

**Tender for Providing
Geographic Information System (GIS) Services for
Zone – 10 in Corporation of Chennai**



Tender Reference: W.D.C.No: AEE/GIS / 1365 /2010

CORPORATION OF CHENNAI

**GIS Cell, Works Department, Ripon Buildings,
Periyar EVR Salai, Chennai – 600003**

Tel.: +91-44-25619397.

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www.chennaicorporation.gov.in

Signature of Tenderer with Company Seal

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PART – A. GENERAL

Document Control Sheet

Tender for Providing Geographic Information System (GIS) Services for Zone – 10 in Corporation of Chennai

Tender Reference	W.D.C. No: AEE/GIS / 1365 /2010
Date of issue	07.06.2010
Pre Tender meeting	18.06.2010, 3.00 PM (Tentative)
Last Date for sale of Tender Document	30.06.2010, 3.00 PM
Last Date and Time for Receipt of Tender	02.07.2010, 3.00 PM
Date and Time of Opening of Tender	02.07.2010, 3.30 PM
Address for Submission of Tender	The City Engineer, Tender Sales Counter, Corporation Of Chennai, Ripon Buildings, Periyar EVR Salai, Chennai – 600003. Tel.: +91- 044 - 25619397 and Fax No. 044- 25361928.
Amount of Earnest Money Deposit (EMD) Demand Draft in favour of Commissioner, Corporation of Chennai.	1% of the quoted value. Shall be enclosed in financial bid.

**City Engineer,
Corporation of Chennai.**

Disclaimer

The information contained in this Tender document or subsequently provided to Tenderer (s) whether verbally or in documentary form by or on behalf of Corporation of Chennai (herein after called “ COC ”) or any of their employees or advisors, is provided to the Tenderer(s) on the terms and conditions set out in this Tender document and all other terms and conditions subject to which such information is provided.

The purpose of this Tender document is to provide the Tenderer(s) with information to assist the formulation of their Proposals. This Tender document does not purport to contain all the information each Tenderer may require. This Tender document may not be appropriate for all persons, and it is not possible for the COC to consider the investment objectives, financial situation and particular needs of each Tenderer who reads or uses this Tender document. Each Tenderer should conduct its own investigations and analysis and should check the accuracy, reliability and completeness of the information in this Tender document and where necessary obtain independent advice from appropriate sources. COC makes no representation or warranty and shall incur no liability under any law, statute, rules or regulations as to the accuracy, reliability or completeness of the COC document.

COC may in its absolute discretion, but without being under any obligation to do so, update, amend or supplement the information in this Tender document.

CORPORATION OF CHENNAI
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Periyar EVR Salai, Chennai – 600003.
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NOTICE INVITING TENDER

Ref : W.D.C. No: AEE/GIS / 1365 / 2010 Dt 07.06.2010

Corporation of Chennai invites

Tender for Providing Geographic Information System (GIS) Services for Zone – 10.

Sealed tenders are invited from the eligible tenderers for the above work. The tenderers shall have to fulfill the following minimum criteria

Prequalification Criteria:-

1. The tenderer should have developed and implemented GIS based projects in any of the fields such as urban utilities like roads, properties, storm water drains, street lights, electrical distribution, water supply and sewerage network with implementation in the past three financial years. (2007-08,2008-09,2009-10)
2. The tenderer should have the annual turnover of Rs.3 crores in any three financial years in the last five years. (2005-06,2006-07,2007-08,2008-09,2009-10)
3. In case of a Joint Venture the prime tenderer should have above mentioned turn over. The agreement with the associate shall be furnished.
4. The tenderer should have already carried out or doing at least two works on GIS services for a minimum value of 50 lakhs in the past three years. (2007-08,2008-09,2009-10)
5. The tenderer should have submitted their I.T Returns for the last 5 years. (2005-06,2006-07,2007-08,2008-09,2009-10)
6. The tenderer should be only Private & Public Limited Companies - Enclose copy of Certificate of incorporation & Memorandum & Articles of Association
7. Bidder/Joint Venture should not have been black listed by any State or Central Government in India and Bidder/Joint Venture should not have been

terminated by any State or Central Government in India in the last two years.
(Submit undertaking on Rs.100, Non – Judicial Stamp Paper)

The Tender Document is obtainable from the Tender Sales Counter, Corporation of Chennai, Ripon Buildings, Chennai – 600 003, on all working days till 3.00 pm on 30.06.2010 on payment of Rs 16,875/- in the form of Demand Draft of any Nationalized Bank / Scheduled Bank payable at Chennai, drawn in favour of the Commissioner, Corporation of Chennai, Chennai – 600 003.

Tender documents can also be obtained by Registered Post or Courier by sending a requisition letter addressed to the City Engineer, Ripon Buildings, Chennai - 600 003, enclosing a Demand Draft for the Value of Tender Documents plus Rs.1,000/- at the risk and responsibility of the prospective Consultant.

Alternatively Tender documents can be downloaded at free of cost from the websites www.tenders.tn.gov.in or www.chennaicorporation.gov.in till 3.00 pm on 30.06.2010. The downloaded tender document shall be submitted without cost of tender document. In case if any deviation is found in the tender document submitted by the consultant from the content mentioned in the web sites shall liable to be rejected at any stage of the contract.

The tender shall be submitted in wax sealed envelopes, which shall be addressed to The City Engineer, Corporation Of Chennai, Ripon Buildings, Chennai – 600 003. The sealed cover should be marked as “Tender for Providing Geographic Information System (GIS) Services for Zone -10” and addressed to The City Engineer, Corporation of Chennai, Ripon Buildings, Chennai – 600 003.

The tenders must be dropped as a single sealed cover containing two separate wax sealed envelopes for Technical Bid (Cover A) and Financial Bid (Cover B) in any one of the Tender Boxes kept for this work at the C.E.(GL) Office, P.R.O. Office, Office of the Vigilance Officer and Tender Sales Counter, Ripon Buildings, Corporation of Chennai, on or before 3.00 p.m. on 02.07.2010. The Technical Bid will be opened at 3.30 pm on the same day in the presence of available participant consultants or their authorized representatives.

EMD Amount is 1% of the quoted amount in the form of Demand Draft of any Nationalized Bank / Scheduled Bank payable at Chennai drawn in favour of the Commissioner, Corporation of Chennai, Chennai – 600 003. The filled up Tender Documents can also be sent by Post or by Courier to The City Engineer, Tender Sales Counter, Corporation Of Chennai, Ripon Buildings, Chennai – 600 003 and the Corporation of Chennai shall not be responsible for any delay in transit. The tenders received after the due date and time will not be considered under any circumstances.

If the office happens to be closed on the day as specified, the tenders will be received and opened on the next working day at the same time and venue. The City Engineer, Corporation of Chennai may be contacted for any clarification on all working days from 2.00p.m to 5.00p.m. or over Telephone No: +91-44-25619397. Corporation of Chennai reserves the right to reject any or all proposals and reserves the right to cancel the invitation, advance or postpone without assigning any reasons whatsoever.

City Engineer,
Corporation of Chennai.

Tender for Providing Geographic Information System (GIS) Services for Zone – 10 in Corporation of Chennai

1. Introduction

1.1 Background:

For decades, engineering staff have located parcel maps, as-built drawings, SLDs (Single Line Diagrams) and records of survey maps by physically going to the record room and manually searching for the records. This tedious and cumbersome procedure was inefficient and error-prone and thus, hindered the productivity of various Departments. The newly developed enterprise GIS provides services through a well-designed Web application for the Intranet and Desktop Application for field staff, based on GPS collected, high-precision facilities data. The web-based application is connected to the RDBMS to access not only engineering drawings, but also the enterprise tabular database as billing and commercial information systems. The new system would improve the efficiency and accuracy of the data retrieval, mapping and analysis.

The Planning Commission, Government of India has sanctioned the project of 'Computer Aided Utility Mapping' for six cities and Chennai is one among them. Under this project all urban utility attributes are to be surveyed, data are collected and integrated with the GIS map supplied by the National Informatics Centre. It has been decided that zone -10 may be surveyed and the attribute collection work may be done.

1.2 The Key objectives are:

- i. For improving services to society members.
- ii. For Strategic planning and long term planning for Future projects.
- iii. Creating summarized reports from the database.
- iv. To have Geo-data in universal format.

Hence, COC intends to adopt a two stage Tendering process for the selection of the Successful Tenderer(s) to conduct comprehensive field survey of the attributes for road network, property, other physical features along with the collection

of a list of non-spatial attributes and to integrate to the base maps available with COC for a better management, planning, administration and decision making and also to improve its revenue through the collection of tax from the un-assessed properties in the COC limits. The area under consideration in this Tender is 25 sq. km in various zones and having approximately 1,25,000 number of properties and 450 km length of roads. The area, road length and the number of property mentioned are only approximate figures, which needs to be verified during the survey process and the actual quantities covered are to be claimed for payment.

2. SCOPE OF WORK:

The scope of work will include but not limited to the following.

The scope of services include provision of GIS services like

1. Collection of data by doing physical surveying for attributes of various layers, digitally photographing the property and data validation in the field.
2. Integrating the attribute data available with COC in compatible format
3. Creation of Data base for the properties surveyed
4. Creation of suitable unique open ended id for all the attribute data collected in consultation with COC
5. Mapping Polygon, Line and Point themes in various layers of GIS maps in ARCVIEW 9.2 with the base map as reference. The tenderer shall be responsible for capturing 100% of data on the ground and integrate on the existing base map. The acceptable tolerance value is $\pm 5\%$ for spatial attributes and no tolerance shall be permitted for non spatial attributes
6. All the field data and attribute has to be input through Customized application software available with COC.
7. Preparing GIS based asset database for the COC assets.
8. Integration of GIS data along with images into the GIS maps available with COC.

2.1 EXECUTION PROCESS

The successful tenderer shall carry out the steps as mentioned below. These steps will provide end-end quality products for the area so that the products shall be directly usable by COC with the existing GIS system. The map is available with COC in **ArcSDE** in **1:1000** scale.

Step 1: Study of base maps and digital data base provided by COC.

Step 2: Field Survey.

Step 3: Collection of attributes in the prescribed format for each feature.

Step 4: Data entry in the suitable file format for each feature.

Step 5: Integration of data with customized software on GIS maps.

Step 6: Demo with GIS.

The field data collection, validation with COC records and integrating with the base maps are the services to be provided by the tenderers and are as listed below:

2.1. A: STUDY OF BASE MAPS AND DIGITAL DATA BASE

The tenderer shall study the base map available with COC in 1:1000 Scale provided by NIC (National Informatics Centre)

2.1. B. SURVEYING

The tenderer shall undertake the field survey in specified area and identify the features as requested in this tender. The features to be surveyed in detail are

(a) Properties. Properties shall include residential buildings, commercial buildings, office buildings of central/state/private/COC, all educational institutions, cinema halls, community centers, marriage halls, hotels, restaurants, shops, shopping malls, worship places of all religions like temple, church, mosque etc, Godowns, ware houses, service stations, petrol bunks, railway stations, bus stations (terminus) all types of Hospitals of Govt / COC / Private, market, park, Burial ground, play ground and stadium.

(b) Roads and the features in the road which includes Road side Parks, Storm Water Drains , Garbage Collection Points , Garbage Bins , Transformers, Pillar Boxes(TNEB, BSNL and other Service providers), Cross drainage works (Culverts and bridges), Flyovers / Grade Separators, Street Lights, Trees, Public taps, Water tanks, Hand Pumps and Bore wells , Traffic Islands, Parking Stretch, Bus Shelters, Traffic Signals, Medians and Footpaths.

2.1.C. DATA COLLECTION

The tenderer shall survey and collect the data (spatial and non spatial) from the field with respect to each feature mentioned above. The tenderer shall ensure that footprints of properties (private and public) are captured and digital photographs (existing shape and size on the ground) are taken. The tenderer shall be responsible for capturing 100% of data on the ground and integrated on the existing maps. The acceptable tolerance value is $\pm 5\%$ for spatial attributes and no tolerance shall be permitted for Non spatial attributes.

2.1.D. DATA ENTRY

Field data collected shall be entered into suitable file format for each feature.

2.1.E. DATA VERIFICATION

Field data collected by the tenderer shall be checked by COC. Random quality check of minimum 10 % of the data shall undergo Quality check by COC and the QC report shall be given within 15 days from the date of submission. Among the data randomly selected for quality check, if less than 5% of data is found erroneous, the tenderer shall undertake the corrections required and resubmit within a week's time for QC. If the erroneous data is more than 5% of the sample data collected for QC, the tenderer has to redo the survey for that area. No extension of time will be given for the redoing work. Only one revision is permitted. Otherwise the product will be rejected and the termination of the agreement will be recommended. Payment to the tenderer shall be made only after the quality check.

2.1.F. INTEGRATION OF DATA WITH GIS SYSTEM

The tenderers shall be responsible to integrate the validated data into the existing GIS maps / Digital database at Ripon Buildings or at designated site by COC. The base maps and the digital data available with COC shall not be copied into CD or in any other medium by the tenderers. COC will facilitate the access to corresponding base maps and digital data of the

prescribed area for the tenderer. The tenderers must be ready to setup project office at Ripon Buildings or at designated site by COC and the data security guidelines mentioned in this TENDER must be followed.

2.1. G. DATA SECURITY GUIDELINES

- a) Only authorized persons should handle the data.
- b) The data should not be distributed or displayed to unauthorized persons.
- c) The authorized persons should maintain stock register for the data.
- d) Any movement of the data should be recorded in the stock register.
- e) Adequate arrangements should be made for safe custody of the data.
- f) Necessary instructions for safe custody of the data should be issued to the persons handling the data.
- g) The head of the organization or the person nominated by him should personally ensure the safe custody of the data.
- h) The inventory of the data should be checked at regular intervals to ensure the safe custody of the data by the head of the organization or the person nominated by him.
- i) In case of any loss of data, it should be brought to the notice of the concern immediately for necessary action and also should report the loss in the nearest police station.
- j) No data should be copied or distributed to other departments without permission.
- k) The computer systems, in which data is available, should not have access to unauthorized users.
- l) The data should not be copied on to Networked systems and systems having active USB ports.
- m) The system containing data should be invariably protected with passwords and firewalls.
- n) A certificate shall be issued stating that no copy of the data is available with the tenderer.

2.1. H WORKING METHODOLOGY

Detailed in PART- C

2.2 DELIVERY

The tenderer shall deliver the entire area mentioned in this tender within the time frame of 180 days. However, the delivery of the completed products including all the features listed in this TENDER shall be delivered during the time frame as mile stones. The first delivery shall be within 60 days from the effective date of commencement of work covering 30% and the second delivery shall be within 120 days from the effective date of commencement of work covering additional 30% (totally 60%) and final delivery shall be within 180 days from the date of commencement of work covering the balance 40% of the area.

2.3 TIME FRAME

The Assignment is envisaged to be completed within 180 days from the effective date of commencement of work. The time frame for 30% of the area shall be 60 days from the effective date of commencement of work and the time frame for additional 30% (totally 60%) of the area shall be 120 days from the effective date of commencement of work and the balance 40% shall be completed within 180 days.

2.4 PAYMENT TERMS

Payment will be made in three stages as given below based on the rates agreed upon.

Stage I: On completion of the survey and deliverables for first Four Divisions.

Stage II: On completion of the survey and deliverables for next Five Divisions.

Stage III: On completion of the survey and deliverables for next Five Divisions.

The deliverables shall be acceptable to the QC panel of COC for making payment. Only 75% of payment for the number of properties and length of road completed in each stage will be paid. 20% will be paid only after the successful integration of the data with the GIS map and accepted by the QC panel of COC. Balance 5% will be retained as Retention amount and will be released after expiry of 6 months from the completion date based on the satisfactory functioning of the GIS.

The number of properties and length of roads mentioned in the **Financial Offer for the Project (Part - D)** is only tentative. The payment will be made based

on the number of properties actually covered. No separate payment shall be made for the survey of **ENGINEERING DATA** (Clause B.1) and any other attributes suggested by the corporation also integration of the same with G.I.S. These engineering data shall not be considered as property. The tenderer has to inspect the area and study all the features and the maps available with COC and quote the rate accordingly.

2.5 LIQUIDATED DAMAGES FOR DELAY IN COMPLETION

If the successful tenderer fails in the due performance of his contract within the time fixed by the COC or any extension thereof, the successful tenderer shall be liable to pay liquidated damages for the delay in delivery of products of the mentioned area at the rate of ½ % of the tender cost per week subject to the maximum of 10% of the tender cost.

2.6 RIGHT OF COC TO TERMINATE THE CONTRACT

2.6.1 Notwithstanding anything elsewhere herein provided and in addition to any other right or remedy of the COC under the Contract or otherwise (including the right of the COC to recover from the tenderer agreed liquidated damages and delay in completion of the works within the provision of contract hereof), the COC shall be entitled to terminate the Contract by a written Termination Notice at any time during the project on the occurrence of any of the following event(s) contingencies, namely,

2.6.1.1 Default or failure on the part of the tenderer to perform any of the obligations of the tenderer under the Contract, including but not limited to;

- a) Failure to enter into agreement with the Corporation of Chennai within fourteen (14) days from the date of receipt of the award (Letter of Acceptance – LOA) of the work from Corporation of Chennai
- b) Failure to start the work within 15 (fifteen) days from the date of agreement
- c) Failure to commence any work at any job in accordance with the time prescribed in this behalf in the Progress Schedule,
- d) Failure to execute the works in conformity with the Progress Schedule,
- e) Failure to provide at each job sufficient material, equipment, Survey & GIS

technical engineers, other facilities not limited to Minimum A1 Size Plotter DGPS, ETS, Measuring Tape, etc., required for the proper and / or due execution of the work or any part thereof (not limited to during the survey and also during the Field verification by COC / third party inspection as when required by COC).

- f) Negligence in carrying out the works or unsatisfactory execution of the work
- g) Abandonment of the work or any part thereof.
- h) Suspension of the Work for a continuous period of 14 (fourteen) days without the prior consent of the Officer in Charge.
- i) Any breach of the terms and conditions of the Contract by the tenderer or his subcontractor, agent or employee.
- j) Failure to deposit the Initial Security Deposit within specified time in terms of Clause under this contract.
- k) Failure to execute the Contract Agreement in specified Form of Agreement within specified time in terms of clauses under this contract.
- l) During progress of work if the erroneous data is found to be more than 5% of the sample data collected for QC check the tenderer shall be asked to redo the work. In the redone work if the erroneous data is found to be more than 2.5% of sample QC data then the contract will be terminated.
- m) If the tenderer is found misusing or sharing the copy of the map the contract will be terminated. The base maps and the digital data available with COC shall not be copied into CD or in any other medium / external storage devices by the tenderers

2.6.1.2 If there is any material change in the constitution of the Contractor (if a firm, or corporate entity), or in the circumstances or organization of the contractor, which is detrimental to the interest of the COC.

2.6.1.3 Dissolution of the Contractor (if a firm) or commencement of liquidation or winding up (whether voluntary or compulsory) of the tenderer (if a company) or appointment of a receiver or manager of any of the tenderer's assets and / or insolvency of the tenderer (if a sole proprietorship or of any partner of the tenderer (if a firm).

2.6.1.4 Distress, execution or other legal process being levied on or upon any of the tenderer's goods and / or assets.

2.6.1.5 Death of tenderer (if an individual)

2.6.1.6 If the tenderer or any person employed by him shall make or offer for any purpose connected with the Contract any gift, gratuity, royalty, commission, gratification or other inducement (whether money or in any other form) to any employee or agent of the COC.

2.6.1.7 If the tenderer shall assign his interest or any part thereof in the contract.

2.6.2 The decision of the COC as to whether any of the events / contingencies mentioned in tender Clauses hereof entitling the COC to terminate the Contract, has occurred or noted shall be final and binding upon the tenderer.

2.6.3 The Termination Notice shall set forth, in addition to a statement of the reason or reasons for terminating the Contract, the time(s) and place(s) for conducting a survey and measurement of the work performed under the Contract up to the date of termination for the purpose of determining the amount(s) due to the Contractor. The reason(s) for the termination stated in the Termination Notice, shall be final and binding upon the Contactor.

3. Eligibility and Qualification Criteria

1. The tenderer should have developed and implemented GIS based projects in any of the fields such as urban utilities like roads, properties, storm water drains, street lights, electrical distribution, water supply and sewerage network with implementation in the past three financial years. (2007-08,2008-09,2009-10)
2. The tenderer should have the annual turnover of Rs.3 crores in any three financial years in the last five years. (2005-06,2006-07,2007-08,2008-09,2009-10)
3. In case of a Joint Venture the prime tenderer should have above mentioned turn over. The agreement with the associate shall be furnished.
4. The tenderer should have already carried out or doing at least two works on GIS services for a minimum value of 50 lakhs in the past three years. (2007-08,2008-09,2009-10)
5. The tenderer should have submitted their I.T Returns for the last 5 years. (2005-06,2006-07,2007-08,2008-09,2009-10)

6. The tenderer should be only Private & Public Limited Companies - Enclose copy of Certificate of incorporation & Memorandum & Articles of Association
7. Bidder/Joint Venture should not have been black listed by any State or Central Government in India and Bidder/Joint Venture should not have been terminated by any State or Central Government in India in the last two years. (Submit undertaking on Rs.100, Non – Judicial Stamp Paper)

The above documents should be submitted with necessary supportive documents point wise in a separate Folder / spiral bounded document mentioned as 'Eligibility Criteria Document' and should be indexed properly with page number and the indexing page should contain the content for each point of eligibility criteria as per the tender document enclosed with page number.

The tenderer must stamp and initial on all pages of this document and also the enclosures submitted by the tenderer. Eligibility for experience and value of work shall be accepted based on submission of completion certificate from the appropriate authority. Work Progress Certificate with value has to be produced for on going works. Vouchers and Work orders shall not be accepted. The original documents for which photo copies are enclosed while tendering, shall be produced on demand by the department. If the documents produced is found to be not genuine in the latter date Corporation of Chennai reserves right to take legal action against the tenderer.

The Technical proposal shall not contain any information on Financial Bid of this work. The Technical proposal containing information on Financial Bid of this work shall be declared non responsive.

4. TERMS AND CONDITIONS

The following terms and conditions are intended to sensitize the tenderer to various clauses, which may be reflected in the final Contract.

4.1 Tender for Proposal

The tenderer is expected to examine all instructions, forms, terms and specifications contained in this document. The prospective tenderer is requested to inspect the GIS Map available in Geomatics Division, Works Department, Ripon Buildings on any working day between 10.30 a.m. and 04.00 p.m. before they submit their tender. The proposal should be precise, complete and in the prescribed format as per the requirements of this tender document. Failure to furnish all information required by this tender document or submission of applications not responsive to this tender document in every respect will be at the applicant's risk and may result in rejection. The tenderer shall also be responsible and shall pay for all of the costs associated with the preparation of its Proposal and its participation in the tendering process.

4.2 Content of Tender document

This document has to be read in its entirety. The terms and conditions for the tender encompasses all the terms and conditions mentioned in this document. However Corporation of Chennai reserves the right to alter any of the above-mentioned dates at a short notice. The same will be intimated to all the concerned parties. Before submitting the proposal due diligence can be undertaken by tenderer at its own cost.

4.3 Clarification & Amendment on Tender document

A prospective tenderer requiring any clarification on the tender document may notify Corporation of Chennai in writing to City Engineer, Ripon buildings, Corporation of Chennai, Chennai-600 003.

In case any one tenderer asks for a clarification to the tender documents before 48 hours of the opening of the Tender, Corporation of Chennai shall ensure that a reply is sent and copies of the reply to the clarification sought will be communicated to all those who have purchased the tender documents without identifying the source of the query. The reply will be published as an addendum in

the website *www.tenders.tn.gov.in* and the tenderer shall submit the same while submitting the tender.

At any time after the issue of the tender documents and before the opening of the tender, Corporation of Chennai may make any changes, modifications or amendments to the tender documents and shall send intimation of such change to all those who have purchased the original tender documents and will be published as addendum in the website *www.tenders.tn.gov.in* and the tenderer shall submit the same while submitting the tender

A Pre-bid meeting will be held on 18.06.2010 at 3.00 p.m. (Tentative) at the office of the Chief Engineer (General), Corporation of Chennai, Ripon Buildings, Chennai - 600 003. Corporation of Chennai shall ensure that the minutes of the meeting is communicated to all those who have purchased the tender documents without identifying the source of the query.

4.4 Earnest Money Deposit (EMD) Amount

The Tender shall contain Earnest Money Deposit (EMD) of 1% of the quoted amount in the form of Demand Draft / Pay Order / Bankers cheque of any Nationalized or any other scheduled bank drawn in favor of "The Commissioner, Corporation of Chennai " payable at Chennai. The EMD shall be enclosed in **Financial Bid (Cover-B)**. The E.M.D will not be received in cash or currency notes or cheques or in the shape of NSC or government bonds and the tender shall be rejected if EMD is not paid in the prescribed manner. The EMD will be refunded to the unsuccessful tenderer on application after intimation is sent of the rejection of the tender or at the expiry of 120 days from the date of tender which ever is earlier. The EMD of the successful tenderer will be returned only after the deposit of performance guarantee. Tenders with out EMD are liable for rejection.

The EMD made by the tenderer will be forfeited if:-

1. the tenderer withdraws his tender or back out after acceptance
2. the tenderer withdraws his tender before the expiry of validity of the offer, the period specified in the specification or fails to remit the security deposit.
3. the tenderer violates any of the provisions of these regulations contained herein.

4. the tenderer revises of the terms quoted during the validity period.

4.5 Submission of the Tender

The Proposal shall be in two parts: **COVER A - Technical bidding and COVER B - Financial bidding**. The proposal should be submitted in two separate envelopes, which should be addressed to The Commissioner, Corporation of Chennai, Ripon Buildings, Chennai – 600 003.

Cover-A should contain the “**Technical Bid**” and **Cover-B** should contain “**Financial Bid**”. Both cover-A and cover-B should be named as mentioned above and should be sealed separately and shall be put in an **outer sealed cover**. The outer sealed cover should be marked as “**Tender for providing Geographic Information System (GIS) Services for Zone – 10 in Corporation of Chennai**” and addressed to The City Engineer, Corporation of Chennai, Ripon Buildings, Chennai – 600 003. Tenders once submitted shall be final and no amendment shall be permitted after the close of the tender. Tenderers are solely responsible for timely delivery of their proposals to the location set forth herein prior to the stated Proposals Submission due date.

Technical Bid (Cover-A): Duly filled in and signed in with all the relevant details to assess the capability of the tenderer to undertake the work detailed in the Prequalification Criteria.

Financial Bid (Cover-B): Duly filled in ‘PART –B, FINANCIAL BID’ and signed in with rate quoted in Indian Rupees. Earnest Money Deposit (EMD) of 1% of the quoted amount in the form of Demand Draft / Pay Order / Bankers cheque of any Nationalized or any other scheduled bank drawn in favor of "The Commissioner, Corporation of Chennai " payable at Chennai shall be enclosed in cover-B. The rate should include all overhead expenses including all taxes, duties etc., complete in all respects. The rate to be tendered should be inclusive of Service Taxes and duties. The rate should be quoted in Indian Rupees in both figure and words. In case of any dispute in the prices quoted, the lowest will be considered. Rates once fixed will be valid for one year period or till the end of the contract.

If the envelope is not sealed and marked as instructed above, COC assumes no responsibility for the misplacement or premature opening of the contents of the Proposal submitted and such Proposal, may, at the sole discretion of COC, be

rejected. Proposals submitted by either facsimile transmission or telex will not be accepted.

4.6 Language of Tenders

All Proposal and supporting documentation shall be submitted in English.

4.7 Format and signing of Tender

This tender document in original or downloaded should be properly bound along with all enclosures as mentioned in pre qualification criteria. The enclosures may be typed or printed in a clear typeface or good quality photocopies of the original. An accompanying letter is required, signed by an authorized signatory of the tenderer, committing the tenderer to the contents of the original response. Each tender shall be made in the legal name of the tenderer and shall be signed by the tenderer or a person duly authorized to sign on behalf of the tenderer. The tenderer must stamp and initial on all pages of this document and also the enclosures. All the alterations, omissions, additions, or any other amendments made to the Proposal shall also be initialed by the person(s) signing the Proposal.

4.8 Sealing and Marking of Tenders

The tenderer shall submit the tender in a wax sealed envelope.

4.9 Late Tenders

Any tender received after the deadline for submission of tenders, will be rejected.

4.10 Period of Tender validity

The tenders shall be valid minimum for a period of "120 days", from the date of opening of tenders. On completion of the validity period, unless the tenderer withdraws his tender in writing, it will be deemed to be valid until such time that the tenderer formally (in writing) withdraws his tender. COC reserves the right to reject any Proposal, which does not meet this requirement. The firm should certify that they have not been blacklisted / debarred from participating in tender floated by any State / Central Govt Agencies.

4.11 Evaluation of Technical Bids

Evaluation will be based on prequalification criteria and shall qualify the

tenderer for further processing.

4.12 Financial Bids from technically qualified tenderers

The Financial Bids of the technically qualified tenderers only shall be opened in the presence of their representatives on the specified date and time. There shall be no negotiations regarding the Financial Bidding, except with the tenderer who has lowest amount.

4.13 Price Quotation

The tenderer shall quote the rates as mentioned in **PART – B FINANCIAL BID** for entire contract period for the service to be provided. All the hardware, equipment, systems, manpower etc., as part of the work will be owned by the tenderer.

Any deviations from the format provided shall be treated as invalid. The tenderer must quote the prices both in figures and words. In case of any dispute in the prices quoted, the lowest will be considered. All quotes shall be in Indian Rupees. If there is an arithmetic error on computing of individual items or total amount the correct total shall be computed by the COC and the same shall govern.

If there is a discrepancy between the unit rate and the unit item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will govern.

The rates shall be inclusive of all Taxes. If quoted exclusive of taxes, then it shall be treated as inclusive of taxes only. Only one rate shall be quoted for each item. If more than one rate is quoted for a single item the tender shall be rejected. The rates shall be quoted unconditionally and Conditional tenders shall be rejected. Rates once fixed shall be valid for till the end of the contract.

4.14 Contract Period

The finalized rate of this Proposal shall be valid for the entire Contract Period of 180 days from the date of commencement.

4.15 Award of work

Award of work shall be placed on the finally selected tenderer after only the successful and satisfied demonstration of the service by the tenderer.

4.16 Signing of Contract and Performance Guarantee

The Successful tenderer shall be required to enter into agreement with the Corporation of Chennai within fourteen (14) days from the date of receipt of the award of the work from Corporation of Chennai. This contract shall be on the basis of this document, the proposals of the tenderer and other terms and conditions as may be mutually determined by the Corporation of Chennai to be necessary for the due performance of the work.

The Successful tenderer shall be required to submit Performance Guarantee in the form of irrevocable bank guarantee (**Appendix – 6**) issued by any scheduled bank for 2% of the total amount quoted in the Financial Bid before executing the agreement and keep it valid for 9 Months in favour of The Commissioner, Corporation of Chennai as required under the agreement as set out in **Appendix – 5**. However it is open to the Commissioner, Corporation of Chennai to insist on higher deposit as per rules in force. The Performance Bank Guarantee shall be valid one year after the completion of the project. The tenderer shall renew if required.

If the successful tenderer fails to furnish such Performance Guarantee and execute the agreement the EMD will be forfeited and debar them in participating the future tenders. In such an event, COC reserves the right to

- a. Either invite the next lowest Tenderer for negotiations or
- b. Take any such measures as may be deemed fit in the sole discretion of COC, including annulment of the tendering process.

Notwithstanding anything contained in this TENDER, COC reserves the right to accept or reject any Proposal, or to annul the tendering process or reject all Proposals, at any time without any liability or any obligation for such rejection or annulment, without assigning any reasons thereof.

4.17 Commencement Date

The tenderer has to commence the work within 15 days from the Agreement date. Any delay in commencement beyond the 15 days shall invite penalty clause and if it is beyond 30 days the Order on the tender to be cancelled and Performance Guarantee will be forfeited.

Up to 15 days	from the date of Agreement	-	No penalty
Beyond 15 days up to 30 days	from the date		
	of Agreement	-	Rs. 5000/- per day

4.18 Arbitration

Corporation of Chennai and the tenderer shall make every effort to resolve amicably by direct negotiation any disagreement or dispute or misunderstanding arising between them in connection with this service. If any dispute shall arise between Corporation of Chennai and the tenderer on aspects not covered by this tender document or work order, or operation thereof, or the rights, duties or liabilities under these except as to any matters the decision of which is specially provided for by the general or the special conditions, such dispute shall be referred to two arbitrators, one to be appointed by each party and the said arbitrators shall appoint an umpire in writing before entering on the reference and the award of the arbitration or umpire, as the case may be, shall be final and binding on both the parties. The arbitrators or the umpire as the case may be, with the consent of parties, may modify the time frame for making and publishing the award. Such arbitration shall be governed in all respects by the provision of the Indian Arbitration Act or its later modifications and the rules there under and any statutory modification or re-enactment, thereof. The arbitration proceedings shall be held in Chennai, India.

4.19 Force Majeure

The successful tenderer shall not be liable for Liquidated Damages, or termination for default if and to the extent that it's delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

For purposes of this clause, "Force Majeure" means an event beyond the control of the tenderer and not involving the successful tenderer/ fault or negligence, and not foreseeable. Such events may include, but are not restricted to, acts of the Corporation of Chennai in its capacity as a buyer, wars or revolutions, terrorist attacks, fires, floods, epidemics, quarantine restrictions and freight embargoes.

If a Force Majeure situation arises, the tenderer shall promptly notify the Corporation of Chennai in writing of such condition and the cause thereof. Unless otherwise directed by the Corporation of Chennai in writing, the tenderer shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

4.20 Attachment of Documents for the Technical Tender

In addition to the support documents for the qualification criteria mentioned the tenderer has to enclose the following along-with the Technical Bid, failing which the tender shall be rejected. No request on this aspect shall be entertained from the rejected tenderers at a later day:

1. Company Description and History : Tenderers must provide for themselves and for all subcontractors proposed a brief corporate description and history including business organization, location(s) of office(s), types of services and products offered, the number of years in business providing mapping services, and the number of employees. If a subcontractor is proposed, tenderers must clearly describe their role and responsibilities.
2. Staff Qualifications: Tenderers must identify the members of the proposed project team, including the project manager. Tenderers must describe the professional qualifications and experience for the staff, including those from subcontractors, who will perform work on this project. In addition the following information MUST be provided:
3. Time Schedule : Tenderers shall furnish a detailed note giving sound description on the approach, method, specification, data formats, technologies, quality assurance, proposed deployment schedule, capacity, number of systems proposed to be used for ensuring completion of the work as per specifications within the desired time frame. The tenderer must propose a detailed project schedule including interim milestones and project deliverables.
4. The Service Tax Number shall have to be given by the tenderer.
5. Legal Agreement with Consortium partners with clearly defined roles and responsibilities of each partner.
6. Audited financial accounts for last two years.
7. Powers of Attorney of Signatories of tender.
8. Details of offices in India.
9. Appendix 3
10. Appendix 4

APPENDIX - 1

LETTER OF TENDER

From,

To,

The City Engineer
Corporation of Chennai,
Ripon Buildings,
Chennai-600 003

Date

Sub:- Corporation of Chennai - Tender for providing Geographic
Information System (GIS) Services for Zone – 10

Ref: W.D.C. No: AEE/GIS / 1365 /2010

Sir,

Being duly authorized to represent and act on behalf of
(hereinafter referred to as “the Tenderer”), and having reviewed and fully
understood all of the Proposal requirements and information provided and collected,
the undersigned hereby submits the Proposals on behalf of (Name of Tenderer) for
the Project with the details as per the requirements of the TENDER, for your Perusal
We confirm that each of our Proposals is valid for a period of 90 days from (insert
Proposal Due Date).

Yours faithfully,
For and on behalf of
(Name of Tenderer)

Duly signed by the Authorized Signatory of the
Tenderer (Name, Title and Address of the
Authorized Signatory)

APPENDIX - 2

DETAILS OF TENDERER:

1. (a) Name of Tenderer
(b) Address of the office(s)
(c) Date of incorporation and/or commencement of business
2. Brief description of the Tenderer's main lines of business.
3. Details of individual(s) who will serve as the point of contact / communication for COC with the Tenderer:
 - (a) Name
 - (b) Designation
 - (c) Company/Firm/Individual
 - (d) Address
 - (e) Telephone number
 - (f) Mobile number
 - (g) Email address
 - (h) Fax number
4. Name, Designation, Address and Phone Numbers of Authorized Signatory of the Tenderer
 - (a) Name
 - (b) Designation
 - (c) Company/Firm/Individual
 - (d) Address
 - (e) Telephone number
 - (f) Mobile number
 - (g) Email address
 - (h) Fax number

APPENDIX – 5

DRAFT AGREEMENT FORMAT

This agreement made and executed on this ____ day of ____ 2010 between the Corporation Of Chennai, represented by the Commissioner, hereinafter called the COC on the one part and M/s. _____, represented by _____., with Regd. Office at _____, on the other part hereinafter called Contractor, which terms shall mean and includes his heirs, successors and legal representatives as the case may be.

Whereas the COC is desirous of Providing Geographic Information System (GIS) Services for Zone – 10 in Corporation of Chennai in accordance with the tender notification No. W.D.C. No: AEE/GIS / 1365 /2010

The Contractor has become the successful tenderer for Providing Geographic Information System (GIS) Services for Zone – 10 in Corporation of Chennai detailed in the tender document which forms part and parcel of this agreement.

The contractor has agreed to provide the services at a cost of Rs. _____(Rupees _____Only) for the specified area and has agreed to provide necessary Bank Guarantee as per TENDER for satisfactory completion of work.

NOW THIS DEED WITNESSETH AS FOLLOWS:

1. In this agreement works and expressions shall have the same meaning as are respectively assigned to them in the TENDER document here in after referred to.
2. The following documents shall be deemed to form and be read and construed as an integrate part of the Agreement, viz:
 - a.TENDER notification No W.D.C.No:AEE/GIS/1365 /2010 Dt 07.06.2010
 - b.(All applicable documents shall be listed above)
3. The aforesaid documents shall be taken on complementary and mutually explanatory of another, but in the case of ambiguities or discrepancies shall subject to the provisions of special conditions of services, take precedence in the order set out above.
4. In consideration of the payment to be made by the COC to the contractor as here in after mentioned, the Contractor hereby covenants with the Corporation to execute, complete and maintain the works conforming in all respects with the provisions of the TENDER.
5. The COC hereby covenants to pay in full the contract price, at the time and agreed to the contractor in consideration of the execution, completion and delivery of the work in conformity with the provisions of TENDER.

6. The Contractor agrees to submit the deliverables for the specified area to the satisfaction of COC along with invoice and the COC agree to accord acceptance and clear the payment within a maximum period of 30 days from the date of acceptance.
7. The COC reserves the right to deduct the payment for the works not executed / found not required during the execution.
8. In witness whereof both the parties set their signatures to this agreement on this date of _____ 2010.

CONTRACTOR

COMMISSIONER
Corporation of Chennai

WITNESS:

1)

2)

APPENDIX - 6

BANK GUARANTEE FORMAT

B.G. No.

Dated :

In Consideration of CORPORATION OF CHENNAI have agree to exempt thereafter called "the said contractor (s)" from the demand, under the terms and conditions of an agreement dated _____ made between M/s _____, having its head office at _____ and Corporation of Chennai, Ripon Buildings, Chennai - 600 003 for thereafter called the said 'Agreement', of Security Deposit for the due fulfillment by the said contractor (s) of the terms and conditions contained in the said Agreement, provision of Geographic Information Systems (GIS) services on production of a Bank Guarantee for Rs. _____ (Rupees _____)

1. We _____ constituted under Banking Companies (Acquisition and Transfer of undertakings) represented by (hereinafter referred to as "the Bank" which terms includes its successors and assigns) do hereby undertake to pay the Corporation of Chennai an amount not exceeding Rs. _____ (Rupees _____) for not fulfilling the contractor's obligations relating to the provision of Geographic Information Systems (GIS) services against any loss or damage to or suffered by reason of any breach by the said contractor's lapse on the part of the firm to confirm to the terms and conditions of contract contained in the said agreement.

2. The Bank hereby undertakes to pay the amount due and payable under this guarantee without any demur merely on a demand from the Corporation of Chennai stating that the amount claimed is due by reason of any breach by the said contractor any of the terms or conditions contained in the said agreement or by reason of the contractor's failure to perform the said Agreement. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, total liability of Bank under this guarantee shall be restricted to an amount not exceeding Rs. (Rupees.....)

3. The Bank further agrees that the guarantee herein contain shall remain in full force and effect during the period that would be taken for the performance of the said agreement and that it shall continue to be enforceable till all the dues of the Corporation of Chennai under or by virtue of the said agreement have been fully paid and its claims satisfied are discharged OR till the 2010 OR till Corporation of Chennai certifies that the terms and conditions of the said contractor(s) are fulfilled and accordingly discharges the guarantee, which ever is earlier. Unless a demand or claim under this agreement is made on the Bank in writing on or before 2010 Bank shall be discharged from all liability under this guarantee thereafter.

4. The Bank further agrees will the Corporation of Chennai that the

Corporation of Chennai, shall have the fullest liberty without consent of Bank and without affecting in any manner obligations of Bank hereunder to vary any of the terms and conditions of the said agreement to extend time or to postpone for any time or from time to time any of the powers exercisable by the Corporation of Chennai against the said contractor (s) and to forbear or enforce any to the terms and conditions relating to the said agreement and we shall not be relieved from liability by reason of any such variation, or extension being granted to the said contractor (s) or for any forbearance, act or omission on the part of Corporation of Chennai or any indulgence by the COC to the said contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would but for this provision have effect of so relieving the Bank.

5. The Bank lastly undertakes not to revoke this guarantee during its currency except with the previous consent of the Corporation of Chennai in writing.

6. Notwithstanding anything, contained hereinabove our liability under this guarantee is restricted to Rs./(Rupees..... only). Our guarantee shall remain in force until 2010 our liability hereunder is conditional upon your lodging a demand or claim withbank on or before 2010. Unless a demand or claim is lodged with us within the aforesaid time your rights under the guarantee shall be forfeited and we shall not be liable there under.

7. This guarantee shall be governed and construed in accordance with the laws of India. All claims under this guarantee will be payable solely atBank..... This guarantee will be returned to the bank when the purpose of the guarantee has been fulfilled or at the expiry, whichever is earlier.

For..... Bank
.....Branch,

PART – B.

B.1 ENGINEERING DATA

Definitions for each attribute to be given along with methodology and sketches.

B.1.1 ROAD

1. Road Geo ID will be provided by COC
2. Road Name
3. Category
4. Ward ID
5. Road Segment length
6. Road Segment Origin
7. Road Segment Destination
8. Right of Way
9. Carriage way
- 10.No. of lanes
- 11.Pavement/surface type
- 12.Date of last improvement

Note:

1. Road Geo ID is the unique number given to each road to identify it based on geo reference.
2. Carriage way – includes motorable portion of the road excluding foot path and tree line.
3. Right of way – The width of the road from property line in one side to the property line on the other side.

B.1.2 ROAD SIDE PARKS

1. Road Geo ID will be provided by COC
2. Road Name
3. Road side Park Name
4. Location
5. Area
6. Status
7. Existence

B.1.3 STORM WATER DRAINS

1. Road Geo ID will be provided by COC
2. Road Name
3. Drain Length
4. Drain Type
5. Drain Width
6. Drain Depth
7. Status
8. Location
9. Flow Direction
10. Existence

B.1.4 GARBAGE COLLECTION POINTS

1. Road Geo ID will be provided by COC
2. Road Name
3. Location
4. Time of Garbage Removal

B.1.5 GARBAGE BINS

1. Road Geo ID will be provided by COC
2. Road Name
3. Location
4. Type of Bin
5. Size of Bin

6. Time of Emptying.

B.1.6 TRANSFORMERS

1. Feature ID Road Geo ID will be provided by C
2. Road Name
3. Length
4. Breadth
5. Location
6. Status
7. Existence

B.1.7 PILLAR BOXES (TNEB,BSNL AND OTHER SERVICE PROVIDERS)

1. Road Geo ID will be provided by COC
2. Road Name
3. Department Name
4. Length
5. Breadth
6. Height
7. Location
8. Status
9. Existence

B.1.8 CROSS DRAINAGE WORKS (BRIDGES/CULVERTS)

1. Road Geo ID will be provided by COC
2. Road Name
3. Name of the Drain / Nalla / River
4. Cross Drainage (Bridges / Culvers)
5. Length
6. Depth / Thickness
7. Width
8. Location
9. Flow Directions
10. Status
11. Existence

B.1.9 FLYOVERS / GRADE SEPERATORS

1. Road Geo ID will be provided by COC
2. Road Name
3. Name of the Flyover / Grade Separator
4. Length
5. Width
6. Max Vertical Clearance
7. Location
8. Status
9. Existence

B.1.10 STREET LIGHTS

1. Road Geo ID will be provided by COC
2. Type of Lights
3. Pole Type
4. Pole No
5. Location
6. Existence

B.1.11. TREES

1. Road Geo ID will be provided by COC
2. Category
3. Species Type
4. Girth (Above 3 ft / 1 m from the GL)
5. Maintained by
6. Location
7. Existence

B.1.12. PUBLIC TAPS ON THE ROAD SIDE

1. Road Geo ID will be provided by COC
2. Road Name
3. Type
4. Details/Status

5. Location
6. Existence

B.1.13. HAND PUMPS ON THE ROAD SIDE

1. Road Geo ID will be provided by COC
2. Road Name
3. Type
4. Details/Status
5. Location
6. Existence

B.1.14. WATER TANKS ON THE ROAD SIDE

1. Road Geo ID will be provided by COC
2. Road Name
3. Type
4. Details/Status
5. Location
6. Existence

B.1.15. BORE WELL ON THE ROAD SIDE

1. Road Geo ID will be provided by COC
2. Road Name
3. Type
4. Details/Status
5. Location
6. Existence

B.1.16. TRAFFIC ISLAND

1. Road Geo ID will be provided by COC
2. Name of the Road / Roads
3. Shape
4. Width
5. Height
6. Length

7. Diameter
8. Location

B.1.17. PARKING STRETCH

1. Road Geo ID will be provided by COC
2. Name of the Road
3. Length
4. Width
5. Area
6. Paid / Free
7. Fee collected By
8. Parking Stretch Type
9. Location
10. Existence

B.1.18. BUS SHELTERS

1. Road Geo ID will be provided by COC
2. Road Name
3. Bus Shelter Type
4. Location
5. Maintained By
6. Existence

B.1.19 TRAFFIC SIGNALS

1. Road Geo ID will be provided by COC
2. Road Name / Names
3. Location
4. Existence

B.1.20 MEDIANS

1. Road Geo ID will be provided by COC
2. Road Name
3. Median Height

4. Median Width
5. Median Length
6. Median Type
7. Maintained By
8. Greenery Details
9. Location

B.1.21 FOOTPATHS

1. Road Geo ID will be provided by COC
2. Road Name
3. Footpath Width
4. Footpath Length
5. Footpath Height
6. Footpath Type
7. Location
8. Existence

B.1.22 SHOULDER DRAINS(SIDE DRAINS)

1. Road Geo ID will be provided by COC
2. Road Name
3. Location
4. Existence

B.1.23 Miscellaneous

Any features on the surface not mentioned above to be included with necessary attributes as decided by COC

B.2. PROPERTY DATA (For each property)

1. Road Geo ID will be provided by COC
2. Road Name
3. Property ID
4. Property No (Old & New)
5. Floor No
6. Flat No
7. Block No / Name

8. Total No. of Floors
9. Owner's name
10. Building Name
11. Correspondence Address (Block / Phase, Street, Locality, Pin code)
12. Telephone No
13. Water Meter No
14. CMWSSB Connection No
15. TNEB - Consumer No & Common Meter No (if nay)
16. Land Area
17. Land Dimensions
18. Built up Area (Res.Tenanted, Res.Self Occupied, Non res – tenanted, Non res – Self occupied, Total Floor wise – to be given in separate questionnaire)
19. Total Built up area (All Floors)
20. Roof Type, Floor Type
21. Property Usage
22. Ownership Status
23. Tax Bill Number
24. If commercial Trade license number
25. Type of trade
26. Digital photo of front portion
27. Line Drawing to scale of the Each Property (in .pdf format)

Note:

A unique ID is given for each property.

1. Land Area
 - a. Length: Along the road can be measured.
 - b. Breadth: to be measured
2. Built up area to be measured
3. Properties shall include residential buildings, commercial buildings, office buildings of central/state/private/COC, all educational institutions, cinema halls, community centers, marriage halls, hotels, restaurants, shops, shopping malls ,worship places of all religions like temple, church, mosque etc, Godowns, ware houses, service stations ,petrol bunks, railway stations, bus stations(terminus) all types of Hospitals of Govt / COC / Private, market, park, Burial ground, play ground, stadium, etc.
4. Units to be used for each attribute should be in metric system.
5. Features already available on the map shall be used and identified / verified on the field.
6. Features not available on the map shall be identified / verified on the field and included on the map.

B.3 DELIVERABLES

B.3.1 The tenderer has to prepare the following themes (layers) in GIS data formats under the proposed work.

Polygon themes

- (i) House Plots: this should cover entire geo area of the specified area except roads, pavements and river / nallas and water bodies.
- (ii) Dwelling units (built-up): this layer should consists of all types of structures but excluding open areas
- (iii) Roads, pavements, Road islands
- (iv) River, Nallas, water bodies
- (v) Slum areas
- (vi) Parks, Playground, Open areas
- (vii) bridges, flyovers, foot over bridges, subways
- (viii) transformers

Line themes

- (i) Network of Storm water drains
- (ii) street light electric lines of COC
- (iii) Road dividers, , road arches,
- (iv) Transport & traffic: one way or bi-way traffic showing lines

Point themes

- (i) Properties: - existing PTINs, un assessed properties
- (ii) Water utilities: - common water taps, hand pumps, overhead tanks.
- (iii) Manholes:- Sewerage line manholes and storm water line manholes
- (iv) Electric utilities:- Electric poles, street lights(ordinary), street lights(big sized on main roads), High mask,
- (v) Solid Waste: - location of dumper bins, waste without bins, collection points
- (vi) Advertisement: - location towers, pole ads, bus shelters
- (vii) Properties within Slum areas:- existing PTINs, un assessed properties
- (viii) Transport and traffic:- bus stops, traffic signals, traffic islands
- (ix) Avenue plantations
- (x) Public telephone booths, lid caps, statues, etc.

Note: As soon as, once the specified area is completed, the tenderer has to submit all the data / materials collected from the COC (both soft copy & hard copy)

B.3.2. Deliverables shall undergo QC as detailed in **clause 2.1.E** and the QC report shall be obtained within 15 days from the date of submission.

B.3.3. The demo should be shown after the integration of the final digital data of part by part into the existing GIS system at COC.

PART – C WORKING METHODOLOGY

1. Introduction:

Corporation of Chennai, intends to develop a GIS database in large scale by conducting a comprehensive field survey for mapping up of all the properties/houses and utilities to develop an integrated GIS System for the purpose of providing better civic facilities/amenities and better administration.

The selected expert Agencies, for this purpose, will take up the survey work for collecting information relating to the buildings/houses/ properties (such as ownership, usage, category, areas, Digital photographs etc.) and mapping them onto a large scale map and developing the desired GIS database as per the guidelines and quality standards discussed in this document.

2. Methodology

The detailed methodology of the project is mentioned in three major stages under the following heads.

Stage –1

1. Understanding the scope of work and input data
2. Training to the field staff
3. Conduction of sample survey

Stage-2

1. Field inputs preparation
2. Field Survey for mapping & collection of data
3. Fair up of final map
4. Computerization (data entry) of Non-spatial information
5. Digital photographs
6. Submission of weekly outputs
7. Co-ordination with COC staff

Stage -3

1. Digital mapping
2. Thematic maps preparation
3. Integration of non-spatial information

4. Submission of final outputs

Stage-1

1. Understanding the scope of work and Input data

It is understood from the nature/description of the job work, mentioned in the tender document, that a detailed survey shall be conducted to map all the properties and physical features that exists in the specified area on to a large scale map along with the collection of required non-spatial information. The field work also demands the measurement of 100% of properties (parcels with buildings) for both plot and plinth areas.

Field marking shall be converted into digital (GIS) environment as different layers. The non spatial data pertaining to particular theme shall be integrated along with the linking of digital photographs of the properties.

2. Training to the field staff

Execution of the proposed work requires three types of skilled manpower. The job work to be carried by this manpower is mentioned as below.

1. Field survey : Mapping of buildings/houses/properties and utilities to their exact shape & dimensions with proper coding.
Measurements of properties, verification of documents if necessary.
Assessment of categorization, usage, authorization of the properties
Digital photographs
2. Field data collection: Non-spatial data collection as per the survey format
Data entry work
3. GIS Engineer: Input maps generation, Digitization & GIS conversion of surveyed outputs
Thematic layer preparation
Integration of spatial & non-spatial database
Quality Check & finalization of deliverables.

The tenderer shall appoint minimum 50 numbers (10 Members for Engineering Survey & 40 Members for Property Survey) of field staff to complete the project in their allotted areas for the project period. The tenderer are requested to submit the details of manpower in a prescribed format (ID card) to get certified from COC authorities. The Approved format of ID card needs to be printed by the Successful

vendor and submitted to the COC for the Authorization. The Approved format for the Appeal to Public will be approved by COC and printing will be carried out by the Successful vendor. The necessary training shall be provided to this manpower by the technical representative who is supposed to attend the workshop conducted by COC to maintain a standard quality of the proposed work. The team leaders representing all the selected Agencies who are attending the workshop shall understand the complete processes involved in the execution of the project and guide the rest of the teams. They can coordinate with the technical staff of GIS Division of COC for any clarifications and technical support with regard to the present work.

3. Conduct of sample survey

The team leaders representing the tenderer who are attending the workshop shall conduct a sample/test survey for a part of commercial and residential area to get clarity and implications involved in the field work. The necessary sample maps can be had with the GIS Cell of COC. The Agencies have to complete this task before the award of work order/agreement.

Stage-2

1. Field inputs preparation

As per tender schedules, digital data of 1:1000 scale maps in ESRI shape file format will be provided to the tenderer. The digital data consists of all major roads (polygon), buildings/structures as group polygons and few major land marks as point feature type. As the details mentioned under the work description are covering every feature from the ground, therefore it is ideal to generate hard copy maps for the purpose of field work into **1:500 scale**. These hard copy maps have to be produced into two sets of A2 or A1 sizes by the tenderer. The First Set of A1 or A2 size maps will be used in the field for marking of features and the Second set A1 or A2 size will be used to fair the markings in office at the end of each day's field work after incorporating the Survey data in the system. Successful Vendor has to install the minimum of A1 Size Plotter at COC premises till end of the project for taking the field plot during the field survey, Since the Digital Map data is not allowed to take out the COC Premises.

The Corporation will provide the following input data, which the tenderer has to collect from the Corporation before the start of the project work

- 1) Spatial database of the project area in vector format preferably in DWG or shape file formats which can be used to generate hard copies for field mapping work.
- 2) Formats for the collection of non spatial database
- 3) Soft copy of existing property tax database required for this project
- 4) Limited office space related to the use of the spatial data only shall be provided by the COC with only electric connection, 5 Computers with 5 Arc GIS license pertaining to spatial data analysis and updation to use only in COC premises.
- 5) Necessary Printer, Plotter, Stationery, Other Infrastructures required to execution / completion of this project has to be provided by Successful vendor.

2. MAPPING OF PROPERTIES

This is the crucial technical stage of the project as any wrong marking / missing / error introduced in the marking of properties & features will result to poor quality (accuracy) of statistics (area) in the outputs and lead to wrong analysis and decisions. Hence the mapping work will be planned to the best possible methodology mentioned as below.

The survey team will consist of minimum 10 persons, with necessary survey background for collecting non-spatial information. To achieve the spatial accuracy, It is mandatory to use the survey equipments - DGPS, ETS & Combination of Both during the field survey for Both Engineering & Properties survey.

The 5 important categories of field work

- Premises (plot)
- Building or Structure
- Properties
- Utilities
- Non-spatial information

The mapping work of above entities is discussed under the following points.

In the first step, the surveyor has to physically verify a block or part of a block (here block means – any built up covered by road/street/path in all the four sides) and after a through observation and with the reference of position of compound walls, he has to mark the plot boundaries as polygons onto the scaled map according to the ground dimensions (length and breadth of each plot). While marking, the position of roads (adjacent or opposite- which are seen in the map) will be taken as reference.

He will also verify and correct the position of road, footpath divider etc as with reference to the premises/plot or structure. The boundary line of a premises facing towards the road shall delineate road and private property. The footpath area shall be covered into road area. **The Premises/plot boundary shall be marked/mapped with dotted line** (while fairing up of the map).

After the premises/plot boundaries are marked for a block, the surveyor has to **mark the built-up i.e. building / structure within that premises/plot again as polygon with a continue line symbol**. While marking/mapping the built-up, the setbacks, open spaces of the construction shall be considered in mapping for arriving highly accurate plinth areas. For example, on ground if there are 4 meters gap between the premises boundary line and building edge then the surveyor has to draw the building line with 8mm gap from the premises line as the field map will be generated in 1:500 scale. In case of continuous built-up the premises boundary and building lines will go in one line. The shape of the built up shall reflect to the exact shape and orientation.

Once the outline of building or structure is drawn with correct shape, it has to be divided into portions (in cases where an individual house/building has multiple portions or in the case of multistoried constructions) according to the ground floor construction. The extra floors can be mapped as points depending on the no. of portions/properties exists in each floor.

In case of apartments/multistoried buildings, each flat will be treated as one portion. A portion/flat need not be divided further when it is the case of residential usage. But in case of commercial usage each unit shall be represented as a polygon (in case of ground floors) or as a point (in other floors)

All the properties existing above the ground floor shall be mapped as point features, but with a systematic representation so as to identify the properties to their correct position in the building as shown in the below figure.



Fig : 1 mapping of properties

Assessed and un-assessed properties:

Properties or portion which is having PTINs (Property Tax Identification Numbers) are called assessed properties. Properties which have no PTINs are called un-assessed properties.

While mapping the properties/portions, the surveyor has to verify the number of portions or properties in that premises with the tax database (printed copy). If the number of properties/portions in the tax data and on ground is same then it means all the properties are assessed and has PTINs. Other wise, if there are additional properties/portions in the premises and are not part of the assessed properties, and then they shall be treated as un-assessed properties. The assessed properties shall be marked as points in **Green** color and the un-assessed properties shall be marked as points in **Red** color.

Under Assessed Properties:

The properties which are assessed and having the PTINs, but are not assessed correctly with reference to their plinth area or usage are called under assessed properties.. For example, a property assessed as residential usage but running commercial activity or a property assessed with less plinth area or additional constructions to assessed construction will be treated as under assessed.

*The under assessed properties with reference to area shall be marked with **yellow** color and the under assessed properties with reference to usage shall be marked with **Pink** color*

Thus, all premises/plots, buildings/structures and properties belong to ground floor are mapped as polygons and the properties exists in other than ground floor are

mapped as points with different classification and notation. This will cover the following themes under the project work.

Area measurement

The area of premises/plot and buildings which are mapped as polygons shall be have two area fields, namely Map-area and ground-area. The area of the properties that are represented as polygons will have both the above mentioned fields. But the properties which are represented as points will have areas verified from the authentic sources (Sale deed etc) or calculated from ground based portions.

Each and every property must be provided with area, usage, occupant so as to evaluate plinth properties, according to usage (like how much residential area and how much commercial area in a single property) and according to occupant (rented area & owner occupied area)

The accurate marking of plot, building, and additional structures will have correct areas once they are built for topologies in GIS environment. Agencies shall measure at least 20% of properties covering corner plots lanes/street/blocks for the purpose of reference and control on all the properties.

Table-1 Themes under properties

S No	Name of the theme	Feature Type	Classification	Symbol	Color
1	Premises / plot	Polygon		Dotted line	Blue
2	Structure/ building	Polygon		Continuous line	black
3	Properties/portions	Point	Assessed Un-assessed Under assessed - (Area) Under assessed - (usage)	Dot Dot Dot Dot	Green Red Yellow Pink
5	Roads	Polygon	Footpaths Islands Flyovers Bus bays/shelters	Dotted line Dotted line Box Box	Red Green Red Box

Mapping of Utilities

The physical features like electric poles, street lights, water points, bore wells, transformers, manholes etc will be marked to their respective positions by the reference of building, structure and road. The following standard color scheme and attributes for representing these different features will be followed

Table-2 –Themes under utilities

S No	Theme (category)	Feature Type	Classification (code)	Symbol	Color
1	Electric	Point	To be finalized after the discussion between the Bidder and COC		
2	Telephone pole	Point	“		
4	Water supply	point	“		
6	Bore wells	point	“		
7	Man holes	point	“		
8	Trees	point	“		

Table-3 Other physical features

S No	Theme (category)	Feature Type	Classification	Symbol	Color
1	Advertisement	Point	Hoardings (701) Uni-poles (702) Towers (703) FOBs (704)		
2	Other	Point	PCBs (901) Lid Caps (902) Tent houses (903) Huts (904)		

The features that are not covered above, but found in the field shall also be mapped with proper code, name, address etc and thematic maps shall be generated accordingly.'

Assignment of Code

Every premise has to be assigned an unique code (this can be plot no also). The structure or building(s) in that premises shall be given as –plot code with two digits. The properties can be assigned code as building code with two digits. These code numbers can be noted in the survey format. But on the map, only premises number can be noted correctly and for buildings and properties, single digit numbers will be followed.

Ex: when a Premises/plot of No : 186 has three (1,2,3) structures/buildings and the properties under each building are 4,2,1 respectively then

Premises code	Building code		Property Code	
Plot - 186	Building-1	18601	Properties	1860101
			Properties	1860102
			Properties	1860103
			Properties	1860104
	Building-1	18602	Properties	1860201
			Properties	1860201
	Building-1	18603	Properties	1860301

Codes for Utilities shall be assigned as per the table-3 on consultation with COC.

Digital photographs

Digital photographs shall be taken for each premise with a code number that could help in identifying that plot in the map. Best possible angles and view shall be followed in taking the photographs.

Fair up of final map

The second set of maps of A1 or A2 size of the same (1:500) scale is used to fair the marking at the end of each day by the respective surveyors, after incorporating the Survey data in the system.

Non-spatial information collection

While marking a property, the relevant non-spatial information (as per the survey format and guidelines) will be collected by interacting with property owners/residents. During this work documents from property owners like copy of sale deed, electric/water/phone bills etc may be verified to fill the details in the survey format.

Door locked properties will be noted under remarks field and the information will be collected at later dates.

Co-ordination with COC staff

In case of any disturbance/objections from the residents / owners, the project coordinators shall coordinate with the concerned COC Staff for smooth functioning of field work.

Stage-3

Digital mapping

The fair copies of the field work shall be vectorised and converted into GIS Environment. Necessary editing and topology creation have to be done by the technical team and the final thematic maps/ layers shall be created as per the tables 1-3.

Computerization of non-spatial information & integration

All the possible non-spatial information which is collected in the field survey in the prescribed formats shall be computerized through the software front-end to ensure error free database either in MS-ACCESS or ORACLE formats. The front-end software for data entry will be provided by COC.

The theme wise non-spatial data shall be integrated to the respective themes in GIS environment.

Table - 4 Attributes integration

Sl.No	Name theme	Data fields to be integrated
1	Premises/plot	Details under 1 st category(A. Premises/plot wise) of survey format
2	Buildings	Details under 2 nd category(B. Building wise) of survey format
3	Properties	Details under 3 rd category(C. property wise) of survey format
4	Roads	Code, road/street no, Name, Type(cement/BT/metal/other) Location/colony, area/locality, condition
5	Utilities	Feature code, Name of feature, Type (as per table-2&3: theme category), Category (as per table 2&3:classification), Material , Location/colony, area/locality

Submission of outputs

The outputs of the comprehensive survey and mapping work shall be submitted in GIS database (ArcSDE) formats in two sets of CDs

PART – D. FINANCIAL BID:

Name of the Work: Tender for Providing Geographic Information System (GIS) Services for Zone – 10 in Corporation of Chennai:

Having gone through this TENDER document and having fully understood the Scope of Work for the Project as set out by COC in the TENDER, we are pleased to inform that we would charge as follow.

Surveying all the features mentioned in the Scope of work and submission of deliverables as per this tender document.

Sl No. (a)	Description (b)	Quantity (c)	Unit (d)	Rate per Unit in Rs. (e)	Amount in Rs. (f) = (c) x (e)
1.	Properties in Zone X	1,25,000	Numbers		
2.	Roads in Zone X	450	km		
TOTAL (Rupees only)					

(The amount should be quoted in both figures and words for carrying out the activities as set out in the Scope of Work)

1. The rate shall be quoted inclusive of all Taxes. The rates shall be considered as inclusive of tax even if quoted exclusive of tax.
2. The rates shall be quoted in figure and words and only one rate shall be quoted for each Item.
3. Conditional tenders will not be accepted and rates once fixed shall be valid for the entire period of the contract.
4. The quantities mentioned are approximate only. The payment shall be made as per actual.

I / we understood that the QUANTITIES mentioned are only tentative and the payment shall be made based on the quantities covered and the rate quoted by me / us. I / we understood that there is no separate payment for the Engineering survey and integration of the same with G.I.S We have reviewed all the terms and conditions of the TENDER document and would undertake to abide by all the terms and conditions contained therein. I / We hereby declare that there are, and shall be, no deviations from the stated terms in the TENDER Document. We are ready to undertake the assignment with the rates quoted above for the specified area.

For and on behalf of (Name of Tenderer)
Duly signed by the Authorized Signatory of the Tenderer
(Name, Title and Address of the Authorized Signatory)