following essential information:

- Project overview - A brief overview of the project, including its objectives, scope, and purpose;
- Status of repairs - Summary of actions taken to address issues recorded during the previous inspection;
- Defects - Summary if issues recorded at the site during the inspection;
- Orders and recommendations - Any orders and recommendations to implement repair activities for the identifies defects.

Table 2 Phase II deliverables

No.	Report	Number of copies	Delivery schedule
1	Works Commencement Report	5	15 days after commencement of each works contract
2	Monthly Progress Report	5	10 days after completion of each month
3	Quality Assurance Plan	5	180 days after commencement of the services
4	Semi-annual Progress Report	5	10 days after completion of the reporting period
5	Annual Progress Report	5	15 days after completion of the reporting period
6	Works Completion Report	5	30 days after completion of each works contract
7	DNP Reports	5	15 days after completion of each DNP inspection
8	Ad-hoc reports on any major issue raised during the works implementation, at the Client's request (e.g. revised PC-I, additional bidding documents, additional working drawings, screening reports, additional design reports, etc.)	5	As and when required

5 STAFFING

To fulfill its obligations, the Consultant shall provide the staff and its head office expert assistance as described hereunder. The following Table provides a preliminary estimate of the time effort for the key and non-key staff required for the entire assignment.

The Consultant should propose a staffing plan and skill mix necessary to meet the objectives and the scope of the services. The Consultant is encouraged to use national expertise and experience, as well as to use the Balochistan expertise to the extent possible. Additionally, the Consultant is strongly encouraged to ensure a gender balance across the team, and to ensure appropriate skills and experience in gender issues relevant to Project implementation. The Consultant is also advised to propose the staff keeping in view that the project will be sequenced in SoP-1 and 2.

Table 3 Team composition

No.	Position	Staff months
A Key staff		
1	Design Team Leader / Highway Design Engineer	6
2	Senior Structural Design Engineer	4
3	Procurement and Contract Specialist	4
5	Supervision Team Leader / Chief Resident Engineer	24
Subtotal A		38
B Non-key staff		
B.1 Phase I		
1	Pavement Design Engineer	3
2	Geometric Highway Design Engineer	4
3	Structure / Bridge Design Engineer	4
4	Hydrologist / Drainage Engineer	4
5	Geotechnical Engineer	4
6	Traffic Specialist	4
7	Road Safety Expert	4
8	GIS Expert	4
9	Transport Economist	3

No.	Position	Staff months
10	Financial Analyst	3
Subtotal B.1		37
B.2 Supervision		
12	Resident Engineer (02 positions)	48
13	Materials Engineer (02 positions)	36
14	Site Supervision Engineers (highway & structures) (03 positions)	66
15	Site Surveyors (03 positions)	58
16	Occupational & Health Safety Specialist (OHS Specialist)	18
17	Environmental Specialist	18
18	Social Specialist	18
19	Quantity Surveyor (2 positions)	40
Subtotal B.2		302
Grand total (A+B)		377

C.	DIRECT COST	No.	Man months
1	Rent and POL/ maintenance/repair (4x4 wheel drive)+POL+Driver	4.00	28
2	Office Rent (Main office + site offices) including utilities and services, support staff etc	1.00	28
3	Stationery, Printing/ Binding, equipment, and other Consumables.	Lump sum	
4	Topographic/ Alignment Survey with purchase of survey equipment	Lump sum	

Support staff will support the work of the key and non-key staff and will be deployed at office or the specific site according to the requirements of the Consultant's team. The following expertise would be required: road designers, structural designers, drainage designers, quantity surveyors, surveyors, road inspectors, structural inspectors, material inspectors, laboratory technicians, environmental associates, social associates, administrative and additional staff.

5.1 STAFF REQUIREMENTS

S/No	Title	Experience, Qualification & Responsibilities	
Key Experts			
1	Team Leader / Highway Design Engineer	Experience:	Bachelor's degree in Civil Engineering – preferably Masters in Civil Engineering / Highway Engineering / Transportation Engineering or equivalent
		Qualification:	Twelve (12) years relevant international experience ⁴ , and eight (8) years of experience as Team Leader/Project Manager in Design of Highway Geometric and Pavement
		Responsibilities:	<p>Overall responsibility for the organization, conduct and delivery of consultancy services and reporting to C&W Department, Project Director, PIU, IFRAP. The Team Leader / Highway Design Engineer will head the Consultant team and will work directly to manage the project and will maintain liaison with C&W Department, Project Director, PIU, IFRAP in connection with scope of work as mentioned in Terms of Reference for feasibility study and detailed design for the RAP roads and environment impact assessment. It is obligation of Team Leader of consulting firm to provide complete support to construction team if his consulting firm does not emerge to be the supervision consultant.</p> <p>Responsibilities of the Team Leader / Highway Design Engineer will include but not limited to the following:</p> <ul style="list-style-type: none"> • Assume full responsibility for the consulting team and performance of services under the consultancy contract. • Keep the Employer informed of technical issues and progress of all works both by informal and formal meetings and correspondence and assist in any project issue which the Employer as may require. <p><u>Major Activities:</u></p> <p><u>(1) For Road Assessment Study</u></p>

⁴ International experience is defined as experience gained outside Client's country. It is independent of the nationality subject to conditions of eligibility that govern World Bank financing

S/No	Title	Experience, Qualification & Responsibilities	
			<ul style="list-style-type: none"> • Collect all relevant data on economy, population, traffic, industry, trade, with all concerned local Departments • Conduct traffic count & O&D survey for the proposed alignment • Prepare a 3-D simulation for the various alternative analysis • Prepare the standard feasibility study report <p><u>(2) For Detailed Design</u></p> <ul style="list-style-type: none"> • Conduct detailed survey and geometric design for the approved alignment including L. profile, cross sections, layout design of all structures such as bridges, culverts, interchanges, underpasses, retaining structures, any other structures use for slope stabilization etc. • Conduct soil investigation, and Geometric Design with Highway Safety duly furnished in it. • Detailed topographic survey or use of Stereo DEM with Ground Control Point (GCP) validation. • Detailed Soil investigation survey, and hydrology survey, on the proposed alignment. • Identification of quarry sites and borrow areas and construction material survey. • Identification of problematic areas as regards to deposition of ice / sand dunes along with appropriate design to address shifting of ice / sand dunes on roadway with cost effective remedial measures. • Geotechnical Investigation survey for bridges and related structures. • Remedial measures for scouring etc. if any. • Hydraulic Model Study if required.

S/No	Title	Experience, Qualification & Responsibilities	
			<ul style="list-style-type: none"> • Design of Toll Plazas associated buildings, and rest areas, including architectural drawings and detailing construction specifications. • Geometric Design of Highway with detailed Highway Safety Report. Detailed design of up gradation of existing road. • Road furniture design including traffic signs and gantries. • Hydrology & Hydraulic design of structures. • Structure Design including electrical design of lightening for bridge etc. • Horticulture and Landscaping of intersections. • Axle load survey or collection of data from nearby weigh stations. • Pavement Design with surface and subsurface drainage. • Provision of ducts/crossing of future utilities like OFC, pipelines etc. • Stakeout of design alignment after approval for ground validation. • Utility folders and Land acquisition plans using imageries, cadastral maps on GIS. • Fixation of ROW markers when required by the Client. • Preparation of Bidding Documents, BOQ, Engineers Estimate. • Preparation/revisions of PC-1s. • Prepare design report of all design drawings. • Team leader at the end of design shall make final presentation with following details:

S/No	Title	Experience, Qualification & Responsibilities	
			<ul style="list-style-type: none"> ➤ Team leader will describe the selected road alignment, merits, demerits, land acquisition and other impediments (if any). ➤ Team leader will highlight important components of project like major bridges, flyovers, interchanges, service areas and landslides (if any) etc. ➤ Important parameters of sub-soil investigation like CBR, Pile Capacity and General Soil Classification etc. ➤ Team leader will also highlight the environmental impact of the road construction on the road influence areas. ➤ Important hydraulic parameters used in the design of bridges over rivers/ canals. ➤ Results of traffic study and axle load survey. ➤ Location of quarry sites. ➤ Team leader shall clearly explain the traffic management plans. ➤ Complete description of design criteria and functional requirements. ➤ Description of specialized equipment and machinery required for the construction. ➤ Description of methodology/ codes for pavement and structural design including details of computer models. ➤ For Structural Design, Summary of results of computer output. ➤ Maximum and minimum forces for all elements) in tabulated form shall be presented. ➤ A plan showing major quarry sites/ borrows area sites including mass diagram showing cut and full along the finally selected alignment shall be presented. <ul style="list-style-type: none"> • Any other points, which the TL may like to highlight, should be included.

S/No	Title	Experience, Qualification & Responsibilities	
2	Senior Structural / Bridge Design Engineer	Experience:	Ten (10) years relevant international experience and five (5) years of experience in major structural / bridge design of major Road Projects.
		Qualification:	Bachelor's degrees in Civil Engineering – preferably Masters in Structural Engineering
		Responsibilities:	<p>He/she will be responsible for Design and Design Review of structural elements of road components i.e., bridges, culverts, interchanges, underpasses, retaining walls and specifications on cost effective multi hazard resistant design including detailed structural drawing specification and estimates.</p> <p>Responsibilities of Senior Structure/Bridge Design Engineer will include but not limited to:</p> <ul style="list-style-type: none"> • He will assist the TL in the performance of his tasks. • It is required that Senior Structure/Bridge Design Engineer should undertake the job in professional manner to best of its ability and resources. <p><u>(a) Road Assessment Study</u></p> <ul style="list-style-type: none"> • Provide details about existing structures, damages, assessment, development necessity with respect to engineering parameters. <p><u>(b) Detail design of RAP</u></p> <ul style="list-style-type: none"> • Detailed design of structural elements of road components on basis of traffic surveys and analysis for different traffic module and forecast methodology. • Design of new structures, retaining works, intersections, flood, and erosion protections works, training works, interchanges, under passes etc. on basis geotechnical investigations as well as on basis on basis of relevant engineering data on required standard and detailing construction specification. • Structural design including electrical design of lightening for bridges etc.

S/No	Title	Experience, Qualification & Responsibilities	
			<ul style="list-style-type: none"> Any other task that may assigned to perform the task under the consultancy assignment.
3	Procurement & Contract Specialist	Experience:	10 years' experience as Procurement and Contract Specialist on major road projects based on FIDIC form / conditions of contract, Experience, and knowledge of World Bank procurement procedures is essential. Proven credentials in contract administration, evaluating contractor's claims and dispute resolution, preferable experience/track record of an arbitrator, mediator, adjudicator and/or dispute resolution adviser.
		Qualification:	Bachelor's degree with a major in Civil Engineering, Law, Contracts, Purchasing, or Management - preferably MSc in Civil Engineering, Law, or Contracts / Procurement, or equivalent.
		Responsibilities:	The responsibility shall include but not limited to <ul style="list-style-type: none"> He/she will be responsible for assisting TL in all the activities pertaining to procurement. Assist in preparation of procurement and contract documents. Responsible for preparation of bidding documents. Shall update and improve PC-I for the project on prescribed proforma by planning commission. To assist in preparation of separate PC-I for land acquisition (if any). Support TL in drafting, for submittal to World Bank through employer. Shall also prepare documents for acquiring any additional or removal of structures and utilities particularly in built up areas;

S/No	Title	Experience, Qualification & Responsibilities	
4.	Supervision Team Leader / Chief Resident Engineer	Qualification	Qualified Civil Engineer with at least 15 years' experience of managing roads, and other similar construction works in Pakistan or abroad. He/she will have overall responsibility for the consulting firm, conduct and delivery of consultancy services and contract/construction contracts, and reporting mechanisms. S/he will head the Consultant and will work directly to manage relations with the Client. S/he will be responsible for: (i) all liaisons with and reporting to the Client; (ii) financial and technical management of the consultancy; (iii) provide overall guidance and advise to construction supervision/contract administration team; (iv) amicably resolve any disputes during the construction and provide decisions whenever required, and (v) overall responsibility for progress and completion with assistance from team members.
Non-Key Experts			
1	Pavement Design Engineer	Experience:	10 years as Pavement Design Engineer for major road projects with proven credential in geometric design of highways
		Qualification:	Bachelor's in civil engineering Preferably Master in Civil Engineering/Highway Engineering or equivalent with specialization in pavement design.
		Responsibilities:	<p>Responsibilities of Pavement Design Engineer will include but not limited to</p> <ul style="list-style-type: none"> • He/she will assist Senior Pavement Design Engineer. • He/she will be responsible for design and design review of highway pavement design, detailed geometric design with detailed highway safety report and pavement design with surface and subsurface drainage on basis of detailed soil investigation, axle load study and traffic surveys (Traffic count for 10 years design life). • He/she will be responsible for designing road furniture design including traffic signs and geometrics, traffic control features, drainage designs, rehabilitation and repair plans, traffic plans and amenities with detailed specifications and cost effective

S/No	Title	Experience, Qualification & Responsibilities	
			<p>multi hazard resistant design following four lane carriageways on NHA standard. AASHTO, ASTM, ACI codes will be adopted. Final pavement design shall be done using empirical-mechanistic material. Asphalt institute and shell model shall be used.</p> <ul style="list-style-type: none"> • Geometric design of highway safety report of up-gradation of existing road. • Pavement design with surface and subsurface drainage. <ul style="list-style-type: none"> • Provision of ducts/crossing of future utilities like OFC, pipelines etc. • To evaluate for flexible, rigid and composite pavement along with cost comparison.
2	Geometric Highway Design Engineer	Experience:	10 years as Geometric Pavement Design Engineer for major road projects with proven credential in geometric design of highways
Qualification:		Master's in civil engineering or equivalent with specialization in Transportation/Traffic Engineering.	
Responsibilities:		<p>Responsibilities of Geometric Pavement Design Engineer will include but not limited to</p> <ul style="list-style-type: none"> • He/she will be responsible for design and design review of highway pavement design, detailed geometric design with detailed highway safety report and pavement design with surface and subsurface drainage on basis of detailed soil investigation, axle load study and traffic surveys. • He/she will be responsible for designing road furniture design including traffic signs and geometrics, traffic control features, drainage designs, rehabilitation and repair plans, traffic plans and amenities with detailed specifications and cost effective multi hazard resistant design following four lane carriageways on NHA standard. AASHTO, ASTM, ACI codes will be adopted. Final pavement design shall be done using empirical-mechanistic method. 	

S/No	Title	Experience, Qualification & Responsibilities	
			<p>Asphalt institute and shell model shall be used.</p> <ul style="list-style-type: none"> • Geometric design with detailed highway safety report of up-gradation of existing road. • Pavement design with surface and subsurface drainage. • Provision of ducts/crossing of future utilities like OFC, pipelines etc. • To evaluate for flexible, rigid and composite pavement along with cost comparison.
3	Structure / Bridge Design Engineer	Experience:	10 years' experience as Designer and/or Design reviewer of Structures with proven credentials in Bridge Designing.
		Qualification:	Master's in civil engineering / Structural Engineering / Highway Engineering or equivalent, preferably PhD in Structural Engineering or equivalent.
		Responsibilities:	<p>Responsibilities of Structure/Bridge Design Engineer will include but not limited to.</p> <p>He/she will assist Senior Structure/Bridge Design Engineer in connection with design of structural elements of road components i.e., bridges, culverts interchanges, under passes retaining walls.</p> <p><u>(a) For Road Assessment Study</u></p> <p>Provide details about existing structures, damages, assessment, development necessity with respect to engineering parameters.</p> <p><u>(b) Detail Design</u></p> <ul style="list-style-type: none"> • Detailed design of structural elements of road components on basis of traffic surveys and analysis for different traffic module and forecast methodology. • Design of new structures, retaining works, intersections, flood, and erosion protections works, training works, interchanges, under passes etc. on basis geotechnical investigations as well as on basis on basis of

S/No	Title	Experience, Qualification & Responsibilities	
			<p>relevant engineer data, adopting four lane carriageways on NHA standard.</p> <ul style="list-style-type: none"> • Structural design including electrical design of lightening for bridges etc. • Prepare separate drawings for bridges and culverts and other related structure as mentioned in 4.3.16.3 and 4.3.16.4 of TOR. • AASHTO (LRFD), ASTM, ACI standard and loads will be adopted.
4	Hydrologist / Drainage Engineer	Experience:	10 years' experience as Hydrology/Drainage/Water Resources Engineer on major road project of same magnitude.
		Qualification:	Bachelor's in civil engineering, Masters in Hydraulic/Drainage/ Water Resources Engineer, with sound knowledge of hydrology.
		Responsibilities:	<p>The responsibility shall include but not limited to</p> <ul style="list-style-type: none"> • Field visits to access site condition with regard to hydrology study. • He/she will be responsible to access hydrological data of the area of road alignment and comprehensive report shall be prepared which shall depend upon the nature of the valley, or flood plain to be traversed, the cost of proposed drainage structures and class of highway with help of topographic maps showing drainage characters, satellite imaginary to be used for upstream and downstream to identify the land use and drainage characteristic. • Evaluate the topography and gradients, water formation of the area. Analyze existing side/cross drainage conditions along the road alignment. • He/she will be responsible for vetting the condition of drainage crossing structures keeping in view the past available data of floods and rains.

S/No	Title	Experience, Qualification & Responsibilities	
			<ul style="list-style-type: none"> • To provide expert technical advice in respect of drainage proposals, undertaking flood risk assessments. • Using topographic map, satellite imagery and site visit, the hydrology/drainage engineer required to comment nature of land use in affected water sheds nature of vegetation and soil characteristic of the basin, water within affected drainage basins along with operational procedures of these reservoirs. • To collect rainfall data for the project area from metrological department with brief description. • To collect river discharge data of river Indus from relevant department. • A brief history is required to be prepared in connection with dates of occurrence of the flooding and elevation of high-water marks as well as rain fall intensity.
5	Geotechnical Engineer / Geologist	Experience:	10 years international experience as Geotechnical Engineer on Major Road Projects, knowledge of soil bio engineering / biotechnical application for slope stabilization.
		Qualification:	Bachelor's degree in Geotechnical Engineering, Civil Engineering – preferably M.Sc. or PhD in Geotechnical Engineering.
		Responsibilities:	Responsibilities of Structure/Bridge Design Engineer will include but not limited to <ul style="list-style-type: none"> • To perform geotechnical investigation including field and laboratory testing, for canal, road and river bridges. • To carry out sub-surface investigations consisting of boreholes / drill holes / test pits of required depth, supplemented by field and laboratory testing to accurately assess the engineering properties of the underlying soil strata for detailed design of foundations, substructures and roads shall be undertaken under strict quality control and adherence to relevant ASTM procedures / standards.

S/No	Title	Experience, Qualification & Responsibilities	
			<ul style="list-style-type: none"> • Identify risks of natural disasters such as mud slides, earthquakes, and provide advice on ways in which potential damage can be mitigated. • Measure characteristics of the earth such as gravity and magnetic fields using equipment such as seismographs gravimeters, torsion balances, and magnetometers. • Develop applied software for the analysis and interpretation of geological data. • Identify deposits of construction materials and assess the materials' characteristics and suitability for use as concrete aggregates, road fill, or in other applications. • Prepare Geological maps cross-sectional diagrams, charts and reports, land use, and resource managements using result of field work and laboratory research. • To evaluate causes of movement and tagging mechanism along the physical route and propose remedial measures required to stabilize the slope. • Identification of problematic area as regards deposition of sand dunes and to address shifting of sand dunes along with remedial measures. • Geotechnical investigation survey for bridges and structures. • Soil and material investigation shall be done to ascertain the index and engineer properties of soil and rock encountered and evaluate result for final design.
6	Transport Economist	Experience:	At least 10 years relevant professional experience in transport sector including preparation and implementation of transport policies in Highways projects of same magnitude.

S/No	Title	Experience, Qualification & Responsibilities	
		Qualification:	Master's degree or equivalent in Transport/Transport Economics with specialize experience in transport sector.
		Responsibilities:	The responsibility shall include but not limited to <ul style="list-style-type: none"> • Evaluate cost benefits of the project in terms of Transport Economy. • To develop an understanding of traffic pattern, he/she is required to carry out classified traffic count at required location along the project and on connected network for economic analysis. • To calculate delays of vehicle to be used in economic analysis. • To carryout study for diversion and general traffic as traffic count forms the basis for capacity analysis, pavement design and economic analysis. • To collect any relevant traffic data from concerned agencies. • Calculate average time taken by different sort of vehicles while passing through the candidate roads to up or down country. • Calculate delays of vehicles to be used in economic analysis. • Traffic volume at count station to be forecast for 10 years design period. Various alternative growth rates (if available) from agencies or based on historical increases in fuel consumptions, vehicle registration etc., shall be utilized. After review of the various growth rates and resulting traffic volume, the transport economist will recommend the growth rate to be adopted as basis for design and coordinate. • The traffic forecast will be made individually for each vehicle category including cars, buses, wagons, dual axle and multi axle trucks and tailors according to NTRC format. Generated traffic if any shall also be assessed and included in the traffic economy.

S/No	Title	Experience, Qualification & Responsibilities	
			<ul style="list-style-type: none"> Access the existing level of service with the proposed solution.
7	Traffic / Road Safety Expert	Experience:	12 years relevant experience with proven credential as traffic engineer / road safety specialist on major road projects
		Qualifications:	Bachelor's degree preferably master's in civil engineering / Transportation Engineering / Highway Engineering / Traffic Engineering and certification as safety auditor or equivalent.
		Responsibilities:	<p>The Traffic /Road Safety Specialist is part of the services team and will be providing all necessary assistance to the construction supervision team with respect to work zone safety, and implementation of safety audit recommendations. He/she will assist to the TL + other team members in review and approve the safety plans of the contractor and he will monitor the safety of the works and the safety of the traffic diversions and ensure compliance with the regulations.</p> <p>He/she will review hazardous location(s) and conditions, evaluate audit results, and safety and operational deficiencies, identify potential safety and operational improvement and recommend appropriate improvements. The Road safety specialist will train the national staff on the team.</p>
8	Financial Analyst	Experience:	Experience in financial and economic analysis and regulation of road infrastructure and services is required. Knowledge of Financial Management Systems (FMS). Preferably more than 10 years' working experience in program/project finance, accounting and financial reporting under projects financed by international financial institutions including WB.
		Qualification:	Master's degree with a major in Finance/Accounting/Economics/Management or equivalent – preferably advanced degree in Finance / Accounting / Economics / Management or equivalent or accounting qualification such as Certified Public Accountant/Chartered Certified Accountant.
		Responsibilities:	<ul style="list-style-type: none"> Assistance to the team and work closely with team to assess current financial practices of

S/No	Title	Experience, Qualification & Responsibilities
		<p>C&W Department and identify gaps for rectification.</p> <ul style="list-style-type: none"> • Assistance to team to assess financial management system (FMS), including Project Performance Monitoring System (PPMS), project financial information and accounting system used by C&W Department. • Elaborate and propose procedures for setting-up and maintaining consolidated accounts. • Lead the periodical review of the work plan and budget of the C&W Department. • Assist the C&W Department in preparing the Project financial progress reports provide required inputs and information necessary for the preparation of periodical progress reports and completion report. • Review the OSR at the city level, identify measures and steps for improving OSR, develop a time bound action plan for OSR improvement and monitor and guide their implementation. • Design measures for targeted subsidies for poor household where affordability of services is an issue, including cross subsidies to ensure funds are available within OSR or tariff streams to pay the subsidies, rather than dependence on provincial or federal transfers. • Elaborate and propose procedures for setting-up and maintaining consolidated accounts. • Assist in the periodical review of the work plan and budget of the C&W Department. • Coordinate efforts with Financial Specialist in C&W Department in undertaking financial and economic analysis, as required, of C&W Department. <p>Assist in providing advice on capacity building needs of WSSCs staff, review financial management capacity building programs, FMS software, and</p>

S/No	Title	Experience, Qualification & Responsibilities	
			provide assistance during the delivery of training sessions.
9	Resident Engineer	Qualification:	<p>Qualified Civil Engineers with at least 10 years' experience as a Resident Engineer in construction supervision of Road and other similar infrastructure in Pakistan whereas experience in Sindh terrain would be preferable. S/He will supervise the work directly with Assistant Resident Engineers (AREs) and rest of construction supervision teams and will manage the construction milestones and quality control of works. They will provide assistance to the Team Leader in overall management, monitoring and reporting and will be responsible for day-to-day management of works.</p> <p>In addition to above, the REs will also be responsible for following additional assignments;</p> <ul style="list-style-type: none"> • Regular report to the Client. • Assumes overall responsibility for management and supervision of the field team. • Undertakes responsibility for satisfactory completion of projects as per design, specifications and as per agreed cost and timeframe. • Work as per Client's agreement for the assigned engineering and supervision activities with the best professional and consulting standards to ensure that the assignment is completed satisfactorily. • Carry out proper and continuous monitoring, supervision for implementation at site of work of the designing plans and maintain liaison with all staff/other stakeholders. • Assist in reviewing and modifying the designs for cost effectiveness and technical suitability.
10	Quantity Surveyor	Experience:	12 years relevant experience on preferably three major road projects
		Qualification:	Bachelor's degree in Civil Engineering – preferably master's in civil engineering / Highway Engineering / Structure Engineering / Transportation Engineering

S/No	Title	Experience, Qualification & Responsibilities	
			/ Construction Management / Project Management or equivalent
		Responsibilities:	<ul style="list-style-type: none"> • Prepare and maintain sketches, maps, reports, and legal descriptions of surveys. • Verify the accuracy of survey data, including measurements and calculations conducted at survey sites. • Direct or conduct surveys in order to establish legal boundaries for properties, based on legal deeds and titles. • Record the results of surveys, including the shape, contour, location, elevation, and dimensions of land or land features. • Calculate heights, depths, relative positions, property lines, and other characteristics of terrain. • Prepare or supervise preparation of all data, charts, plots, maps, records, and documents related to surveys. • Write descriptions of property boundary surveys for use in deeds, leases, or other legal documents. • Plan and conduct ground surveys designed to establish baselines, elevations, and other geodetic measurements. • Search legal records, survey records, and land titles in order to obtain information about property boundaries in areas to be surveyed. • Adjust surveying instruments in order to maintain their accuracy. • Establish fixed points for use in making maps, using geodetic and engineering instruments. • Determine longitudes and latitudes of important features and boundaries in survey areas, using theodolites, transits, levels, and satellite-based global positioning systems (GPS).

S/No	Title	Experience, Qualification & Responsibilities	
			<ul style="list-style-type: none"> • Train assistants and helpers and direct their work in such activities as performing surveys or drafting maps. • Analyze survey objectives and specifications in order to prepare survey proposals or to direct others in survey proposal preparation. • Compute geodetic measurements and interpret survey data in order to determine positions, shapes, and elevations of geomorphic and topographic features. • Develop criteria for survey methods and procedures. • Develop criteria for the design and modification of survey instruments. • Conduct research in surveying and mapping methods, using knowledge of techniques of photogrammetric map compilation and electronic data processing. • Locate and mark sites selected for geophysical prospecting activities, such as efforts to locate petroleum or other mineral products. • Survey bodies of water in order to determine navigable channels and to secure data for construction of breakwaters, piers, and other marine structures. • Direct aerial surveys of specified geographical areas; and <p>Determine specifications for photographic equipment to be used for aerial photography, as well as altitudes from which to photograph terrain</p>
11	GIS Specialist	Experience:	<p>Preferably 10 years' of demonstrated relevant professional experience at the national or international level in GIS applications. Preference will be given to those who possess relevant experience with Donors (ADB and WB) or their funded projects and overseas relevant experience / relevant experience with international organization and Government Institutions.</p>

S/No	Title	Experience, Qualification & Responsibilities	
		Qualification:	Preferably a master's degree in GIS and Remote Sensing or equivalent qualification
		Responsibilities:	<p>GIS Specialist will perform the following functions, including but not limited to:</p> <ul style="list-style-type: none"> • Review assessment studies of all C&W Road network digital data, reports, maps and other multi source data including satellite imagery and digital elevation models (imagery of past events where possible and fresh imagery for baseline mapping, satellite record of roads, bridges, and settlements along with health and education facilities access etc through multiple criteria GIS analysis identify roads at feasibility level. • Perform any other tasks / assignment that may be assigned by Client and/or WB etc.
12	Material Engineer	Experience:	10 years as Material Engineer on five Highways Projects / Expressways of same magnitude projects, preferably with experience of asphalt concrete mix design in countries having similar climate and/or truck overloading problems like Pakistan.
		Qualification:	Bachelor's degree in (Civil Engineering) or master's in engineering Geology or equivalent.
		Responsibilities:	<p>Responsibilities of Material Engineer will include but not limited to</p> <p>He/she is required to seek, interpret, and evaluate subsurface and surface data in order to predict the behavior of soil and materials along the route and adjacent to the alignment.</p> <p>He/she will assist and will be responsible for quality of materials used in construction by performing field and laboratory tests and certifying their acceptance based on recommended specifications for the material, will also identify the sources of material and query sites.</p> <ul style="list-style-type: none"> • Stipulate Material Testing Procedures and Specifications. • Identify sources of materials, quarry sites and borrow areas.

S/No	Title	Experience, Qualification & Responsibilities	
			<ul style="list-style-type: none"> • Confirm the suitability and availability of material in the borrow pits and quarries for pavement. • Identify and evaluate additional sources of materials. • Undertake field and laboratory testing of the materials to determine their suitability for various components of the work; and to ascertain the index and engineering properties of soil and rock encountered. • Prepare mass haul diagram for haulage purposes giving quarry charts indicating the location of selected borrow areas, quarries. • Make suitable recommendations regarding making good the borrow and quarry areas after the exploitation of materials for construction of works. • Be responsible for Material Testing and specification & certification of material quality. • Preparation and testing of concrete mixes of different design mix grades using suitable materials (binders, aggregates, sand filler etc.) as identified during Material Investigation to conform to specification applicable in Pakistan. <p>Survey of material with topmost quality complying with material testing ASTM (American Society for Testing and Materials) and AASHTO (American Association of State Highways & Transportation Officials) latest edition.</p>
13	Environment Specialist	Qualification	<p>The specialists will have: (i) Master’s Degree or higher in environmental sciences/management or related field; (ii) at least 10 years of experience in environmental management, monitoring, and/or impact assessment; (iii) familiarity with the World Bank environmental safeguards requirements and national environmental management procedures; (iv) ability to communicate and work effectively with local communities, contractors, and government agencies; (v) ability to analyze data and prepare technical reports; (vi) ability to regularly visit the sub-project sites; and (vii) proficiency in spoken and written English. Working closely with the Client and</p>

S/No	Title	Experience, Qualification & Responsibilities	
			<p>other relevant personnel and agencies, the specialist will assist in all aspects of the implementation of the project ESMF and subproject ESMPs. The specialist will: (i) Ensure that the steps of the ESMF covering environmental screening and impact assessment are followed by Clients and contractors; (ii) Deliver training, and assist in the preparation of the ESMF procedures for screening and assessing environmental impact, and assist in the preparation of the Environment and Social Management Plans (ESMPs); and (iii) Assist the Client in the public consultations, (iv) to establish and publicize the grievance redress mechanism (GRM) for sub-projects, ensuring that the GRM publicity is appropriate to the scale and complexity of the sub-project and includes, as a minimum, the disclosure of all contact persons for lodging complaints; (v) supervision of ESMP implementation, (vi) Assist the Client to prepare quarterly (during construction) and semi-annual project monitoring progress reports (otherwise) for submission to the World Bank within stipulated period after each reporting period, and (vii) contribute to the PPMS for monitoring and reporting on environmental safeguards actions.</p>
14	Occupational health safety Specialist (OHSS)	Qualification	<p>A minimum of a Bachelor's degree in Occupational Health and Safety, Environmental Health, Public Health, or a related field.</p> <p>A Master's degree in a relevant field will be an advantage.</p> <p>At least 8-10 years of professional experience in occupational health and safety management.</p> <p>Proven experience in large-scale infrastructure or water supply and sanitation projects, preferably in a developing country context.</p> <p>Familiarity with World Bank Environmental and Social Standards (ESS), particularly ESS4 (Community Health and Safety) and ESS2 (Labor and Working Conditions).</p> <p>Experience with risk assessment and management, safety audits, and the development of OHS plans.</p> <p>Certification in OHS (e.g., NEBOSH, OSHA) will be highly desirable.</p> <p>Development and Implementation of OHS Policies:</p> <p>Develop and implement comprehensive OHS management plans, procedures, and guidelines in alignment with World Bank standards and local regulations.</p>

S/No	Title	Experience, Qualification & Responsibilities
		<p>Ensure the integration of OHS considerations into project design, planning, and execution stages.</p> <ul style="list-style-type: none"> •Risk Assessment and Mitigation: <p>Conduct risk assessments and hazard identifications at all project sites.</p> <p>Develop and implement control measures to mitigate identified risks and ensure a safe working environment.</p> <ul style="list-style-type: none"> •Training and Capacity Building: <p>Conduct regular training sessions and workshops for project staff, contractors, and other stakeholders on OHS practices and emergency response procedures.</p> <p>Provide technical support and guidance to project teams on OHS matters.</p> <ul style="list-style-type: none"> •Monitoring and Reporting: <p>Monitor compliance with OHS policies and procedures across all project sites.</p> <p>Prepare regular OHS performance reports, including incident reports, safety audits, and risk assessments.</p> <p>Recommend corrective actions and follow up on their implementation.</p> <ul style="list-style-type: none"> •Incident Investigation and Response: <p>Lead investigations into any work-related incidents or accidents, identifying root causes and recommending preventive measures.</p> <p>Ensure proper documentation and reporting of all incidents as per World Bank and local regulatory requirements.</p> <ul style="list-style-type: none"> •Stakeholder Engagement: <p>Coordinate with local health and safety authorities, project stakeholders, and the World Bank to ensure alignment of OHS practices.</p> <p>Promote a culture of safety and health within the project by engaging with workers and communities.</p> <ul style="list-style-type: none"> •Emergency Preparedness and Response: <p>Develop and maintain emergency response plans and ensure that all personnel are trained and familiar with emergency procedures.</p> <p>Conduct regular emergency drills to ensure preparedness for potential incidents.</p> <p>Deliverables</p>

S/No	Title	Experience, Qualification & Responsibilities	
			<ul style="list-style-type: none"> •Comprehensive OHS Management Plan and related documents. •OHS training materials and records. •Regular OHS performance and compliance reports. •Incident investigation reports with recommended actions. •Emergency response plans and records of drills conducted. <p>Reporting</p> <p>The OHS Specialist will report to the Project Director and work closely with the Environmental and Social Safeguards team, project engineers, and contractors.</p>
15	Social Safeguards Expert	Qualification	<p>The specialists will have Master’s degree in social sciences with at least 10 years of relevant work experience working with national / international consultants, preferably in donor funded projects and government institutes. He/she will have experience of working on the Bank financed projects and fully familiar with the Bank’s Safeguard Policy & Frameworks. He/she will have demonstrated ability to work in a multidisciplinary team and excellent communication skills in spoken and written English. Tasks include: (i) screen subprojects for involuntary resettlement impacts to determine eligibility of the subproject for financing under the project; (ii) for subprojects with involuntary resettlement impacts, prepare Resettlement Plans in accordance with the Resettlement Framework; (iii) assist and supervise detailed design of subprojects to ensure involuntary resettlement impacts are minimized, if not avoided; (iv) based on detailed design, conduct detailed measurement survey and update the Resettlement Plan in accordance with the Resettlement Framework; (v) assist in organizing and conducting consultations with affected people to ensure that the Resettlement Plan have been fully discussed and agreed; (vi) assist Client and field staff in the implementation of Resettlement Plans in the subproject areas; (vii) develop and conduct training modules to ensure proper understanding and implementation of Resettlement Plans; (viii) monitor implementation of Resettlement Plans; and (ix) contribute to the PPMS for monitoring and reporting on resettlement by developing monitoring and evaluation indicators for involuntary resettlement and assisting in the preparation of monitoring reports for involuntary resettlement, (ix) Assist the Client in the public consultations, (x) to establish and</p>

S/No	Title	Experience, Qualification & Responsibilities
		publicize the grievance redress mechanism (GRM) for sub-projects, ensuring that the GRM publicity is appropriate to the scale and complexity of the sub-project and includes, as a minimum, the disclosure of all contact persons for lodging complaints; (xi) supervision of ESMP implementation, (xii) Assist the Client to prepare quarterly (during construction) and semi-annual project monitoring progress reports (otherwise) for submission to the World Bank within stipulated period after each reporting period.

6 Implementation Arrangements

6.1 Commencement and Duration

The Consultant shall commence its services within 3 weeks of the contract signing. Commencement of the services is expected in December 2024.

The consulting assignment is divided into two phases lasting a total of 28 months. Duration of the first phase (design and supervision) is estimated at 4 months (SoP-1), while the second one would last up to 24 months comprising of supervision, based on the project's scope developed for SoP-1 including DNP

6.2 Location

The Consultant shall establish the main office in Quetta in proximity (walking distance) from the Client office. Similarly, the Consultant shall have to establish field offices near construction sites, at a suitable location near the project roads or at the Contractor's compounds.

6.3 Client Input

The Client will facilitate the Consultant to obtain all reports, maps, data, or any other information relevant to the project and available with provincial Irrigation Department or other line departments. The Client will also provide the Consultant with all permissions and approvals needed by the Consultant to obtain (if available) maps, aerial photographs, remote sensing data and images, or to import into Pakistan equipment and supplies needed to enable the consultants to carry out the tasks relevant to the assignment. The client will assist the Consultant and each of its personnel with work permits and such other documents as shall be necessary to enable them to perform their services, and assist in issuance of entry and exit visas, residence permits, and other necessary documents for the expatriate employees of the Consultant and their eligible dependents, required for their stay in Pakistan. Any duties, fees or other port charges on staff or equipment shall not be reimbursed Client.

6.4 Consultant's Input

The Consultant shall allocate sufficient resources and budget to support its team in performing the services, including rental of vehicles, main office and site offices, office equipment, utilities, stationary, computer hardware and software, communication, printing and copying facilities, local and international transport, housing/accommodation, etc. Main office will be fully furnished office space and include a conference room with at least 25 seating places, communication and presentation equipment. The Consultant shall also establish clear procedures for the management, maintenance, and return of the rented vehicles, properties, and equipment.

7. Payment

Phase I of the services (Design) will be lump sum based.

Phase II (Supervision) will be paid based on the actual time consumed during the supervision and contract management phase, including all reimbursable mentioned in 6.4 above.

8. Selection Process:

A consulting firm will be selected in accordance with Quality and Cost Based Selection (QCBS) method set out in the World Bank's Procurement Regulations (Nov 2020) www.worldbank.org/procure.

9. Hiring of Consultancy Services for the Second Phase (40 Million USD) for Road Infrastructure

The Hiring of the consultancy services for the second phase of the assignment will be decided later and will be as per the World Bank's Procurement Regulations (Nov 2020) www.worldbank.org/procure.

Annexure-I: List of Flood-Damaged Roads & Structures**LIST FOR THE DESIGN & SUPERVISION OF 10 MILLION USD**

S.No	DISTRICT	NAME OF SCHEME	DAMAGE (LENGTH IN KM)	BRIDGES/STRUCTURES
1	Jhal Magsi	Black Top Road Nautal To Gandawah District Jhal Magsi	11.4	
2	Quetta	Various Damaged Bridges In Quetta District: Bmc, Batneyabad, Kharotabad, Norzai Kakar Town, Killi Shah Alam Nawakilli, Barezai, Chashma Achozai, Ahmedabad Kuchlak		8