

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

TERMS OF REFERENCE FOR CONSULTANCY SERVICES

CONSULTANCY SERVICES FOR PREPARATION OF ASSESSMENT STUDY, PREPARATION OF DETAILED DESIGNS, PROCUREMENT ASSISTANCE AND SUPERVISION OF WORKS (WATER SUPPLY SYSTEM)

Phase-I: Preparation of Assessment study of selected sub-projects and Review Original Design & make improved Design including Procurement Assistance (03 Months)

Phase-II Construction Supervision & Contract Administration of Works (27 Months)

1. PROJECT BACKGROUND AND INTRODUCTION

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 percent and learning poverty at 75 percent. 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.

Pakistan's economy is currently under severe stress with low foreign reserves, a depreciating currency, and high inflation. Reflecting a consumption-driven growth model, with limited productivity-enhancing investment and exports, strong economic growth has often come at a cost of economic imbalances and frequent macroeconomic crises. Long-term growth of real gross domestic product (GDP) per capita therefore has been low, averaging only around 2.2 percent annually over 2000-22. With high public consumption, economic growth increased substantively above potential in Fiscal-Year 2022 (FY22) that led to strong pressures on domestic prices, external and fiscal sectors, the exchange rate, and foreign reserves. These imbalances were exacerbated by the catastrophic flooding in 2022, surging world commodity prices, tightening global financing conditions, and domestic political uncertainty. Furthermore, distortive policy measures, including periods of informal exchange rate restrictions and import controls, delayed the International Monetary Fund (IMF) Extended Fund Facility (EFF) program, and contributed to creditworthiness downgrades, lower confidence, high yields and interest payments, and the loss of access to international capital markets.

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 percent. 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 n, and Water Supply & Sanitation Schemes sectors bear the brunt of the damage. The provinces of Sindh and Balochistan account for approximately 50 percent and 15 percent of recovery and reconstruction needs, respectively. Table 1 shows the damage, loss, and needs² breakdown by region.

Total Damage, Loss, and Needs in Pakistan²

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 Pakhtunkhwa	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

Source: Government of Pakistan 2022.

* 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.

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

The recently published Country Climate Development Report (CCDR)³ shows that Pakistan’s high vulnerability to climate change is a risk multiplier, compounding its human and economic development challenges. The country consistently ranks among the top ten countries worldwide most affected by climate change.⁴ Extreme weather events have increased in frequency and intensity, impacting ecosystems, people, settlements, and infrastructure. Heat waves, 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 percent more intense than it would have had the climate not warmed by 1.2

¹ Government of Pakistan. 2022. *Pakistan Floods 2022 Post-Disaster Needs Assessment*. Ministry of Planning Development & 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.

³ World Bank Group (2022). Pakistan Country Climate Development Report.

⁴ Germanwatch, Global Climate Risk Index 2021. <https://www.germanwatch.org/en/19777>

degrees.⁵ 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 heat wave 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.

Pakistan is especially vulnerable to flooding—including riverine, flash, glacial lake outbursts, and coastal flooding—and the country regularly experiences large-scale flooding, most notably in 2010 and, more recently, in June 2022. Pakistan faces some of the highest disaster risk levels in the world, ranking 18 out of 191 countries according to the 2020 Inform Risk Index and eighth at risk of flooding. Despite a history of other disasters such as earthquakes⁶, heatwaves, and droughts, floods remain the dominant hazard. Most of the country's population lives along the Indus River, which is prone to severe flooding during the monsoon season. The catastrophic 2010 rainfall flooded one-fifth of the country, affecting 20 million people and claiming 2,000 lives. The World Bank estimates that Pakistan loses, on average, US\$1 billion annually due to flooding⁷. This figure will rise due to climate change and the unprecedented losses experienced during the 2022 floods, which have exceeded the scale of the 2010 monsoon flooding (previously the worst flooding in the country's history). 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 total damage is estimated at PKR 3.2 trillion (US\$14.9 billion), total loss at PKR 3.3 trillion (US\$15.2 billion), and total needs at PKR 3.5 trillion (US\$16.3 billion). The sectors that suffered the most damage are housing at PKR 1.2 trillion (US\$5.6 billion); agriculture, food, livestock, and fisheries at PKR 800 billion (US\$3.7 billion); and transport and communications at PKR 701 billion (US\$3.3 billion). The transport and communications sector has the highest reconstruction and recovery needs at PKR 1.1 trillion (US\$5.0 billion); followed by agriculture, food, livestock, and fisheries at PKR 854 billion (US\$4.0 billion), and housing at PKR 592 billion (US\$2.8 billion). The provinces of Sindh and Balochistan account for approximately 50 percent and 15 percent of recovery and reconstruction needs, respectively (PDNA Report 2022)

The Government of Pakistan has obtained loan from the World Bank and provided as grant in

⁵ World Weather Attribution, 2022. <https://www.worldweatherattribution.org/wp-content/uploads/Pakistan-floods-scientific-report.pdf>

aid to the Government of Balochistan for implementation of the Resilience, Enhancement, and Livelihood Diversification in Balochistan (IFRAP). The IFRAP Project is being implemented by the Government of Balochistan with the financial Assistance of World Bank. The umbrella PC-I of the project has been approved by the ECNEC at a cost of Rs.88000 M (400 M USD). An amount of Rs. 10 M USD equivalent to Rs. 2800 M (at an exchange rate of 1 US\$ = 280 PKR) has been allocated for reconstruction of Water Supply and Sanitation damaged by the flood of 2022.

The PMU-BIWMRD Project (PIU-IFRAP) intends to conduct detailed assessment for reconstruction/rehabilitation of the water supply schemes (damaged by floods in 2022) in the reported districts of Balochistan through a consultancy agreement against the \$10 million allocated share in Umbrella PC-1 for the project titled "Resilience, Enhancement, and Livelihood Diversification in Baluchistan through ranking on the basis of cost effectiveness. The Project Implementation Unit (PIU-IFRAP) has already been established under BIWRMDP headed by the Project Director (Client's Representative).

According to preliminary data, the infrastructure for water, Sanitation, and hygiene (WASH) has been severely damaged. As per preliminary estimates, 20% of water systems in KP have been damaged, 30% in Balochistan, and up to 50% in the hardest hit areas of Sindh and Punjab.

In line with a recent rapid assessment in Balochistan, 63% of respondents see a lack of access to drinking water as a primary concern. Access to drinking water, Sanitation, and hygiene promotion are critical for displaced people, many of whom will be unable to return home for weeks. With people resorting to open defecation and drinking contaminated water, there is a significant risk of disease outbreaks.

The proposed Project to be financed by the World Bank aiming at to support, finance and incentivize Post-Flood Reconstruction, Resilience Enhancement and Livelihood Diversification initiatives of the federal and Balochistan government with a primary and upfront focus on flood-ravaged and resource-constrained province of Balochistan.

1.1. Scope of work:

The consultancy firm will be responsible for the following activities, in accordance with the World Bank's guidelines and criteria:

- Conducting a detailed technical assessment of the damaged water Supply and Sanitation systems in the flood-affected areas
- Developing detailed design engineering for the restoration of the water Supply and Sanitation systems in coordination with the client and in compliance with the World Bank's guidelines and criteria
- Preparing detailed engineering drawings, technical specifications, and bills of quantities, bidding documents for the restoration works in compliance with the World Bank's guidelines and criteria
- Providing technical assistance to the client for the implementation of the restoration works in compliance with the World Bank's guidelines and criteria
- Conducting site visits and monitoring the progress of the restoration works in compliance with the World Bank's guidelines and criteria
- Ensuring that the restoration works comply with the technical specifications and standards as well as the World Bank's guidelines and criteria
- Providing technical training to the client's staff on the operation and maintenance of the restored water Supply and Sanitation systems, in compliance with the World Bank's guidelines and criteria.

1.2. Deliverables:

The consultancy firm will be responsible for delivering the following, in compliance with the World Bank's guidelines and criteria:

- Detailed technical assessment report of the water Supply and Sanitation systems in the flood-affected areas.
- Detailed design engineering for the restoration of the water Supply and Sanitation systems, in compliance with the World Bank's guidelines and criteria.
- Detailed engineering drawings, technical specifications, bills of quantities and bidding documents for the restoration works, in compliance with the World Bank's guidelines and criteria.
- Progress reports on the implementation of the restoration works, in compliance with the World Bank's guidelines and criteria.
- Final report on the completion of the restoration works, in compliance with the World Bank's guidelines and criteria.

The Consultant assignment is divided into two phases lasting a total of 30 months, with the first phase take about three months and the second that would last up to 27 months based on the project's timeframe and circumstance.

The detailed activities for Phase-1 will be based on;

- i) Comprehensive assessment level study for identified Water supply schemes given in Annex 1, to review original design and make improved resilient design as per the prevailing climate change conditions, to identify the underlying causes and develop a plan for restoration /rehabilitation of the damaged infrastructure with estimated cost.
- ii) To carry out detail feasibility level study of mentioned scheme in Annexure 1 with necessary technical engineering studies and prepared technical design, technical specification, cost estimate, bidding documents for implementation with detailed improved design, assisting the client in procurement, bid evaluation and construction planning/supervision arrangement modality.
- iii) Submission of Bidding Documents against schemes/packages simultaneously as per the resilient design (Resilient Design Integration, Bid Packaging Strategy, Timely Bid Submission, Bid Evaluation Support, Contract Negotiation Assistance) etc.
- iv) Preparation of site-specific ESMPs where required that are fully compliant with the World Bank's safeguards requirements, in addition, create O&M Manual for the entire project.

And the detailed activities for Phase-2 will be based on;

- i) Construction supervision and contract administration, including post-construction activities that involves the DLP (Defect Liability Period) over the period of time mentioned at the time of contract.
- ii) Ensuring that quality restoration work is in process and 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.
- iii) Ensure project safeguards management and implementation of environmental and social management plans during implementation phase of the project.
- iv) Monitor and evaluate the contractor's and Employer's implementation of environmental and social management plans, resettlement plans, and other social safeguard measures.
- v) Conduct quality test of all procured and supplied material before installation as per standard procedure.

It is pertinent to mentioned that the assessment report will include all necessary aspects covering technical, institutional and economics, social/environmental assessments, procurement, and financial management etc. required for approval by the Government and the international funding institution including the World Bank.

1.3. Objective:

The objective of this consultancy is to provide technical support for the restoration of water Supply and Sanitation systems in the flood-affected areas, in accordance with the World Bank's guidelines and criteria. The consultancy firm will be responsible for conducting detailed engineering design, providing technical assistance to the client, and supervising the implementation of the restoration works.

1.3.1. Project Duration

The Project intends to hire the consultants for 30 months, 03 months for identification, procurement documentation and engineering design completion and 27 months for supervisory consultancy for implementation and the services described in these Terms of Reference.

The scope of work is not limited to the assigned objectives and can be expanded or reduced as needed.

Schemes details are given in Annex -1 for Water Supply and Sanitation.

2. Scope of Work in Detail:

2.1. Phase-1 Scope of Work for Detail Engineering

The main study components of flood-damaged water Supply and Sanitation infrastructure restoration will depend on site requirement and will include:

Damage assessment: This involves assessing the extent and severity of damage to water Supply and Sanitation infrastructure, including pipes, pumps, treatment plants, solar systems and storage facilities. The damage assessment will provide a baseline for identifying priority areas for repair and replacement.

Water quality assessment: After a flood, water quality may be compromised due to contamination from sewage and other pollutants. A water quality assessment is necessary to identify the extent of contamination and determine if additional treatment is needed.

Planning for restoration: Based on the damage and water quality assessments, a plan should be developed for the restoration of the water Supply and Sanitation infrastructure. The plan should include timelines, cost estimates, and priorities for repair and replacement.

Implementation: The implementation of the restoration plan involves repairing or replacing damaged infrastructure, installing new equipment, and restoring water Supply and Sanitation services. The implementation process should prioritize the most critical areas first.

Monitoring and evaluation: After the restoration work is completed, it is important to monitor the performance of the restored infrastructure to ensure that it is functioning properly and that the water quality is safe. Evaluation is also needed to determine the effectiveness of the restoration efforts and identify areas for improvement.

Capacity building and community participation: It is important to involve the affected communities in the restoration process to ensure that their needs and concerns are

addressed. Capacity building activities may also be needed to train community members in Water and Sanitation management and maintenance.

Overall, the main study components of flood-damaged water Supply and Sanitation infrastructure restoration should include assessments, planning, implementation, monitoring and evaluation, and community participation to ensure a successful restoration process.

2.1.1. Collection of Data

Consultant shall collect available primary (data collected from the source at site) and secondary (any previous data/record available) source data related to the study, as well as documents and recommendations of previous studies carried out for the mentioned schemes. The Consultant shall collect available primary and secondary source data related to the study, as well as documents and recommendations from previous studies conducted for the PHE, Local government, WASA, UNICEF infrastructures and Water supply and Sanitation in the targeted project area and other structures, as well as through discussions with relevant stakeholders, such as Public Health Engineering, Local government department, WASA, District Administrations, Water Supply & Sanitation Schemes, geological survey of Pakistan, UNICEF and other organizations, covering the concept and options of the tasks, if necessary, and criteria for future projects. The consultant will evidently reassess the recorded data, as well as the financial cost of each area under study, and will expound on the primary causes of inadequate facilities. The data should be based on an actual survey with pictorial evidences and coordinates through GIS demarcation in detail drawings, aerial maps in details.

2.1.2 Review of Data

Consultant shall review all the data collected through previous feasibility studies, such as rainfall and stream flow data, climatic and weather data, topographic data, demographic data, hydro geological data, ecological data, demand and supply data or any other data deemed necessary for the feasibility study. Examine and study all of the major structures in the and topographic areas and the water supply distribution systems that are associated with them. The Consultant shall collect the requisite data (primary and secondary) and related information required to review the design, rates, cost estimate, specifications and required land area for the project keeping in view the future expansion.

2.1.3 Additional Data Collection

The Consultants shall collect all additional data for the assessment of the limitations of the existing Water Supply and Sanitation infrastructures as well relevant hydraulic and hydrologic data, groundwater data, soil quality data, water quality data, and so on, all of which are required for conducting studies and designing project components.

2.1.4 Collection of Baseline Data for Future Performance

Collection of baseline data including, social, environmental and groundwater, soil quality, water quality for future monitoring of the impact of Schemes.

2.1.5 Investigations, Surveys and Analysis

The investigations will include and-not limited to the following

Environmental and Social Screening: The study should include an initial screening of the potential environmental and social impacts of the restoration activities. This includes identifying and assessing potential negative impacts such as soil erosion, water pollution, and community health and safety risks.

Environmental and Social Impact Assessment: An Environmental and Social Impact Assessment (ESIA) should be conducted to identify and assess the potential environmental and social impacts of the restoration activities in more detail. The ESIA should include a description of the project activities, an assessment of potential impacts, and recommendations for mitigation measures.

Resettlement Action Plan (RAP): If the restoration activities involve any resettlement of people or businesses, a RAP should be developed to address the impacts on those affected. This includes identifying and assessing the needs of the affected people and developing a plan for their relocation and compensation.

Stakeholder Engagement Plan: A Stakeholder Engagement Plan should be developed to ensure that all stakeholders, including affected communities, are consulted and involved in the restoration activities. The plan should identify all stakeholders, their interests, and the methods and frequency of engagement.

Environmental and Social Management Plan (ESMP): An ESMP should be developed to guide the implementation of the restoration activities, including measures to mitigate potential negative impacts. The ESMP should include a description of the mitigation measures, implementation schedule, monitoring plan, and reporting requirements.

Environmental and Social Monitoring: Environmental and social monitoring should be conducted throughout the restoration activities to ensure that potential negative impacts are mitigated and that the restoration work is implemented in compliance with the ESMP. Monitoring data should be collected and reported on a regular basis.

Field investigations: Field investigations are necessary to assess the extent of damage to the water Supply and Sanitation infrastructure. This may include visual inspections, measurements, and sample collection for laboratory analysis.

Water quality analysis: Water quality analysis is necessary to determine the extent of contamination and the type of pollutants present in the water supply. This analysis may include tests for total coliform and E. coli bacteria, as well as chemical parameters such as pH, turbidity, and dissolved oxygen.

Hydraulic analysis: Hydraulic analysis is necessary to assess the capacity and performance of the water Supply and Sanitation infrastructure, including pumps, pipes, and storage facilities. This analysis may include flow measurements, pressure testing, and hydraulic modeling.

Cost Estimates: A detailed cost estimate is necessary to determine the budget required for the restoration work. This estimate should include the cost of materials, labor, and equipment, as well as any additional expenses such as permits, O&M costs and environmental assessments. Adequate budget provisions must be confirmed based on engineering designs and market rates, including price and physical contingencies as appropriate.

Community surveys: Community surveys are necessary to understand the needs and priorities of the affected population. This may include surveys on water and Sanitation usage, health impacts, and economic and social impacts of the flood.

Environmental assessments: Environmental assessments are necessary to evaluate the potential environmental impacts of the restoration work, such as soil erosion, water quality

degradation, and habitat loss. These assessments may include site inspections, soil sampling, and biological surveys.

Environmental and Social Monitoring: Environmental and social monitoring should be conducted throughout the restoration activities to ensure that potential negative impacts are mitigated and that the restoration work is implemented in compliance with the ESMP. Monitoring data should be collected and reported on a regular basis.

Overall, the investigations, surveys, and analysis for a study on flood-damaged water supply and Sanitation infrastructure restoration should be conducted in the context of an ESMF to ensure that potential environmental and social impacts are identified, mitigated, and monitored throughout the restoration process.

2.1.6 Detailed Feasibility and Design of Proposed studies.

Overall, a detailed feasibility and design study for flood-damaged Water Supply and Sanitation infrastructure restoration should include comprehensive assessments of the damage, water quality, and hydraulic performance of the infrastructure, as well as cost estimation, technical design, environmental and social assessment, stakeholder engagement, implementation plan, and monitoring and evaluation plan. These studies will ensure that the restoration work is effective, efficient, and sustainable, and that potential negative impacts on the environment and local communities are mitigated.

- **Conducting feasibility analysis:** A feasibility analysis would be conducted to assess the technical, economic, environmental, and social feasibility of the restoration plan. This would include an assessment of the capacity of local communities and service providers to participate in and sustain the restoration work.
- **Conducting design analysis:** A design analysis would be conducted to develop detailed engineering plans for the restoration work. This would include detailed designs for Water Supply and Sanitation infrastructure components such as pumps, pipes, and treatment facilities.
- **Preliminary Damage Assessment:** Conduct a preliminary damage assessment to determine the extent and type of damage caused by the flood to the Water Supply and Sanitation infrastructure. The assessment should include visual inspections, data collection, and data analysis to determine the impact of the flood on the infrastructure.
- **Water Quality Assessment:** Conduct a water quality assessment to determine the extent of contamination and the type of pollutants present in the water supply. This will help in determining the level of treatment needed to restore the water quality to safe levels.
- **Technical Design:** Develop a technical design for the restoration work, including the necessary repairs or upgrades to the water supply and Sanitation infrastructure. The design should consider the results of the preliminary damage assessment, water quality assessment, and hydraulic analysis, as well as any environmental and social considerations.
- **Environmental and Social Assessment:** Conduct an environmental and social assessment to identify potential negative impacts of the restoration work on the environment and local communities. The assessment should also identify measures to mitigate these impacts and further details are provided in the section 2.1.7 of this document.
- **Implementation Plan:** Develop an implementation plan for the restoration work, including a detailed schedule and budget, procurement plan, and quality assurance plan.

- **Monitoring and Evaluation Plan:** Develop a monitoring and evaluation plan to track the progress of the restoration work and assess the effectiveness of the mitigation measures. The plan should include monitoring data collection and reporting requirements. More details are provided regarding monitoring and evaluation plan in 2.1.8 section of this document

2.1.7 Environment and Social Safeguards Management

Under this item of work, the consultant shall be required to prepare Environmental and Social Safeguards Assessment aligned with the Project's Environment and Social Management Framework. (ESMF) where required.

- Conduct environmental and socio-economic surveys,
- Preparation of environmental and Social Assessments including preparation of a Resettlement Action Plan if needed; The consultations for the RAP would have been carried out in the Project area and all procedure would be followed according to the existing GOB and World Bank guidelines.
- Identify and assess impacts of the proposed intervention on the environmental and social receptors, and propose relevant mitigation measures according to the mitigation hierarchy.
- Prepare ESMP/ IEE / ESIA / EMMP of each site in accordance with the ESMF of the project, and in line with Government of Pakistan/ Government of Balochistan regulations and laws, and World Bank guidelines, and will get approval for each document and package from Balochistan Environment Protection Agency and Balochistan Forest & Wildlife Department.
- Environmental assessment
 - Environmental assessment
 - Environmental and Social Management Framework
- Social analysis
 - Project background and social setting
 - Social impact assessment
 - Land acquisition and resettlement assessment, framework, and, when needed, preliminary action plan
 - Indigenous people assessment, framework and when needed, preliminary action plan
 - Gender assessment, framework, and, when needed, preliminary action plan
 - Draft Stakeholder Engagement Plan (which also provides guidance on the conduct of stakeholder engagement during the current situation)
- Prepare Environmental and Social Impact Assessment (ESIA) and ESMP

2.1.8 Operational and Maintenance (O&M) Plan

The Consultants are required to submit the O&M plan. The contents of O&M plan shall include:

Management Structure: Define the management structure responsible for the operation and maintenance of the restored infrastructure, including roles and responsibilities of key personnel.

Asset Management: Establish an asset management system that includes routine inspections, repairs, and replacements of equipment and infrastructure to ensure their continued functionality. Adequate consideration is to be given to the management arrangements, and operations and maintenance costs to ensure investments are sustainable from a financial and institutional point of view.

Preventive Maintenance: Develop a preventive maintenance schedule that includes regular inspections and maintenance activities to prevent breakdowns and prolong the lifespan of the infrastructure.

Emergency Response Plan: Develop an emergency response plan that outlines procedures for responding to emergencies, such as flooding or equipment failure.

Training and Capacity Building: Develop a training and capacity building program for staff and community members involved in the operation and maintenance of the infrastructure.

Monitoring and Reporting: Develop a monitoring and reporting system that includes regular data collection and reporting on the performance of the restored infrastructure. This will help to identify any issues early on and allow for timely intervention.

Financial Sustainability: Develop a financial sustainability plan that includes a budget for operation and maintenance costs, as well as strategies for generating revenue to cover these costs over the long term.

Environmental and Social Management: Incorporate environmental and social considerations into the O&M plan, including measures to minimize negative impacts on the environment and local communities.

2.1.9 Financial and Economic Analysis

The analysis should consider both the financial and economic aspects of the project, including the following components:

Cost-Benefit Analysis: Conduct a cost-benefit analysis to determine the economic feasibility of the restoration project. This analysis should include an assessment of the costs associated with the restoration project, such as material and labor costs, and the benefits associated with the restored infrastructure, such as improved access to clean water and Sanitation facilities.

Financial Analysis: Conduct a financial analysis to determine the financial feasibility of the restoration project. This analysis should consider the sources of funding for the project, including grants, loans, and other financing options, and the expected revenues generated by the restored infrastructure.

Revenue Generation: Identify potential revenue streams associated with the restored infrastructure, such as user fees, and estimate the revenue that can be generated from these sources.

Operating and Maintenance Costs: Estimate the operating and maintenance costs associated with the restored infrastructure, including the costs of routine maintenance, repairs, and replacement of equipment and infrastructure.

Financial Sustainability: Develop a financial sustainability plan that outlines how the restored infrastructure will be financially sustained over the long term. This plan should include a budget for operating and maintenance costs and strategies for generating revenue to cover these costs.

Social and Economic Benefits: Identify and quantify the social and economic benefits of the restored infrastructure, such as improved public health and increased economic opportunities.

2.1.10 Final Feasibility Report

- Based on the preceding activities Consultant shall prepare a Detailed Feasibility Report. The report shall include proposed mitigations for potential environmental and social impacts and its indicative budget.
- Project and financial management
- Risk management plan
- Minimum Efficiency Reporting Value recommendations and plan
- Project Delivery Strategy, including Procurement Plan
- ESMPs/EMPs/EIA

2.11 Bidding Documents & Engineer's Estimates

The Consultant shall prepare and submit complete Bidding Documents of the assignment as per World Bank Procurement Regulations November 2020. The document shall include Instructions to Bidders customized and contextualized through Bid Data Sheet, Eligibility, Qualifications and Experience Criteria, General Conditions of Contract customized and contextualized through Special Conditions of Contract, Bid Forms, Bill of Quantities and Technical Specifications, and other sections as warranted under World Bank requirements. Engineer's Estimates will be prepared on prevailing market rates.

2.12 Prepare/Review/ updating of Detailed Design of Intake Structure, Water Treatment Plant, Water Storage Tanks, Solar Systems and All Other Allied Structures & Equipment:

- The Consultant will prepare/review/ update the detailed design of Intake structure, Water Treatment Plant, Conductance Main, Water Works, Distribution Network, Water Storage Tanks, Solar System, approach road and all other allied components in accordance with the International standards & practice.
- The Consultant will review/update the network analysis through computer software and will also review/update the treatment process including all allied equipment.
- The consultant will be responsible for selection and identification of material to be used at water treatment plant for its operation.
- The Consultant will prepare/review/update the general arrangement drawings for main works and all other allied works in accordance with the International Standards & latest codes. To identify the gaps/short comings of detailed Engineering design if prepared and will rectify/improve the short comings necessary to execute the project.

2.2. Phase 2: ToR for Restoration Supervision

The following are the main responsibilities of a consultant during restoration supervision works

- a) The consultant will provide technical support throughout the implementation process. This includes providing of working drawings, reviewing and approving contractor's design submissions and providing input during restoration.
- b) The consultant will be responsible for ensuring that the restoration work is carried out to the required standards and specifications. This includes conducting regular quality control inspections, checking the quality of materials, and ensuring that the restoration work is in accordance with the design drawings.

- c) The supervisory consultant will liaise with stakeholders, including local communities, government agencies, and other relevant parties, to ensure that the Public Health Engineering schemes system design meets the needs of all stakeholders and is compatible with local conditions.
- d) The consultant will be responsible in the Preparation of a bidding dossier with clear technical specifications and other guidelines for contractors.
- e) The consultant will assist the project management in procurement process and contract management.
- f) The consultant will be responsible for verification of interim and final payments against the works to be executed by the contractor during implementation phase and ensure proper contract management.
- g) Following E&S screening, the necessary safeguard instruments will be prepared (e.g., Environmental and Social Impact Assessments, ESMP) and suitable mitigation measures for any significant impacts together with any residual project impacts should be detailed.
- h) Preparation should be based on an appropriate design horizon for each kind of asset, based on known hazard profile and vulnerability, forecasts of population, water use requirements, and project E&S impacts. These assumptions must be suitably validated by implementing comprehensive E&S monitoring.
- i) Ensure the investment is not rated “High” as per the Environmental and Social Risk Classification under the WB ESF.

Detail Description of scope of work for the above ToRs are given below

General Duties and Responsibilities of the Consultants are:

- i. The Consultants will carry out a critical review (if required) of the detailed engineering design prior to the commencement of works to identify anomalies or omissions that constitutes inconsistency in the design and completeness of works. On completion of the review, the Consultant will prepare a report, setting out all findings and recommendations for correcting any deficiency or omissions identified. Notwithstanding these, the Consultant will immediately inform the employer of any deficiency or omission that may have a substantial impact on the Project at the time the defect or omission is uncovered.
- ii. The consultant will administer the civil work’s contracts, make engineering decisions, be responsible for quality assurance, provide general guidance and furnish timely responses to the contractors in all matters relating to the civil works, and ensure that all clauses of the contract agreement between the civil works contractors and Client are adhered to and respected.
- iii. The consultants will advise the Client on all matters relating to the efficient and successful execution of the civil works contracts, and will act at all times to protect the interests of the project and will take all reasonable steps to keep the restoration costs to a minimum, consistent with sound economic and engineering practices; and prior to execution work, will prepare a “Contract Administration and Restoration Supervision Manual” outlining routines and standard operating procedures to be applied in contract administration and restoration supervision, based on sound internationally recognized practice, civil work contract of the project.

A- Pre-Execution

a. Manual, Documents & Procedures

- Prepare Restoration Supervision Manual and get its approval from the Client 15 days prior to execution of work.
- Prepare Contract Administration Manual and get its approval from the Client 15 days prior to execution of work.
- Prepare Self-Evaluation System in accordance with ISO 9001: 2015.
- Prepare Standard Operating Procedures (“SOPs”) for Pre-Requirement to Payment Certificate.

b. Design Review / Cognizance

- Consultant will leave no fault or discrepancy, which may cause for delay of project during its execution.
- The consultant is responsible to check survey data provided.
- To verify the data used in design process by the design consultant.
- Consultant shall perform the design review / cognizance prior to mobilization of the contractors.

c. Quality Assurance

- Prepare Project Quality Plan (PQP), Inspection, and Test Plan linked with the specifications.
- Prepare Mock-up Programme and its implementation report.
- Update online Running Distance (“RD”) wise Check request management system, wherein upload check request / test results with evidence of photographs and video clips, if non-conformance, repeat check request.

d. Management

- Prepare the Pre-Restoration meeting agenda, and conduct the Pre-restoration meeting, record, and distribute the minutes.
- Appoint various members of the Engineer’s restoration supervision team as the Engineer’s Assistants (Resident Engineers, Material Engineers, Inspectors, etc.) and notify the Contractor and the Employer, and approve the Contractor’s Representative.
- Verify whether the Performance Security complies with the form provided in the Contract, whether it is in the correct amount and currencies, and notify the Employer accordingly.
- Ensure there is no high security concerns impeding works.
- Verify whether the bank guarantee for advance payment is in the form specified under the Contract and in the amount and currencies stated in the Particular Conditions of the Contract.

e. Survey

- Consultant will review the survey work prior to commencement of restoration activities.
- The consultant is responsible for joint survey prior to execution of earthwork with the contractor representative and employer representative.
- Inform the employer promptly regarding any variation from the basic survey data received from the design consultant.
- All levels and references will be referred to permanent benchmarks.
- Establish a system for validation of data for both levels and RD’s through Real Time Kinematic Positioning (“RTK”) Rover and DGPS, by employer or 3rd party.

B- During Execution

a. Contract Administration

- Quality control measures should be implemented throughout the detail engineering design phase and implementation phase to ensure that the design meets the required standards and specifications. This may include regular site inspections, testing of materials and equipment, and monitoring of restoration activities.
- The Consultants will make sure that all conditions of Contract are fulfilled.
- Issue instruction to the Contractor to commence the works and record as per the contract agreement.
- Verify whether the bank guarantee for advance payment conforms to the Contract requirements and that the guarantee is valid until the entire advance payment is recovered from the Contractor's payment certificates.
- Interpret the specific provisions of the Contract related to the Employer's obligation to give possession of the Site, and the Contractor's Work Program, assess the contractual consequences of any specific land acquisition issue and advise the Employer on the appropriate mitigation measures.
- If required, determine the Contractor's entitlements to time extensions on the basis of the Contractor's Work Program.
- Determine Delay Damages on the basis of the Work Program and advise the Employer of the relevant contractual remedies if the Contractor's progress is behind schedule.
- A detailed Project Implementation Plan must be prepared for each selected investment with realistic timelines for each stage of preparation and implementation.
- Verify the sources of indices or prices for price adjustment determine a provisional value of an index/reference price until it is published, but, if the index is not published in certain period(s), apply the last available published value.
- Initiate and process variations promptly when it is necessary for the additional restoration of the works.
- Request the Contractor's technical and cost proposal, prior to its determination, as required, consult both parties in all matters in connection to variation work.
- Value variations obtain the Employer's approval of any variation, issue variations under the Contract, keep record of all variations issued under the Contract and report the summary of the variations in the Consultant's Monthly Progress Reports.
- Assess objectively the Contractor's claims and give professional and objective advice to the Employer, consult both parties before determining an extension of time.
- Extension of Time (EOT) – Determine Contractor's claims of EOT on the basis of the Contractor's approved Work Program, the impact of the delay(s) event on the Critical Path and the particulars submitted by the Contractor, and not to act as the Contractor's advisor in this matter.
- Maintain an Events Log since the beginning of Contract.
- Assist the parties establish Dispute Board (DB), provide all necessary information to DB members, and attempt to facilitate amicable settlement of the dispute between the Employer and the Contractor.

b. The Engineer Duties

- The Engineer of the supervision firm has no authority to alter or amend the contract.
- Carry out any subsequent design changes, variation orders and day work orders.
- Obtain the Employer's specific approval before taking any action for determination of extension of time, additional costs and the Contractor's claims for additional time or costs, for all events for which the Employer's express approval is required under the Conditions of Contract.
- Review and approval of the work program
- Review the contractor work program with respect to the resources' efficiency such as equipment's efficiency, manpower efficiency and material supply chain and thereafter advise the contractor accordingly.
- Reviews the Contractor's Work Program and notify the Contractor if the program does not comply with the Contract and advising the contractor to co-opt with the contractual timelines accordingly.
- Monitor the progress against the Work Program and the cash flow estimate and request revisions, if required.
- Conduct regular weekly site meetings and monthly progress review meetings, record and distribute the minutes.
- Assess minimum restoration equipment, plant and machinery requirements, by type and specification, and monitor, keep and regularly update a list of the Contractors' equipment, plant and machinery in order to keep a check on the Contractors' mobilization. Inspect and evaluate the Contractor's establishments including in particular the laboratory facilities to ensure compliance with the terms and conditions of the Contract.
- Keep and maintain daily records of labor, equipment and weather conditions on the site along with records of activity, progress and other events happening on the site having relevance to the works.

c. Payment

- Issue regular notices to the Contractors of intended field measurements, measure the Works, compute the quantities for payment, and determine the amounts due to the Contractor within the period specified in the Contract.
- Establish and maintain throughout the works contracts a structured system of measurement records, supporting documents and calculations for the payment of all BOQs items that is transparent for auditing purposes.
- Issue the interim certificates to the Client for payment to the Contractors having regard to any contractual provisions for advance payment, variation of price, and exchange rate fluctuation etc. Certify the completion of the Activities/Works or parts thereof and process final payments to the Contractors.
- Prepare and maintain the Estimates of Cost of Works to Completion continuously, update the Estimates after each Variation instruction or a Variation Order issue and after each Interim Payment Certificate (IPC), and present the latest Estimate in the Consultant's Monthly Progress Reports.

d. Quality Assurance and Quality Control (QA/QC)

- Discharge fully the Engineer's obligations with respect to approval of materials and workmanship, approval and auditing of the Contractor's Quality Assurance System and the QA Personnel and the compliance testing by the Engineer.

- Inspect quarries and borrow pits, and crushing plants, and order tests of materials and ensure adherence to specifications and approve the sources of materials.
- Carry out independent testing in the field and/or in the laboratory of the "Engineer/Project Manager" and approve or disapprove and certify the works that conform to the specifications and maintain permanent records of results of all the tests made along with all Check Requests.
- Give notice to Contractors of any defects and deficiencies, and issue instructions for the removal and substitution of the improper works, where provided under the contract. If required, order suspension of the work(s) and/or recommend to the Client other recourse available under the Contract.

e. Insurance

- Verify whether the form and substance of the evidence of the Contractor's insurances is satisfactory, whether insurance premiums have been paid and the required insurances are effective on the dates required by the Contract.
- Verify that the terms of the Contractor's insurance policies fully comply with the requirements of the Contract including:
 - Whether both the Employer and the Contractor are adequately covered as insured Principals.
 - Amounts insured and currencies of payment, validity of the insurance policies, special conditions.
 - limits of insurance per event and in aggregate, deductibles, excess, conditions related to locations; and
 - Whether and which subcontractors are covered by the insurances, and whether additional insurances will be required if the Contractor engages new subcontractors.
- Monitor whether the Contractor maintains adequate insurance in the course of performance of the Contract, particularly if the Contractor provides insurances for a fixed period which is shorter than the period required under the Contract.
- Advise the Employer on the appropriate action and contractual remedies in case the Contractor does not perform its insurance obligations in accordance with Contract.

f. Reporting

- Submit monthly, quarterly and semi-annual reports during restoration and annual reports thereafter with separate environmental and social Safeguards Monitoring Reports to the Bank and disclose relevant information from such reports to affected people promptly upon submission.
- Report any actual or potential breach of compliance with the measures and requirements set forth in the Environmental and Social Management Plan ("ESMP"), the Site Specific Environmental and Social Management Plan ("SSEMP") or the Land Acquisition and Resettlement Plan ("LARP") promptly after becoming aware of the breach.
- Report in the Consultant's Monthly Report the work progress against the Contractor's Work Program and the cash flow estimate.
- Regularly monitor and report on the results indicators during the restoration period following the schedule of Project reports

g. Environment, Social, Health and Safety (ESHS)

- Without relieving the Contractors of their obligations under the Contract, review and approve the traffic management and safety plan, and ensure compliance such that the Works are carried out at all times in a safe and secure manner and damage or injury to persons or property is avoided.
- If any unanticipated environmental and/or social risks and impacts arise during restoration, implementation or operation of the Project that were not considered in the EIA, the CEIA, the ESMP, the SSEMP or the LARP, promptly inform the Bank of the occurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan.
- Selected investments shall promote and adhere to international best practice and the requirements of the WBG Environmental, Health, and Safety Guidelines.
- Carry out the following duties related to environmental management with particular reference to the technical requirements of sound environmental standards on the basis of the Environmental Assessment and Review Framework (EARF), the Initial Environmental Examinations (IEEs), and the Environmental Management Plans during restoration: (i) review and endorse site specific Environmental and social Management Plans (ESMPs) for the projects sections, prepared by the Contractors; (ii) ensure that all the environmental mitigation measures required to be implemented are incorporated into the contract documents; (iii) ensure that the Contractors comply with the measures and requirements relevant to the contractors set forth in each IEE and ESMP, and any corrective or preventative actions set out in Environment Monitoring Reports; (iv) conduct environmental monitoring and ensure that the day-to-day restoration activities are carried out in an environmentally sound and sustainable manner; (v) prepare and submit semi-annual environmental monitoring reports on the implementation of the 'Environmental and social Management Plan (ESMP) to the Client within 14 days after a completion of the monitoring period; (vi) Prepare additional environmental impact assessments, if required, compliant with World Bank's Environment and Social Safeguards policies;
- With respect to the prevention of COVID-19, HIV/AIDs and Human Trafficking, monitor that the contractors comply and carry out required actions as provided in the respective contract documents, such as awareness and education of labourers and workers.
- Ensure that the contractor(s) provide a safe workplace for their workforce, supervisory personnel and for members of the public requiring access through the sites in full conformity with Health and Safety regulations.
- Ensure that the contractor(s) comply fully with contractual obligations relating to care of the environment (both specified and legislated) and provide all reports and obtain all permits and permissions required in relation to spoil areas, borrow areas quarries and the like.
- Provide any other specialist services requested by Client under conditions to be mutually agreed ensure that the restoration methods as proposed by the contractor for carrying out the works are satisfactory, inspection of contractor's restoration equipment; and safety of the works, property, personnel, and general public; the schedule of mitigation measures for adverse environmental impacts.
- Review the Site-Specific Health and Safety Management Plan (SSHSM) for the Project that is prepared and submitted by the Contractor. Then, make recommendation to the Employer in relation to the approval of the SSHSM. Communicate the approved SSHSM to all consultants and contractors throughout all project stages. Should any unforeseen events

occur, review the updated SSHSMP and make recommendation to the Employer in relation to the approval of the SSHSMP.

- Prepare the Project Execution Plan, which inter alia, includes how management of SSHSMP is to be addressed throughout all stages of the Project.

h. Records

- Establish and maintain an effective documents management system in the Engineer's office, which provides for separate filing of incoming and outgoing correspondence and documents, as well as the filing by subject matter.
- Ensure the receipt of and maintain as permanent records of all warranties required under terms and conditions of the Contract for materials including their source and equipment accepted and incorporated in the project.

i. Capacity Building

- Develop training programs for supervisory staff (Field Engineers, surveyors and related staff) and develop on the job training on innovative restoration methods, project management and value engineering.

j. Audit

- Provide all necessary assistance to the Employer and external auditors for conducting regular quarterly audits of the measurement records, supporting documents and calculations for the payment of all BOQ items.

k. Completion of Work

- When the works are completed in accordance with the Contract, issue a Taking over Certificate to the contractor(s).

C- Post Execution (*Defect Notification Period*)

- Carry out detailed inspections of the works after notice to engineer for final inspection and performance certificate.
- Prepare detailed recommendation reports / Punch List and improvement since last inspection, for the Employer after each inspection.
- Issue performance certificate and process final statement and final payment certificate thereafter.
- Regularly monitor and report on the results indicators during the DNP following the schedule of Project reports

D- Project Closure

- The consultant is responsible to prepare all reports to satisfy the requirements of the Bank as well as Government of Balochistan.

E- General Responsibility

- a. The Consultants will assist the Client with holding stakeholder outreach meetings in the project area to update local communities with project progress. Specific communications materials will be provided to community members in Urdu and English and other languages as appropriate, describing the project, relevant governing the Bank policies and procedures, benefit entitlements, grievance redress mechanism, HIV/AIDs, COVID-19, safe working conditions, etc. A basic tracking system will be maintained to record consultation activities, the provision of project information, to register concerns and/or complaints received, and to track follow-up action.

It is important to note that the consultancy assignment will be purely based on the Assigned task for a Water Supply and Sanitation system restoration that has been damaged in floods and it should include the following steps:

- **Assessment of the Damage:** to conduct a detailed assessment of the damage caused by the floods. This should include a review of the existing WSS infrastructure, such as the water treatment plant, distribution network, and sewage treatment facilities. The assessment should identify the areas that have been damaged and the extent of the damage.
- **Identification of Repair and Rehabilitation Options:** Based on the assessment of the damage, a range of repair and rehabilitation options should be identified. These options should consider the technical feasibility, cost-effectiveness, and environmental and social impact of each option.
- **Cost Estimation:** To estimate the cost of each option must include the cost of materials, equipment, and labor, as well as any environmental or social safeguards that may be required.
- **Technical Feasibility:** The technical feasibility of each option should be evaluated to determine whether it is feasible to implement the option. This should consider factors such as the availability of materials, technical expertise, and the impact on the environment and surrounding communities.
- **Environmental and Social Impact Assessment:** The impact of each option on the environment and surrounding communities should be assessed to identify any potential negative impacts. This should include an assessment of the potential for soil erosion, water pollution, and impact on wildlife and habitat.
- **Risk Assessment:** The risks associated with each repair and rehabilitation option should be assessed to identify any potential hazards or safety risks. This should include an assessment of the potential for landslides, flooding, or other hazards.
- **Evaluation of Alternatives:** Once the repair and rehabilitation options have been evaluated based on the above criteria, a preferred option should be selected. The selected option should be evaluated against the other options to determine its effectiveness and cost-effectiveness.
- **Project Planning:** Once the preferred option has been selected, a detailed project plan should be developed. This should include a timeline for implementation, a budget for the project, and a plan for stakeholder engagement and communication.

2.3 Deliverables for Phase-1

The consultant will deliver the following documents with satisfactory quality that are required at Client's and World Bank's end for approval.

a. Inception Report

Inception report for Water Supply & Sanitation Schemes infrastructure should provide a comprehensive and detailed plan for the design, construction, and management of the Water Supply & Sanitation Schemes infrastructure project, including a clear understanding of the project's objectives, scope, and expected outcomes with below breakup of pre-requisites.

- **Project Overview:** This section provides a brief overview of the project, including its objectives, scope, and expected outcomes within the timelines mentioned in the deliverables.

- **Site Assessment:** This section provides a detailed assessment of the site, including GIS maps, Geodic coordinates, detail topography, Inventory for structures, soil characteristics, climate, and water availability. It also includes an analysis of any potential environmental and social impacts of the project.
- **Water Supply & Sanitation Schemes Structure Design:** This section outlines the proposed Water Supply & Sanitation Schemes system design, including the selection of appropriate equipment, materials, and technologies, as well as the design of hydraulic structures and water distribution systems.
- **Project Management:** This section outlines the project management plan, including timelines, budgets, procurement processes, and quality control measures.
- **Stakeholder Engagement and Consultation:** This section outlines the engagement and consultation process with stakeholders, including local communities, government agencies, and other interested parties.
- **Financial Analysis:** This section provides a detailed analysis of the project's financial viability, including a cost-benefit analysis, financing options, and revenue streams.
- **Risk Assessment and Management:** This section outlines the risks associated with the project, including technical, financial, environmental, and social risks, as well as measures to manage and mitigate these risks.
- **Monitoring and Evaluation:** This section outlines the monitoring and evaluation plan for the project, including the indicators, methods, and frequency of monitoring and evaluation activities.

b. Assessment Study Report and Detailed Engineering Design.

- The detail engineering design phase of Water Supply & Sanitation Schemes infrastructure studies should provide a comprehensive and detailed plan for the design and construction of the Water Supply & Sanitation Schemes system, taking into account all site-specific factors and requirements. The design should be technically sound, cost-effective, and sustainable, while minimizing the climate change impacts, any potential negative environmental and social impacts.

The main requirements for detail engineering design including preparation of bid and working drawings of each Water Supply & Sanitation Schemes should be equipped with below information:

- A detailed site assessment should be conducted to determine the soil characteristics, topography, hydraulic and hydrologic study, climate, and water quality and availability at the site. This information will help to determine the most suitable Water Supply & Sanitation Schemes system design for the site.
- The Water Supply & Sanitation Schemes structures design should be based on the site assessment and should take into account factors such as Water Supply & Sanitation Schemes method, and water source. The design should also include detailed plans for hydraulic structures and hydrologic requirements, water distribution systems, and drainage systems.
- The selection of appropriate equipment, materials, and technologies for the Water Supply & Sanitation Schemes should be based on the site assessment and the

Water Supply & Sanitation Schemes infrastructure design. The materials should be durable, cost-effective, and suitable for the specific site conditions.

- Detailed bidding drawings and detailing working drawings and design specifications should be prepared for all aspects of the Water Supply & Sanitation Schemes , including hydraulic structures, flood protection embankments, water distribution systems, and drainage systems. The drawings and specifications should be clear and detailed to ensure accurate implementation of the design.
- A detailed cost estimation, Bidding documents, BOQ, Engineer’s Estimate etc should be prepared for the Water Supply & Sanitation Schemes during design phase, including all materials, equipment, labor, and other costs associated with the project. The cost estimation should be based on prevailing market rates, should be accurate and up-to-date information be provided to ensure that the project is financially viable.
- The detail engineering design should take into account the potential environmental and social impacts of the Water Supply & Sanitation Schemes , and appropriate measures should be taken to mitigate any negative impacts.
- The consultant will also demonstrate the results of assessment study in this report. The report will show all relevant engineering, social and environmental considerations given in the studies including but not limited to the following:
 - Assess the viability of existing design and its improvement by keeping in view the climate change impacts.
 - Measures to minimize environmental and social impacts.
 - Economic analysis and assessing the viability of the sub-projects.

3. Schedule of reports for Phase-1

Table-1 Key deliverables and delivery schedule for Phase-1

#	Document	Copies	Due
1	Inception Report	05	15 days after the effectiveness of the Consulting Services Agreement
2	IEE/EIA Report	05	On 25 th of 2 nd month
3	Assessment Report	05	At the end of 2 nd week of 3 rd month
4	Final Detailed Engineering Design Documents with Bidding Documents including bidding/Working Drawings and Technical Specification	05	At the end of last week of 3 rd month
5	Site specific ESMP, IEE / ESIA / EMMP and Resettlement Action Plan	05	At the end of 2 nd week of 3 rd month

3.1 Deliverables for Phase -2 - Construction Supervision

Inception Report: The Construction Supervision Inception Report for Water Supply & Sanitation Schemes , Flood Protection and Dams Infrastructure restoration should be a comprehensive document that provides a detailed roadmap for the construction process,

including planning, execution, monitoring, and reporting, to ensure the successful completion of the project.

Inception Report should include the following basic requirements:

Project Description: The report should provide a detailed description of the Water Supply & Sanitation Schemes , flood protection embankment and dams' infrastructure project, including the project's objectives, scope, and purpose.

Project Organization: The report should outline the organizational structure of the project consultants, including the roles and responsibilities of the team leader, project manager, all relevant key staff, the construction supervisor, and the contractor.

Construction Management Plan: The report should include a construction management plan that outlines how the construction process will be managed, including quality control, safety measures, and risk management.

Schedule: The report should include a detailed schedule that outlines the timeline for each phase of the construction process, including start and end dates.

Budget: The report should include a detailed budget that outlines the costs associated with the construction process, including materials, labor, and equipment.

Resource Allocation: The report should include a plan for resource allocation, including the necessary equipment, materials, and labor required to complete the project.

Stakeholder Communication Plan: The report should outline a communication plan for all stakeholders involved in the project, including how information will be shared and disseminated.

Environmental and Social Safeguards: The report should include an environmental and social safeguards plan that outlines measures to mitigate any potential negative impacts on the environment and local communities.

Reporting and Monitoring: The report should include a reporting and monitoring plan that outlines how progress will be tracked, monitored, and reported throughout the construction process.

Risk Assessment: The report should include a risk assessment plan that outlines how risks associated with the construction process will be identified, assessed, and managed throughout the project.

3.2 Monthly Progress Report:

Monthly Progress Report shall provide PMU/PIU-IFRAP (Client) with a clear and transparent update on the project's progress, challenges, and achievements during the reporting period.

Monthly Progress Report should include the following information:

Project Overview: The report should provide a brief overview of the project, including its objectives, scope, and purpose.

Project Status: The report should include an update on the project's current status, including progress made during the reporting period.

Milestones: The report should list any milestones achieved during the reporting period and any upcoming milestones.

Schedule: The report should include a status update on the project's schedule, including any delays, changes, or adjustments made during the reporting period.

Budget: The report should provide an update on the project's budget, including any changes or adjustments made during the reporting period.

Resources: The report should provide an update on the resources allocated to the project, including equipment, materials, and labor.

Quality Control: The report should provide an update on the project's quality control measures, including any issues or concerns that arose during the reporting period.

Safety: The report should include an update on the project's safety measures, including any incidents, accidents, or near-misses that occurred during the reporting period.

Environmental and Social Safeguards: The report should provide an update on the project's environmental and social safeguards, including any measures taken to mitigate negative impacts on the environment or local communities.

Stakeholder Communication: The report should provide an update on stakeholder communication and engagement during the reporting period, including any issues or concerns raised by stakeholders.

Risks and Issues: The report should identify any risks or issues that arose during the reporting period and outline any measures taken to address them.

Recommendations: The report should include any recommendations or suggestions for improving the project's progress, schedule, budget, or quality.

Quality Assurance Plan (QA/QC Manual):

The consultant must provide the Quality Assurance Plan (QA/QC Manual) 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: The QA/QC Manual should begin with an introduction that explains the 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 QA/QC Manual should describe the organizational structure of the consultant's team, including the roles and responsibilities of each team member.

Quality Control Procedures: The QA/QC Manual should outline 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: The QA/QC Manual should describe 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: The QA/QC Manual should outline 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: The QA/QC Manual should describe 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: The QA/QC Manual should outline 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: The QA/QC Manual should describe the consultant's 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: The QA/QC Manual should include procedures for reporting and addressing any non-conformances or deficiencies that are identified during the project.

Performance Monitoring and Reporting: The QA/QC Manual should outline how the consultant will monitor and report on the performance of the quality control and quality assurance procedures.

Quarterly Progress Report (Physical & Financial):

Consultant should include the below information in the Quarterly Progress Report (Physical & Financial):

Introduction: The report should begin with an introduction that explains the purpose of the document, the scope of the consultant's services, and the standards and regulations that the consultant is adhering to.

Project Overview: The report should provide a brief overview of the project, including its objectives, scope, and purpose.

Physical Progress: The report should include 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: The report should provide 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: The report should list any milestones achieved during the reporting period and any upcoming milestones.

Resources: The report should provide an update on the resources allocated to the project, including equipment, materials, and labor.

Quality Control: The report should provide an update on the project's quality control measures, including any issues or concerns that arose during the reporting period.

Safety: The report should include an update on the project's safety measures, including any incidents, accidents, or near-misses that occurred during the reporting period.

Environmental and Social Safeguards: The report should provide an update on the project's environmental and social safeguards, including any measures taken to mitigate negative impacts on the environment or local communities.

Stakeholder Communication: The report should provide an update on stakeholder communication and engagement during the reporting period, including any issues or concerns raised by stakeholders.

Risks and Issues: The report should identify any risks or issues that arose during the reporting period and outline any measures taken to address them.

Recommendations: The report should include any recommendations or suggestions for improving the project's progress, schedule, budget, or quality.

Conclusion: The report should conclude with a summary of the project's progress during the reporting period and an overview of any upcoming activities or milestones.

Quarterly & Annual Progress Report (Physical & Financial):

The Quarterly and Bi-Annual Progress Report (Physical & Financial) should include the following information:

Introduction: The report should begin with an introduction that explains the purpose of the document, the scope of the project, and the standards and regulations that the project is adhering to.

Project Overview: The report should provide an overview of the project, including its objectives, scope, and purpose.

Physical Progress: The report should include 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: The report should provide 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: The report should list any milestones achieved during the reporting period and any upcoming milestones.

Resources: The report should provide an update on the resources allocated to the project, including equipment, materials, and labor.

Quality Control: The report should provide an update on the project's quality control measures, including any issues or concerns that arose during the reporting period.

Safety: The report should include an update on the project's safety measures, including any incidents, accidents, or near-misses that occurred during the reporting period.

Environmental and Social Safeguards: The report should provide an update on the project's environmental and social safeguards, including any measures taken to mitigate negative impacts on the environment or local communities.

Stakeholder Communication: The report should provide an update on stakeholder communication and engagement during the reporting period, including any issues or concerns raised by stakeholders.

Risks and Issues: The report should identify any risks or issues that arose during the reporting period and outline any measures taken to address them.

Lessons Learned: The report should include a section that outlines any lessons learned during the reporting period, including any improvements that can be made to the project's progress, schedule, budget, or quality.

Recommendations: The report should include any recommendations or suggestions for improving the project's progress, schedule, budget, or quality.

Conclusion: The report should conclude with a summary of the project's progress during the reporting period and an overview of any upcoming activities or milestones.

Table 2. Key deliverables and delivery schedule for Phase-2 Assignment

#	Document	Copies	Due
1	Inception Report	5	75 days after the effectiveness of the Consulting Services Agreement i.e 15 days before completion of Phase-1 (Design Phase of 03 months)
2	Monthly Progress Report (Physical & Financial)	10	10 th of the each month
3	Quality Assurance Plan (QA/QC Manual)	10	Before starting the physical activities
4	Quarterly Progress Report (Physical & Financial)	10	10 th of the first month of following quarter
5	Annual & Bi-Annual Progress Report (Physical & Financial)	10	10 th of the first month of following year and 10 th of following 06 th month
6	Quality Control / Assurance Report	10	After Every 3 months
7	Revised PC-I	10	As and when required based on the inter component adjustment
8	Assignment Completion Report	10	At completion of each sub - project
9	Planning Commission Proforma-IV (PC-IV)	25	At completion of each sub - project
10	Complete inventory of works/activities completed	1	At completion of each sub- project
11	Special Reports including Additional Bidding Documents, Additional Working Drawings, Screening Reports, Design Reports, Working Drawings. Variation Orders, Bid Evaluation Reports, Various Forms.	10	As and when required

Delivery of Documents

The consultant must also provide below documents during design and supervision phase.

Table-3 Delivery of Documents

Documents	No of Sets
Technical Specifications for each payable item for each sub project Comprising of: - Description - Material Requirement	03 Sets

Documents	No of Sets
<ul style="list-style-type: none"> - Construction Requirement/Method of Working (Techniques) - Equipment to be used - Testing and quality control - Method of measurement & payment 	
BID/ Contract Documents Comprising of: <ul style="list-style-type: none"> - Invitation for Bid - Instruction to Bidder - Form of Contract - General Conditions of Contract (GCC) - Particular Conditions of Contract (PCC) - Rate Analysis of Non-Schedule Items 	03 Sets
Performa including: <ul style="list-style-type: none"> - Engineer's cost Estimate - Geo Technical Investigation - Hydrology and Hydraulic study report - Economic analysis 	03 Sets
Back-up calculation of BOQs in MS-Excel or MS-Word	03 Sets
Soft copies of all documents mentioned above in relevant software file extension [3 CDs / DVD each (along with USB)]	

Table-4 Mode of Payment for Services under Phase-1

“A” is the **Contract amount**, excluding of (i) Provisional Sum; (ii) Contingency; and (iii) Indirect Local Tax.

S/No	Activity	Percentage of “A”	Days
1	Inception Report / Pre-Feasibility Report for 05 sub projects	02%	15 days after signing of Consultancy Contract
2	Engineering Design, EIA/IEE and ESMP with Cost Estimates, bidding Drawings and Technical Specifications for 27 Irrigation	3%	45 days after signing of Consultancy Contract
2	Bidding Documents, bidding & Working Drawings, Technical Specifications, BoQ for first lot (prioritized) including 50% sub projects (Lot-I)	5%	45 days after signing of Consultancy Contract
3	Bidding Documents, bidding & Working Drawings, Technical Specifications, BoQ for second lot including remaining 50% sub projects (Lot-II)	5%	90 days after signing of Consultancy Contract
Total		15%	90 days

Mode of Payment for Services under Phase-2

Mode of Payment for Services under Phase-2 (Supervision)

The payment method for services under the remaining 85 % of budget in Phase-2 regarding supervision Phase will be determined by the monthly remuneration of the staff and other

related activities, calculated based on the actual number of man-months and activities consumed by the consultant staff.

Note*

Payment Schedule: Payments will be made on a designated Monthly Payment Date, usually on the First or Last working day of each month. It is important to maintain note that payment operations is conditional to the submission of a statement of expenditure.

Taxes and Deductions: All applicable taxes and deductions will be withheld and remitted according to [Local/National] tax regulations.

Annual Review: An annual performance and compensation review will take place at the end of each year, with any necessary adjustments applied at that time. Adjustments will be based on World bank criteria and Client requirement with subject to Financial Audit.

Contingencies: In the event of premature termination or changes to the scope of work, payment terms may be adjusted in accordance with the terms outlined in the consultant agreement.

Record-Keeping: Accurate records of all payments will be maintained, including payment dates, amounts, and supporting documentation, as required.

Legal and Regulatory Compliance: This payment structure complies with all relevant labor laws, tax regulations, and legal requirements in the jurisdiction where the consulting services are provided.

4. Staffing and Deployment

Table 6 provides a preliminary estimate (subject to change) of the person-months required for the entire assignment. Prospective Project supervisory consultants (PSC) should propose a staffing plan and skill mix necessary to meet the objectives and the scope of work. However, to ensure equitable evaluation of financial proposals, prospective consultants should not reduce the overall time commitment of the key staff.

Firms are encouraged to use national expertise and experience and also to use the Balochistan expertise to the extent possible. If all the required skills are not available within a single consulting firm, a joint venture with other firms should be proposed. Additionally, firms are strongly encouraged to ensure a gender balance across the team, and to ensure appropriate skills and experience in gender issues relevant to Project implementation.

Table 6. Expected Staffing Requirement

No.	Position	Staff Months
A. Key Staff (30 months) for Phase 1 and Phase 2		
1	Team Leader	30
2	Contract Engineer	30
3	Senior Water Supply & Sanitation Expert	27
4	Chief Resident Engineer	27
5	GIS and Data Manager	08

No.	Position	Staff Months
	Sub Total (A)	122
B. Non Key Staff		
B-1 Engineering Design (03 Months) for Phase-1		
7	Water Supply & Sanitation Engineer (02)	06
8	Environmental Engineer/ Environmental Expert (02)	06
9	Sociologist /Social and Community Development Expert (02)	06
10	Geotechnical Engineer (01)	03
11	Junior Engineer (10)	30
12	CAD Operators (02)	06
13	Quantity Surveyors (05)	15
14	Field Surveyors (05)	15
15	Computer Operators (02)	06
	Sub Total (B)	93
B-2 Engineering Supervision for Phase-2 (27 months)		
16	Resident Engineer (3 Positions)	81
17	Quality control Engineer (2 Positions)	54
18	Site Supervision Engineers (10 Positions) for 27 Months	270
19	Site Supervisors/surveyors (10 Positions) 15 months	150
20	Environmental Engineer/ Environmental Compliance Expert (2 Positions) for 12 Months	24
21	Sociologist /Social and Community Organizers (2 Positions) for 12 Months	24
22	Solar Design Engineer (2 Position) for 12 Months	24
	Sub Total (C)	627
B-3- Support Staff (Phase-1 and Phase-2)		
23	IT Specialist/GIS Expert (01)	27
24	Other Staff (06)	180
	Sub Total (D)	207
	Grand Total (A+B+C+D)	1049

4.1 Staffing Requirement details with ToRs and Qualifications

Team Leader:

The **Team Leader** will have overall responsibility for the organization, conduct and delivery of the consultancy services and will work directly with the PMU. He/she will be an engineer with at least a Master's degree in Public Health Engineering and minimum of 15 years of experience in Water Supply and Sanitation infrastructure project and management. He/she will have knowledge of the donor's procurement procedures. Experience in at least one Water Supply and Sanitation sector project of similar nature and magnitude and prior experience in Balochistan.

Role:

- Leading the project team and ensuring the timely and efficient delivery of the project
- Managing client relationships and ensuring client satisfaction
- Ensuring that the project adheres to quality, safety, and environmental standards
- Managing project risks and resolving project-related issues
- Providing technical guidance and oversight to the project team
- Preparing and submitting regular progress reports to the client

Responsibilities:

- Developing project plans, schedules, and budgets
- Coordinating project activities with other departments, stakeholders, and external contractors
- Monitoring project progress and ensuring that the project is completed within the allocated time and budget
- Reviewing project designs, specifications, and drawings
- Ensuring that the project meets quality, safety, and environmental standards
- Conducting site visits and inspections to monitor project progress and quality
- Providing technical guidance and support to the project team
- Managing project risks and resolving project-related issues
- Developing and maintaining good working relationships with clients and stakeholders

Qualifications:

A Bachelor's or Master's degree in Civil Engineering in the related field with at least 15-20 years of experience in water supply and Sanitation projects

- Strong leadership, project management, and communication skills
- Experience in managing projects, teams, and budgets
- Strong technical skills in water supply and Sanitation design, construction, and operation
- Experience in working with government agencies and donors
- Knowledge of international best practices and standards in water supply and Sanitation projects
- Experience in managing risks and resolving project-related issues.

Senior Water Supply & Sanitation Expert:

Project management and technical leadership:

- a. Provide technical leadership in water supply and Sanitation engineering in accordance with World Bank standards and guidelines
- b. Manage project teams and supervise technical staff
- c. Develop project work plans, budgets, and monitoring and evaluation plans
- d. Monitor and supervise the implementation of project activities and ensure that they meet the required quality standards
- e. Prepare technical reports and progress updates to the Project Manager and World Bank counterparts
- f. Liaise with stakeholders and partners to ensure that the project is aligned with their priorities and needs
- g. Provide guidance and support to the project team on technical issues related to water supply and Sanitation engineering.

Design and planning:

- Develop and review technical designs and specifications for water supply and Sanitation infrastructure in compliance with World Bank standards and guidelines
- Conduct feasibility studies and environmental and social impact assessments
- Review and provide input on bidding documents, including technical specifications, drawings, and bills of quantities.

Construction supervision:

- Supervise construction activities and ensure that they comply with the technical designs and specifications
- Conduct regular site visits to monitor progress, quality, and safety of construction works
- Review and approve contractor's work plans, invoices, and payment requests in compliance with World Bank procurement guidelines
- Identify and address construction issues and risks, and provide guidance and support to the project team in resolving them.

Qualifications and experience:

- A Bachelor's degree in Civil Engineering in the related field
- At least 10-15 years of experience in water Supply and Sanitation projects.
- Knowledge of World Bank procurement guidelines, environmental and social safeguards requirements, and technical standards and guidelines for water supply and Sanitation engineering
- Strong project management and technical leadership skills
- Experience in managing and supervising technical staff and project teams

- Experience in designing and reviewing technical designs and specifications for water supply and Sanitation infrastructure
- Experience in construction supervision, monitoring, and quality control
- Strong communication and interpersonal skills, and the ability to work effectively with stakeholders and partners.

Chief Resident Engineer

The Chief Resident Engineer (CRE) is a senior technical expert who leads the construction supervision team and is responsible for ensuring the successful implementation of the Water Supply and Sanitation project. Some of the key responsibilities of a CRE in a supervision consultancy for Water Supply and Sanitation project may include:

Technical leadership:

- Provide technical leadership to the construction supervision team and ensure that all construction works are carried out in accordance with the project design, specifications, and standards
- Review and approve technical designs, drawings, and other technical documents
- Provide technical guidance and support to the project team and contractors.

Contract management:

- Manage the construction contracts and ensure that the contractors comply with the terms and conditions of the contract
- Ensure that the project is completed within the approved budget and timeframe
- Prepare progress reports and other project management reports for the client and other stakeholders.

Quality control and assurance:

- Ensure that the construction works are of high quality and comply with the relevant codes and standards
- Conduct regular site inspections and quality control checks to identify and address any construction defects or issues
- Ensure that all materials and equipment used in the construction works meet the required standards.

4. Stakeholder engagement:

- Build and maintain positive relationships with the client, contractors, and other stakeholders
- Attend project meetings and provide technical input and advice
- Address any concerns or issues raised by the stakeholders in a timely and effective manner.

Qualifications and experience:

- A Bachelor's or Master's degree in Civil Engineering in the related field
- At least 15 years of experience in construction supervision of Water Supply and Sanitation projects
- Experience in managing large-scale construction contracts.
- Strong technical knowledge and expertise in water Supply and Sanitation engineering
- Knowledge of the relevant codes, standards, and regulations for water supply and Sanitation projects
- Excellent communication and interpersonal skills, and the ability to work effectively with project teams, contractors, and stakeholders.

Contract Engineer

The Role & responsibilities of a Contract Engineer in a for the Water Supply and Sanitation project include:

Role:

- Monitoring and supervising the construction work in accordance with the design and specifications
- Ensuring that the contractor follows the contract terms and conditions, including the World Bank procurement guidelines
- Managing contract-related issues, including claims and disputes
- Ensuring that the work is completed on time and within the budget
- Ensuring that the quality of the work meets the required standards
- Preparing and submitting progress reports to the Project Manager and the Client
- Coordinating with other consultants and stakeholders to ensure that the work is integrated with other project components
- Ensuring that the health, safety, and environmental standards are adhered to in compliance with the World Bank guidelines.

Responsibilities:

- Reviewing and approving construction schedules, budgets, and payment requests in compliance with World Bank procurement guidelines
- Reviewing and approving contractor's submittals, including shop drawings, material submittals, and method statements in compliance with World Bank procurement guidelines
- Conducting regular site visits to monitor the construction progress and quality of work in compliance with World Bank environmental and social safeguards requirements
- Reviewing and approving contractor's invoices and payments in compliance with World Bank procurement guidelines

- Resolving contract-related issues and disputes in compliance with World Bank procurement guidelines
- Coordinating with other consultants and stakeholders to ensure that the work is integrated with other project components
- Ensuring that the contractor complies with health, safety, and environmental requirements in compliance with World Bank environmental and social safeguards requirements
- Preparing and submitting progress reports to the Project Manager and the World Bank in compliance with World Bank reporting requirements.

Qualifications and experience:

- A Bachelor's degree in Civil Engineering in the related field
- At least 7-10 years of experience in construction supervision of water supply and Sanitation projects.
- Knowledge of World Bank procurement guidelines, environmental and social safeguards requirements
- Knowledge of construction codes, standards, and regulations
- Strong communication and interpersonal skills
- Ability to manage and coordinate with contractors, consultants, and stakeholders in compliance with World Bank procurement guidelines
- Knowledge of health, safety, and environmental regulations in compliance with World Bank environmental and social safeguards requirements
- Experience in managing construction risks and resolving issues in compliance with World Bank procurement guidelines.

M&E Specialist

- The role of a Monitoring and Evaluation (M&E) Specialist in a World Bank project supervision consultant firm is to ensure that the project meets its objectives and outcomes, and that the implementation process is effective, efficient, and in compliance with the World Bank's standards and guidelines. The M&E Specialist is responsible for designing and implementing a monitoring and evaluation plan for the project, and for providing technical support to the project team in data collection, analysis, and reporting. Some of the key responsibilities of an M&E Specialist in a World Bank project supervision consultant firm may include:
 - Design and implementation of the project's M&E plan:
 - Develop a comprehensive M&E plan for the project that includes clear indicators, targets, and data collection methods
 - Ensure that the M&E plan is aligned with the project's results framework and that it meets the World Bank's requirements for M&E
 - Develop data collection tools and protocols, and provide training to the project team on their use

- Monitor the implementation of the M&E plan and provide technical support to the project team in data collection and analysis.
- Data collection, analysis, and reporting:
 - Collect and analyze data on project activities, outputs, and outcomes, using both quantitative and qualitative methods
 - Ensure the quality and accuracy of data and analyze the findings to identify trends, patterns, and areas for improvement
 - Prepare regular reports on project progress and results, and provide feedback to the project team on their performance
 - Ensure that the project's data management system is effective, efficient, and secure.
- Knowledge management and learning:
 - Facilitate the sharing of knowledge and learning across the project team, partners, and stakeholders
 - Document and disseminate good practices, lessons learned, and success stories from the project
 - Provide technical support to the project team in identifying and addressing capacity gaps related to M&E.
- Qualifications and experience:
 - A Master's degree in Monitoring and Evaluation, Statistics, Economics in the related field
 - At least 7-10 years of experience in M&E of development projects.
 - Knowledge of the World Bank's M&E guidelines and tools, and experience in using them to design and implement M&E plans
 - Strong analytical and data management skills, and experience in using statistical software packages
 - Experience in capacity building and training on M&E
 - Strong communication and interpersonal skills, and the ability to work effectively with project teams, partners, and stakeholders.

Social and Environmental Safeguard Specialists:

Qualification: A Bachelor's or Master's degree in Environmental Science, Sociology, or related field, with at least 5-10 years of experience in conducting social and environmental impact assessments, and developing mitigation plans.

Roles and Responsibilities: Responsible for ensuring that the project adheres to social and environmental safeguards, including conducting social and environmental impact assessments, developing mitigation plans, and ensuring that the project meets environmental and social sustainability objectives.

Electrical/Solar Design Engineer will have Master's degree in Electrical/Mechanical/Agriculture Engineering with preferably 15 years of relevant work experience of

designing, costing and implementation of the Electrical works in solar system distribution network specifically in public health engineering / Water supply and Sanitation distribution network preferably with donor funded projects and have demonstrated ability to work in a multidisciplinary team.

Site Engineers:

Qualification: A Bachelor's degree in Civil Engineering, with at least 5-10 years of experience in construction supervision of water supply and Sanitation projects. Strong technical skills, project management, and communication skills are required.

Roles and Responsibilities: Responsible for supervising the construction of water supply and Sanitation facilities, ensuring adherence to design and quality standards, managing site-related issues, and providing regular progress reports to the project team.

Surveyors:

Qualification: A Bachelor's degree in Civil Engineering or DAE Surveying, with at least 5-10 years of experience in topographical and geotechnical surveys, and preparation of site plans.

Roles and Responsibilities: Responsible for conducting topographical and geotechnical surveys, preparing site plans, and ensuring compliance with design standards.

AutoCAD Draftsmen:

Qualification: A diploma or degree in AutoCAD or Drafting, with at least 5-10 years of experience in preparing detailed drawings and plans using computer-aided design software.

Roles and Responsibilities: Responsible for preparing detailed drawings and plans, ensuring that the designs adhere to quality and safety standards, and providing regular updates to the project team.

Quantity Surveyors:

Qualification: A Bachelor's degree in Civil Engineering or DAE in Quantity Surveying, with at least 5-10 years of experience in preparing bills of quantities, estimating project costs, and monitoring project expenditures.

Roles and Responsibilities: Responsible for preparing bills of quantities, estimating project costs, and monitoring project expenditures, ensuring that the project is completed within budget and timelines.

5. Consultants Office

The Consultant shall establish main office in Quetta in close proximity (walking distance) from the Client office. Similarly, the consultant shall have to establish field office near the site.

6. Facilities from the Client

The Client will facilitate the Consultants to obtain all reports, maps, data, or any other information relevant to the project and available with provincial PHE Department or other line departments. The Client will also provide the Consultants with all permissions and approvals needed by the Consultants 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 Consultants and each of its personnel with work permits and such other documents as shall be necessary to enable them to perform their services; and also assist in issuance of entry and exit visas, residence permits, and other necessary documents for the expatriate employees of the Consultants and their eligible dependents, required for their stay in Pakistan.

Any duties, fees or other port charges on staff or equipment shall not be reimbursable by Client.

Equipment, computers, instruments and furniture etc. required by the Consultants under the Consultancy shall be procured with prior approval of the Client on completion of the project, all these equipment and furniture shall be returned to PHE Department.

Selection Process:

A consulting firm will be selected in accordance with Consultants Qualifications Selection (CQS) method set out in the World Bank's Procurement Regulations (Nov 2020) www.worldbank.org/procure.

7. Other Expenditure Details

a) Design and Supervision Phase (30 months)

S.No	Description	Requirement
1	Rental Vehicle for field survey and supervision (04 Nrs) i/c PoL, Driver and maintenance cost	(4x30) = 120 months
2	Rental Office Building (01 Nr)	30 months
3	Stationary, Photostat and Utilities Charges (LS)	Lump sum
4	Purchase of office equipment, computers, laptop, printers, digital cameras and office furniture etc for Office staff (LS)	Lump sum

Public Health Engineering Schemes

S#	Description.	Name of District	Latitude-N	Longitude-E	Esst: Cost
1	Restoration of WSS Awaran Town, Awaran	Awaran	26.4552440	65.2154450	13.140
2	Restoration of WSS Doleji, Awaran	Awaran	26.4335005	65.3927273	3.216
3	Restoration of WSS Shandi, Awaran	Awaran	26.4637180	65.6262400	2.966
4	Restoration of WSS Barkhan Town & WSS Gravity Flow , District Barkhan	Barkhan	29.8986100	69.5174000	1.368
5	WSS Gravity WSS Murghazi to Mir Pathan, Dera Bugti	Dera Bugti	28.986447	69.384059	2.946
6	WSS Gravity WSS Donani in Dera Bugti	Dera Bugti	28.982716	69.144664	1.590
7	WSS Gravity WSS Lendi in Dera Bugti	Dera Bugti	28.997914	69.095639	0.965
8	WSS Gravity WSS Kordan in Dera Bugti	Dera Bugti	29.604294	68.997308	2.249
9	WSS Gravity WSS Johari/Pitokh in Dera Bugti	Dera Bugti	29.000814	69.060481	2.984
10	WSS Killi Tuni Mat in Sui Dera Bugti	Dera Bugti	28.730230	69.206943	2.151
11	WSS Killi Habib Rahi in Dera Bugti	Dera Bugti	29.073276	69.027690	2.588
12	WSS Killi Pather Nala in Dera Bugti	Dera Bugti	29.216645	69.254262	2.171
13	WSS Killi Kalokushtagh in Dera Bugti	Dera Bugti	29.051838	69.108017	2.568
14	WSS Killi Shamol Marrow in Dera Bugti	Dera Bugti	29.064487	69.232236	0.923
15	WSS Killi Shamsar Mandwani in Dera Bugti	Dera Bugti	29.073860	69.004854	0.915
16	WSS Nasarabad Source No.II Duki	Duki	30.1481250	68.5806830	3.435
17	WSS New Garden Source No.I Duki	Duki	30.1536980	68.5654780	3.688
18	WSS New Garden Source No.2 Duki	Duki	30.1518180	68.5670030	2.864
19	WSS Vot Lahri Fazlo Muhammad Khan Duki	Duki	30.0638670	69.0310570	3.152

20	WSS Killi Banhar Duki	Duki	30.0912260	69.0558560	1.189
21	WSS Killi Faizullah Jan Manzaki Duki	Duki	30.6154100	68.8710340	1.487
22	WSS Killi Gharibabad, Killi Yaro Shaher Duki	Duki	30.1481250	68.5753850	2.815
23	WSS Killi Hosri, Duki	Duki	30.0356500	68.6914800	2.527
24	Gravity WSS Main Bazar Harnai	Harnai	30.1152800°	67.9624128°E	3.924
25	Gravity WSS Killi Garden Killi Sheikhan Harnai	Harnai	30.1022401°	67.9478166°E	3.924
26	Gravity WSS Killi Zarmana to Karwol Harnai	Harnai	30.1277921°	67.9589065°E	9.448
27	Gravity WSS Kot Ali Khan Harnai	Harnai	29.9731535°	68.0856033°E	3.961
28	WSS Khost Bazar Shahrag Harnai	Harnai	30.2257061°	67.5775812°E	3.881
29	Gravity WSS Mian Kach Harnai	Harnai	29.9436594°	68.0610470°E	9.687
30	Gravity WSS Sur Kach Harnai	Harnai	29.9272848.°	68.0748725°E	6.241
31	Gravity WSS Sheen Kach Harnai	Harnai	29.9644386°	68.0928949.°E	6.703
32	WSS Killi Ponga Shahrag Harnai	Harnai	30.1959783°	67.7478683°E	14.605
33	Gravity WSS Killi Shore Aspani Khadrani Marpani Dag Harnai	Harnai	30.0736693°	67.9544829°E	5.503
34	WSS D.A.Yar Phase-1	Jaffarabad	28.2046390	68.2046390	42.335
35	2WSS D.A.Yar Phase-II	Jaffarabad	28.2246500	68.2240100	10.867
36	WSS Khan Garh	Jaffarabad	28.2154590	68.2056200	8.313
37	WSS Rojhan Jamali -I & II	Jaffarabad	28.1918960	68.1558090	8.381
38	WSS Nadir Kot, District Jhal Magsi	Jhal Magsi	28.0860800	67.4533100	6.370
39	WSS Zarain Abad, District Jhal Magsi	Jhal Magsi	28.0811600	67.4590700	8.089
40	WSS Din Muhammad Magsi, District Jhal Magsi	Jhal Magsi	28.6251400	67.3656800	9.842
41	WSS Gandawa Laskani Source, District Jhal Magsi	Jhal Magsi	28.6221400	67.3696800	0.945
42	WSS Gandawa Rahooja Source, District Jhal Magsi	Jhal Magsi	28.5264800	67.4315400	1.828
43	WSS Tajoo Machi, District Jhal Magsi	Jhal Magsi	28.0212900	67.5787200	0.377

44	WSS Drib Machi, District Jhal Magsi	Jhal Magsi	28.0920500	67.5846600	0.704
45	WSS Killi Dasht-e-Mughalzai, District Kalat	Kalat	29.04613	66.58859	2.478
46	WSS Killi Mughalzai, District Kalat	Kalat	29.02230	66.35118	2.478
47	WSS Killi Shesha Deghar, District Kalat	Kalat	29.01200	66.58341	2.478
48	WSS Killi Hindu Mohallah, District Kalat	Kalat	29.02124	66.59173	2.478
49	WSS Killi Ziarat, District Kalat	Kalat	29.05022	66.36201	12.021
50	WSS Kalat Bazar, District Kalat	Kalat	29.01944	66.58974	3.937
51	Restoration of Kachhi Plain Phase-I Water Supply Scheme	Kachhi	28.33 37.26 504" N	68.12 15 44 58"E	24.141
52	WSS Bajoi Kolan Khuzdar	Khuzdar	27.9703510	66.4463620	2.737
53	WSS Khuzdar Town	Khuzdar	27.8123320	66.5987470	3.468
54	WSS Saroona Town	Khuzdar	26.2081440	67.1431230	4.604
55	WSS Karkh Khuzdar	Khuzdar	27.7524330	67.1685296	2.827
56	WSS Kharan Town	Kharan	28'58 79.45	65'43'42.91	1.641
57	WSS Bunap, Kharan	Kharan	28'38'46.90	65'20'40.98'	1.753
58	WSS Killi Mali Said Khan Zarkoon Azad Shaher, Kohlu	Kohlu	30.1481250	68.5806830	14.793
59	WSS Killi Umar Mabtani Marri Bohri, Kohlu	Kohlu	30.1518180	68.5670030	8.732
60	WSS Killi Zarh Khan Marri Tamboo, Kohlu	Kohlu	30.0638670	69.0310570	8.548
61	WSS Killi Mir Nisar Ahmed, Kohlu	Kohlu	30.0912260	69.0558560	4.652
62	WSS Oryani District Kohlu	Kohlu	30.6154100	68.8710340	1.189
63	WSS Naisoba Kohu & WSS Sufaid Kohu	Kohlu	30.148125 30.03565	68.575385 68.69148	1.726
64	WSS Mir Musfta Marri and Master Abdullah Kohlu	Kohlu	30.0356500	68.6579100	1.738
65	WSS Killi Inayatullah Maiwand, Kohlu.	Kohlu	30.0352500	68.6578400	7.198
66	WSS Killa Saifullah Town Source-I & II (02 No)	Killa Saifullah	30.6924870	68.3624880	16.881

67	WSS Marpal Muslim Bagh	Killa Saifullah	30.7017540	68.3605540	1.997
68	WSS Salak Murgha Muslim Bagh	Killa Saifullah	30.4353000	67.3743000	6.112
69	WSS Surgara, Muslim Bagh	Killa Saifullah	31.0220000	67.4949000	3.844
70	WSS Sarana Kan	Killa Saifullah	30.4915000	67.4508000	4.100
71	WSS Muslim Bagh	Killa Saifullah	30.4440000	67.3103000	4.100
72	WSS Muslim Bagh Town	Killa Saifullah	30.5003000	67.4811000	31.268
73	WSS Killi Urgas Babo Qadir Mohallah Muslim Bagh	Killa Saifullah	30.5005000	67.4153000	8.304
74	WSS Killi Pan Kunjughi Gravity Scheme, Mushlim Bagh	Killa Saifullah	30.4803000	67.3541000	8.328
75	WSS Killi Wali Kach Killa Saifullah	Killa Saifullah	30.4803000	67.3541000	7.944
76	PHE Office Killa Saifullah and Muslim Bagh	Killa Saifullah	30.4818 30.702824	68.360385 67.3516	1.000
77	WSS Killi Arambai-II, Tehsil Killa Abdullah	Killa Abdullah	30.4946000	67.4418000	5.032
78	WSS Killi Marawar Syedan-II, Tehsil Killa Abdullah	Killa Abdullah	30.7149250	66.7142370	5.032
79	WSS Killi Machika-II, Tehsil Killa Abdullah	Killa Abdullah	30.7612800	66.6779610	7.896
80	WSS Killi Chori Malak Saleem, Tehsil Killa Abdullah	Killa Abdullah	30.6903620	66.6898200	7.896
81	WSS Killi Loi Kolak, Tehsil Killa Abdullah	Killa Abdullah	30.7141460	66.8000450	5.725
82	WSS Killi Majak, Tehsil Killa Abdullah	Killa Abdullah	30.6956649	66.7645840	5.725
83	WSS Killi Jangal Pir Alizai, Tehsil Killa Abdullah	Killa Abdullah	30.6186800	66.6942700	5.725
84	WSS Killi New Majak-II, Tehsil Killa Abdullah	Killa Abdullah	30.7059200	66.7563100	5.725
85	WSS Killi Machika, Tehsil Killa Abdullah	Killa Abdullah	30.7733300	66.6703400	4.311
86	WSS Killi Marawar Syedan, Tehsil Killa Abdullah	Killa Abdullah	30.7175830	66.7155990	3.593

87	WSS Killi Ali Shah Machika, Tehsil Killa Abdullah	Killa Abdullah	30.7293000	66.6906100	7.896
88	WSS Killi Haji Zareef Machika, Tehsil Killa Abdullah	Killa Abdullah	30.7560900	66.6676200	2.864
89	WSS Killi Machika-III, Tehsil Killa Abdullah	Killa Abdullah	30.7496500	66.6674500	2.864
90	WSS Killi Ziarat, Tehsil Killa Abdullah	Killa Abdullah	30.3072324	66.6801740	1.604
91	WSS Killi Molvi Attaullah & Malik Saleh Muhammad, Tehsil Killa Abdullah	Killa Abdullah	30.7335630	66.6634480	2.832
92	WSS Killi Muhallah Qaseem, NADRA Office Tehsil Killa Abdullah	Killa Abdullah	30.6400900	66.6434610	11.276
93	WSS Killi Anif Nourk Gulistan, Tehsil Gulistan	Killa Abdullah	30.6448900	66.6338670	5.032
94	WSS Killi Baz Muhammad Lajwer, Tehsil Gulistan	Killa Abdullah	30.6428160	66.6341970	7.896
95	WSS Killi Lajwer Mohala Murad Ali, Tehsil Gulistan	Killa Abdullah	30.6741860	66.6971430	5.032
96	WSS Killi Lajwer Mohala Nizam Agha, Tehsil Gulistan	Killa Abdullah	30.6755430	66.6977254	7.896
97	WSS Killi Poladzai Lajwer, Tehsil Gulistan	Killa Abdullah	30.6448900	66.6339870	8.205
98	WSS Killi Masszai, Tehsil Gulistan	Killa Abdullah	30.6448730	66.6334100	7.896
99	WSS Killi Abudl Rehmanzai UC 1, Tehsil Gulistan	Killa Abdullah	30.6381580	66.6333480	11.276
100	WSS Killi Lajwer, Tehsil Gulistan	Killa Abdullah	30.6428160	66.6341970	11.276
101	WSS Killi Lajwer Mohala Abdul Wassy, Tehsil Gulistan	Killa Abdullah	30.6427150	66.6359270	6.244
102	WSS Killi Ghazi Shaheed Daman Lajwer, Tehsil Gulistan	Killa Abdullah	30.6741860	66.6977143	7.975
103	WSS Killi Anif Nourk, Tehsil Gulistan	Killa Abdullah	30.6748970	66.6977879	2.864
104	WSS Killi Shagzai Masszai, Majeran Lajwar, Gulistan Karez2, Tehsil Gulistan	Killa Abdullah	30.6771790	66.6988211	1.414
105	WSS Norag Segai, Gulistan Killa Abdullah	Killa Abdullah	30.6445800	66.6335200	5.032
106	WSS Maizai adda, Killa Abdullah	Killa Abdullah	30.6145670	66.5135430	5.032

107	WSS Haji Gulzar Maizi, Killa Abdullah	Killa Abdullah	30.6145670	66.5135430	5.032
108	WSS Abadul malik Zakirayzi, Gulistan Killa Abdullah	Killa Abdullah	30.6145670	66.5135430	5.032
109	WSS Killi Norak Sulemankhail Gulistan Killa Abdullah	Killa Abdullah	30.6445250	66.6335280	5.032
110	WSS Peer Goth at Liari Town	Lasbela	25.8063220	66.5866570	8.089
111	WSS Pawan Pir Sawai Uthal	Lasbela	25.7088657	66.6573657	5.544
112	WSS Sukan Uthal	Lasbela	26.0080982	66.5316069	5.661
113	WSS Lakhra Booster Station	Lasbela	25.8136323	66.5976450	1.215
114	WSS Hara Moshani Chankar Lakhra	Lasbela	25.9829099	66.3716965	3.326
115	WSS Oba Lakhr 1,2,3 for Chankra	Lasbela	25.942336	66.385453	5.375
116	WSS Mini Damb Winder	Lasbela	25.4109400	66.6683700	2.839
117	WSS Kud Gundacha Seya Goth Bela	Lasbela	26.3676534	66.2391957	9.250
118	WSS Dona Koke Lakhra	Lasbela	25.9531942	66.3746016	3.826
119	WSS Liari Boosting Station	Lasbela	25.7053787	66.4937544	6.671
120	WSS Killi Chanali Loralai	Loralai	30.33'040"	68.10'07.7"	11.579
121	WSS Killi Sardar Gul Muhammad Jogaizai, Loralai	Loralai	30.23'24.0"	68.37'27.5"	11.739
122	WSS Killi Nauroz Shah Bypass Road, Loralai	Loralai	30.22'02.6"	68.37'53.8"	11.739
123	WSS Old Pahari Source to Loralai Town at Oraygai River	Loralai	30.24'20.9"	68.33'04.6"	2.882
124	Loralia Town Municipal Committee line at Pathan Kot River	Loralai	30.21'12.2"	68.35'04.6"	6.449
125	Loralia Town at Oriagai River form Shina Lashta Source to Zangiwai Bridge	Loralai	30.25'31.1"	68.32'03.1"	1.802
126	WSS Killi Turkaman, Mastung	Mastung	29.9054700	66.9488800	7.083
127	WSS Killi Uskoni, Mastung	Mastung	29.6080400	67.0818600	7.083
128	WSS Killi Karez Kalan Pringabad, Mastung	Mastung	29.8782680	66.8682218	2.877
129	WSS Killi Babkani and Killi Malik Abad Mastung	Mastung	29.9060453	66.7502730	6.644

130	WSS Killi Pull Marove Ispilingji, Mastung	Mastung	29.7693100	67.1358900	2.430
131	WSS Killi Babri, Mastung	Mastung	29.9108300	67.0870000	5.468
132	WSS Karez Sour, Ushkoni, Jaded abad Kanak and Killi Pirkanoo, Mastung	Mastung	29.815854,29.60804,29.899358,29.786198,29.791747	66.822921,67.08186,66.652336,66.859806,66.855938	2.455
133	WSS M. Shahi Mastung Town.	Mastung	29.7971970	66.8605050	1.462
134	WSS Drug Town Phase-I	Musakhail	30 51' 25"	70 11" 09"	6.814
135	WSS Karkana Old, Durug	Musakhail	30 49' 52"	70 14" 38"	6.319
136	WSS Gravity Flow Musakhail Town	Musakhail	30 50' 33"	69 46" 53"	2.928
137	WSS Zawar Essot, Musakhail	Musakhail	30 58' 22"	70 01" 11"	3.797
138	WSS Killi Gurgoji Durug	Musakhail	30 47' 39"	70 08" 29"	2.349
139	WSS Killi Molvi Najeebullah Nishpa Tangi Sar, Durug	Musakhail	30 55' 08"	70 06" 24"	8.512
140	WSS Killi Hafiz Noor Khan, Durug	Musakhail	30 89' 19"	70 11" 75"	2.019
141	WSS Killi Inayatullah Tangisar	Musakhail	30 56' 22"	70 06" 32"	1.228
142	WSS Drug Town Phase-II Molvi Abdull Razaq	Musakhail	30 51' 24"	70 10" 48"	1.506
143	WSS Killi Lorkai Raghai Walayat Khan Tangisar	Musakhail	30 55' 32"	70 06" 11"	5.677
144	WSS Killi Salmezai Muskhail	Musakhail	30 58' 18"	69 50" 23"	1.595
145	WSS Shah Nadir Muskhail	Musakhail	31 10' 24"	69 48" 03"	1.595
146	WSS Zari Muskhail	Musakhail	30 44' 59"	69 45" 21"	1.595
147	WSS Haji Fateh Mohallah Musakhail Town	Musakhail	30 51' 32"	69 49" 20"	1.595
148	WSS Sarvar Jan Sheikh Muskhail	Musakhail	30 52' 06"	69 50" 56"	1.595
149	WSS Karkana Elahi Bakhsh Durug	Musakhail	30 50' 02"	70 15" 38"	1.595
150	WSS Rind Colony, Rarasham Town.	Musakhail	30 21' 46"	69 51" 20"	1.595
151	WSS Zari Band	Musakhail	31 13' 28"	69 49" 38"	1.572

152	WSS Rest House Muhallah Musakhail	Musakhail	30 51' 45"	69 49" 13"	1.572
153	WSS Karam Shah, Rarasham.	Musakhail	30 23' 37"	69 51" 53"	1.115
154	WSS Killi Musfta Kamal Khan Kingri.	Musakhail	38 25' 07"	69 48" 37"	1.910
155	WSS Garbi Nath Tehsil Durug	Musakhail	30 52' 35"	70 08" 57"	2.220
156	WSS Nekhal Khadozai	Musakhail	30 52' 60"	69 49" 52"	1.537
157	WSS Nawasabad Durug	Musakhail	30 56' 22"	70 06" 32"	8.204
158	WSS Rarasham Town.	Musakhail	30 21' 52"	69 51" 35"	1.314
159	WSS Juma Khan Umarani, Naseerabad	Naseerabad	28.25'42"	68.01'25"	44.191
160	WSS Sher Muhammad Umrani, Naseerabad	Naseerabad	28.25"43"	68'00'00"	31.072
161	WSS Jan Muhammad Mengal, Naseerabad	Naseerabad	28.26"28"	68'01'13	38.109
162	WSS Ghulam Nabi Marri, Naseerabad	Naseerabad	28.25'28"	68.01'09	16.495
163	WSS Mir Wah Tehsil Tamboo, Naseerabad	Naseerabad	28.25'59"	68.00'57"	31.072
164	WSS Manjoo Shoori Tehsil Tamboo, Naseerabad	Naseerabad	28.25'27"	68.01"03	44.191
165	WSS Killi Jamaldini	Nushki	29'24'49	65'57'11	8.499
166	WSS Killi Sahib Zada	Nushki	29'38'22	65'38'23	7.157
167	WSS Killi Ahmed Wal Kohezai	Nushki	29'32 56	66'1'56	4.480
168	WSS Sangeen Daak	Nushki	29'10'7	65'40'11	6.496
169	WSS Killi Darzi Chah	Nushki	29'30'01	66'28'08	9.084
170	WSS Killi Kohezai Ahed Wal	Nushki	29'38'22	65'38'23	4.932
171	WSS Murad Ali Kishingi	Nushki	29'25'44	65'57'58	4.932
172	WSS Killi Qabool	Nushki	29'33'06	66'00'56	3.363
173	WSS Killi Zaro Chah	Nushki	29'15'24	65'49'13	3.363
174	WSS Killi Niyam Durgi	Nushki	29'32'34	66'01"01	3.363
175	WSS Killi Reco	Nushki	29'24'49	65'57'11	2.509

176	WSS Naseerabad Qazi Abad	Nushki	29°38'22	65°38'23	1.742
177	WSS Garibabad Ward No-3	Nushki	29°32'56	66°1'56	1.742
178	WSS Garibabad Bus Adda	Nushki	29°10'7	65°40'11	1.742
179	WSS Qaziabad Ward No 2	Nushki	29°30'01	66°28'08	1.742
180	WSS Irrigation Collony	Nushki	29°38'22	65°38'23	1.742
181	WSS Killi Nokjow , Mirza Khan, Ahmed Wall and Naik Muhammad Mall	Nushki	29°25'44	65°57'58	2.588
182	WSS Killi Batto	Nushki	29°10'7	65°40'11	1.066
183	WSS Killi Badini Nushki	Nushki	29°25'44	65°57'58	1.044
184	WSS Killi Bakra Landi Mall & Killi Mangal-I	Nushki	29°33'06	66°00'56	1.051
185	WSS Killi Sahibzadi Nushki	Nushki	29°15'24	65°49'13	1.378
186	UF PInant Anajh Mandi Dera Allah Yar Jaffarabad	Provincial	28° 22' 37" N	68° 21' 02" E	2.326
187	UF PInant Nazim Office Dera Allah yar Jaffarabad	Provincial	28° 22' 37" N	68° 35' 05" E	2.326
188	UF PInant Civil hospital Dera Allah Yar Jaffarabad	Provincial	28° 37' 29" N	68° 35' 05" E	2.326
189	UF PInant Murad Colony Dera Allah Yar Jaffarabad	Provincial	28° 37' 09" N	68° 33' 86" E	2.326
190	UF PInant Tehsil Colony Dera Allah Yar Jaffarabad	Provincial	28° 22' 37" N	68° 21' 22" E	2.326
191	UF PInant Khan Garh Jaffarabad	Provincial	28° 22' 36" N	68° 21' 29" E	2.326
192	UF PInant Rojhan Jamali Jaffarabad	Provincial	28° 32' 40" N	68° 13' 14" E	2.326
193	UF PInant PHE office Dera Allah Yar Jaffarabad	Provincial	28° 21' 30" N	68° 18' 03" E	2.326
194	UF PInant Kashmir Kot Jaffarabad	Provincial	28° 29' 46" N	68° 26' 58" E	2.326
195	UF PInant Goth Muhammad Hassan Jamali Jaffarabad	Provincial	28° 14' 13" N	68° 42' 85" E	2.326
196	UF PInant Abdul Ghafoor Lehri Jaffarabad	Provincial	28° 38' 18" N	68° 42' 63" E	2.326
197	UF PInant Ismail Challgari Jaffarabad	Provincial	28° 30' 09" N	68° 19' 08" E	2.326
198	UF PInant Noor Muhammad Nawara Jaffarabad	Provincial	28° 30' 01" N	68° 29' 06" E	2.326

199	UF PInant Lal Baksh Jattak Jaffarabad	Provincial	28° 24' 27" N	68° 21' 08" E	2.326
200	UF PInant Ghulab Khan Khoso Jaffarabad	Provincial	28° 32' 09" N	68° 11' 18" E	2.326
201	UF PInant Wapda Colony Naseerabad	Provincial	28° 37' 21" N	68° 09' 56" E	2.326
202	UF PInant Govt Girls School Joda Khan Joyo Naseerabad	Provincial	30° 32' 40" N	69° 03' 05" E	2.326
203	UF PInant WSS Juma khan Umrani Naseerabad	Provincial	30° 31' 34" N	69° 11' 05" E	2.326
204	UF PInant Village Shezada Khan Umrani Naseerabad	Provincial	30° 33' 40" N	69° 03' 05" E	2.326
205	UF PInant WSS Changezi Khan sasoli Naseerabad	Provincial	30° 41' 40" N	69° 13' 11" E	2.326
206	UF PInant WSS Goth Majeed Lehri Naseerabad	Provincial	30° 32' 40" N	69° 03' 05" E	2.326
207	UF PInant WSS Mir gul mossiani Naseerabad	Provincial	30° 72' 55" N	69° 15' 55" E	2.326
208	UF PInant WSS Aziz Abad Jamali Naseerabad	Provincial	30° 06' 40" N	69° 71' 97" E	2.326
209	UF PInant WSS Manjoo Shori Naseerabad	Provincial	30° 98' 62" N	69° 61' 06" E	2.326
210	UF PInant WSS gulam Nabi Marri Naseerabad	Provincial	30° 36' 57" N	67° 06' 10" E	2.326
211	UF PInant Goth Bashir Khan Khosa Sohbatpur	Provincial	28° 51' 78" N	68° 54' 37" E	2.326
212	UF PInant Haji Hazar Khan Khosa Sohbatpur	Provincial	28° 11' 15" N	68° 51' 90" E	2.326
213	UF PInant Muhammad Khan(Musharaf Khosa) Sohbatpur	Provincial	28° 16' 31" N	68° 41' 12" E	2.326
214	UF PInant Ghulam Rasool Jiani Sohbatpur	Provincial	28° 71' 22" N	68° 22' 21" E	2.326
215	UF PInant Molvi Qadir Bakhsh Sohbatpur	Provincial	28° 51' 78" N	68° 34' 88" E	2.326
216	UF PInant Ahmed Nawaz Khosa Sohbatpur	Provincial	28° 32' 33" N	68° 65' 15" E	2.326
217	UF PInant Khawand Bakhsh Khosa Sohbatpur	Provincial	28° 14' 43" N	68° 41' 76" E	2.326
218	UF PInant Naseer Ahmed Khosa Sohbatpur	Provincial	28° 09' 52" N	68° 54' 98" E	2.326
219	UF PInant Habib-ur-Rehman Sohbatpur	Provincial	28° 66' 01" N	68° 04' 29" E	2.326
220	UF PInant Haji Yar Muhammad Sohbatpur	Provincial	28° 29' 59" N	68° 03' 31" E	2.326
221	UF PInant Near Nazim House JhalMagsi	Provincial	28° 15' 01" N	67° 41' 06" E	2.326

222	UF PInant Panjuk JhalMagsi	Provincial	28° 38' 26" N	67° 81' 61" E	2.326
223	UF PInant Saif abad JhalMagsi	Provincial	28° 08' 15" N	67° 11' 41" E	2.326
224	UF PInant Chukhi village JhalMagsi	Provincial	28° 28' 16" N	67° 45' 76" E	2.326
225	UF PInant Hathyari JhalMagsi	Provincial	28° 09' 01" N	67° 41' 06" E	2.326
226	UF PInant Mohalla Qazi JhalMagsi	Provincial	28° 21' 26" N	67° 88' 67" E	2.326
227	UF PInant Khari Village JhalMagsi	Provincial	28° 72' 15" N	67° 07' 21" E	2.326
228	UF PInant Gajan JhalMagsi	Provincial	28° 33' 16" N	67° 13' 16" E	2.326
229	UF PInant Muslimbagh	Provincial	30° 33' 16" N	69° 13' 19" E	2.326
230	WSS Killi Murgha Zakaryazai	Pishin	30.6915020	67.4186920	6.126
231	WSS Kaleem Shah Killi Haji Basoo	Pishin	30.5883210	66.9950670	12.937
232	WSS Killi Taimor Shah Sharan	Pishin	30.6656800	67.3281570	15.209
233	WSS Hameed Abad	Pishin	30.6904580	67.1261101	2.588
234	WSS Qila Vila Barshor	Pishin	30.8662200	67.3382226	3.443
235	WSS Killi Dub Khanzia Pishin	Pishin	30.7487550	67.1394640	1.912
236	WSS Killi Manzari Kakazi Hurmazai	Pishin	30.7285400	66.2282550	7.570
237	WSS Killi Khanozai Town,	Pishin	30.6154177	67.3267135	2.522
238	WSS Killi Balozai,	Pishin	30.6430210	67.2966700	4.275
239	WSS Killi Rud Malazai,	Pishin	30.4395035	67.1718860	5.241
240	WSS Killi Yaro,	Pishin	30.4811103	66.9781276	6.381
241	WSS Killi Sharan,	Pishin	30.5375432	67.2026305	15.318
242	WSS Killi Tharatha No.1	Pishin	30.5933960	67.0310830	2.045
243	WSS Killi Manzari Kakazi Hurmazai	Pishin	30.7285300	66.8367690	1.242
244	WSS Killi Niganda Pishin	Pishin	30.6073117	67.2285550	3.594
245	WSS Rest House Pishin	Pishin	30.9740950	66.9961310	7.570

246	WSS Asmat Tareen Killi Dub Khanzai Pishin	Pishin	30.7231230	67.0785470	12.937
247	WSS Killi Dilsora	Pishin	30.7566230	67.5785480	1.166
248	Gravety Flow WSS Bagh Ragh Barshure	Pishin	320.8688400	67.1614890	12.945
249	WSS Jabbar Killi Sharen UC Margha Zakeryazi Pishin	Pishin	30.6591450	67.3298320	10.158
250	WSS for GGH School Faizabad, Sharen, UC Margha Zakeryazi Pishin	Pishin	30.6610600	67.3344720	10.158
251	WSS Dasht- E- Shahbaz Gwargo, Panjgur	Panjgur	28 28 25.54	65 10 94.94	0.700
252	WSS Dazi, Panjgur	Panjgur	26 98 03.98	64 13 72.85	2.858
253	WSS Bonistan, Panjgur	Panjgur	26 42 28.07	63 57 32.75	1.372
254	WSS Killi Shah Nawaz	Quetta	30.3025189	66.8548783	10.968
255	WSS Baba Jan Town	Quetta	30.3025511	66.8473214	7.365
256	WSS for Boys Middle School and Killi Ragi Nasran	Quetta	30.3021090	66.8473830	16.466
257	WSS Killi Malazi Nasran-I	Quetta	30.2322549	66.9248870	8.507
258	WSS Killi Malazi Nasran-II	Quetta	30.2314700	66.9584770	8.507
259	WSS Killi Shahi Karez, Quetta	Quetta	30.1262600	66.2541870	11.249
260	WSS Killi Nohisar I & II Quetta.	Quetta	30.2406020	66.8872850	17.014
261	WSS Killi Gul Muhammad	Quetta	30.2423210	66.9832510	15.872
262	WSS Haji Nawab Killi Haji Barkat Aghbarg Quetta	Quetta	30.2125810	66.8336270	7.162
263	WSS in Hanna Urak Vally	Quetta	30.3523210	66.9835221	2.435
264	1 No Bore of WSS Karak	Quetta	30.2423580	66.9822200	0.301
265	3 No Bores of Nawa Killi area	Quetta	30.6587900	66.9815800	0.904
266	3 No Bores of Kuchlak	Quetta	30.2426220	66.9858470	0.904
267	WSS Jamia Musjid Killi Kotwal	Quetta	30.2325260	66.9854870	6.414
268	WSS Sumangli Housing Scheme, Quetta	Quetta	30.3054800	66.3692510	15.252
269	WSS Killi Sumangli Departmental Scheme	Quetta	30.2654800	66.9887450	15.000

270	WSS Eman City I & II	Quetta	30.2548900	66.9825180	17.014
271	WSS Killi Umer Quetta	Quetta	30.2365400	66.9821510	16.679
272	WSS at Shah Nawaz Mill Colony, Quetta	Quetta WASA	30.1004803	66.9803270	6.876
273	WSS at Girls College Brewery Road, Quetta	Quetta WASA	30.1888734	66.9614691	6.876
274	WSS at Karkhasa -K5 Quetta	Quetta WASA	30.1793871	66.9372219	4.843
275	WSS at Karkhasa -K1 Quetta	Quetta WASA	30.1872505	66.9486391	4.843
276	Kasi Abad	Quetta WASA	30.1744672	66.9451851	5.323
277	Restoration of Dasht Well Field WASA	Quetta QWESIP	30.1877560	66.9493660	23.332
278	WSS Sikander Khan Khoso, District Sohbatpur	Sohbat pur	30.2268820	67.1202220	16.237
279	WSS Village Abdul Rasheed, District Sohbatpur	Sohbat pur	28 33 56 5 " N	68 33 27.68 E	16.927
280	WSS Jia Khan (Kandi), District Sohbatpur	Sohbat pur	28 36 56 " N	68 30 47" E	3.943
281	Construction of Canal Water Treatment System, District Sohbatpur	Sohbat pur	28 36 56 " N	68 30 47" E	705.000
282	WSS Sibi, District Sibi	Sibi	29.6242570	67.8897420	13.524
283	Kach Kocha To Lehri , District Sibi	Sibi	29.5737740	67.8859200	13.524
284	WSS Sibi, Tube well No. 1 Nari Road, District Sibi	Sibi	29.5669430	67.8785750	54.923
285	WSS Sibi Town, District Sibi	Sibi	29.0416720	68.2249330	21.875
286	WSS Killi Mula Qamar ud din, Basima	Washuk	28.2199327	65.2923.26452	4.688
287	WSS Kill Nawab Khan, Basima	Washuk	28.2199327	65.2923.26452	4.688
288	WSS Killi Barkat Basima	Washuk	28.2199327	65.2923.26452	4.202
289	WSS Killi Noor Muhammad	Washuk	28.2199327	65.2923.26452	1.659
290	WSS Killi WSS Molvi Abdul Haq Damag, Basima	Washuk	28.2199327	65.2923.26452	4.202
291	WSS Mashkail Town	Washuk	27.5552100	62.6455300	20.837

292	WSS Lagdasht, Mashkail	Washuk	27.5558110	62.5455140	4.449
293	WSS Sodagan. Mashkial	Washuk	27.5641300	62.5136000	4.449
294	WSS New Jangian I, Washuk	Washuk	28.2755574	64.4932332	2.543
295	WSS New Jangian II, Washuk	Washuk	28.3370440	64.4948061	2.543
296	WSS Mengalbad Hurmagi, Washuk	Washuk	28 20 52.60	64 21 34.60	2.543
297	WSS Killi Haji Abdul Wahid Hurmagi, Washuk	Washuk	28.1837030	64.3236340	2.543
298	WSS Washuk Town	Washuk	27.7132140	64.8391010	3.037
299	WSS Killi Sher Zaman Garda Babar	Zhob	31°13'27"N	69°35'28"E	1.713
300	WSS Zhob Town	Zhob	31°18'21.98"N	69°38'7.33"E	19.317
301	WSS Killi Walma M.Ilyas Zhob	Zhob	31°18'46.89"N	69°22'32.23"E	1.478
302	WSS Killi Sheikhan Zhob	Zhob	31°27'29.19"N	69°36'33"E	1.713
303	WSS Killi Nasrullah Murgha Kibzai	Zhob	31°27'29.19"N	69°36'33"E	0.853
304	WSS in Tehsil Sinjavi, District Ziarat	Ziarat	30°15'44"	68°16'41" E	10.870
305	WSS Dola Uch Wani, Killi Mamozan , Killi Shaheed Babo, Killi Haji Nasrullah Dotani, Sinjavi , District Ziarat	Ziarat	30°27'59"	67°35'25"	2.317
	G.Total:				2547.17