

CONSULTANCY SERVICES

FOR DESIGN, CONSTRUCTION SUPERVISION & CONTRACT MANAGEMENT FOR
CIVIL WORKS - PHASE 2



TERMS OF REFERENCE

September 2019

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TERMS OF REFERENCE

1. PROJECT BACKGROUND

Karachi, an ethnically and linguistically diverse megacity with rapid population growth, is the economic centre of Sindh Province. Karachi has an estimated population of 22-25 million, accounting for almost half of the entire provincial population. It is the main seaport and international trade hub of the country, and a powerhouse in terms of manufacturing employment. Migration from other parts of the country is the primary driver of population growth.

A detailed Karachi City Diagnostic was conducted by the World Bank to provide a multi-sector assessment of the infrastructure, service delivery and institutional gaps of the city. The Diagnostic, based on the framework of improving prosperity, liveability and social inclusion, found that the complex political economy and institutional fragmentation within Karachi, have led to poor liveability indicators for all segments of the population. The Diagnostic showed that to close its urban infrastructure gaps, Karachi requires large investments (estimated at about US\$10 billion over the next ten years) along with substantial institutional development and policy reforms.

The Government of Sindh (GoS) and the local governments are keen to implement interventions that would have visible and high impact results to build confidence between government and citizens, while setting the stage and platform for a longer term and sustained action. A project focused on neighbourhood improvement investments and enhancing citizen services will provide the catalyst needed to build consensus and improve citizen confidence. Targeted improvements in visible, high-impact and low-hanging improvements to public spaces for example, if properly designed and managed, are a vital pathway towards inclusive urban development in a currently segregated city.

The GoS (the Client) has received financing from the World Bank toward the cost of the Karachi Neighborhood Improvement Project. Project Implementation Unit (PIU), working under the Planning and Development Department GoS; is functioning as the Implementation Agency for the Project, intends to procure consultancy services for Design, Construction Supervision & Contract Management and for Civil Works – Phase II of the Project.

2. PROJECT DESCRIPTION

The Project aims to enhance public urban spaces in selected neighborhoods in Karachi and improve the capacity of local governments such as KMC and DMCs. Component 1 of the project, titled “Public Spaces and Mobility Improvements in Selected Neighborhoods” will finance urban upgrading works to improve the quality of life in selected commercial and residential neighborhoods. Two neighborhoods in Karachi city have been identified by the GoS and are located within:

- (i) Saddar downtown area; and
- (ii) Korangi-Malir Districts.

Works financed in these areas will be investments that are visible to the public and enhance usage and satisfaction with neighborhood improvements, such as, but not limited to: improvements in food streets,

markets and bazaars; community amenities and public toilets; improved paving for sidewalks, pedestrian crossings and roads; street lighting, landscaping, street furniture including solid waste containers and bins, or wayfinding signs; playgrounds, sports fields, or community centers; reorganized street parking or improved bus facilities; repaving roads with rehabilitation of selected underground network; reorganizing parking at selected locations; and better street crossings at appropriate locations.

Currently, Karachi Neighborhood Improvement project (KNIP) is executing a 4-year project since June 2017, focusing on public space enhancement in targeted neighborhoods of Old town Saddar, Malir and Korangi. Under phase 1 KNIP is implementing following sub-projects which are under progress:

- a) Redevelopment of Educational and Cultural Zone in Saddar downtown area;
- b) Rehabilitation of Khokhrapar Road from Saudabad Chowrangi to Thaddo Nallah Bridge including Dualizing of Bridge, Khokhrapar Malir;
- c) Rehabilitation of 9000 Road from Coast Guard Chowrangi to Fishermen Village Korangi.

Project Implementation Unit (PIU) Karachi Neighborhood Improvement Project working under the Planning and Development Department GoS; is functioning as the Implementation Agency for the Project, intends to procure Consultancy Services for Engineering Design, contract management, Environmental and social safeguards and construction supervision for civil works for Phase 2.

The sub-projects are identified based on following considerations:

- i. Urban Space enhancement themes;
- ii. Higher number of beneficiaries;
- iii. Physical connections with phase 1 interventions;
- iv. Pedestrian Linkages of Important public spaces within and with future BRT stations, where appropriate.

3. PROJECT NEIGHBORHOOD AREAS & PROPOSED SUB-PROJECTS UNDER PHASE 2

The Prioritization process for sub-project selection includes (i) project name and description, (ii) project rationale and justification with reference to the Urban Design Scheme, (iii) project maps with boundaries and concept schemes, (iv) relevant design and spatial analysis and cost benefit analysis of the proposal, (v) socio-economic analysis and cost benefit analysis, (vi) identification of social and environment safeguard issues (i.e. requirements for acquisition and resettlement, land ownership, etc.) that will enable the Client to conduct safeguard screening and design of resettlement programs and (vii) preliminary cost estimates.

The Client with the assistance from Stakeholders and Civil Society members has initially identified following potential interventions in targeted neighborhood under which many sub-projects have been identified and selected as priority package:

Old Town Karachi/Downtown Saddar Area Revitalization:

Saddar is located in the historic downtown area of Karachi. It has a high concentration of civic, education, cultural and commercial uses, and a large number of daily visitors. Sub-projects in Saddar Downtown area may include, inter alia: upgrading roads and streets, sidewalks, and pedestrian crossings within existing rights-of-way (ROW); upgrading existing open spaces, installing shade features, and removing barriers for visitors; reorganizing traffic patterns and closing certain street segments (temporarily or permanently); installing signs, street furniture, lighting, and bus stop shelters; organizing street parking and installing safety barriers to reduce vehicular encroachment on sidewalks and enhance safety; and rehabilitating infrastructure and storm water drainage beneath roads upgraded by the project.

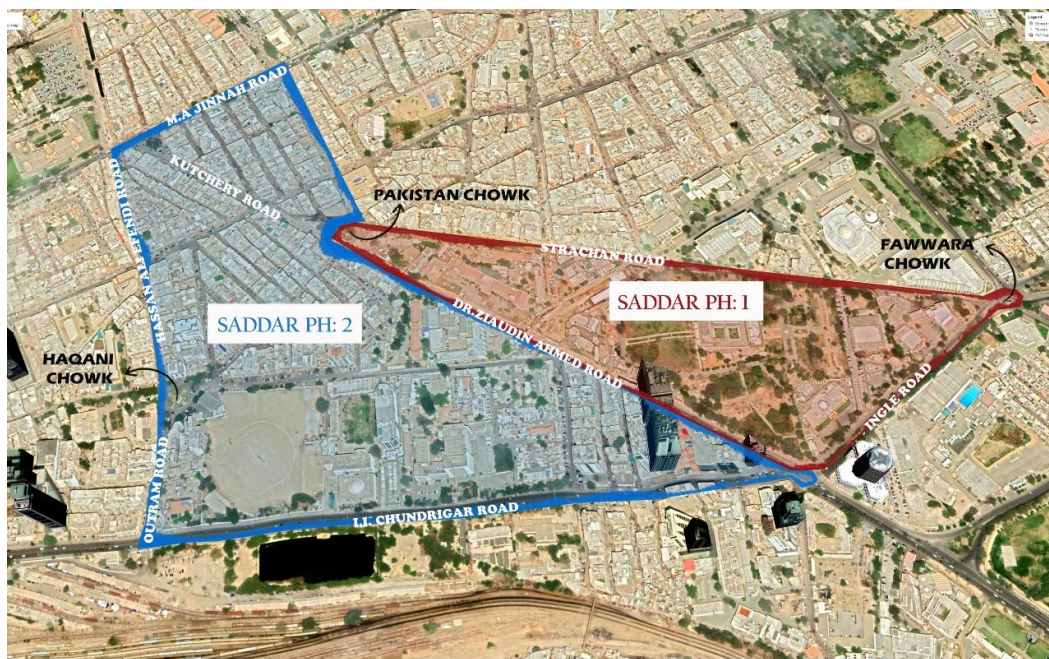
The phase 2 Interventions may include the following types:

- Area improvements including infrastructure rehabilitation, sidewalks etc.
- Creating Vibrant multi-modal Streets through cultural integration, improved public space and placemaking.
- Rehabilitating the play grounds/Parks as magnet for involvement of Youth.
- Rehabilitation of Neighborhood Road/s for mobility Improvement.

The Following sub-projects are identified in Old Town Saddar for Phase 2:

Re-Development of Serai Quarters and adjacent areas in Old Town Karachi:

The Serai Quarter in old town is historic residential area with a mix of residential apartments, commercial area, important public spaces/roundabout positioned on the confluence of Central Business District (CBD), administrative, health, educational and cultural facilities of the city. In addition to being physically connected to ongoing KNIP Phase 1 developments, is bounded by MA Jinnah Road on north, on the west by Outram/Hasan Ali Afandi Road, on the south by I.I. Chundriagar Road and on east by Dr. Ziauddin Road and Gadhi Khata Area.



Map of Proposed sub-project Area for development

The rehabilitation of Public spaces is required to carry out urban design exercise through participatory approach, addressing the needs of local community and Stakeholders such as area residents, business group, youth, catering for future urban densification according to the Project themes.

The interventions under this sub-component will focus on improving the mobility at roundabouts and cater for enhancement of visibility of presently available green spaces/parks such as Haqqani Chowk, various open spaces on the edges of the periphery; etc, including potential for addressing current facilitation for streets in the form identifying on street parking area. The Interventions will focus on pedestrian priority, Multi-modal Street, where ever suitable and address the current and future pedestrian needs, universal access, mobility patterns and may include pedestrian trails/pedestrian only street and their extension in appropriate direction.

Korangi-Malir Areas:

Malir is a dense, mixed-use area with low-income communities. It is characterized by an arterial corridor and a number of existing open spaces that are severely degraded. Sub-projects in Malir may include, inter alia: upgrading the main road, sidewalks, pedestrian crossings within existing ROW; reorganizing vehicular with shade, adequate drainage and trash collection facilities; installing street furniture, bus shelters, safety barriers, shade features and lighting; and rehabilitating underground infrastructure beneath upgraded roads, and storm water drainage where necessary

Korangi is a residential and industrial area with a large number of low-income communities and vibrant markets along several major corridors. It includes one of the largest fishing villages in Karachi. Sub-projects in Korangi may include, inter alia: upgrading main roads, streets, sidewalks, and pedestrian crossings within existing ROW; improving existing open spaces such as markets, playground and road medians; installing street furniture, lighting, bus shelters; and safety barriers for pedestrians; and rehabilitating underground infrastructure beneath upgraded roads, and storm water drainage where necessary.

A series of Consultations with Community and other stakeholders were held during the process of identification of sub-projects. The PIU, with stakeholders, has identified a list of potential sites, based on maximizing beneficiaries and creating linages with existing public facilities such as hospitals, schools, markets, public spaces and Phase 1 sub-projects.

Re-Development and Improvement of secondary roads and Public Spaces in three Clusters in Malir

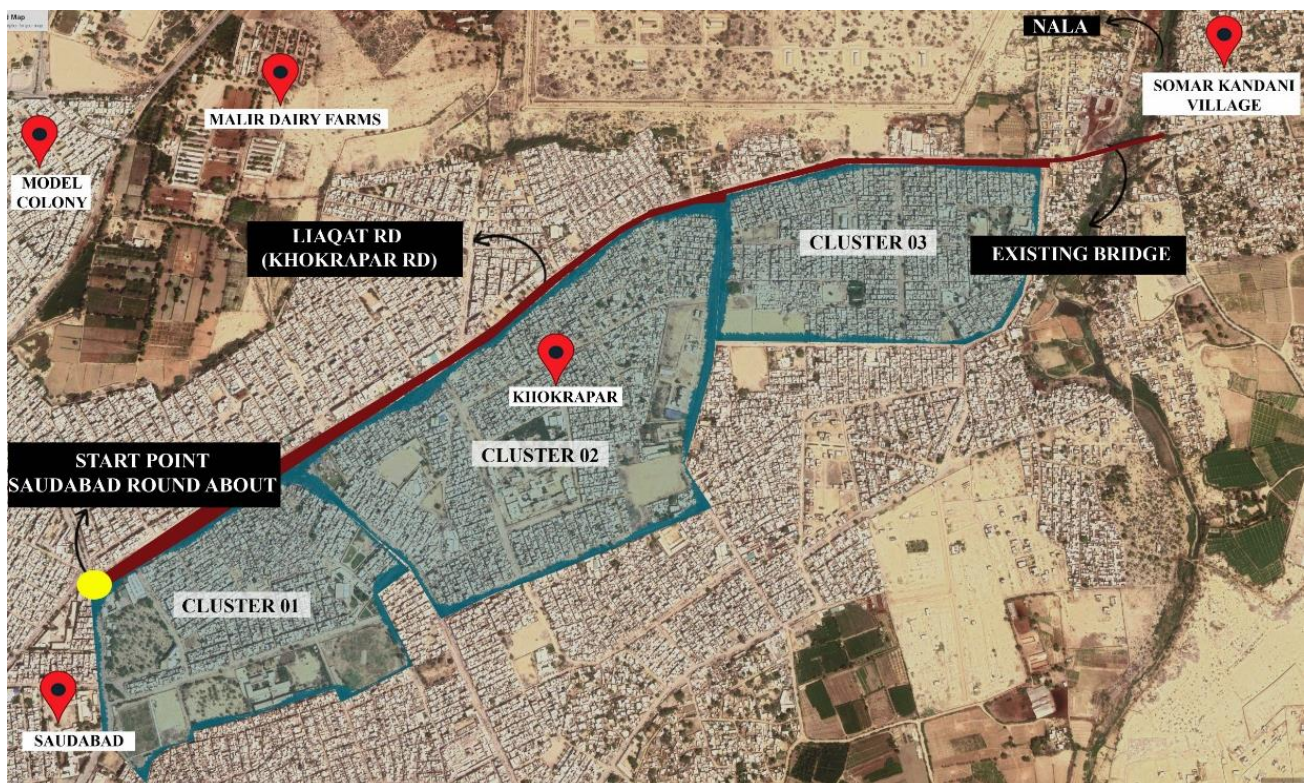
The Phase 2 scope in Malir area include rehabilitation of various public spaces such as playgrounds areas, parks in residential blocks, markets, schools to form part of a clusters. The re-development of clusters is required to carry out urban design exercise in participatory approach addressing the needs of local community and Stakeholders such as area residents, business group, youth, catering for future urban densification according to the Project themes, PIU team guidelines. The Street improvement may consider the models of community participation for façade uplifts and maintenance etc. making it more sustainable in long run.

Re-development of Malir Cluster 1:

The area under cluster 1 comprises of residential blocks of Sabir colony, Khokhrapar No 1, and 2 adjacent areas. The area has a concentration of Schools, colleges, Public play grounds, parks, roundabouts and other public spaces. The residential blocks adjacent to the public facility will qualify for rehabilitation of infrastructure, where required, and internal public spaces will be improved under the project. The scope of works in the residential blocks may require to be re-defined after the need assessment surveys.

Malir Cluster 2 and 3:

The area under cluster 2 and 3 comprise of residential blocks of Kokhrapar No 3, 4, 5, Chaman colony and adjacent areas. The area has a concentration of Schools, Colleges, Hospitals, Public play grounds, parks, roundabouts and other public spaces. The residential blocks adjacent to the public facility will qualify for rehabilitation of infrastructure, where required and internal public spaces will be developed under the project. The scope of works in residential blocks may require to be re-defined after the need assessment surveys.



Map of sub-projects in Malir

(ii) Rehabilitation of Neighborhood Road/Umer Colony Road from Chungi Naka to Korangi Creek Gate Intersection in Korangi

The densely populated areas are physically disconnected making them inaccessible to public spaces, public facilities, parks and play grounds etc. The Mobility improvement by the proposed secondary road connects the densely populated marginalized communities, minority groups etc.

The Secondary road under this sub-component comprises of 1.8 Km length with ROW of 80 ft. The Rehabilitation along this road also comprises of Intersection improvement, allied Engineering works such as carriage way, storm drainage, culverts, footpaths, median etc.



Map showing proposed road in Korangi

4. OBJECTIVES OF CONSULTANCY SERVICES

The consultants will provide services for above mentioned sub-projects which include conceptual and detailed engineering design, construction supervision and contract management for two (02) years under phase 2 of KNIP including the Environmental and Social Safeguard (Preparation of ESMP and RAPs if applicable, of subproject wise documents). The consultant will provide the staffing for carrying out the works in design phase and provide construction supervision services & contract management, as mentioned in this TOR for these sub-projects in accordance with the regulations of the Governments of Pakistan and Sindh, procurement regulations of the World Bank, or other current relevant regulations (if any). The consultant will provide supervision of construction progress; training and assisting the PIU in managing contracts and contractors' ongoing defects notification works after construction has completed.

In addition to the above-mentioned sub-projects, the consultants will also provide similar services including identification and consultation of additional sub-projects in future.

5. SCOPE OF SERVICES

The overall scope of services comprises of 2 Stages:

- a) Preparation for Base map, and Preliminary Conceptual Designs;
- b) Engineering/Urban Designs;
- c) Environmental and Social Impact Assessment;
- d) Construction Supervision and Contract Management;
- e) Planning, Designing, Construction and Operation related Environmental and Social Safeguard Management, RAP Sub Project wise Documents;
- f) Stakeholder consultation and identification of potential sub-projects.

The civil & allied works must be implemented in accordance with contracts provisions and current regulations of the Government.

Stage 1

Preparations:

The consultants will hold consultations with PIU in order to develop a vision and a time-bound plan for work and collect required data, documents, reports etc. with PIU.

DESIGN SERVICES

Base Map

The Consultant shall conduct a rapid land survey, rapid assessment of public spaces and data collection for the purpose of producing an accurate base plan for the purpose of urban design for the focus area, Where possible, the base plan shall capture key information such as, but not limited to: (i) public-private boundaries (e.g. road reservation, boundary lines between public and privately owned buildings, park boundaries etc.); (ii) pedestrian crossings, curb lines to demarcate between pedestrian sidewalks and road, as well as areas dedicated for parking; (iii) building lines, footprints and height; (iv) existing street fixtures (e.g. lighting posts, electrical boxes, street furniture, mature trees etc.); (v) underground services (e.g. sewerage, water, electricity, etc.) The base map may identify the base line of social, economic and physical connection of the area including no. of beneficiaries of any intervention, the area physical connection with Phase 1 and identify Pedestrian Linkages of Important public spaces within area and with future BRT stations along with preliminary environmental/social screening of the projects.

Rapid Public Life and Strengths, Weakness, Opportunities and Threats (SWOT) Analysis

The Consultant Firm shall also demarcate, characterize and identify zones in the public realm based on existing uses. For example: (i) areas that are high traffic during the day and night (e.g. students, pedestrians); (ii) areas that are used by food/street vendors; etc; The consultant shall also identify opportunities and challenges for the proposed Local Area/Public space.

Identify Beneficiaries

As part of the survey, the Consultant firm shall identify potential beneficiaries with a particular focus on vulnerable groups; women and youth. Where possible, detailed data such as number of beneficiaries, social characteristics, gender segregated data should be collected.

Identify Stakeholders

The Consultant shall identify and propose a list of stakeholders. The list will be used for consultations.

Urban Design Scheme of Identified areas

Vision and Urban Design Scheme

Prepare a Vision and an Urban Design Scheme for the Old city Area, identified Areas in Malir and Korangi area that can be used as development parameters for the selection of investment projects. The scheme should build upon the project development objectives of “*enhancing public spaces in selected neighborhoods*” and include but not be limited to the following urban design considerations where it is appropriate:

- Creating a people-centric public spaces that are walkable and accessible to all especially for vulnerable groups, women and youth.
- Attractive streetscape elements such as street furniture, landscaping, street lighting, building-street interface, facades etc.
- Comprehensive pedestrian network and circulation such as sidewalks, through-block links, road crossings, connections to open spaces.
- Accessible public open spaces and parks to encourage social interaction and provide areas of respite.
- Critical and historic landmarks and gateways and how they are connected to the public spaces, pedestrian connectivity, and preservation of such assets and view corridors.
- Place making, Street scale innovative designing including landscaping for streetscape, public spaces that contributes towards controlling storm water run-off (i.e. swales, permeable paving etc.) and creating micro climates that enhance the urban environment (e.g. shade and trees).
- Appropriate building heights and massing, in context with the natural environment, urban character, religious and cultural character landmarks, view corridors etc.

“Long List” of Interventions in the vicinity of Identified Areas

The Consultant is required to include a tentative long list of possible specific investment projects, with an early assessment of: (i) their technical feasibility, (ii) rough cost estimates; (iii) cost-benefit analysis; (iv) preliminary safeguards screening/issues. This will provide a long list of interventions which can be used to select priority projects in future in consultation with the Client, civil society/academia, experts and the relevant stakeholders of the area. While the Urban Design Scheme can include the scope for interventions, the proposed interventions shall focus primarily on public urban spaces such as, but not limited to:

Streets and plazas	Streets, avenues, boulevards, traffic roundabouts, squares and plazas, pavements and sidewalks, passages and galleries, bicycle and pedestrian paths, lighting, street furniture, landscaping.
Open spaces	Parks, gardens, playgrounds, roundabouts, clusters
Public buildings	Public libraries, civic/community centers, municipal weekday markets, public sport facilities

Validating and Identifying Priority Investment Projects (Short List)

The Consultant shall validate, identify and propose a final list of specific investment projects selected from the above tentative list through consultation with PIU/Civil society/academia, stakeholders. The Consultant shall fully consider and discuss with Client all existing plans and designs which have been developed while at the mean time analyze the different scenarios and their feasibility. The Consultant shall look into the practical side of project proposals, by considering: (i) the implementation timeline, (ii) readily availability of spaces for rehabilitation. It is clarified that scope does not cover all Roads for rehabilitation within the boundaries shown in maps. The scope should be determined based on need assessment, Surveys etc and areas will be upgraded/improved based on clear criteria.

Upon consultation with and review by the Client/Expert's committee, it is envisaged that selected investment projects will proceed to the detailed design stage. The Consultant is expected to package the investment proposals and develop an urban upgrading investment plan reflecting priority intervention area. This will include:

- Proposed investment projects with packaging/ phasing which should take in consideration the available documentation and the need of further studies and surveys
- Indicative costs to implement the identified infrastructure projects. This output is expected to be used for the selection and prioritization of urban upgrading and infrastructure projects during the plan implementation stage;
- Initial environmental & social screening to identify the environmental, social and resettlement impacts.
- Detailed Social Assessment regarding resettlement, relocation and livelihood impacts on local communities, business communities and mobile/informal vendors under WB OP 4.12.
- Develop project briefs, for selected projects in consultation with the Client/advisory group; Briefs will include (i) project name and description, (ii) project rationale and justification with reference to the Urban Design Scheme, (iii) project maps with boundaries and concept schemes, (iv) relevant design and spatial analysis and cost benefit analysis of the proposal, (v) socio-economic analysis and cost benefit analysis, (vi) identification of social and environment safeguard issues (i.e. requirements for acquisition and resettlement, land ownership, etc.) that will enable the Client to conduct safeguard screening and design of resettlement programs and (vii) preliminary cost estimates.
- In consultation with the Client develop a tentative list of investment projects for future phases.

Preliminary Designs for Identified sub-projects

The Consultant shall develop preliminary designs for investment projects to be carried on appropriate updated and reliable documentation. The intention for the preliminary design is, in part, to assist the Client in assessing the feasibility and value for the final selection of projects for Detailed Design. This shall include, but not be limited to:

- Preliminary architectural/Urban designs for specific investment projects such as streetscapes, public urban spaces etc.
- Layout and relevant sections/elevations at appropriate urban/site scale showing the spatial and functional characteristics of the intervention and its integration in the urban/natural context.
- An approximate cost estimation of the identified interventions.

There shall be regular interactive discussions and reporting between Consultant team and the Client to exchange concepts and ideas in order to make sure the proposed investment projects are feasible and practical. At the end of Stage 1, all submitted investment project briefs will be evaluated by PIU/Experts through community participatory method.

Detailed Designs

Based on the agreed-upon list of investment projects selected for Stage 2 by the Client, the Consultant shall develop detailed designs, specifications, Bill of Quantities (priced and unpriced) and a complete set of bidding documents in packages ready for bidding, so as to allow contractors to prepare realistic bids, to achieve good quality works with reasonable quality control and provide the Client with support for quality assurance and contract management. This shall include, but not limited to:

Feasibility Study, Surveys and Review of Existing Designs

This is to determine detailed project scope and delineate specific project boundaries. This may include activities such as, but not limited to: (i) reviewing the design and detailed drawings from past consultancies and proposing necessary modifications to these drawings and specifications where necessary; (ii) conducting field surveys, land survey of sites, including topographic and architectural surveys of the concerned areas and buildings, measured drawings of buildings/ facades identified for detailed designs if needed; (iii) data collection, detailed investigations/evaluations and analysis for detailed design; Bore hole investigations for soil required for foundation designs, required where structures suggest, etc.

Detailed Urban, Engineering Design

This includes all works required with the aim of producing a completed set of bidding documents. This include, but are not limited to: (i) prepare detailed designs (architectural, engineering, transportation, where applicable, lighting, landscaping, drainage etc.) and technical specifications including all necessary data collection, surveys and analysis to cover all aspects of detailed design; (ii) cost estimates; (iii) bills of quantities (priced and unpriced)and bidding documents preparation. The detail design drawings will be prepared on the basis of approval of preliminary design.

The Consultant shall prepare necessary drawings for local authority approvals and any other approvals required in the process. (i.e. approvals from agencies such as Archeology, Parks etc.) The required approvals shall be identified in the work plan.

PLANNING, DESIGN, PREPARATION OF BIDDING DOCUMENTS AND PRE-CONSTRUCTION SERVICES

The scope of the services for the consultants will include, but not necessarily be limited to the following.

- i. Carry out topographic surveys, including horizontal and vertical alignment and cross sections, establishment of horizontal control points, benchmarks and permanent reference beacons as required for detailed Engineering design to enable construction quantities to be calculated to the accuracy of (+) (-) 10 %.
- ii. Collect soil samples from roadway, existing pavement structure and borrow areas and testing for classification, Atterberg limits (liquid and plastic limits). Modified AASHTO compaction, soaked CBR and suitability for stabilization.
- iii. Collect samples from quarry sources for fine and course aggregates and test them for use in sub base, aggregate base, asphalt concrete and cement concrete works etc.
- iv. Carry out Inventory and condition surveys of the sub-project, including its geometric features, type and condition of drainage structures, load carrying capacity, pavement and other major features.
- v. Assess/ quantify potential problems that are related to the land acquisition, cutting of trees, relocation of utilities etc and should be addressed before construction contracts are awarded.
- vi. Investigate the suitability of locally available construction material and where necessary, locate new queries and borrow pits and assess the quantity of material and hauling distance.
- vii. In case of sub-project being road construction/ rehabilitation, the consultant will examine materials found along the road alignments, taken at suitable intervals. Pay particular attention to sub surface conditions at bridge sites (if any) through appropriate geo technical survey.
- viii. Carryout traffic count surveys along the project area. On the basis of traffic count, historical records and projections made, traffic levels and axles load considerations, determine the most cost-effective construction option for sub-project.
- ix. Update technical, economic and social data.
- x. The relevant record /data is also required to be computerized / digitalized
- xi. Prepare Detailed Engineering Designs, Tender Documents, including Bills of Quantities, Engineering estimates and work out the cost of civil work contracts and overall project.
- xii. Prepare appropriate contract packages, taking into account the location of the project and size of contracts
- xiii. Prepare Bidding documents in accordance with the WB Procurement Regulations for procurement of civil works;
- xiv. In conjunction with the Project Implementation Unit, prepare realistic construction schedule showing the anticipated progress of works and expenditure for the contract packages. The schedule will reflect seasonal, climatic effects at the work sites, and will take into account typical outputs of projects of similar nature.

6. DESIGN IMPLEMENTATION SCHEDULE

It is envisaged that the design and construction supervision phases for the above-mentioned contracts shall be as follows:

- | | |
|--|-----------|
| (a) Preparation for Base map, Long list/Short list
and Preliminary Urban Designs..... | 02 Months |
| (b) Design Phase..... | 04 Months |
| (c) Construction Phase..... | 18 Months |

7. DESIGN DELIVERABLES

During the performance of these Services, the Consultant shall prepare reports for submission to the Client. The Table below indicates the description, numbers and time frame requirements for submission of reports.

Under this TOR, the Consultancy will comprise of two main stages. Stage 1 will require the preparation of a vision statement, an urban design scheme leading to a list of investment projects which may be developed into detailed designs of development of a selection of identified investment projects into detailed designs and drawings and prepare for the bidding documents for bidding purpose and stage 2 will cover the contract management and Construction Supervision.

No.	Deliverables	Format	Estimated duration
Stage 1 (6 Months)			
1	Base Data/Base Map Report including Vision, Public Life/SWOT Analysis, Beneficiaries, Stakeholder list.	5 printed reports in A4 and/or A3 size, plans in A1. A PowerPoint presentation. An electronic copy of all reports, plans and related GIS and CAD files.	One month
2	Urban Design Scheme and Report with "Long List" of Interventions and accompanying rough technical feasibility, rough		One month

	costs, CBA (if possible), preliminary safeguards issues.		
3	Preliminary Designs , cost estimates, updated CBA and safeguards issues.	5 printed reports in A4 and/or A3 size, plans in A1. A PowerPoint presentation. An electronic copy of each report, plan and related GIS and CAD file(s).	One month
4	Detailed Designs (Urban Design, Engineering, Transportation, MEP/Utilities etc) with cost estimates, BOQs, safeguards assessments etc.	5 printed reports in A4 and/or A3 size, plans in A1. An electronic copy of each report, plan and related CAD file(s). Recommendation of packaging strategies and draft template, bidding documents in line with World Bank Procurement Regulations.	Two Months
5	Bidding Documents	As per bid submission requirements.	One Month

Stage 2

CONSTRUCTION SUPERVISION AND CONTRACT MANAGEMENT SERVICES

Depending on the construction packaging developed under earlier phase of project implementation, the scope of construction supervision and contract management services may consist of following construction packages under different construction contracts. The Supervision Consultant, however, shall supervise the works of all construction contracts under one consultancy services package.

The objectives of the consultancy services under this phase are:

- a. Proper management of projects including field measurements and quality assurance work.
- b. Comprehensive supervision of project implementation activities carried out by the contractors to ensure complete compliance with the drawings, technical specifications, ESMP and various stipulations contained in the Contract Documents.
- c. Efficient construction supervision by personnel who are experienced in the modern methods of construction supervision and contract management.
- d. Ensure high standards of quality assurance in the supervision / execution of work.
- e. Ensure completion of the works within the stipulated period and/or identify ahead of time impediments to this effect.

The main features of Contract Management Framework (CMF) envisaged for the execution of the proposed construction of works are:

- a. For administration of the contract under the project, the PIU will be the Employer. The Employer will have a project implementation unit (PIU), which are the in-charge of the works. The PIU shall be headed by the Project Director, who is assisted by appropriate professional and support staff. The Project Director will act for and on behalf of Employer.
- b. The Consultant shall nominate a Representative who shall be called the Team Leader and will act as the 'Chief Resident Engineer'(CRE). The Chief Resident Engineer shall have a team of experienced professional and support staff for the execution of the Consultancy Service under the Contract.
- c. The supervision Consultant will make the necessary measurements and control the quality of works. While the supervision Consultant shall make all Engineering, decisions required during the implementation of the Contract in accordance with the contract conditions

The scope of Consulting Services for construction supervision phase in accordance with the provision under civil works contract(s) shall include but not necessarily be limited to the following:

Engineering and Administration

- a. Assist Employer in contract administration and management of the civil work contract(s).
- b. Act as 'Project Manager' for the purpose of civil works contract(s).
- c. Interpretation of the Technical Specifications and Contract Documents.
- d. Scrutinize and approve the Contractors' detailed work programme, suggest modifications if any, after a careful study keeping in view the overall interest of the project. After having approval, the same will be issued to the Contractor for implementation with copy to the Employer.
- e. Scrutinize and/ or review Contractor's superintendence, personnel and suggest modifications, if any.
- f. Initiate advance actions for handing over of site and / or issue of drawings, and / or advise Employer.
- g. Scrutinize the Construction Methods proposed by the Contractor for carrying out the works to ensure that these are satisfactory with particular reference to the technical requirements, project implementation schedule and environmental aspects as well as safety of works, personnel and the general public.

- h. The Project Manager is to approve the working drawings/detailed drawings prepared earlier under design phase or by the Contractor or any other agency and also setting out data and issue the same to the contractor.
- i. Liaison and co-ordination through client with the local authorities for shifting of utilities, wherever required.
- j. Certify 'As constructed' drawings for each component of the works finished by the Contractor.
- k. Review and ensure conformity of Contractor's securities in approved formats.
- l. Maintain a day-to-day diary recording all events to the works.

Construction Supervision

- a. Carry out detailed checking and verification of the setting-out data for the work including lines, levels and layout to ensure conformity with the working drawings.
- b. Carry out inspection of the contractor's equipment, machinery, installations, housing and medical and mandatory facilities etc. And ensure that they are adequate and are in accordance with the terms and conditions of the contract.
- c. Direct the Contractor to carry out all such works to do such things as may be necessary to avoid or to reduce the risk in case of any emergency affecting the safety of life or to reduce the risk in case of any emergency affecting the safety of life or of the adjoin property and advise the Employer as soon thereafter as is reasonably practicable.
- d. Inspect Works on substantial Completion before taking over and indicate the Employer any outstanding work to be carried out by the contractor during the defect notification period.
- e. Supervise the contract in all matters concerning safety and care of the work with strict compliance of Environmental and Social Management Plan.

Quality of materials and Works

- a. Evolve and implementing a system for the quality assurance of the works. The systems of control of quality of materials and completed works shall also include sampling methods and criteria and accepting and acceptance criteria. The sampling methods and the acceptance criteria shall be based on statistical methods and the recommendations of the relevant codes, standards and international practices. Any other aspects for proper quality control shall be finalized and executed accordingly.
- b. Inspect the performance of works with regard to workmanship and compliance with the specifications, order / supervise/ perform tests on materials and / or work and approve / disapprove the Contractor's plant and equipment.
- c. Review and approve the test results/certificates of all construction materials and / or sources of materials and carry out additional tests as necessary to establish their quality.
- d. Associate with the work tests being carried out by the contractor and undertake additional tests as necessary to assess the quality of works.
- e. Carry out technical supervision of the works to ensure their quality and conformity with the standards and specifications as per contract. In addition to assessing and checking the laboratory and field tests carried out by the Contractor, the Consultants shall carry out independent tests as necessary to establish their quality.
- f. In the event any material or item of works is found to be substandard and unacceptable, the Consultant shall initiate actions so that such cases do not recur.

- g. Maintain a permanent record of all measurements for the work quantities to be paid for and the results of all tests carried out for monitoring the quality of works.

Measurement and Payment

- a. Take field measurement of all items of works and of quantities of materials incorporated in the work and maintain up to date books containing such computations or other information concerning the use of construction materials, properly segregated in to sections of construction.
- b. Maintain up to date records of remaining quantities to be incorporated in the work and monitor the expected project cost based upon the remaining quantities. General records of all labour and specified materials used in the works, including copies of orders, delivery notes and invoices for such materials and details of wage rates paid by the contractor shall be maintained.
- c. Prepare a schedule for placing the orders for specified material, in consultation with the contractor, to minimize the financial effects of escalation in the price of those materials.
- d. Certify that work volume and recommend the interim / final certificate for payment accordingly.
- e. Furnish the certificate to the Employer that the items included in the Contractor's bills satisfy the required quality of works and are acceptable with regards to the standards and specifications prescribed in the Contract.
- f. Check and certify all requests for payments, all monthly bills, interim bill and final bill of the Contractor.
- g. Scrutinize and advise the Employer upon the claims raised by the Contractor, if any.
- h. To perform repeat tests or check measurements, if directed by the Employer. These repeat tests or measurements may be conducted in the presence of Employer or his representatives as may be directed.
- i. In case of conflicts, perform tests or measurements of any or all of the items in presence of Employer.

Progress of Work

- a. Implement a system for monitoring the progress of work based on computer project management techniques.
- b. Systematically check the progress of the Work and order the initiation of the work, which is part of the Contract.
- c. Maintain an up-to-date status of all construction activities against the original schedule for completion of works.
- d. Shall investigate and initiate early action with regard to the delays in the execution of works. The Resident Engineer shall explain in his monthly progress and special reports the reasons for delays and explain the actions to be taken / already taken to correct the situation. All reports prepared by the Consultants' Team shall be objective and shall substantiate any event/ recommendation with factual data and information. The progress Reports shall contain the pertinent data and chart form and shall clearly bring out the comparison between the projected and the actual work done using "S" curves and /or any other widely accepted superior methods of representation.

As -built drawings and documentation:

The Consultant will review certification and submit to the Client As built drawings prepared by the Contractors in draft form, one month before the completion of each contract. These documents will be finalized two weeks after receiving comments from the Client.

Defects Notification Period:

During the 12-month Defects Notification Period, there are a number of obligations of the Contractor, which require attendance by the Consultant. During this Period, the Contractor is obliged to carry out any outstanding work that is specified in the (Partial) Completion Certificates, issued when (a part of) the works has been substantially completed and handed over to the Client. These tasks comprise, but are not limited to, the following:

- a) Check all construction and installation that has to be remedied and finalized, as identified in the (Partial) Completion Certificates.
- b) Instruct the Contractor to rectify, and check the proper remediation of, any defects that appear during the Defects Liability Period.
- c) Scrutinize and verify all statements of completion including financial statements submitted by the Contractor during the Defects Liability Period and advise the Client on their acceptability or on rectification required.
- d) Upon completion of the Defects Liability Period and remediation and completion of all works to the satisfaction of the Client, prepare a Defects Liability Certificate for issuance to the contractor, indicating that he has satisfactorily carried out the works, and is entitled to final payments under the contract.
- e) Depending on the details of the conditions of the Construction contract, the Contractor then submits his Final Statement indicating the final values of the work constructed, and the final sums to which he is entitled. The consultant will thus scrutinize and verify this Final Statement and, upon acceptance by the Client, prepare a Final Certificate to be issued to the contractor.
- f) Advise the Client on any outstanding claim, variation, or change order.
- g) Advise the Client on the handling of any case of arbitration and litigation subsequent to the construction contract.
- h) Review and recommend on any outstanding issue related to the Operation and Maintenance manuals for the equipment and installations, as prepared by the Contractor.
- i) Review and advise on any outstanding issue related to final As-Built drawings, as prepared by the Contractor.
- j) Prepare and submit a Final Completion Report to the Client, summarizing the important features of the works, including construction schedules, reasons for deviations from the schedules, overviews of claims and variation orders, and including inventory of documents and records prepared during the construction period, that are handed over to Client.

8. OVERALL PROJECT SCHEDULE

To ensure the Project is implemented in a timely manner, the PIU requires that the Design and Contract Management & Construction Supervision services be started by November/December 2019. The Services for the Construction Supervision and Contract Management are expected to complete the entire work by October 2021.

9. COUNTERPART SUPPORTING FACILITIES

The following documents are the key sources of information for this assignment:

- a) Environmental and Social Management Framework (ESMF); Environmental and Social Management Plans (ESMP); Resettlement Policy Framework (RPF); and Resettlement Action Plan (RAP), if any.
- b) Relevant World Bank Safeguard Policies.
- c) Other relevant documents.

The following services and documents will be provided by the Client without cost to the Consultant:

- a) **Data:** The Client will provide the Consultant with access to all available data, information, maps, drawings and internal documents relevant to the consulting services. All reference material will be loaned to the Consultant and shall be returned at the completion of the assignment or earlier, as may be requested. Any Data, if not available with the PIU, it will provide necessary Authority letters to the Consultant in acquiring it from the relevant agency.
- b) **Access:** The Client will arrange for access by the Consultant to all existing and planned roads, neighborhoods, areas and communities likely affected by the project, etc., which the Consultant deems necessary to visit and conduct field investigations in connection with performing its duties. Access to the key officials in the relevant authorities concerned with subjects related to the assignment will also be arranged by the Client.

The consultants must include in their proposal(s) logistical requirements, provision of site offices, telephones, vehicles, office furniture and equipment etc. during execution of consultants' contract.

10. PROJECT STAFFING REQUIREMENTS

The consultant firm or firms in case of joint venture must specialise in design of the construction works, supervision of these works, contract management and environment & social management services.

The composition and indicative minimum levels of the required staff input are listed below. However, the Consultants should make their own estimates of resources required to complete the assignment efficiently:

	Proposed Position	Number of staff
	Key Experts	
1.	Team Leader/CRE/ Urban Design Specialist	1
2.	Contract Engineer	1

3.	Procurement Specialist	1
4.	Resident Engineers	2
5.	Resident Architect	2
6.	Landscape Architect	1
7.	Road Design Engineer	1
8.	Structure Design Engineer	1
9.	Environmental Engineer	1
10.	HSE/OHS Engineer	1
11.	Resettlement/Social Safeguards Specialist	1
12.	Electrical Design Engineer	1
13.	Participation & Communication Officer	1
14.	Traffic/Transport Engineer	1
Junior Staff		
1.	Assistant Resident Engineer (Road)	1
2.	Assistant Resident Engineer (Structure)	1
3.	Quality Control Engineer	1
4.	Quantity Surveyor	2
5.	Site Inspectors (Road)	1

6.	Site Inspectors (Structure)	1
7.	Office Coordinator	1
Supporting Staff		
1.	CAD operator	1
2.	Data Entry Operator	2
3.	Office Assistant	2
4.	Drivers	3
5.	Office Boys	2

Note: The details on the required qualification and experience of the key experts/junior staff will be prepared and incorporated in these TORs shortly

SELECTION METHOD

The Consultant shall be selected based on **Quality and Cost Based Selection (QCBS)** method in accordance with the World Bank Procurement Regulations.

11. PROJECT DELIVERABLES

All reports documents prepared by the Consultants shall be professionally precise and objective. The report formats shall be finalized in consultation with the Employer. The consultants shall provide specified number of copies / sets of the following reports and / or documents to Employer, which may be varied as per requirements:

i.	Inception Report.....	3 copies
ii.	Preparation for Base Map Report.....	3 copies
iii.	Long list/Short list Report/Preliminary Costs.....	3 copies
iv.	Preliminary Urban Design and Report.....	3 copies
v.	ESMPs and RAP Documents.....	10 copies
vi.	Site Survey and Investigation Reports.....	3 copies
vii.	Draft Design Report.....	2 copies
viii.	Final Design Report.....	3 copies
ix.	Engineer's Estimates.....	3 copies
x.	Bidding Documents (Complete including conditions of contract, specifications, drawings and BOQ etc.)	10 copies of each contract package
xi.	Monthly Progress Reports.....	3 copies

xii.	Quarterly Progress Reports.....	3 copies
xiii.	Other Reports (including design revisions)	3 copies
xiv.	Final Report.....	3 copies
xv.	Contract Completion Reports.....	3 copies
xvi.	As Built Drawings.....	3 copies

Note:

Proposals will include suggested standard operating procedures so that:

- Every page of all design reports, calculations, drawings, etc., are signed off clearly by the designer, peer reviewer and approver with their names and initials.
- Every page of all construction supervision related reports, plans, activities, approvals are signed off clearly by the initiator, reviewer and approver.
- An overall certification will be made at critical stages and on completion that design and construction meet all required project, government and technical standards.

The electronic/AutoCAD versions of all documents will be provided to Employer along with the hardcopies.