



PUNJAB CITIES PROGRAM (PCP)

**TERMS OF REFERENCE
FOR
HIRING OF CONSULTANTS
FOR
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENT
SUPERVISION
IN
16 cities of Punjab**

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Punjab Municipal Development Fund Company

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I. Brief Background

- ✓ A Program captioned as Punjab Cities Program (PCP), introduced as a Program for Results (P4R), funded by World Bank through soft loan of USD 200.00 million and gestation period of 5 years, is being launched in 16 MCs of Punjab. Each MC will contribute 20% of the total cost of the sub-projects being executed in its jurisdiction. The development objective of the Program is to strengthen the performance of participating Municipal Committees (MCs), focusing on urban management and improvement of municipal services infrastructure for satisfactory service delivery. The operation is financed through a hybrid of Investment Project Financing (IPF) and Program-for-Results (PforR) instruments of the World Bank.
- ✓ The PforR (Window-1) will pilot the Performance Based Grants (PBGs) to the MCs of the 16 selected cities as given below:

Northern Punjab	Central Punjab	Southern Punjab
1- Daska	1- Gojra	1- Bahawalnagar,
2- Hafizabad	2- Jaranwala,	2- Burewala
3- Jhelum	3- Jhang,	3- Khanewal,
4- Kamoke	4- Kamalia	4- Vehari,
5- Muridke	5- Okara	5- Kot Addu
6- Wazirabad		

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

II. Objectives of Consultancy Services

The overall objectives of hiring of the Consultancies Services are;

- a) Detailed Design of the need based and prioritized municipal infrastructure sub-projects in the sectors given below, after due deliberations with PMDFC & MCs
- b) Resident supervision of the sub-projects for quality control.

The intention of the process is to develop the municipal infrastructure at a pace and level where satisfactory service delivery level for the entire growing population of the cities in future, is attained and the gap between the supply and demand is bridged instead of widening with passage of time.

III. Package for the Consultancy Services

The Consultancy Services for 16-cities will be undertaken in the Municipal Committees /Corporations as mentioned below;

S. N.	Municipal Committee /Corporation
1	Municipal Corporation Jhelum,
2	Municipal Committee Wazirabad
3	Municipal Committee Daska
4	Municipal Corporation Hafizabad
5	Municipal Corporation Kamoke
6	Municipal Corporation Muridke
7	Municipal Committee Gojra
8	Municipal Corporation Jhang
9	Municipal Committee Jaranwala
10	Municipal Committee Kamalia
11	Municipal Corporation Okara
12	Municipal Committee Khanewal
13	Municipal Corporation Burewala
14	Municipal Committee Bahawalnagar
15	Municipal Committee Vehari
16	Municipal Committee Kot Addu

IV. Responsibilities of Consultants

The responsibility matrix of doing work for Detailed Design and Resident Supervision is given as below:

Sector	Detailed Design	Resident Supervision
Rehabilitation of Municipal Services Infrastructure Projects	Not required	Resident Supervision of the ongoing subprojects in some MCs
Solid Waste Management	Design of SWM Machinery & Equipment carried out by PMDFC	Top Supervision of Machinery & Equipment by Consultants
	Design of Parking areas by Consultants	Resident Supervision of Parking Areas by Consultants
Roads & streetlights	Design of priority roads and street light wherein no water supply and sewerage system is to be laid in future	Resident supervision by Consultants for the subprojects which can be completed by December, 2021.
Cross roads, chowks and important nodes	Detailed Design by the Consultants	
Parks	Detailed Design by Consultants	

V. Terms of Reference

The consultants will be required to carry out the activities as outlined in the table above and as given below:

A. Detailed Design

The detailed design will be taken up for the below mentioned municipal services infrastructure:

1. Parking Areas for parking solid waste and other vehicles

2. Urban metalled / concrete pavers roads /streets along with longitudinal or cross drainage which may comprise of:
 - a) Resurfacing of the existing roads
 - b) Widening and improvement of the existing roads
 - c) Construction of new roads
 - Metalled Roads
 - Concrete pavers streets / roads
 - d) Street lights on important roads
3. Cross roads, chowks and important nodes
4. Parks and green spaces

These sub projects are being identified by MCs which will be marked on plans of the city and finally scrutinized by PMDFC before handing over to the consultants.

a) General requirements of detailed design of Sub-Projects

The consultants will be required to undertake, but not be limited to, the following broadly categorized tasks for detailed design of the sub-projects:

- i. Topographic and all other types of surveys required therein, soil and all other kind of investigations, at site and laboratory testing and all other tasks required to precisely assess the existing condition of the structures / land and other features of the infrastructure component under design.
- ii. Preparation of location plans, site plans, contour plans, longitudinal profiles, cross sections, 3D views and other such types of plans or sections to precisely describe the existing configuration and condition of the infrastructure component.
- iii. Consultation with MC Officers regarding the problems encountered by the general public and in operation & maintenance of the infrastructure under design by the MC.
- iv. Preparation of the subproject Feasibility Report (if required), Detailed Design, Rough Cost Estimates, Bid and Detailed Drawings, PC-Is and other Project documents required therein.
- v. Correction, modification or alteration of the above-mentioned documents after discussions with MC Officers and PMDFC regarding suitability of the design and decisions arrived at.
- vi. Carrying out the Economic and Financial Analysis for determination of EIRR and FIRR as per requirements of the PC-Is.
- vii. Sensitivity Analysis of the sub-projects and their economic, financial, and social effects.
- viii. Presentation of PC-Is to DDWP, DDSC/Pre-PDWP/PDWP and finalization of PC-Is in the light of comments (if any) from these forums.
- ix. Preparation of the detailed cost estimates and structural drawings and help MCs in getting it Technically Sanctioned by the competent authority.
- x. Preparation of Bidding Documents including pre-qualification/post qualification criteria for contractors
- xi. Participate in the bid opening process and assist MCs in preparation of Bid Evaluation Report on the PMDFC prescribed format.
- xii. Preparation of Revised PC-Is and detailed cost estimates of the sub-projects if required,

their presentation to the competent forum and correction or modification as per requirements of that forum.

The detailed scope of work to be carried out for each sector has been given in **Annexure-A**.

b) Documents to be prepared by the Consultants

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

- 1) Inception Report
- 2) Feasibility Report for the projects costing Rs 300 million & above.
- 3) Detailed design of the sub-project
- 4) Cost Estimates
- 5) Economic and Financial Analysis
- 6) Sensitivity Analysis
- 7) PC-Is
- 8) Bidding Documents including but not limited to;
 - Instruction to Bidders & Conditions of the Contract (COC)
 - Special Conditions of the Contract
 - Bill of Quantities (BOQ)
 - Contract Data
 - Specifications
 - Form of Agreement and detailed draft contract (general and specific conditions) based on the standard format of Pakistan Engineering Council.
- 9) Revised PC-Is and revised detailed cost estimates, whenever required.

B. Resident Construction Supervision

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

- 1) Two Senior Engineers/Team Leaders based at Lahore will be appointed who will have overall control of the works across 8 MCs each.
- 2) One Assistant Resident Engineer (Qualified Graduate Engineer Civil in the respective discipline with sufficient experience as given below) will be stationed in each Program MC, and will be responsible for resident supervision of the works & goods and shall perform duties with due diligence, efficiency and in accordance with the best engineering professional and consulting standards.
- 3) Consultants will submit the Inception Report within the specified period and devise a progress report format for its submission along with the inception report, to the Client for approval.
- 4) The Consultants will participate in the bidding process of the subprojects being taken up under Punjab Cities Program during their Contract Timeline and prepare Evaluation Reports of such bids in collaboration with MCs.

- 5) The Consultants will obtain the work plan from the contractor before commencement of work at site, analyse it under the light of total time period for completion & scope of work and recommend it to the Engineer in Charge for approval. The Consultants can make changes in the work plan in consultation with the contractor if so required, to increase the pace of progress of work. Same process will be done for the Revised Work Plans in case the Contract Timeline is extended.
- 6) Consultant will provide to Client, the complete SOPs of Contract Implementation particularly, Processing of Variations / deviations in the quantities and specifications of works, Processing of Contractors IPCs, Check Request System, and Laboratory Testing etc. with their inception report. These SOPs will be discussed with consultants and approved by the Client
- 7) The Consultants will be responsible for giving recommendations on the inventory of sources of materials submitted by Engineer in charge and to be used in the work and equipment & machinery to be installed at site of work, before arrangement of the materials or before booking of the equipment & machinery with the vendors by the contractors.
- 8) The Consultants will be responsible for checking the quality of works and machinery & equipment installed by the contractors at site of work and will issue notice to the contractor for their replacement if these do not conform to the laid down specifications. One copy of this notice will be submitted to the Engineer in Charge.
- 9) The Consultants shall certify that construction material brought at site by the contractor and tested from an approved government laboratory in line with Contract Documents, is in accordance with the specifications.
- 10) The Consultants will verify the quantities of work carried out by the Contractor by actual measurements at site and will verify IPCs submitted by the contractor with recommendations for payment to the relevant MC.
- 11) Any work already completed before the mobilization of the consultants, will also be checked and verified by the consultants in quantity and quality. For this purpose, they can excavate, drill, cut cores and perform all other tests required therein for assuring the quantity and quality of work. The cost of these tests will be paid by the contractor.
- 12) None of the substandard works, equipment and machinery will be verified for payment to the contractor by the Consultants. Similarly, no excess quantity over and above that actually measured at site by the Consultants, will be verified and paid.
- 13) The Consultants will inspect the vehicles, vehicles chassis and any other machinery purchased by the MCs under Direct Contracting from the manufacturers at the time of delivery to the MCs.
- 14) The Consultants will inspect the super structures of the solid waste vehicles and other Machinery & Equipment during its manufacture in the factories / manufacturing

plants and before delivery to the MCs and give certificate for their conformance to the specifications given in the Contract Agreements.

- 15) The Consultants may perform Factory Acceptance Test (FAT) on the solid waste vehicles & equipment, machinery and equipment to be installed in works, in the manufacturer's premises and obtain a copy of the test result for their record. One copy of each test will be submitted to the Engineer in Charge and the Client.
- 16) The Consultants shall supervise the works in all matters concerning safety and care of work and report to Engineer in Charge (Municipal Officer I&S) of each MC on any problem arising out in construction work during its execution.
- 17) IPCs will be verified and certified by the Senior Engineer through his field staff. Consultant will ensure that all necessary documents are appended with the IPCs before recommendation to Engineer in Charge. One copy of the verified IPC will also be provided to the Client by the consultants.
- 18) The test reports from nearest government laboratory (C&W, NLC, FWO, PCSIR, PITAC, UET Lahore and UET Taxila or any other Government approved laboratory etc.) will be attached with the contractors' IPCs and also appended with the fortnightly and monthly reports
- 19) No payment to the Consultant will be made till submission of the certification by its Senior Engineer/Team Leader that the work has been completed in accordance with Contract Documents and approved Drawings for Construction and the quality and quantities of the works have been verified.
- 20) The Consultants will keep record of the water quality test results of all water sources improved or extended under the contract and supply one copy of all such test results to Engineer in Charge and the Client.
- 21) The Consultants will also keep the record of all tubewell drilling logs, tubewell conversion charts, tubewell development and testing charts and hand over one copy of each document /record to the Engineer in Charge and the Client.
- 22) The Consultants will help the Client in preparation of the Fact-Finding Report in case of any conflict arising between the contractor and the MO (I&S) or any other MC Officer or any other problem / obstruction/ bottlenecks arising in execution of the work at site due to various issues.
- 23) The Consultant will monitor the approved implementation schedule and report delays if any with proper analysis of delays particularly early warning of such events to MO (I&S), the Engineer in Charge. The Consultants will also recommend the measures to put the work on pace as per time line of the contract.
- 24) The Consultants shall keep the record of daily inspection reports and hand them over to the concerned Engineer in Charge i.e. MO (I&S) on fortnightly basis. One copy of this record shall be retained by the consultants at site offices and the summary of such notes shall become part of Monthly Progress reports to be submitted to the

Client. The Consultants will submit progress pictures through an android application attached with a dash board through Google map providing GPS with date and time and progress in percentage at site. In case of renovation or rehabilitation of certain components the before and after pictures will also be submitted.

- 25) The Consultant will keep pictorial evidence of each and every stage of work before, during and after completion of the work. This pictorial evidence will be systematically & chronologically arranged and will be submitted to the Client and MO(I&S) on weekly basis or as required by the Client.
- 26) The required decisions shall be made at site by Assistance Resident Engineers in consultation with the Senior Engineer. Decisions requiring major changes in scope of work liable to change the project cost substantially, will be referred to the Team Leader who will process such cases in line with contract agreement signed between MC and the Contractor and recommend to MO (I&S), the Engineer in Charge, for approval.
- 27) The Consultant shall submit fortnightly progress report to the concerned Engineer in Charge and the Client on monitoring of works, environmental, social, occupational health and safety management plans, pointing out the deficiencies in the works & plans and suggestions for its remedial measures. The Consultant shall update the dashboard for physical and financial progress of projects as per the instructions of client.
- 28) Consultant will include MC stationed field officer's attendance sheet of every month in the Monthly Progress Report duly attested by the Team Leader/Senior Engineer. This sheet will also be included in the IPCs submitted by the Consultants to the Client for payment.
- 29) Due to various types of variations in quantities and specifications of the actual work required / executed in the filed with those provided in the BOQ /letter of award, the revision in the PC-I and detailed cost may be needed. In such cases the Consultants will prepare Revised Cost Estimates on the format specified by Government of Punjab and PC-Is, present these before the competent forum for Approval and subsequently prepare the detailed cost estimate and drawings for seeking Technical Sanction from the competent authority.
- 30) One month prior to the expiry of the defect liability period of the work, the Consultant shall carryout a detailed final inspection of the works along with MCs and Contractors concerned authorised staff and submit a report to the concerned Engineer in Charge pointing out the defects if any in the works along with remedial measures mentioning specified time lines with one copy endorsed to the Client.
- 31) After completion of the Project/Subproject /any part thereof, the Consultants will recommend to the Engineer in Charge a completion certificate of that Project/Subproject /any part thereof as per requirement of the Engineer in Charge

along with the punch list of defects, shortcomings or any other issue to be rectified by the contractor in the Defect Liability Period.

- 32) The Contract Agreement may be extended if some works remain incomplete during the Contract Timeline of the Consultants due to unavoidable reasons or if so required by the Client or the Engineer in Charge due to any other factor. The Terms and Conditions of the extended Timeline may be negotiated by the Client with the Consultant.
- 33) If subsequently, at any stage after the expiry of the defect liability period and during the service life of the work, the quality of any item of work verified and passed by the consultant is found substandard, defective or its quantity is found in excess over that actual quantity in field, the consultant shall also be liable to pay the compensation to the concerned MC for the defective work. The liability shall be to the extent of two times the fee charged for consultancy.

C. Core Teams

The core team of the consultants for design, sectoral planning and construction supervision is given below:

S #	Personnel	Nos	Qualification	Input
A	Detailed Design			
1	Team Leader/ Senior Engineer (Detailed Design and supervision)	02	BSc/BE in Civil Engineering from HEC approved University with minimum 15 years' professional experience and 5 years' experience on similar assignments; or MSc; Civil Engineering/Public Health Engineering/Environmental Engineering with Bachelor in Civil Engineering with minimum 10 years' experience and 5 years' experience on similar assignments on urban planning, designing and construction supervision assignments.	Lahore based Full Time
2	Sr. Surveyor	02	Diploma in Surveying (2 Years) with minimum 10 years' experience in site surveying on projects of similar nature.	Stationed as per need
3	Field Surveyors	04	Diploma in Surveying (2 Years) with minimum 5 years' experience in site surveying on projects of similar nature.	Stationed as per need
4	SWM Specialist (Design)	01	BSc; Civil Engineer with Masters in Public Health/Environmental Engineering from HEC approved University and possessing minimum experience of 10 Years for designing SWM designs	Full time
5	Roads Specialist (Design)	02	BSc; Civil Engineer from HEC approved University with Masters in Highways/Transportation Engineering and possessing minimum experience of 10 Years for designing highways	Full Time
6	Architect / Landscape for design of Parks	02	Bachelor in Architecture with 15 years' experience and at least 5 years' experience on design of Parks or Master in Architecture with 10 years' experience and 5 years' experience on design of Parks.	Intermittent

7	Quantity Surveyors	02	DAE in Civil with minimum 10 years' experience for projects of similar nature as QS.	Full time
8	CAD Operator	02	DAE in Civil with minimum 10 years' experience for preparation of drawings in CAD particularly civil engineering infrastructure projects.	Full Time
9	Procurement & Contract Management Specialist	01	BSc;/BE Civil Engineering with minimum 08 Years of Experience in Contract Management and overall experience of 15 Years on Civil Engineering Projects particularly PEC/FIDIC Based Contracts. He must have knowledge of MS Project and Prim-Vera. Preference will be given having Master's degree in Project Management/Contract Management	Lahore based Intermittent
B	Resident Supervision			
10	Assistant Resident Engineers	16	Bachelor Degree in Civil engineering with minimum 8 years' experience in site supervision and execution for projects of similar nature.	MC Based. Full Time

Any other related staff will be quoted by the Consultant in line with the methodology submitted.

VI. Time Line

- Complete Assignment is likely to be completed within 06 Months of the signing of contract agreements. The Detailed Design of all the subprojects will be completed with first 4 months of the signing of Contract Agreement.
- Some information regarding the location and existing facilities of the Parking areas has been collected by PMDFC and will be handed over to the Consultants. Municipal Officers will be closely consulted during surveys, investigations and preparation of the Detailed Design and their problems and suggestions will be duly incorporated. In case of any disagreement the matter will be discussed with Senior Program Officer (Infrastructure Development) PCP.

VII. Deliverables/KPIs with timeline

- The design of Parking Areas, Urban Roads and Chowks / Cross Roads / Important Nodes and Parks /green spaces will be started simultaneously.
- Under mentioned timeline will be followed for Detailed Design of each subproject in each MC.

1	Detailed Design of the Parking Areas in 16 MCs	Within first 2 months after mobilization
2	Detailed Design of 50% metaled roads /Concrete pavers streets or roads and chowks/ important nodes along with longitudinal & cross drainage & street lights in 16 MCs	Within first 2 months
3	Design of remaining 50% roads and chowks/ important nodes as given	Within first 4 months

		above in 16 MCs	
4		Parks & green spaces	Within first 4 months
	Important <i>The Detailed Design of all subprojects in the above-mentioned sectors will be started in parallel and complete assignment of the detailed design will be completed within first 4 months.</i>		
6	Resident supervision	1) Resident supervision of the remaining Rehabilitation projects will be taken up immediately after mobilization. 2) Resident Supervision of the Parking Areas will be commencing as soon as an individual subproject is designed and work is awarded. 3) Resident Supervision of Roads & chowks / cross roads / important nodes may commence as soon as any one of these in a particular MC, is designed and work awarded and can be completed within the Contract Timeline of the Consultants. 4) Resident Supervision of Parks may not be taken in hand by the consultants unless some subproject is so small that it can be completed within the Contract Timeline of the Consultants.	
	Total Contract Timeline		06 months

Detailed Design of Parking Areas, Roads, Chowks/important nodes along with street light and Parks & Green spaces)

Sr. No.	Description	Proposed Timeline for each service		Hard Copies	Soft Copies	
1	Mobilization, Inception reports, & SOPs for Contract Implementation	15 days		03	01	
2	Preparation of the Detailed Design (submission of all documents as per contract agreement for each subproject)					
a	Design of Parking Areas (16 subprojects)	First 02 months		03	01	
b	Roads (08 subprojects)	Within first 02 months		03	01	
c	Roads (08 subprojects)	Within next 02 months		03	01	
c	Chowks /cross roads / important nodes (16 subprojects)	First 03 months		03	01	
d	Parks (16 subprojects)	First 04 months		03	01	
Time period for detailed design		04 months				

Total time period for Resident Supervision	06 months				
The detailed design time period and Resident supervision period will run in parallel					
Resident construction supervision					
S.N.	Deliverables	Hard Copies	Soft Copies (MS Word/Excel/PDF)		
1	Inception Report	03	01		
2	Fortnightly Progress Report	03	01		
3	Monthly Progress Reports	03	01		
4	Final Report	03	01		
5	Revised PC-I (when required)	14	01		
If the time line for the execution of a project is extended, the resident supervision fees and the staff to be retained for the extended time, will be negotiated according to the prevailing situation at that time.					

Annexure-A

Detailed scope of work of Detailed Design

The sector wise main features to be included in scope of work for various sectors for the Detailed Design of Subprojects, has been the given herein. The tasks to be performed will not be limited to these parameters and the Consultants may include all other features or parameters required to make the detailed design of Subprojects most cost effective, workable, comprehensive, viable and sustainable.

1) Urban Roads & Street Light

A. Existing situation

- a) Detailed survey and field investigations for roads which should include but not limited to collection of all available data about the existing & new roads, their structure and subsoil classifications & condition including traffic loads and intensity.
- b) Road traffic surveys at various points, cross roads / chowks, road sections and chowks encountering high traffic intensity and jams and reasons for these jams, road sections and chowks/ cross roads having encroachments beyond the authorized building limits.
- c) Road structure and its capability to take the present and future traffic loads and intensity.
- d) Plotting of location plans, road plans, contour plans, ROWs, building lines, longitudinal profiles and cross sections of existing roads and allied structures and chowks / cross roads along with location of all land marks and features.
- e) Details of existing utilities or services plotted on the road plans.
- f) Detail of existing utilities, services and encroachments plotted on the exploded plans of chowks / cross roads.
- g) Profiles of the existing longitudinal and cross drainage, waste water flooding reaches, storm water flooding reaches, Chowks / cross roads experiencing storm water or waste water flooding and reasons thereof.
- h) Detail of existing street light including its location on the road plan, status of erection of lights on street light poles or power distribution company's poles, type of luminaries and their functional status.
- i) Need of rehabilitation of the existing street light and need of street light on the road if it does not exist.

B. Detailed Design

The detailed design will include but not limited to the below given features. The consultants will add any other feature to make the design most cost effective and sustainable.

- j) Preparation of detailed design of the roads to be improved or new roads to be constructed in the presently populated areas or the areas now included in the municipal limits of the MCs which should include:
 - Design Criteria for roads
 - Geometric design of roads

- Road structures design
 - Road sections where encroachments are required to be removed to ease the traffic jams.
 - Road longitudinal profile and cross sections at required locations
 - Road longitudinal and cross drainage profiles and plans.
- k) Measures required to be taken for elimination of storm water and waste water flooding from affected sections of the roads and chowks / cross roads including the structures required to be constructed with their detailed drawings and plans.
 - l) Design of chowks / cross roads, their widening if required, exploded plans & sections, 3D views, construction of any suitable landmark defining some good characteristics of the city, their beautification and land scaping and installation of street lights with some special features if required to give a conspicuous look to the chowk/cross road.
 - m) Rehabilitation of the existing street light on the existing roads and chowks / cross roads or provision of new street light if it is suitably needed along with required drawings and plans.
 - n) Any other document / drawing / plan and section required to explain the detailed design and construction of roads / chowks.
 - o) Carryout Environmental and Social Impact Assessments acceptable to World Bank and EPA Punjab after implementation of the Sectoral Plan and recommend mitigation measures as per requirements along with Environmental and Social Management Plan

2) Design of Parking areas

The location of the lands allocated by MCs for parking areas, have been identified and detailed information regarding each is available with this office and will be provided to the Consultants. Any other information required therein will be provided by the Municipal Officer (I&S) of each MC whenever required by the Consultants.

The Design Consultants will be required to perform the below mentioned activities;

- 1) Topographic surveys of the land allocated for development of vehicles parking area by each MC or the existing parking areas including its spot levels
- 2) Detail of existing features and facilities in the land /parking area, status of all utilities and services in or around the land/area, approach road, its ROW, metalled width and condition all plotted on the plan.
- 3) Preparation of the location plans of MC office and parking areas plotted on the city GIS map, Key Plans and Layout Plans, 3D views of the parking areas for which the detail of machinery and equipment to be procured by MCs and presently available with MCs that will be supplied to the Consultants.
- 4) Planning and Preparation of Detailed Design of the parking areas on the given lands or extension of the existing parking areas incorporating the below mentioned features / services but the Consultants may include any other feature /services which may facilitate the parking, servicing, repairs & maintenance, washing of the vehicles or any other activity required to keep the machinery and equipment in satisfactory working condition. Further the Consultants will also look into the proposals of the MCs

regarding these facilities and will incorporate them wherever technically and physically feasible.

- a) Boundary wall and gate
 - b) Approach road
 - c) Sheds for vehicles parking
 - d) Apron and flooring
 - e) Washing deck with sand pit
 - f) Toilet
 - g) Guard room
 - h) Small office with staff room and dressing room
 - i) Small workshop with working apron
 - j) Water supply system
 - k) Sewerage system
 - l) Drinking water facilities
 - m) Any other facility which may enhance the functionality of the parking area.
- 5) Preparation of Detailed Plans, Drawings, Cost estimates and PC-I forms including the approach road and all required services.
 - 6) Preparation of the detailed cost estimates and Specifications for Technical Sanction
 - 7) Preparation of the Bidding Documents including Bill of Quantities and other documents specified in the Contract Documents.
 - 8) Participation of the consultants in the bidding process and bid evaluation
 - 9) Preparation of the Revised PC-I and Revised Detailed Cost Estimates if required.
 - 10) Carryout Environmental and Social Impact Assessments acceptable to World Bank and EPA Punjab after implementation of the Sectoral Plan and recommend mitigation measures as per requirements along with Environmental and Social Management Plan

3) Detailed Design of Parks & Green Spaces

- a) Complete topographic survey including spot levelling of the existing and proposed park site including the boundary wall.
- b) Any soil or other investigations required for design of the park.
- c) Preparation of inventory of existing facilities in the park including their condition and possibility of future use after repairs.
- d) Preparation of the location plan, key plan and layout plan, 3D views of the existing land or park by incorporating all facilities, structures and services in the plan.
- e) Design of rehabilitation of existing parks including repair or replacement of the existing components and provision of new components and facilities for improved public recreation and possible leasing out of facilities for generation of funds for O&M or construction of new parks at sites proposed by MCs.
- f) Design of the parks will include but not limited to the under mentioned components;
 - Preparation of site profile and design of landscaping in cut and fill
 - Pathways, boundary wall, podium, entrance gates and approach road.
 - Jogging track and allied services.

- Water source and pipe network for lawn watering and for water supply system for toilets, cafeteria and for drinking purposes.
 - Toilets as per actual requirement of the visitors.
 - Lighting system including high mast lights and ornamental lights on the pathways along with LT control panel and external electrification.
 - Cafeteria (feasible for larger area parks only) including water supply, drainage and approach path.
 - Children outdoor games including swings and slides and other children playing facilities to be erected on a separate and specified area in the parks with flexible floor.
 - Apron for the electrically operated games along with provision of suitable number of three phase electric connection points (weather proof DBs raised above GL) for renting the area to vendors
 - Benches & other sitting facilities, pergolas and other ornamental structures most suiting to the topography and location of the parks
 - Suggesting the most suitable plants according to the soil classifications and climatic conditions.
 - Planting facilities, planters and platform of placing flowering plants at suitable intersections of pathways, podiums or approaches.
 - A hall with suitable area (in larger parks only) for renting out to vendors of children indoor games or gymnasium or some other revenue earning facility.
 - All structures will be given aesthetic architecture to give beauty to the park.
- g) Design should be suggested in keeping with the storm season wherein it should not create long water stagnation periods.
- h) In case of parks on depressed sites, park storm water drainage should be accompanied with aquifer recharging facilities.
- i) Any other important and necessary item of work required to make the park most useful and provide a source of income to the MC for meeting the O&M charges.
- j) Carryout Environmental and Social Impact Assessments acceptable to World Bank and EPA Punjab after implementation of the Sectoral Plan and recommend mitigation measures as per requirements along with Environmental and Social Management Plan.

Annexure-B

Number of Projects for Detailed Design and Resident Supervision

No of cities		16	
Name of MCs		Jhelum, Wazirabad, Daska, Hafizabad, Kamoke, Muridke, Gojra, Jhang, Jaranwala, Kamalia, Okara, Khanewal, Burewala, Vehari, Bahawalnagar, Kot Addu	
Detailed Design	Municipal Service	Total No of subprojects	Description of subprojects
	Parking Areas	16	One subproject in each MC
	Roads & street lights	16	Average 03 Km length for one subproject in each MC
	Chowks/Cross raods/ Important Nodes	16	Average 03 Nos chowks / cross roads /important nodes in one subproject in each MC
	Parks	16	Average 01 subproject with average area of 02 acres in each MC
The length and number of roads and chowks/important nodes, and Nos and area of Parks can incrrase or decrease in a particular MC as per priority list of each MC and after scrutiny by PMDFC regarding feasibility of subprojects.			
Resident Supervision		Parking area	
		Remaining Rehabilitation works in 10 MCs	
		Resident Supervision of Roads & chowks / cross roads / important nodes and Parks may commence as soon as any one of these subprojects in a particular MC, is designed and work awarded and can be completed within the Contract Timeline of the Consultants.	

Consultancy Services for Design and Construction Supervision of Infrastructure Year-2 Subprojects										
Name of MCs---- Jhelum, Wazirabad, Daska, Hafizabad, Kamoke, Muridke, Gojra, Jhang, Jaranwala, Kamalia, Okara, Khanewal, Burewala, Vehari, Bahawalnagar, Kot Addu (16 Nos)										
S.N.	Consultancy Services	Year 2021-2022								
		Month-1	Month-2	Month-3	Month-4	Month-5	Month-6			
1	Design of Parking areas in 16 MCs									
2	Resident Supervision of Parking areas									
3	Resident supervision of uncommitted Group									
4	Design of Parks & Roads									
5	Design of Chowks/Cross Roads/Important Nodes									
6	Resident supervision of Roads and Chowks/important nodes									

Rates for Design of Subprojects		
1	Parks	Per acre
2	Roads	Per Km
3	Chowks/cross roads /important nodes	Per No

Staff for Resident Supervision of Subprojects	
Senior Engineer/Team Leader	01 for 8 MCs
ARE	01 per MC