

Section 5: Terms of Reference

1. Background

1. Government of India has announced the list of 60 cities to be taken up for development as smart cities. The cities have to now move towards converting their plan proposals to projects.

2. Objective of the Assignment

2. The objective of the assignment is to provide direct assistance to Gangtok Smart City Development Limited (GSCDL) of the Gangtok to design develop, manage and implement Smart City Projects as per para 10.6 of Smart City Mission Guidelines.

3. Scope of Services

3. The scope of PDMC under the proposed mission will be divided into three broad components namely (i) Project Management, (ii) Design & Development and (iii) Supervision.

4. The Consultant shall support the Gangtok Smart City Development Limited (GSCDL) of the Gangtok in overall project management of Smart City projects, including designing, developing, managing and implementing smart city projects identified by the city on the following two outputs:

- (i) Output1:Area Based Development
- (ii) Output2: Pan-city Solution

5. Under this assignment the consultant is required to review projects identified by the Smart City, for Area Based Development as well as for Pan City Solution (Smart City Proposal Can be downloaded from the website of Smart City mission <https://smartnet.niua.org/content/56764492-c9bc-4495-8a8f-7023b5cb0cf4>). The project detail (module wise) as mentioned in Smart City Proposal is attached at Annexure I for reference. The projects identified in this list are to be vetted in consultation with stakeholders with regard to the technical and economic feasibility and sustainability etc. Therefore projects may change so as to align and adapt with mission objective in consultation with the stakeholders/employer. The consultant will carry out required investigations, design, prepare feasibility report, Preliminary Design Report/ Detail Design Report (PDR/DPR), and assist in procurement of implementing partner/agency (ies) expeditiously for the indicative list of projects as Annexure I and any other project which may be envisaged for making city smart. The PDMC shall assist SPV in preparation of RFPs for the procurement of implementing partner(s)/ Agency (ies).

6. The PDMC shall also assist the Gangtok Smart City Development Limited (GSCDL)in supervision & monitoring of the work of implementing agencies and shall be responsible for overall management of the project.

7. The RFPs prepared by the PDMC for procurement of implementing partner/agency (ies) for implementation of Smart City Projects, will follow International Competitive Bidding (ICB) method. Gangtok Smart City Development Limited (GSCDL) will decide on method of procurement such as CQCBS, QBLCS (Quality Based Least Cost Selection) or as per the existing procurement legal framework of the State etc.
8. PDMC shall operate full-fledged with all its Key Experts and Non- Key Experts from their Project Office in Gangtok.
9. Without limiting the scope, the PDMC shall be responsible for the following tasks:

4. Detailed Scope of Work:

A. Task 1: Project Management:

I. Activity 1:

- i. The team leader of the consultant shall initially mobilize the core team following notice to proceed to set up project office along with equipment and peripherals and then will mobilize further manpower as per requirement for each module.
- ii. Handhold/ support Gangtok Smart City Development Limited(GSCDL) for project identification and prioritization, investigations, design, procurement, supervision, cost control, scheduling, risk management, monitoring, auditing, reporting, and ensuring compliances and due diligences required for the project;
- iii. Planning, scheduling and monitoring of the projects using PMIS / latest IT tools and techniques such as online monitoring of work sites with the aid of cyber tools.
- iv. Assist State Government/ Gangtok Smart City Development Limited (GSCDL) in identifying key stakeholders, (such as from elected representatives, eminent persons, sector experts, RWAs, market associations, government entities, institutions etc.) and conducting regular meetings to discuss progress and issues related to smart city projects, and prepare minutes for recording and circulation;
- v. Establish all necessary records and the procedures of maintaining/updating such records for each package and for the entire project.
- vi. Develop and implement procedure for timely payments to the contractors and monitor for compliance;
- vii. Monitor implementation of mitigation measures for the project, and update the Plan as per requirement.
- viii. Assist GSCDL in raising, regulating, utilizing, and managing various funds and grants allocated by various bodies/schemes to the SPV and simultaneously manage accessing of funds by the SPV from other sources including debt, user charges, taxes, tolls, surcharge and others.
- ix. Review the project costs and financing plan/project financing options for each project and assess the need for additional fundraising to bridge gaps between

capex required and allocable funds. The consultant shall be responsible for advising the most optimal financing option and tie up the funds required by the projects.

- x. Assist the GSDCL in fund raising activities, Prepare the GSDCL's future cash flow statement for the next five years to identify annual or quarterly funding requirements
- xi. Assist the SPV in recruitment and capacity building for the SPV's employees and define/review the SPV's organizational policies including Human Resource policy and draft code of conduct for employees, vendors/contractors.
- xii. Support the development/drafting of procurement manuals, governance structure, and financial reporting mechanisms of the SPV.
- xiii. Prepare the strategy and framework for citizen engagement and mass communication, and ensure compliance with smart city mission guidelines in this regard of all stakeholders of the projects.
- xiv. Support the SPV in engaging knowledge partners to include national and international academic and research institutions, experts, specialists, think-tanks, and other relevant organizations that build and strengthen the SPV's capacities to consistently implement and showcase the ABD projects.

B. Task 2: Project Design and Development:

II. Activity 2: Situation analysis report

a. Area Based Development:

- i. Integrated Projectisation - The consultant will review and re-verify the integrated modules (group of projects) in the smart city proposal and regroup them into modules in consultation with the Gangtok Smart City Development Limited (GSDCL)
- ii. Consult the available documents such as city development plans /strategy plans, sanitation plans. Mobility plan and review feasibility study etc.
- iii. Review existing status of physical Infrastructure and other available secondary data.
- iv. Identify requirements of surveys, studies and investigations;
- v. Carry out necessary surveys, investigations, situational analysis, cost benefit analysis, prepare preliminary project cost estimates.
- vi. Review the available GIS maps and integrate to the possible extent to develop area wise spatial mapping on assets.
- vii. Preparation of situation analysis report for each module.

b. Pan City Proposal

- i. Review existing available documents & infrastructure on the proposed smart solution and integrate them into modules.
- ii. Prepare the separate as-Is of each ABD & Pan Solution module.
- iii. Identify key stakeholders from City/ Official/ Elected Representatives/ Concerned NGOs, Eminent Citizens, Representative from Premium Institutes of the City/ State, Representatives of Business Organization in consultation with the Commissioner/ CEO of SPV etc. for consultation.
- iv. Evaluation of existing Broadband infrastructure in the city including both Government and Private Sectors to identify existing connectivity gaps (Fiber availability, Network Hubs, Redundancy etc.).
- v. Prepare & submit the locations with coordinates (e.g. electricity poles, stations/ sub stations, water zones etc.), for the sensors & devices to be mapped in GIS for Water/ Sewerage/ Solid Waste/ Street Lighting/others Management.
- vi. Identify & prepare the interfaces of integration between the modules under As-Is.
- vii. Submit a simple and clear architecture of whole as -Is system consisting of all ABD and Pan Solutions modules in integrated manner.
- viii. Preparation and Submission of Business Process Re-engineering Report (BPR) and Final Functional Requirement Specifications (FRS) and its acceptance & approval by the Client:
 - Design the entire business process as per the learning from the as -is study.
 - Prepare the Business process re-engineering report.
 - List out the functional requirement specifications as per BPR and get it approved by the Client to go for the feasibility study.

III. Activity 3: Feasibility Report**a. Area Based Development**

- i. Prepare feasibility study report of modules (group of projects) to ascertain both technical and financial viability based on financial models. The feasibility report should describe the various technical options with recommendation for most appropriate option
- ii. Preparation of project development and implementation road map, project prioritization, carryout project phasing matrix and risk mitigation plan.
- iii. Review land availability, rehabilitation - resettlement & environmental issues for identified projects
- iv. Coordinate with stakeholders and other departments of central and state governments wherever convergence is required, to facilitate integration with AMRUT, Digital India, Skill India, Make in India etc. and develop module wise action plan for completion of work
- v. Identify the possibility of private / public participation in the service delivery, as feasible and applicable and prepare contract document for such packages.

b. Pan City Proposal**• To-Be & Requirement Specifications**

- i. Prepare the separate To-Be of each ABD Project & Pan Solution.
- ii. Identify & prepare the interface of integration between the projects under To-Be.
- iii. Submit a simple & clear architecture of whole To-Be system consisting of all ABD & Pan Solution modules in an integrated manner.
- iv. Prepare the functional & non-functional requirements specifications.
- v. Prepare Networking and connectivity requirements
- vi. Identify & prepare Data digitization requirements
- vii. Identify & prepare Training requirements
- viii. Study various technologies and suggest the most viable techno-economic solution.
- ix. Prioritize the activities of the projects/components and prepare a tentative implementation plan.
- x. Identify risks and suggest mitigations plans.

• Financial Implications and Viability

- i. Identify financial implications involved in the project based on the techno-economic estimated cost.
- ii. Identify the possibility of private/public participation in the service delivery of the project, as feasible and applicable.
- iii. The financial viability of the project based on different financial models and recommend suitable model for each module indicating the rationale.
- iv. Assist Smart City/SPV in consultation for each sub project or group of sub projects as applicable, with stakeholders to discuss the project wise scope identified and future use of the suggested solution architecture.

IV. Activity 4: Preliminary/Detailed Project Report (PDR/DPR)

a. Area Based Development

- i. Based on the approved feasibility report prepare module wise preliminary/detailed designs report (PDR/DPR) as per requirement of the project in accordance with established engineering practices, tender drawings, and cost estimates etc.
- ii. For preparing DPR, the consultant will carry out all the required engineering surveys and investigations¹ such as total station/LiDAR survey, geotechnical investigation, soil survey, construction material survey, ground water investigation i.e. hydro-geological investigations, rainfall data collection, identification of underground utilities and their mapping, water sampling and analysis etc. including sufficient off-site information to allow relationship with possibly useable off-site infrastructure to be established.
- iii. The PDR/DPR should also include assessment of utility shifting requirements and costs estimations including O&M requirements and estimates; preparing document required for statutory clearances and other clearances like Railway, Forest, National Highways etc. including environment management plan (EMP) and mitigation measures;
- iv. Assist the Gangtok Smart City Development Limited (GSCDL) on technical, commercial, financial, and legal aspects for project development as per requirement.

b. Pan City Proposal

- i. Once the Feasibility Report is approved, prepare detailed designs in accordance with sound & established engineering practices; tender drawings and; cost estimates etc. The design shall meet the techno economic aspects for best possible solution after consideration of various available alternatives and shall sufficiently be detailed to ensure clarity and understanding by all stake holders and will be incorporated into a detailed project report to be submitted for the approval of the Smart City/SPV. The costs estimate shall be prepared on the basis of Rates suggested by SPV such as SOR of State with latest addenda and corrigenda And/or market rates would be arrived at proper rate analysis carried out through market enquiry;²
- ii. The design shall meet the techno economic aspects for the best possible solutions after considering various alternatives and shall be sufficiently detailed to ensure understanding by all stake holders and will be incorporated into the detailed Project Report. The activities for the proposed project shall include preliminary designs, drawings, works technical specifications, bill of quantities, and cost estimates

¹ Required Survey and Investigations in consultation and approval of the SPV

² The SPV is to decide for the rates to be adopted for the estimate of the Feasibility/PDR/DPR

(Engineer's Cost) based on Schedule of Rates of the state and/or market rate analysis, along with detailed implementation plans.

- iii. For each sub project based on the approved frame work the following shall be included in the DPRs:
 - Assessment of utility shifting requirement and costs estimations; preparing document required for statutory clearances and other clearances like Railway, Forest, National Highways etc;
 - Assess each site's environmental aspects for detailed design of the project component. Accordingly prepare initial environmental impact examinations (IEE) as may be required;
 - Preparation of environmental safeguard actions including impact assessments, if any, during the design stage;
 - Prepare environment management plan (EMP) and mitigation measures;
 - Preparation and implementation of resettlement plans, if any
- iv. Prepare Detailed Project Report including technical specifications, Contract drawings, bills of quantities and above aspects;
- v. Finalizing arrangement for contracting including exploring options for PPP/ Service Level Agreements;
- vi. Preparation of strategy and action plan for IEC program including public participation;
- vii. Assist stakeholder consultations for each module.

V. Activity 5: Bid Process Management (preparation of Bid documents and award of contract):

1. Based on discussions with all stakeholders and approval from to Gangtok Smart City Development Limited (GSCDL) the consultant shall Prepare consolidated bid documents, technical specifications, contract drawings, final bills of quantities, EMP and any other necessary information required for successful tendering and implementation of contracts. The Bid document should be in accordance with the Government of India / State Government guidelines. Under this task the Consultant is required to do the following:
2. Assist SPV in all aspects of procurement including issuing bid invitation, addendum/corrigendum, and clarifications to the bidders queries, assist in bid evaluation, selection of contractors/ implementing agencies;
3. Prepare contract documentation to include Letter of invitation, conditions of contract, specifications, design parameters; bills of quantities, etc. for all modules in close coordination with the SPV.
4. The draft contract to be included in the bid documents shall, among other things, clearly define the obligations of the implementing agency with respect to financing(if applicable), design, construction, O&M, and tariffs; equitably allocate risks between

the parties; and specify rules and procedures to address non- performance of contractual obligations.

5. Assist in preparation of replies of the pre-bid queries, contract negotiations and award of contract(s).

a. Area Based Development

- i. Finalize arrangement for contracting including exploring options for PPP/ Service Level Agreements;
- ii. Provide transaction advisory and bid process management support including preparation of bid documents, managing bid process including assist in issuing of bid invitation, addendum/corrigendum, and clarifications to the bidders queries, bid evaluation, selection of contractors, award of contract and signing of contract(s);
- iii. The draft contract to be included in the bidding document shall among other things, clearly define the obligations of the implementing agencies including specifying rules and procedures to address non-performance of contractual obligations.
- iv. The Gangtok Smart City Development Limited (GSCDL) of the Gangtok may get the bid document certified/accredited by Independent Agency.

b. Pan City Proposal

The bid process management shall include;

- i. Prepare the RFP Documents
- ii. Coordinate Bid Process Management
- iii. Support in evaluation of bids and selection of SI
- iv. The SPV may get the bid document certified/accredited by Independent Agency such as **the Department of Electronics and Information Technology (DeitY)**, a division of The Ministry of Communications and Information Technology (Gol).

Task 3: Project Implementation and Supervision

I. Activity 6: Implementation phase:

a. Area Based Development:

During the project implementation of the module(s) (group of projects), the Consultant shall:

- i. Assist Gangtok Smart City Development Limited (GSCDL) to conduct stakeholder consultation during design and implementation process.
- ii. Provide advice and guidance to the Gangtok Smart City Development Limited (GSCDL) for modern procedures and guidelines for project implementation and management in general.
- iii. Contract administration and Management of the modules;
- iv. Develop technical specifications for each Module
- v. Supervise and monitor construction work of each contracted module;

- vi. Scrutinize the implementing agency's detailed work program and guide implementing agency in preparation of supervision schedule/ work plan for each module;
- vii. Scrutinize construction methods proposed by implementing agency including environmental, safety, personnel and public issues;
- viii. Assess the adequacy of the contractors' inputs in material, labor and construction methodology and provide advisory whenever required;
- ix. Formulate a rehabilitation & resettlement framework as per requirement and monitor implementation of Social safeguards & environmental standards, if any.
- x. Carry out necessary quality control activities and certify that the quality of works conforms to the specifications and drawings;
- xi. Supervising the construction of various contract packages for related outputs of the Program
- xii. Record the work measurement jointly by PDMC and SPV and certify the contractor's bill and recommend for making payments to Gangtok Smart City Development Limited (GSCDL)
- xiii. Assist the Gangtok Smart City Development Limited (GSCDL) in interim and final certification of the bills of payment;
- xiv. Furnish the detailed construction drawings as necessary during continuance of the contract or checking and recommendation of drawings for approval as required;
- xv. Assist for resolution of all contractual issues including examining the contractor's claims for variations/ extensions or additional compensations etc and prepare recommendations for approval by the Gangtok Smart City Development Limited (GSCDL);
- xvi. Assist third party inspection of work carried out by implementation agency(ies), if necessary, as decided by Gangtok Smart City Development Limited (GSCDL)
- xvii. Assist Gangtok Smart City Development Limited (GSCDL) in obtaining all necessary permissions and complying with statutory requirements as required prior to construction, such as permissions from line departments' viz. Railway, Road Transport, Highways, Department of Archaeology, Department of Forests and National Parks etc.
- xviii. Review and issuance for execution of contractors' design and drawings with approval of SPV for lump sum turnkey contracts and review the project documents and give recommendations as required for PPP projects.
- xix. Review and finalize the "as built" drawings submitted by Contractor;
- xx. Assist the Gangtok Smart City Development Limited (GSCDL) in issue of completion certificates;
- xxi. Inspect the works at appropriate intervals during defect liability period and certification issue;
- xxii. Prepare on behalf of Gangtok Smart City Development Limited (GSCDL) monthly project progress reports describing the physical and financial progress of each subproject, highlighting impediments to the quality and progress of the works and

- remedial actions, to be submitted to Gangtok Smart City Development Limited(GSCDL)
- xxiii. Assist Gangtok Smart City Development Limited(GSCDL)in monitoring of progress as per the Program Performance Monitoring System (PPMS) or as required by Gangtok Smart City Development Limited(GSCDL)
 - xxiv. Develop and maintain project management information system (PMIS) to track project progress and generate MIS progress reports such as physical and financial progress.
 - xxv. Develop and implement procedure for timely payments to the implementing agency (ies) and monitor for compliance.
 - xxvi. Support Gangtok Smart City Development Limited (GSCDL) in overall Project Management and coordination with implementing agencies, government agencies, private players, technology service providers and others.
 - xxvii. Support Gangtok Smart City Development Limited (GSCDL) to meet compliance requirements as and when required.
 - xxviii. Support Gangtok Smart City Development Limited (GSCDL) in documentation and presentation of outputs
 - xxix. Prepare Capacity building plan and Change Management Plan
 - xxx. Monitor and maintain issue tracker and keep on updating the status of all risks and issues from time to time.

b. Pan-City Proposal

The project implementation support shall include

- i. Project Management Activities
 - a) Develop the project plan and project charter
 - b) Coordinate workshops and discussion meetings between SPV, State IT Department, State Line Departments, Municipal Corporation Officials, SI, MoUD/ (GoI) etc.
 - c) Co-ordinate DPR submissions/approvals of SI.
 - d) Responsible for reviewing the deliverables submitted by SI within a period of 2 week (or as agreed with SPV) from the receipt of that deliverable.
 - e) Highlight deviations/issues in the deliverables of SI to relevant authority within the specified time limits and assist SI and SPV in resolution of issues.
 - f) Prepare Capacity building plan and Change Management Plan
 - g) Identify the legal changes required and assist in drafting and issuance of Government Orders for giving effect to the BPR
 - h) Ensure that the technology standards, guidelines & frameworks are adhered to during implementation.
 - i) Suggest and co-ordinate capacity building needs and training programs.
 - j) Monitor and maintain issue tracker and keep on updating the status of all risks and issues from time to time.

- k) Defining the escalation mechanism for timely resolution of issues & risks.
 - l) Co-ordinate for STQC certification.
 - m) SLA monitoring and suggest changes in SLAs, if required
 - n) Monitoring the performance of the SI against the base project plan
 - o) Monitoring the performance of the overall system in terms of availability & efficiency against the service levels already defined for SI
 - p) Suggest corrective and preventive measures to SPV and SI to enhance the performance of the system
 - q) Coordinate with all the stakeholders and support the state departments while interacting with various agencies (internal and external) during the course of the project.
 - r) Build mechanisms to ensure coordination and consultation between all key stakeholders and members of the SPV on a continued basis to facilitate the execution of the project.
- ii. Monitoring the deployment and commissioning of necessary hardware
- a) Monitoring installation and commissioning of ICT infrastructure
 - b) Monitor the facility management services and help desk of the SI, to ensure system uptime
 - c) Provide fortnightly reports to SPV for the status of implementation till “go-live”.
- iii. Engaging STQC for Audit
- a) The Consultant will be responsible to engage STQC to conduct the assessment/review of the system before rolling it out. The Consultant shall review and inspect all the procedures and systems relating to the solution.
 - b) The Consultant would be responsible for the outcome in the following areas in such a manner which results in successful STQC certification. Specifically the STQC shall look into:
 - **Application audit :**
 - a) Functionality audit *vis-a-vis* the Functional Requirement Specification (FRS) agreed upon during development phase
 - b) Determine systematic measures implemented to control and secure access to the application programs and data including password controls, user authentications, roles and responsibilities, audit trails and reporting, configuration and interface controls, etc.
 - c) Review of database structure including:
 - d) Classification of data in terms of sensitivity & levels of access
 - e) Security measures over database installation, password policies and user roles and privileges

- f) Access control on database objects – tables, views, triggers, synonyms, etc.
 - g) Database restoration and recoverability
 - h) Audit trails configuration and monitoring process
 - i) Network connections to database
- **Review of Network and Website will include:**
 - a) Penetration and vulnerability testing
 - b) Security exposures to internal and external stakeholders
 - c) Installation of requisite prevention systems like Intrusion Prevention Systems (IPS), etc.
 - **Review and Implementation of Security Policies and Controls will include:**
 - a) Review of backup process, including schedule, storage, archival and decommissioning of media
 - b) Physical access controls review (over DC and other critical area)
 - c) Incident management process – covering identification, response, escalation mechanisms
 - d) Anti-virus (malware) controls – patching, virus definition file update
 - e) General computer controls review
 - f) Audit of IT Infrastructure will include monitoring the deployment of IT infrastructure at various locations including Data centre and Disaster recovery centre as per the BOM specified for the SI.
 - g) Performance / SLA Audit - whether the actual level of performance of the services is the same as specified in the contract of SI.
 - h) Identify the key issues / bottlenecks in the system and suggest mitigation plans.
 - i) Overall compliance to MSA and SLA - The compliance of the implementation partner with any other obligation under the MSA and SLA.
- iv. UAT and Go-Live Report :
- a) Assist & support to assess and certify the solution and associated infrastructure & services.
 - b) Planning, preparing & execution of the User Acceptance Test, tracing the functional requirements before the Go Live
 - c) Preparation and submission of Go-Live Report, which should shall include the following:
 - Hardware at various locations and data centre
 - Networking equipments and connectivity

- Data digitisation and migration
 - Training to the departmental personnel
 - Handholding support
 - Integration with applications of other departments / agencies etc.
 - Any corrective or preventive actions required from any of the stakeholders
 - Highlight the changes required in the applications and ensure that the suggested changes are incorporated in the system by the SI
- v. Monitoring the O&M
- a) Support SPV for monitoring of the compliance of the contractual obligations of the SI.
 - b) Monitor the operations and maintenance of the overall system as per the standards and requirements defined for SI including but not limited to resolution of issues, availability of the system, updating hardware or system software etc.
 - c) Ensure that the SLAs and performance levels defined for SI are met as agreement. The Consultant shall review the SLA performance, capacity and effectiveness of the helpdesk set up by the SI.
- vi. The consultant shall be responsible for reviewing the work of System Integrator and recommend payments to the SPV.
10. The Consultant shall provide support to the Client for the successful completion of the Project and its handing over to Client/ any other agency as decided by the Client.
11. The Consultant shall be responsible for reviewing the work of System Integrator and approve payments to be made to the SI by the Client.
12. The Consultant shall provide support to the Smart City/SPV for the successful completion of the Smart City Project and its closure.

5. Team Composition & Qualification Requirements

The Professionals required for this assignment are categorized as (i) Time based Contract (for task 1 and 3) and (ii) Lump Sum Contract (for task 2). **For time based contract, the team shall provide full person man days/ months' time on the project (field), no home input will be considered in this category.** However for Lump sum Contract. The team input may be considered into home and field. The support team shall be on the need basis of the assignment.

13. Based on the scope of work, the Consultant shall assess the actual requirement of the professionals for carrying out the assignment for different project under all modules during the course of the assignment. A reasonable size team of support staff like support design engineers, quantity surveyors, draft men, junior analysts, field engineers etc. shall also be required to support the professionals. The Consulting firm may deploy the additional staff as per requirement of the assignment for which there will be no extra financial implications for the Client and the cost of such additional staff is deemed to be included in the total Remuneration quoted by the Consultant in its Financial Proposal.

14. The broad indicative team requirement of professionals as core team & support team and support staff has been indicated below. The consulting firm shall review the composition [position required, number of professionals and man days' for each professional] and finalize as per the requirement of the assignment (modules).

15. The CVs of the core team shall be evaluated for technical score are indicated below:

	Position	Man months	Minimum Qualification & Experience
For Time Based Contract (Task 1 & 3)			
Task 1: Core Team ³for Project Management(The CVs shall be submitted by the Consultant for the following professionals)			
1.	Team Leader cum Urban Management Specialist <i>[CV for this position shall be evaluated.]</i>	25	<ul style="list-style-type: none"> • Bachelor of Engineering with Masters of Planning or MBA or Construction Management or Masters of Engineering in Urban Infrastructure related subject • 10 Years experience in Urban Sector • Experience of Project Management in Urban Infrastructure Works. Experience as Team leader/ Deputy Team leader for minimum 5 projects. • Knowledge of urban development policies, issues and Project experience

³SPV may change the core team and the man days as per the requirement of the Projects identified under Smart City Proposal and accordingly evaluate the CVs of core team for technical score.

2.	Infrastructure Specialist <i>[CV for this position shall be evaluated.]</i>	6	<ul style="list-style-type: none"> • Master's in Civil Engineering • 10 Years experience in Urban Sector • Experience in citywide urban development and infrastructure planning/ design. (Water supply, sewerage/septage / SWM/ urban roads etc.).etc) • Knowledge of urban development issues and Project experience.
3.	Project Performance and Management Specialist (PPMS) <i>[CV for this position shall be evaluated.]</i>	6	<ul style="list-style-type: none"> • Graduate Engineer/ Urban Planner/ MCA • 5 years' relevant experience • Experience of designing and implementing a suitable PPMS for projects preferably related to urban sector.
4.	E Governance Specialist	5	<ul style="list-style-type: none"> • Master's Degree in Information Technology/ Engineering/MCA • 5 years' relevant experience • Experience in working with the GoI/State Government/ ULB or similar institution for implementation e governance projects • Experience in preparation of technical document for the e-Services and solution to implementing the IT related infrastructure services /e-services, networking infrastructure etc.
5.	Urban Finance/ Accounts Specialist	5	<ul style="list-style-type: none"> • Master's Degree in Finance/ Economics/ Chartered Accountant/ Commerce/ ICWA / Post Graduate in Economics with specialization in Public Finance. • 8 years relevant experience. • Experience of municipal finance analysis, municipal budgeting and accounting and financial projections. • Experience in working with ULB • Experience in Financial Modelling in Urban Infrastructure and PPP.
6.	Knowledge Management Specialist	5	<ul style="list-style-type: none"> • Master's degree in Business, Economics, Public Administration or any development related field • 8 years relevant experience • Experience in capacity building, imparting training, preparation of training module, HR related activities

7.	Urban Designer	6	<ul style="list-style-type: none"> • Graduate Architect with Masters in urban design • 5 years relevant experience in city scape and street scape design. • Experience in relevant field
8.	Associate Engineer (infrastructure)	6	<ul style="list-style-type: none"> • Graduate in Civil Engineering • 5 years' experience in construction management of Urban Service delivery (Water Supply/ Sewerage/ Drainage/ Transportation/ Drainage/ Solid Waste Management)
Task 3: Support Staff for Project Implementation and Supervision (The CVs shall be submitted by the Consultant for the following professionals)			
1.	Construction Manager <i>[CV for this position shall be evaluated.]</i>	5	<ul style="list-style-type: none"> • Graduate in Civil Engineering • 10 years' experience in construction management of Urban Service delivery projects (Water Supply/ Sewerage/ Drainage / Drainage/ Solid Waste Management). • Knowledge of different construction methodologies. • Knowledge of latest Project Management tools
2.	Assistant Construction Manager	5	<ul style="list-style-type: none"> • Graduate in Engineering • 8 years' experience in construction management of Urban Service delivery (Water Supply/ Sewerage/ Drainage/ Transportation/ Drainage/ Solid Waste Management)
3.	Urban Planner	5	<ul style="list-style-type: none"> • Post-graduation in Urban Planning • 8 years' experience in integrated land use planning • Experience in GIS based land use planning, preparing Master Plan/CDP/SCP etc • Experience developing Development Control Regulations • Knowledge of land management tools like land pooling, TDR etc • experience in Urban research
4.	Support Engineer (2)	10	<ul style="list-style-type: none"> • Degree/Diploma in relevant branch • Degree in (relevant branch) Engineering with 2 years' experience Or Diploma in (relevant branch) Engineering with 4 years' experience
For Lump Sum Contract			
Task 2: Project Design and Development Team (The CVs shall be submitted by the Consultant for the following professionals <u>as when it is required</u>. However consultant may propose additional skill sets to complete the task. Consultant should also propose the duration for assignment for these professional based on their approach and methodology)*			

1.	Transportation Planner/ Engineer. <i>[CV for this position shall be evaluated.]</i>	<ul style="list-style-type: none"> • Master's Degree in Transportation Planning/ Transportation Engineering/ Highway Engineering/ Highway Planning • 8 years of experience in the area of Urban Transport Planning • Experience in city Mobility Plan preparation, Transit Oriented Development (TOD) /
2.	ICT Expert <i>[CV for this position shall be evaluated.]</i>	<ul style="list-style-type: none"> • Masters in Computer Application/ B-Tech in Computer Science/ IT • 8 years in implementing ICT projects in urban area. • Should have at least two projects of consulting/ implementing of city owned ICT wireless and wired networks.
3.	Hydraulic / Drainage Expert <i>[CV for this position shall be evaluated.]</i>	<ul style="list-style-type: none"> • Graduate Civil Engineer • 8 years' experience in drainage network designs and construction. • Experience in drainage network construction. • Experience in Rain water harvesting schemes, • Knowledge of preparation of drainage master plan
4.	Water Supply Expert (desirable)	<ul style="list-style-type: none"> • Degree in Civil Engineering with Post Graduation in PHE / Environment Engineering • 8 years' experience in water supply projects • Design and restructuring of water supply / distribution network projects • Experience in Operation & Maintenance of Urban Water Supply schemes.
5.	Heritage conservation Specialist	<ul style="list-style-type: none"> • NA (in case of Gangtok Smart City Proposal)
6.	Sr. Business Analyst/ BPR Specialist	<ul style="list-style-type: none"> • Degree in BE/B-Tech. with MBA • 7 years' relevant experience • Worked in similar capacity for at least 7 years. • Should have worked on at least 1 (one) urban project in government sector in similar capacity.
7.	Procurement Specialist	<ul style="list-style-type: none"> • Degree in Engineering/ Management/ law / Business Administration or Equivalent • 8 years' experience in the area of public procurement • Experience in contract procurement /management in infrastructure projects. • Knowledge of state purchase Manual

8.	Urban Designer	<ul style="list-style-type: none"> • Masters in Urban Design/Architecture or equivalent • 7 years' experience in Urban Designing of a heritage precinct. • Experience in Transit Oriented Development • Experience in Local area planning,
9.	Transportation Planner/ Engineer	<ul style="list-style-type: none"> • Master's Degree in Transportation Planning/ Transportation Engineering/ Highway Engineering/ Highway Planning • 7 years of experience in the area of Urban Transport Planning • Experience in city Mobility Plan preparation, Transit Oriented Development (TOD) /
10.	Housing Expert (for affordable Housing component)	<ul style="list-style-type: none"> • Masters in Urban Planning/Housing • 8 years experience in Urban Poverty Alleviation • Experience in affordable housing, low cost housing and cost effective construction technology, slum improvement plan preparation. • Knowledge of housing finance etc
11.	Communication Specialist	<ul style="list-style-type: none"> • Masters in mass communication • 5 years of similar experience • Experience in management of multimedia and activities pertaining to social media
12.	Waste Water Expert	<ul style="list-style-type: none"> • Masters in Environmental Engineering/ Degree in Civil Engineering • 7 years experience on water sourcing, planning & management of water supply and waste water projects including recycling and reuse of waste water and rainwater harvesting
13.	Solar Energy/ Renewable Energy Expert	<ul style="list-style-type: none"> • B-Tech in Electrical/ Power Engineering / related sector • 7 years' experience in power projects viz., planning/designing for power generation, transmission and distribution.
14.	Electrical Engineering Expert	<ul style="list-style-type: none"> • B-Tech in Electrical/ Power Engineering • 8 years similar experience
15.	Environment Management expert	<ul style="list-style-type: none"> • Postgraduate in Environmental Planning / Engineering /Environmental Sciences • 8 years' experience in conducting EIA, environment modelling & preparing Environmental Management plans, Clean Development mechanism.

16.	Utility Engineer	<ul style="list-style-type: none"> • Degree in Civil/ Mechanical Engineering • 8 years' experience in utility services.
17.	Social Development Specialist	<ul style="list-style-type: none"> • Master's Degree or equivalent in social development disciplines • 8 years' experience in years' experience in Urban Poverty Alleviation. • Experience in urban social welfare projects/ community mobilization/ Social Development Sub-Plan
18.	Transaction Advisor for PPP Projects	<ul style="list-style-type: none"> • MBA (Finance) / CA/CFA or equivalent • 8 years' experience in project funding, structuring of PPP projects. • At least developed 02 (two) PPP projects for which the Concessionaire has been appointed and the projects are in execution and/or in operation mode.
19.	Structural Engineer	<ul style="list-style-type: none"> • Masters in Structural Engineering • 8 years related. • Should have the experience in structural design of infrastructure projects.
20.	GIS & Remote Sensing Expert	<ul style="list-style-type: none"> • Degree in Geography, Planning, Architecture with Diploma/ Certificate in GIS • At least 8 years of experience in working on similar projects (i.e. use of remote sensing & GIS technology in urban sector projects) • Knowledge of major GIS software products, GPS, total station, coordinate reference systems, satellite remote sensing technology and GIS applications.
21.	Information Security Systems Expert	<ul style="list-style-type: none"> • MCA/ B Tech / M Tech in IT with certification in CISSP/ CCSP • 8 years' experience in similar field
22.	IT Solution Architect	<ul style="list-style-type: none"> • Degree in Information Technology/ Electronics Engineering or equivalent • 8 years' experience in similar field
23.	Networking & IT Infrastructure Specialist	<ul style="list-style-type: none"> • MCA/ B Tech / M Tech in IT with certification in CCNA • 8 years' experience in similar field

24.	Video Analyst	<ul style="list-style-type: none"> • B-Tech in Information Technology/ Electronics & Communication Engineering / Electronics Engineering / Computer science • 5 Years experience in IT field • Minimum 2 years of experience in designing and implementation of large ITMS/ BMS including Surveillance & Video Analytics
25.	IoT, IoE, AoT Specialist (Optional)	- NA

* The team composition is indicative. The Consultant shall review the composition and suggest suitable skill sets and man months for specialists and support staff as per their approach and methodology.

However for Time Based tasks minimum man month of professionals (mentioned above under respective tasks) should be followed while preparing the technical proposal.

6. Reporting Requirements and Time Schedule and Deliverables

16. The activity wise reporting requirements and deliverables for ABD Project shall be as follows:

a. Activity 1:

17. Mobilization and establishment of Project office, and submission and acceptance of Inception Report by the Client: Inception Report containing approach, methodology, work plan and staffing schedule for the project activities and schedule for deliverables;

b. Activity 2: Situation analysis report

- Preparation of situation analysis report for each module.
- Preparation and Submission of Business Re-engineering Report (BPR) and Final function requirement specifications (FRS) and its acceptance & approval by the Client.

c. Activity 3: Feasibility Report

19. The Report shall address the following aspects:

- Evaluation of design alternatives
- The topography and development pattern of the project area
- Develop historic and future population growth and determine the impact of the population growth on projects under taken in Smart City Mission.
- Preliminary design and cost estimation

- Operation and maintenance aspects
- Financial planning and evaluation
- Institutional and social capacity
- Environmental and Social Impact Assessments
- Formulation of work implementation plan
- Preliminary procurement plan
- Preliminary construction schedule
- Organization evaluation and capacity building and any other relevant information required on project to project basis.
- Identification of potential PPP projects.
- Recommendation of suitable arrangement for contracting including DBO / DBFOT/Management Contracts etc.
- Environmental Management Plan

d. Activity 4: Preliminary/Detailed Project Report (PDR/DPR)

20. The DPR and related documents for the Project must conform to the requirements of the guidelines and procedures of the government and shall include the following:

- Project Proposal
- Project Evaluation Criteria
 - General information: To include basic technical design, institutional arrangements
 - Estimated Project Cost
 - Project Revenue
 - Estimated Project Benefits and Costs
 - a. Financial
 - b. Economic
 - Risk Allocation Matrix
 - Project and Financing Milestones
- Economic and financial analyses,
- Location map
- Preliminary design, specification of works and materials
- Engineer's Estimate in the BOQ format, as necessary
- At this stage consultant should also suggest / propose component different suitable procurement options for proposed projects/module under the respective component.

e. Activity 5: Bid documents and award of contract

f. Activity 6: Project Implementation and Supervision

- **Monthly Contract Performance and Management Reports** using PMIS/ Project Management IT tools for each contract during entire program period.

- **Contract Completion Reports** for each project package..
- **Quarterly and Yearly Progress Reports**

7. Time Schedule and activity wise Deliverable

21. The Activity wise time schedule shall be as follows

S No.	Activity wise Deliverable	Time period (T ₀ date of signing of Contract) and T ₁ is the date of appointment of implementing agency						
1	Activity 1: Inception Report	T ₀ + 15 days						
2	Activity 2 : a) For ABD Modules : Submission of Situation Analysis Report for Modules and its acceptance & approval by the Smart City/SPV b) For Pan City Module : Submission of Business Re-engineering Report (BPR) and Final function requirement specifications (FRS) and its acceptance & approval by the Smart City/SPV	T ₀ + 12 Months						
3	Activity 3: For ABD and Pan City Modules : Feasibility Study Report and its acceptance & approval by the Smart City/SPV							
4	Activity 4: For ABD and Pan City Modules : Submission of Detailed Project Report and its acceptance & approval by the Smart City/SPV							
5	Activity 5: For ABD and Pan City Modules : Submission of Bid Documents and its acceptance & approval by the Smart City/SPV							
6	Activity 2-5 <table border="1" data-bbox="269 1808 1032 1885"> <thead> <tr> <th data-bbox="269 1808 386 1885">Time line</th> <th data-bbox="386 1808 800 1885">No Of Modules (out of total n modules)</th> <th data-bbox="800 1808 1032 1885">Target Date</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Time line	No Of Modules (out of total n modules)	Target Date				
Time line	No Of Modules (out of total n modules)	Target Date						

		Modules in each Quarter	Cumulative Modules	
	Q 1	-	-	T ₀ + 3 Months
	Q 2	-	-	T ₀ + 6 Months
	Q 3	-	-	T ₀ + 9 Months
	Q 4	n	All Modules	T ₀ + 12 Months
	The time period may be extended for another 6 months as per the requirement of the module(s) by the Gangtok Smart City Development Limited(GSCDL)for completion of the assignment up to activity 6.			
8	Activity 6 Project Implementation Support			From the date of selection of the implementation Agency for the each Module To T ₀ + 3 years
	For ABD Modules			From the date of selection of the implementation Agency for the each Module To T ₀ + 3 years
	For Pan City Module Including the following during implementation period a) Submission & acceptance of User Acceptance Test (UAT) Reports b) Submission of Standardization Testing and Quality Certification (STQC) Certificate(s) c) Submission & acceptance of "Go-Live" Report			From the date of selection of the System Integrator (SI) T ₁ to T ₀ + 3 years For a, b, and c activities: T ₁ + 4(four) Months during implementation by System Integrator (SI)

22. In addition to above, the consultant will submit monthly progress reports at the end of each month during the course of assignment mentioning status/ progress of work, activities performed, and issues resolved/to be resolved related to assignments during the month.

8. Client's Input and Counterpart Services and Facilities

- a) Services, facilities and property to be made available to the Consultant by the Client: Adequate office space shall be provided to the Consultant by the Client.
- b) Professional and support counterpart personnel to be assigned by the Client to the Consultant's team: As per requirement and at the request of the Consultant.
- c) The Consulting firm will be responsible to:
 - Arrange for fully equipped office and office operation related facilities for project development team.
 - Arrange for data collection, survey and investigation, preliminary design, report preparation of reports for projects modules
 - Arrange for communication related to contract, data processing, computers, printing equipment and necessary stationeries.
 - Arrange for all transportation and travelling including local travel required for the assignments to perform the consultancy services/job.
 - The equipments/ furniture purchased from the funds provided by the Client shall be the property of the Client and on completion of the project the Consultant shall return all those equipments/furniture in workable condition.

9. Payment Schedule

(a) Payments shall be made according to the following schedule:

- I. The payment shall be made as follows:-

Activity wise Deliverable	Payment Schedule
The accepted contract amount shall be in the following proportion;	
(a) Accepted Contract Amount (M)= [insert amount]	
LUMP SUM BASED FOR TASK 2 (Activity 2 -5)	
(b) For Activity 2 to Activity 5, Lump sum amount (M ₁) = Fin 3B + Fin 4B	
For Activity 2 to Activity 5 payment shall be made on pro rata basis of the modules For each module payment shall be (M ₂) = M ₁ X N N = Actual Module cost / Total cost* of Area Based Development Projects. * For total cost please refer Annexure I Within a module the total amount (M ₂), for activity 2 to activity 5 shall be paid as mentioned below:	
Activity 2 :	37.5 % of M ₂
a) For each ABD Module: Submission of Situation Analysis	

Report for Modules and its acceptance & approval by the Gangtok Smart City Development Limited(GSCDL) b) For Smart Solution Module: Submission of Business Re-engineering Report (BPR) and Final function requirement specifications (FRS) and its acceptance & approval by the Gangtok Smart City Development Limited(GSCDL)	
Activity 3 For each ABD and Smart Solution Module : Feasibility Study Report and its acceptance & approval by Gangtok Smart City Development Limited(GSCDL)	25% of M2
Activity 4 For each ABD and Smart Solution Module : Submission of Detailed Project Report and its acceptance & approval by the Gangtok Smart City Development Limited(GSCDL)	25% of M2
Activity 5 For each ABD and Smart Solution Module : Submission of Bid Documents and its acceptance & approval by the Gangtok Smart City Development Limited(GSCDL)	12.5 % of M ₂
TIME BASED FOR TASK 1&3 (Activity 1 and 6) (a) For Activity 1 to Activity 6, Time Based amount (M ₃) = Fin 3A + Fin 4A	
Monthly payment shall be made on Time Based Input of the Experts as per the per day professional fee quoted by the Consultant and accepted by the Gangtok Smart City Development Limited(GSCDL)of the Smart City. The Monthly payment shall be made on the basis of actual deployment of man days and Approved Time Sheet(s) by the Gangtok Smart City Development Limited(GSCDL)	

ANNEXURE I**1. Introduction**

1. Total estimated cost of SCP is 964.56 Cr, out of which PAN City has share of 161.00 Cr and Area Based Development cost is 760.56 Cr.

2. This indicative list of projects identified for Area Based Development given below is to be vetted in consultation with stakeholders with regard to the technical and economic feasibility and sustainability etc. Therefore projects may change and other projects which may be envisaged for making city smart can be adapted in consultation with the stakeholders/employer. However the total cost of project should remain the same.

2. Area Based Development:

3. The area-based development proposal covers many diverse use & activity components of the city making it a truly representative area. The proposals though very specific, are based on conceptual understanding of the context of Gangtok and are easily replicable in similar context.

4. The proposal is based on the principle of integrating the Natural, Social and Physical context of Gangtok to best utilize the immense and diverse potentials offered by the Gangtok city. The proposals aim to achieve the balance of economic development, healthy life style and environmental conservation sought in the smart city vision for Gangtok, in a democratic and participatory manner with the following key components.

- Promoting walkability which is an existing feature of travel pattern in the city, would help in boosting a sustainable lifestyle at Gangtok.
- Controlling environmental pollution caused by vehicular movements and improving energy efficiency
- Empowering citizens through increased participation by creating accessible and lively public space promoting social interaction and activities for all citizens and tourists, especially the youth.

5. The modules (set of projects) identified under the ABD proposal is as below:

SI	Modules	Set of Projects	Cost (Cr)
1	Mobility	• Footpaths	
		• Road & Junction Improvement (including Widening, Railing, Signages)	
		• Improving new connectivity from East side (from Namthang road to naya bazaar road)	
		• Multi-Level Parking	
		• Up gradation & Smart Solutions for Existing (Taxi Stand) Parking	
		• Pedestrian Walkways (Connecting different levels)	
		• Pedestrian Subway / FOBs	
		• Pedestrian Infrastructure & Street Furniture	
2	Heritage, Culture & Recreational	• Sport Facilities	
		• Movie Theatre	
		• Cultural Center	
		• Handicraft Bazar / KisaanBazar	
		• Lively Public Spaces / Public Art / Sports / Parks /Open Gym-Yoga Spaces	
3	Other Development Works	• Retrofitting of Central Park (including expansion & façade treatment)	
		• Facilities / Infrastructure for Cremation Facilities	
		• Public Convenience (Toilets)	
		• Solar Panel (on Roof Top of Public buildings)	
		• Signature Entry Gates of the city (04 Locations)	
		• Tourist information kiosks at various locations	
		• Rain Water Harvesting	
		• Upgrade Ropeway Infrastructure	
4	Economic Regeneration / Livelihood Creation / Tourist Facilities	• Flower Market Complex (Trading hub / Cold Storage /Information Centre)	
		• Hotels (with or without Casino)	
5	Safety and Security	• Surveillance System (CCTV)	
		• Emergency Call Points	
		• Modern Police Kiosks	
6	Housing / Mixed Use	• Housing (Land of Building & Housing)	

	Development	Deptt.)	
		<ul style="list-style-type: none"> • Infrastructure Works & Facilities at Slums 	
7	Infrastructure/ Utility Up-gradation Sewerage	<ul style="list-style-type: none"> • Sewer Line (Apart from the existing one) • Strengthening & Augmentation of sewer network • Sewage Treatment Plant (Packaged STP) Drainage 	
8	Drainage	<ul style="list-style-type: none"> • Covering of Open drains • Strengthening & Augmentation of drainage network 	
9	Water Supply	<ul style="list-style-type: none"> • Strengthening of Distribution Network • Smart Metering • SCADA 	
10	Electricity	<ul style="list-style-type: none"> • Revamping of Distribution Network • Energy Efficient Solar Street Lighting (LED) • Underground Distribution Cabling • Smart Metering Electricity 	
11	Solid Waste Management	<ul style="list-style-type: none"> • Door to Door Collection • Smart Road Bins (Sensor) • Smart Community Bins (Sensor) • Road Cleaning Equipments • Sanitation 	
12	Communication Infrastructure	<ul style="list-style-type: none"> • Citywide OFC & Wi-Fi Network 	
13	City Branding	<ul style="list-style-type: none"> • Cultural Theme Events • Gangtok Mahotsav • Floriculture promotion • Online & TV Campaigns • Awareness Campaigns • Branding & Promotional Materials 	
	TOTAL		

NOTE:- Please refer the Smart City Proposal for Gangtok Municipal Corporation.

3. Pan City Development:

6. The Pan City proposal is an integrated ICT based solution for management, monitoring & control and e-governance system for municipal service delivery showcased over the water supply system of the city.

7. The proposal is part of a comprehensive ICT strategy for integrated municipal e-governance and services management information system that would be used by citizens to access various municipal services and interact with the municipality on service issues. The same system with a different interface is used by the municipal management to monitor and analyze their service infrastructure so that they are able to take informed decisions and respond to citizens' services issues in a timely and reasonable manner. This system shall be stacked over real time data acquisition and control systems (SCADA) used for monitoring infrastructure and utilities.

8. It is seen as a demonstration of possibilities and act as a catalyst to implementation of a comprehensive smart city strategy; and should therefore not be seen in isolation. The underlying IT, information and application infrastructure would be common to and be shared by most municipal services for many municipal applications and the solution can further be incorporated in the various public services.

9. The case for water supply system was chosen because it is seen as a critical pain area by most citizens and stakeholders; and was due for a complete overhaul with a proposal already approved by the State Government.

10. The modules (set of projects) identified under the Pan City proposal is as below:

SI	Modules	Set of Projects	Cost (Cr)
1	Water Supply Distribution Network	Dismantling of existing network	3
		Up-gradation of existing distribution tanks (GLSR/OHSR)	15
		Laying of Distribution Network	76
		Smart Metering Water	7
		SCADA System	10
2	ICT & E-Governance	Gangtok Smart City Portal (Under SPV) Gateway for all the Infrastructure services	25
		Capacity Building Programs	25
TOTAL			161