| PIMPRI CHINCHWAD MUNICIPAL CORPORATION |
| CORRIGENDUM for Tender no. 11/2016-17 |

**Request for Proposal (RFP) for Selection of Agency for undertaking census of trees and development of application for tree management using GIS platform**

Date of issue of Corrigendum: 5\textsuperscript{th} December 2016

Pimpri Chinchwad Municipal Corporation (PCMC) hereby notifies to the potential bidders that the prebid conference date has been changed from 6\textsuperscript{th} December 2016 to 15\textsuperscript{th} December 2016 at 11 a.m for the above tender notice.

Potential bidders are requested to make note of the above changes.

Sd/-

Chief Garden Superintendent
Pimpri Chinchwad Municipal Corporation
Tender Notice:

Pimpri Chinchwad Municipal Corporation

Request for Proposal (RFP) for Selection of Agency for undertaking census of trees and development of application for tree management using GIS platform

TENDER NO: 11/2016-17

Pimpri Chinchwad Municipal Corporation (PCMC) invites proposals for the selection of agency for undertaking census of trees and development of application for tree management using GIS platform for PCMC. For participating in the bidding process for this tender, the vendor has to be registered with the Additional Commissioner Department under etendering & obtain the digital key.

More details about the bid submission procedure, applicant experience and the selection methodology are available in the Request for Proposal (RFP) document. Interested Applicants are requested to download (www.pcmcindia.gov.in) the RFP document from 29/11/2016. The cost of RFP document is Rs.5,000/- (Rupees Five Thousand only). The last date for the submission of the bid is 14/12/2016.

Contact Person: For any further information/clarifications please contact

Chief Garden Superintendent, Garden Department
Yashwantrao Chavan Rose Garden, Nehrunagar Bhosari 411026
Phone: (+91) 20 7722060907 Fax: (+91) 20 27425600
Email: To – s.salanke@pcmcindia.gov.in Cc – garden@pcmcindia.gov.in

Commissioner
Pimpri Chinchwad Municipal Corporation
Pimpri Chinchwad Municipal Corporation

Request for Proposal

For

Selection of Agency for undertaking census of trees and development of application for tree management using GIS platform

November 2016

Tender Notice No. 11/2016-17
Tender Notice:

<table>
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<tr>
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*Sd/-*
Commissioner
Pimpri Chinchwad Municipal Corporation
DISCLAIMER

The information contained in this Request for Proposal document comprising of Volume 1 and Volume 2 (the “RFP” or “Request for Proposal”) or subsequently provided to Bidder(s), whether verbally or in documentary or any other form by or on behalf of PCMC or any of their employees or advisors, is provided to Bidder(s) on the terms and conditions set out in this RFP and such other terms and conditions subject to which such information is provided.

This RFP is not an agreement and is neither an offer nor invitation by PCMC to the prospective Bidders or any other person. The purpose of this RFP is to provide the Bidders with information that may be useful to them in preparing and submitting their proposal pursuant to the Bidding Documents including this RFP (the “Bid”). This RFP includes statements, which reflect various assumptions and assessments arrived at by PCMC in relation to the Project. Such assumptions, assessments and statements do not purport to contain all the information that each Bidder may require. This RFP may not be appropriate for all persons, and it is not possible for PCMC, its employees or advisors to consider the investment objectives, financial situation and particular needs of each party who reads or uses this RFP. The assumptions, assessments, statements and information contained in the Bidding Documents may not be complete, accurate, adequate or correct. Each Bidder should, therefore, conduct its own investigations and analysis and should check the accuracy, adequacy, correctness, reliability and completeness of the assumptions, assessments, statements and information contained in this RFP and obtain independent advice from appropriate sources.

Information provided in this RFP to the Bidder(s) is on a wide range of matters, some of which depends upon interpretation of law. The information given is not intended to be an exhaustive account of statutory requirements and should not be regarded as a complete or authoritative statement of law. PCMC accepts no responsibility for the accuracy or otherwise for any interpretation or opinion on law expressed herein.

PCMC, its employees and advisors make no representation or warranty and shall have no liability to any person, including any Bidder under any law, statute, rules or regulations or tort, principles of restitution or unjust enrichment or otherwise for any loss, damages, cost or expense which may arise from or be incurred or suffered on account of anything contained in this RFP or otherwise, including the accuracy, adequacy, correctness, completeness or reliability of the RFP and any assessment, assumption, statement or information contained therein or deemed to form part of this RFP or arising in any way by participating in this Bidding Process.

PCMC also accepts no liability of any nature whether resulting from negligence or otherwise howsoever caused arising from reliance of any Bidder upon the statements contained in this RFP.

PCMC may in its absolute discretion, but without being under any obligation to do so, update, amend or supplement the information, assessment or assumptions contained in this RFP.

The issue of this RFP does not imply that PCMC is bound to select a Bidder or to appoint the Successful Bidder or Agency, as the case may be, for the Project and PCMC reserves the right to reject all or any of the Bidders or Bids without assigning any reason whatsoever.
The Bidder shall bear all its costs associated with or relating to the preparation and submission of its Bid including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstrations or presentations which may be required by PCMC or any other costs incurred in connection with or relating to its Bid. All such costs and expenses will remain with the Bidder and PCMC shall not be liable in any manner whatsoever for the same or for any other costs or other expenses incurred by a Bidder in preparation or submission of the Bid, regardless of the conduct or outcome of the Bidding Process.
Glossary

Associate
Bid(s)
Bidders
Bidding Company
Bidding Documents
Bid Due Date
Bidding Process
Bid Security
Commercial Proposal
Agreement
Agency
Conflict of Interest
Consortium
Control
Eligible Projects
Experience
Financial Capacity
Financial Year
Government
PCMC
Letter of Award (LoA)
Member
Project
Qualification
Re. or Rs. or INR
RFP or Request for Proposals
Scope of Work
Successful Bidder
Joint Venture
Subject Person
Technical Capacity
Operation Fee

The words and expressions beginning with capital letters and defined in this document shall, unless repugnant to the context, have the meaning ascribed thereto herein. The words and expressions beginning with capital letters and not defined herein, but defined in the Agreement, shall, unless repugnant to the context, have the meaning ascribed thereto therein.

Any liquidated damages or other compensation stated or required to be payable by the Bidder to PCMC under or pursuant to the Bidding Documents, whether on per diem basis or otherwise, shall be deemed to be a mutually agreed genuine pre-estimate of loss and damage likely to be suffered and incurred by PCMC who shall be entitled to receive the same as a result of a breach or failure of the Bidder and shall not be by way of penalty.
1. INTRODUCTION

1.1. About Pimpri Chinchwad

1.1.1. Pimpri Chinchwad is a twin city to Pune located south-east of Mumbai, and is the fifth most populated city of Maharashtra. The population of Pimpri-Chinchwad as per 2001 Census was 10 lakhs and was 17.29 lakhs in 2011. The jurisdiction of PCMC admeasures an area of about 177 square kilometers.

1.1.2. Pimpri-Chinchwad has a thriving industrial belt, primarily consisting of engineering and automobile industries. With over 6,000 industrial units in the large, medium and small sectors dotting its landscape, Pimpri-Chinchwad is one of the best developed industrial belt of Maharashtra accommodating many reputed industrial houses and business conglomerates of the country.

1.1.3. Present day Pimpri Chinchwad is melange of suburbs of Pune situated along the NH-4 (Pune - Mumbai Highway) and the areas developed due to emergence of Hinjewadi IT Park and the NH-4 Bypass. Nodes like Dapodi, Kasarwadi, Pimpri, Chinchwad, Pradhiikaran and Nigdi, which developed along NH-4 have a distinctly industrial feel due to the presence of large industrial campuses and MIDC areas. Whereas areas like Wakad, Pimple Saudagar, Pimple Nilakh and Sangvi developed later and are predominantly residential suburbs catering to the workforce at Hinjewadi IT Park.

1.1.4. The Pimpri Chinchwad city is managed and governed by the Pimpri Chinchwad Municipal Corporation (PCMC), established in the year 1982. The Maharashtra Municipal Corporation Act, 1949 bestows the responsibility of providing basic infrastructure and services viz. water supply, drainage, sewerage, roads and services such as conservancy, firefighting, street lighting, education and primary health upon the PCMC.

1.2. About the Project

1.2.1. As per the powers conferred under Section 22 sub-section (1) of the Maharashtra (Urban Areas) Protection & Preservation of Trees Act, 1975 (Mah X LIV of 1975), the Government of Maharashtra has made rules to carry out the purposes of the Act. The rules may be called Maharashtra (Urban Areas) Protection & Preservation of Trees Rules, 2009.

1.2.2. As per the Rules, PCMC intends to undertake Census of trees Pimpri Chinchwad Municipal Corporation intends to undertake census of trees.

1.2.3. The Authority intends to manage and implement the GIS based tree census management system for managing the tree permissions and monitoring of tree cover in the city (the “Project”). The PCMC has an area of 177 Sq. Km excluding the defence area and is divided into 64 electoral wards or tree zones.

1.2.4. In that context, PCMC is desirous of appointing an agency for undertaking the scope of work highlighted in the Clause 1.3.

1.2.5. For undertaking the work, PCMC will provide to the Agency, office space for two persons. The agency has to bring its own computer with internet connection, stationary, printers and maintain
the same for its staff. PCMC will provide its networking solution for taking back-up from Agency’s hardware on to PCMC’s server.

1.2.6. PCMC will provide the existing information about the GIS base map layers for undertaking the Project.

1.2.7. For the services provided by the Agency for the scope of work defined in the RFP document, PCMC shall pay an Operation Fee to the agency.

1.2.8. The Operation Period will be for a period of 60 (sixty) months from the Commercial Operations Date (COD) or date of issue of Application Implementation Certificate from DIT department whichever is later. The Agency shall deploy its team on site within 15 days of Commercial Operations Date.

1.3. Scope of the Project

1.3.1. The scope of the Project includes the following:

The Project shall include adhering to the procedure for census of trees; providing equipment’s and manpower for undertaking the census of trees; procuring and supplying GIS platform; developing software application for management of trees and maintaining the system for the next 5 years.

The scope of work includes the following.

1. Procedure for Census of trees: The Concessionaire shall adhere to the following procedure for the census of trees.

a. The concessionaire shall supply the GIS platform with Comprehensive Maintenance Contract (CMC) contract of 5 years as per clause 1.3.1(2).

b. The concessionaire shall develop the mobile and web based application and receive the Application Readiness Certificate from DIT Department of PCMC.

c. Geo-referencing the electoral ward boundaries/ tree zone and Zone boundaries of PCMC using DGPS and ETS.

d. Undertake census of trees of ward no. 27 (Morewadi) and display the information on the GIS platform and web based application. Obtain Application Implementation Certificate from DIT department of PCMC.

e. The Concessionaire shall deploy the following equipment’s for undertaking the census of trees.

   i. Android based mobile device & handheld printer – The device shall be used for census of trees for capturing tree photograph, generate unique code, capturing other details like tree girth, feeding latitude and longitude information and print unique code of tree and affix it on the tree.

   ii. The minimum specification of android based mobile devices to be used during the tree census survey are – Moto G – 4th Generation having specification camera:
iii. Distometer – The device shall be used for capturing the height of the trees. The specifications of the distometer to be used for the census of trees are - ISO 16331-1 certified measuring accuracy: ± 1 mm; Range: up to 150 m; Measuring units: m, ft, in; X-Range Power Technology: Yes; Distance in m: 10, 50, 100 m; of the laser dot in mm: 6, 30, 60 mm; Point finder with 4x zoom: Yes; Memory: 30 displays; Measurements per set of batteries: up to 5000; Multifunctional end-piece: automatic recognition; and Protection class: IP65 – water jet protection and dust-tight.

iv. Differential Global Positioning System (DGPS) instrument – The device shall be used for demarcating the ground points (one ground point per Sq. Km area).

v. Electronic Total Station (ETS) instrument - The device shall be used for capturing the locational details (latitude and longitude) of ward boundary.

f. The web based and mobile based applications shall seamlessly capture data from the field instruments and publish on the GIS server using the GIS desktop software.

g. For the web based application, a digital library (database) of indigenous trees shall be created. The digital library shall contain tree details like common name, botanical name, flowering season, flower photo, fruit photo, native/exotic, tree photo, carbon sequestration rate and tree use.

h. The Concessionaire shall deploy two plant taxonomist/ botanist/ horticulturist for verification of field census data captured using mobile devices using the web based application for creating the census of trees report as per format required under Maharashtra (Urban Areas) Protection and Preservation of Trees Act 1975 and the Maharashtra (Urban Areas) Protection and Preservation of Trees Rules 2009.

i. All the geodetic devices used for census of trees shall have a valid calibration certificate, failing which it shall not be used for the census of trees.

j. The census of the trees shall be done using electronic devices only i.e mobile handheld devices and distometer. No manual or paper based field survey data capturing is permitted.

2. **Procure and Supply the GIS Platform:** The concessionaire shall procure, supply, maintain and manage for 5 years from the date of obtaining Application Implementation Certificate from DIT department of PCMC, the GIS platform for PCMC which include the following activities.

a. Procure, Supply and deploy to DIT department, GIS + Image server Application license, i.e Intergraph Geo Spatial Server or ArcGIS for Server only with unrestricted user license with 5 years maintenance & upgradation contract in the name of PCMC. Also procure, supply and organise by OEM at PCMC, 5 days, 100 user training (field & classroom) at PCMC in batch of 10 persons along with refresher training of 5 days to the 100 users in batch of 10 persons. The technical specification of the GIS + Image Server Application license is enclosed as **Annexure 2**. The server Original Equipment Manufacturer (OEM) shall provide certification for the training given to PCMC and will also be required to
authenticate the complete GIS system implementation at each iteration of development & implementation during the 5 years.

b. Procure, supply, install and deploy GIS server hardware for the GIS + Image server software application. The technical specification of the server hardware is enclosed as **Annexure 3**. The GIS server hardware specification is for 36 core server. The GIS + Image server Application license i.e Intergraph Geo Spatial Server or ArcGIS for Server only with unrestricted user license specified in clause 1.3.1 (2a) above shall be core independent or minimum 12 core (3 license).

c. Procure, Supply and deploy to DIT department, 05 concurrent user license (shareable across multiple desktop computers) of Desktop GIS i.e Geo Media with Transportation Manager and 3D extensions or ArcGIS for Desktop with Network Analyst and 3D extension with 5 years maintenance & upgradation contract in the name of PCMC. Also procure and supply and organize by OEM 5 days, 100 user training (field & classroom) at PCMC in batch of 10 persons along with refresher training of 5 days to the 100 users in batch of 10 persons. The Desktop GIS Original Equipment Manufacturer (OEM) shall provide certification for the training given to PCMC. The technical specification of the Desktop GIS application is enclosed as **Annexure 4**.

d. The GIS + Image server software and the Desktop GIS software product supplied under this Project shall be of the same Original Equipment Manufacturer (OEM).

e. Procure, Supply & deploy to DIT department, single user license of satellite image processing software of ERDAS Imagine with extension pack with 5 years maintenance and upgradation contract in the name of PCMC. Also procure, supply and organize by OEM at PCMC the 5 days, 50 user training (field & classroom) at PCMC in batch of 10 persons along with refresher training of 5 days to the 50 users in batch of 10 persons. The ERDAS Imagine Original Equipment Manufacturer (OEM) shall provide certification for the training given to PCMC. The technical specification of the image processing is enclosed as **Annexure 5**.

f. Procure and supply forty one (41) number of Moto G – 4th Generation mobile device with 3G data connectivity of 4 GB data service per month, for a period of 60 months, for operating the mobile application and validating the survey. The minimum specification of the device are – camera: 13 MP; Android: 6.0.1; Processor: 1.5 GHz; Ram: 2GB; Internal Memory: 16 GB; Battery: 3000 mAH with turbo power charging; and power charger.

g. Procure, supply and maintain five distometer for audit of tree census work. The specification of the distometer is – ISO 16331-1 certified measuring accuracy: ± 1 mm; Range: up to 150 m; Measuring units: m, ft, in; X-Range Power Technology: Yes; Distance in m: 10, 50, 100 m; of the laser dot in mm: 6, 30, 60 mm; Point finder with 4x zoom: Yes; Memory: 30 displays; Measurements per set of batteries: up to 5000; Multifunctional end-piece: automatic recognition; and Protection class: IP65 – water jet protection and dust-tight. Also procure and supply 2 days, 50 user training (field & classroom) at PCMC in batch of 10 persons along with refresher training of 2 days to the 50 users in batch of 10 persons.
3. **Development Stage: Developing android based mobile application and web based application for the management of processes of Tree Authority of PCMC:** The following activities are included in the scope of application development.

   a. Undertake Business Process Reengineering (BPR) of the various processes and service of the Tree Authority of PCMC. Develop GIS system oriented process and system for managing the funds, permissions, services monitoring and inspection of work.

   b. Create satellite image based change detection system using the image processing software supplied to detect the increase or decrease in tree count/tree cover in the city.

   c. Undertake Ortho-rectification of the satellite image provided by PCMC using photogrammetry software every 6 months. The Concessionaire shall undertake DGPS ground point survey for creation of Digital Elevation Model for ortho-rectification.

   d. Development of Mobile Application: The mobile application for census of trees shall have the following functionality.
      
      i. Able to capture data in both online and offline connectivity mode.
      
      ii. Able to authenticate the surveyor/user whenever he login’s to the application.
      
      iii. Automate the capture and transfer of all the field reading from all the field devices to the GIS server.
      
      iv. Automate the capture and transfer on GIS server the latitude and longitude from the digital total station.
      
      v. Generate unique ID for each surveyed tree. The generated code number shall have reference of zone & ward no.
      
      vi. The application shall be compatible with handheld printers to print the unique ID on ground during the survey for attaching the sticker on each census tree and then capture the photograph of the tree.
      
      vii. Able to capture all tree related details for preparing the Census Information Format I & II.
      
      viii. Should be compatible with Android 6.0.1
      
      ix. Able to capture the photo of the tree, access existing census data from server, access PCMC satellite image from server or google map etc. on the handheld mobile devices.
      
      x. The system requirement specification (SRS) for the mobile application shall be finalized by the DIT department of PCMC.

   e. **Develop web based GIS application:** The web based application for tree management shall have the following functionality.
i. Map the tree on the satellite image of PCMC with the description of the tree like tree local name, scientific name, latitude, longitude, tree height, width and photo.

ii. Create digital library of trees details and its statistics in the city with photographs (of tree, its flower and leaves) for the plant taxonomist/ botanist/ horticulturist to verify the tree census data from centralized office location.

iii. Create audit and validation process using tree photograph, unique ID and latitude and longitude generated from the digital total station.

iv. Create census data confirmation and validation process for DIT and Garden Department of PCMC.

v. Ability to edit the information regarding the existing trees.

vi. Ability to export tree list as .kml and .csv files.

vii. Automatically calculate ecosystem benefits (greenhouse gases and air quality) based on tree’s species and diameter.

viii. Audit trail for all modifications through login in the system.

ix. The application shall track and display the user/surveyor travel path (route), his distance covered etc.

x. Editing the tree layer for adding/deleting/modifying the locations and the attributes.

xi. View and query the tree data and retrieve results as combinations of graphical plots, textual reports, maps, images etc. as applicable.

xii. Administration module for users and right creation on the tree layer.

xiii. GIS Layers Management: The Enterprise wide application shall have the following features.

- Switching On/Off of layers.
- Attribute viewer
- Query Panel
- Predefined Query
- Map Contents
- Navigation of Map
- Buffer for Proximity Analysis
- OGC compliant map service
xiv. Develop seamless process of capturing the tree survey data with photograph and locational details (latitude and longitude) with time stamp and porting the same on the PCMC’s GIS server without modification through human intervention.

xv. Develop seamless process for tree cutting permissions; site inspection; tree authority NoC for building permission; tree authority NoC for flex structures; inspection of illegal tree cutting notification & documentation; funds collection and refund.

xvi. Develop integration with Building permission application management system (BPAMS), Central Accounting Application and Sky Sign & Licenses Permission application of PCMC.

xvii. The application shall able to generate various reports ward wise, zone wise, tree wise etc. as per the requirement of the Chief Garden Superintendent.

xviii. The application should be able to generate tree cover analysis, carbon sequestration in Kg/ha., carbon assimilation rate using remote sensing and GIS tools for city area every year.

xix. The system requirement specification (SRS) for the mobile application shall be finalized by the DIT department of PCMC.

xx. The complete software development life cycle for the development of the application shall be followed from creating SRS, Sign Off, Development and Customisation, Integration, Internal Testing and User Acceptance Testing.

f. The development period for mobile and web based application shall be 6 months (1 month SRS + 4 month development + 1 month testing) from the date of work order.

g. The software architecture of the web based application shall be in latest open source platform – Front End: Java and Database: Postgresql.

h. Prepare the User Acceptance Testing criteria document, take sample data for UAT and take approval of the Garden Deptt. of PCMC.

i. System Documents and User Documents shall follow the ITIL (Information Technology Infrastructure Library) standards. This documentation should be submitted as the project undergoes various stages of implementation and the Concessionaire shall upkeep all manuals and documents during the tenure of the contract. Indicative list of documents include.

i. Project Commencement Documentation: Project Plan detailing the activities with milestones & timelines.

ii. User Manuals: As required for operationalization of the system.

iii. System Manual: Covering detailed information required for the administration of the portal.

4. **Operation, Maintenance and Management of GIS platform, mobile and web application for a period of 5 years from obtaining Application Implementation Certificate from DIT department of PCMC:** The following activities shall be covered during the operation, maintenance and management period.

a. The Concessionaire shall submit the detailed project implementation plan to the Project Officer.

b. Census shall be undertaken for trees whose trunk or stem is having a minimum girth of ten (10) centimeter and height of three (3) meter above ground level.

c. The Census of trees must be a head count of all the existing trees upon the 177 sq. km jurisdiction of PCMC which exclude the defence establishment.

d. The tree which is included in the head count shall be marked with the typical symbolic mark (for visual identification during audit) so as to indicate that the survey is carried on site.

e. Prepare municipal wards wise Project plan for undertaking census of trees. Undertake pilot survey of ward no. 27 (Morewadi) to validate the functionality of mobile and web based application and setup process for validation of surveyed data.

f. The Tree Census Report shall provide the plantation requirement to meet the norms of section 7(h) and section 7(c) of the Maharashtra (Urban Areas) Protection and Preservation of trees Act, 1975.

g. The team of professionals for the Project shall undertake the tasks and provide there time (input) as detailed below.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Designation</th>
<th>No. of Posts</th>
<th>Nature of Work</th>
<th>Minimum Time Period on the Project</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Team Leader</td>
<td>1</td>
<td>- Preparation of Project Implementation Plan.</td>
<td>12 Man Month</td>
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<td>- Ensure submission of timely deliverables &amp; updating Project Officer on Project Progress.</td>
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<tr>
<td>2</td>
<td>Landscape Architect</td>
<td>1</td>
<td>- Prepare design for Urban Forestry Street.</td>
<td>12 Man Month</td>
</tr>
<tr>
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<td>Prepare Urban Forestry Master Plan, and Detailed Project Report on Urban Forestry for PCMC for submission to Urban Development Department, GoM under AMRUT, recommending locations in the city and quantity and type of plantation.</td>
<td>0.5 Man Month</td>
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<td></td>
<td></td>
<td></td>
<td>Prepare estimation for the implementation of Urban Forestry Master Plan</td>
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</table>
| 3       | Software Development Expert          | 1            | - Interacting with Users on SRS and UAT  
- Assistance in Testing of Software.                                                                                                                                  |                                    |
| 4       | GIS Expert                           | 1            | - Developing GIS queries and Data management.  
- Creating GIS Analysis Reports                                                                                                                                             | 0.5 Man Month                     |
| 5       | Plant Taxonomist / Botanist/ Horticulturist | 2           | - Authenticating field Tree Census data.  
- Preparation of tree census report.                                                                                                                                 | 24 Man Months                     |
<p>| 6       | On Site Operator                     | 2            | - Handholding Support for managing and operating and updating the new GIS Software for Tree Authority of PCMC.                                                                                         | 60 Man Month                      |</p>
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<td></td>
<td>Undertake training of Municipal Staff on the usage of new system</td>
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**h.** Every 6 months, PCMC is expected to provide the satellite image of the city. The concessionaire shall use the change detection system (using ERDAS Imagine software) to identify the new trees or trees that are cut from the previous satellite image. The Concessionaire shall through field visit update the web based system database regarding the newly identified trees or reduced trees.

**i.** Develop new GIS queries for creating data maps and reports for analysis by the municipal staff.

**j.** **Geo-referencing of Ward Boundaries/ census boundaries on the satellite image of PCMC:** This shall include the following activities.

1. Using calibrated DGPS create one (1) ground point per square kilometer area of PCMC. The ground point shall be established on permanent ground structure. For each ground point also capture three reference points on the permanent structure to trace the ground point.

2. Using the DGPS ground point undertake calibrated Electronic Total Station (ETS) based survey and demarcate the existing ward boundaries and derive the locational details (latitude and longitude) of the census trees.

3. **For ETS ensure the traverse closure every 5km.**

**k.** Hosting the web based application on the GIS server supplied.

**l.** Provide complete online and onsite support for the web based GIS application, mobile application, GIS server software, GIS Desktop software and hardware equipment’s supplied in the Project.

**m.** Setup centralized team of plant taxonomist/ botanist/ horticulturist (2 Nos) to verify and validate from the tree photographs, the tree species and related details during the census of trees.

**n.** Organize & provide training of one day to minimum 100 PCMC staff in batch of 20 regarding mobile, web based application and disto-meter twice every year.
o. Provide data and network connectivity in all electronic devices supplied & deployed for census of trees under this Project for data communication with the server and bear the cost of data connectivity of all field devices.

p. Shall undertake assessment of locations during the survey to identify the new plantation zones/areas and provide recommendation on the number of plantation and type of plantation to improve the carbon sequestration in Kg/Ha.

q. Provide dedicated manpower of two persons on site within 7 days from obtaining the Application Implementation Certificate from DIT department of PCMC. The persons will provide daily handholding support to operate, manage and train the PCMC staff in the newly developed system. The handholding support will be for a period of 60 months from the date of issue of Application Implementation Certificate by the DIT department of PCMC.

r. The two member onsite team is expected to manage the operations and train the municipal staff in the newly developed system, equipment’s and licensed software’s.

s. The selected Concessionaire shall maintain the mobile app, web based application, server hardware, GIS + Image Server Application and GIS desktop Application for 5 years from the date of issue of Application Implementation Certificate from DIT department of PCMC. The Concessionaire shall provide the comprehensive warranty for all hardware, software components both on field and off-field support during the maintenance period.

t. Handback the application code to DIT Department of PCMC after undertaking software testing from CERT empaneled consultant or STQC first time at the time of issue of Application Implementation Certificate and 2nd or last time at the end of the contract period.

u. The precision & accuracy of the survey shall be verified by deploying the 3rd Party Independent Auditor by PCMC. 2% of the accepted Commercial proposal value shall be used by PCMC for the services of the 3rd Party Independent Auditor.

v. Bear all cost, expenses and charges for instruments, development, operation, implementation & maintenance of scope of work.

1.4. Procedure for Handover of Project Site

After selection of the Agency, PCMC shall undertake the following tasks for successful execution of scope of work.
1. Provide existing GIS base map layers to the Agency.
2. Issue office order for providing permission to the Agency for the Census of trees in the city.
3. Provide integration details of Accounting Application and Building Permission Application Management System (BPAMS) software of PCMC.
4. Provide office space to Agency for two persons for operation and maintenance of Project.

1.5. Context of the Bidding Process
1.5.1. The Pimpri Chinchwad Municipal Corporation (the “PCMC”) intends to implement the Project by involving private enterprises to undertake census of trees, development of mobile and web based census of trees application, providing GIS platform and bear all costs associated with the above listed activities during the Operation Period (the “Project”).

1.5.2. The selection process of an entity or a group of entities (“Bidder”) shall be through the e-tendering system of PCMC and in accordance with the procedure set out in the Bidding Documents.

1.5.3. Bidder may be a single entity (“Bidding Company”) or a group of entities (“Consortium”) either registered under the (Indian) Companies Act 1956/ Indian Partnership Act 1932/ Indian Trust Act 1882/Societies Registration Act 1860. The term Bidder shall apply both to the Bidding Company and Consortium which has been issued the RFP and which submits the Bid pursuant to the Bidding Documents.

1.5.4. The Successful Bidder, (“Agency”), shall be responsible for the Project and in accordance with the provisions of the Agreement to be executed separately between the Agency and PCMC, substantially in the form enclosed as Volume 2 of this RFP (the “Agreement”).

1.5.5. The Agreement sets forth the detailed terms and conditions for grant of the operation to the Agency for implementing the Project, including the scope of the Agency’s services and obligations (the “Operation”).

1.5.6. The statements and explanations contained in this RFP are intended to provide a proper understanding to the Bidders about the subject matter of this RFP and should not be construed or interpreted as limiting in any way or manner the scope of services and obligations of the Agency set forth in the Agreement or PCMC’s rights to amend, alter, change, supplement or clarify the scope of work, the Operation to be awarded pursuant to this RFP or the terms thereof or herein contained. Consequently, any omissions, conflicts or contradictions in the Bidding Documents including this RFP are to be noted, interpreted and applied appropriately to give effect to this intent, and no claims on that account shall be entertained by PCMC.

1.5.7. PCMC shall receive the Bids through the e-tendering system and evaluate Bids in accordance with the terms set forth in this RFP and other documents to be provided by PCMC pursuant to this RFP, as modified, altered, amended, reissued and clarified from time to time by PCMC (collectively the “Bidding Documents”), and all Bids shall be prepared and submitted in accordance with such terms on or before the date specified in Clause 1.7 for submission of Bids (the “Bid Due Date”).

1.6. Details of the Bidding Process

1.6.1. PCMC has adopted a two stage process (referred to as the "Bidding Process") in evaluating the Proposals comprising technical and financial bids to be submitted through the e-tendering system. The Bidding Process shall evaluate the Bidder vis-à-vis the qualification requirements stated in the RFP document (“Qualification”) and then evaluate the commercial proposals of the qualified Bidders to select the Successful Bidder. In the first stage, a technical and financial capacity evaluation will be carried out as specified in Clause 3.4. Based on this technical evaluation, a list of short-listed applications shall be prepared. In second stage, the commercial proposal evaluation will be carried out as specified in Clause 3.5. Proposals will finally be ranked according to their combined technical and financial scores as specified in Clause 3.6. The first ranked Bidder shall be selected (the “Successful Bidder”).
1.6.2. The Bidder shall pay to PCMC a sum of Rs 5,000/- (Rupees Five Thousand only) as the cost of the RFP document through the e-tendering system of PCMC.

1.6.3. As part of the Bidding Process, the Bidders are being called upon to submit their Bids through the e-tendering system of PCMC in accordance with the terms specified in the Bidding Documents. The Bid shall be valid for a period of not less than 180 (one hundred and eighty) days from the Bid Due Date.

1.6.4. The Bidding Documents include this RFP and the Agreement. Subject to the provisions of Clause 2.1.2, the aforesaid documents and any addenda issued subsequent to this RFP document, will be deemed to form part of the Bidding Documents.

1.6.5. Under the Qualification, the Bidders would be required to furnish all the information specified in this RFP. Only those Bidders that are qualified in conformance with clause 3.4 and short-listed by PCMC shall have their Commercial Proposals opened.

1.6.6. Under the Commercial Proposal, the Bids will be evaluated as per the process detailed in Clause 3.5 of this RFP document. The evaluation shall be on the basis of the quoted Operation Fee ("Operation Fee" is the amount quoted by the Bidder in the Commercial Proposal for undertaking the scope of work in Clause 1.3 of the RFP). The amount quoted shall be inclusive of all taxes and duties including service tax. The Operation Fee shall be payable by PCMC to the Bidder.

The Bidder shall quote the Operation Fee only through the e-tendering system of PCMC.

1.6.7. Subsequent to the identification of the Successful Bidder, the Letter of Award (LoA) would be issued to the Successful Bidder by PCMC. Within 7 (seven) days from the date of issue of the LoA, The Successful Bidder shall send an acknowledgement agreeing to comply with the conditions set out therein. PCMC will promptly notify other Bidders that their Proposals have been unsuccessful and their Bid Security shall be returned within 30 (thirty) days, without interest, of the signing of the Agreement with the Successful Bidder. The Successful Bidder shall have to enter into the Agreement within 45 (forty five) days from the date of issue of the LoA. The Successful Bidder on the date of signing of the Agreement shall:

1. Furnish the Performance Security by way of an Irrevocable Bank Guarantee/Fixed Deposit Receipt (FDR) for a value of 5% of the value of contract by a nationalized / scheduled bank in favor of Commissioner, Pimpri Chinchwad Municipal Corporation.

2. Bear the cost for stamp duty of the agreement.

Failure of the Successful Bidder to comply with the requirements mentioned in the above paragraph shall constitute sufficient grounds for the annulment of the LoA, and forfeiture of the Bid Security. In such an event, PCMC reserves the right to:

a. Either invite the next best Bidder to match the Bid submitted by the Successful Bidder; OR

b. Call for fresh Bids from the remaining Bidders; OR

c. Take any such measure as may be deemed fit in the sole discretion of PCMC, including annulment of the Bidding Process.
1.6.8. Any queries or request for additional information concerning this RFP shall be submitted in writing or by e-mail to the Chief Garden Superintendent, Garden Department. The Bidders are required to submit their queries on this RFP (i.e. all parts of the RFP) as per the Clause 1.7. The envelopes/communications shall clearly bear the following identification/ title:

"Queries/Request for Additional Information: Bid for Selection of Agency for undertaking census of trees and development of application for tree management using GIS platform.

KIND ATTENTION OF:
Chief Garden Superintendent, Garden Department
Pimpri Chinchwad Municipal Corporation

ADDRESS:
Yashwantrao Chavan Rose Garden, Nehrunagar Bhosari 411026
TELEPHONE: (+91) 7722060907
Mobile: 9922501518/ 9922501928
FAX: (+91) 20 27425600

1.7. Schedule of Bidding Process
PCMC shall endeavor to adhere to the following schedule:

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Bidding Process</th>
<th>Timelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sale of RFP</td>
<td>29/11/2016</td>
</tr>
<tr>
<td>2</td>
<td>Receipt of queries till</td>
<td>6/12/2016 by 17:00 p.m</td>
</tr>
<tr>
<td>3</td>
<td>Pre-Bid Conference</td>
<td>6/12/2016 at 15:00 hours IST</td>
</tr>
<tr>
<td>4</td>
<td>PCMC response to queries latest by</td>
<td>9/12/2016</td>
</tr>
<tr>
<td>5</td>
<td>Issue of Revised RFP</td>
<td>9/12/2016 from 14:00 hours IST onwards</td>
</tr>
<tr>
<td>6</td>
<td>Date of submission of the Bid i.e.</td>
<td>20/12/2016 up to 15:00 hours IST.</td>
</tr>
<tr>
<td></td>
<td>Bid Due Date</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Opening of Bids</td>
<td>20/12/2016 up to 17:00 hours IST. (Technical</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Proposal Only</td>
</tr>
<tr>
<td>8</td>
<td>Opening of Commercial Proposal</td>
<td>After evaluation of Bids</td>
</tr>
<tr>
<td>9</td>
<td>Issue of Letter of Award (LoA)</td>
<td>Within 60 (sixty) days of Bid Due Date</td>
</tr>
<tr>
<td>10</td>
<td>Signing of Agreement</td>
<td>Within 45 (forty five) days of issue of LOA</td>
</tr>
</tbody>
</table>
2. INSTRUCTIONS TO BIDDERS

A. GENERAL

2.1. General terms of Bidding

2.1.1. No Bidder shall submit more than one Bid for the Project. A Bidder applying individually or as a Member of a Consortium shall not be entitled to submit another Bid either individually or as a Member of any Consortium, as the case may be.

2.1.2. The Bidders are expected to carry out their own surveys, investigations and other detailed examination of the Project before submitting their Bids. Nothing contained in the Bidding Documents shall be binding on PCMC nor confer any right on the Bidders, and PCMC shall have no liability whatsoever in relation to or arising out of any or all contents of the Bidding Documents.

2.1.3. Notwithstanding anything to the contrary contained in this RFP, the detailed terms specified in the Agreement shall have overriding effect; provided, however, that any conditions or obligations imposed on the Bidder hereunder shall continue to have effect in addition to its obligations under the Agreement.

2.1.4. The Bid should be furnished in the formats as specified in the RFP and signed by the Bidder’s authorized signatory. The Successful Bidder may be subsequently invited for award of the Operation. The Bidders should note that the formats specified in the RFP have been provided for the convenience of the Bidders and may not exhaustively enumerate or describe various information required to be provided by the Bidders under the Bidding Documents. The Bidders should ensure that all the information required to be provided by it in terms of the Bidding Documents is included in its Bid whether or not a particular format specified herein makes provision for submission of such information and/or whether or not a format for submission of such information is incorporated in the Bidding Documents.

2.1.5. The Bidder shall deposit a Bid security of Rs. 680535/- (Rupees Six lakh eighty thousand five hundred and thirty five only) through the e-tendering system of PCMC and in accordance with the provisions of this RFP for the Bid submitted (“Bid Security”).

2.1.6. The Bidder in case of Bidding Company should submit a Power of Attorney as per the format at Appendix-III, authorizing the signatory of submit the Bid.

2.1.7. In case the Bidder is a Consortium, the Members thereof should furnish a Power of Attorney in favor of the Lead Member in the format at Appendix-IV.

2.1.8. Any condition or qualification or any other stipulation contained in the Bid which is inconsistent with the terms of the Bidding Documents shall render the Bid liable to rejection as a non-responsive Bid.

2.1.9. The Bid and all communications in relation to or concerning the Bidding Documents and the Bid shall be in English language. Supporting documents and printed literature furnished by the Bidder with the Bid may be in any other language provided that they are accompanied by appropriate translations of the pertinent passages in the English language, duly authenticated and certified by
the Bidder. Supporting materials, which are not translated into English, may not be considered. For the purpose of interpretation and evaluation of the Bid, the English language translation shall prevail.

2.1.10. The Bidding Documents including this RFP and all attached or other documents, provided by PCMC are and shall remain or become the property of PCMC and are transmitted to the Bidders solely for the purpose of preparation and the submission of a Bid in accordance with the Bidding Documents. Bidders are to treat all information as strictly confidential and shall not use it for any purpose other than for preparation and submission of their Bid. The provisions of this Clause 2.1.10 shall also apply mutatis mutandis to Bids and all other documents submitted by the Bidders, and PCMC will not return to the Bidders any Bid, document or any information provided along therewith.

2.1.11. A Bidder shall not have a conflict of interest (the “Conflicts of Interest”) that affects the Bidding Process. Any Bidder found to have a Conflict of Interest shall be disqualified. In the event of disqualification, PCMC shall be entitled to forfeit and appropriate the Bid Security and/or Performance Security, as the case may be, as liquidated damages, without prejudice to any other right or remedy that may be available to PCMC under the Bidding Documents and/or the Agreement or otherwise. Without limiting the generality of the above, determining the Conflict of Interest shall be the prerogative of PCMC.

2.1.12. Without limiting the generality of the above, a Bidder shall be deemed to have a Conflict of Interest affecting the Bidding Process, if:

a. the Bidder, its Member or Associate (or any constituent thereof) and any other Bidder, its Member or any Associate thereof (or any constituent thereof) have common controlling shareholders or other ownership interest; provided that this disqualification shall not apply in cases where the direct or indirect shareholding of a Bidder, its Member or an Associate thereof (or any shareholder thereof having a shareholding of more than 5% (five per cent) of the paid up and subscribed share capital of such Bidder, Member or Associate, as the case may be) in the other Bidder, its Member or Associate, is less than 5% (five per cent) of the subscribed and paid up equity share capital thereof; provided further that this disqualification shall not apply to any ownership by a bank, insurance company, pension fund or a public financial institution referred to in section 4A of the Companies Act, 2013. For the purposes of this Clause 2.1.12, indirect shareholding held through one or more intermediate persons shall be computed as follows:

(i) where any intermediary is controlled by a person through management control or otherwise, the entire shareholding held by such controlled intermediary in any other person (the “Subject Person”) shall be taken into account for computing the shareholding of such controlling person in the Subject Person; and

(ii) subject always to sub-clause (i) above, where a person does not exercise control over an intermediary, which has shareholding in the Subject Person, the computation of indirect shareholding of such person in the Subject Person shall be undertaken on a proportionate basis; provided, however, that no such shareholding shall be reckoned under this sub-clause (ii) if the shareholding of such person in the intermediary is less than 26% (twenty six percent) of the subscribed and paid up equity shareholding of such intermediary;

b. a constituent of such Bidder is also a constituent of another Bidder;
c. such Bidder, its Member or any Associate thereof receives or has received any direct or indirect subsidy, grant, concessional loan or subordinated debt from any other Bidder, its Member or Associate, or has provided any such subsidy, grant, concessional loan or subordinated debt to any other Bidder, its Member or any Associate thereof;

d. such Bidder has the same legal representative for purposes of this Bid as any other Bidder;

e. such Bidder, or any Associate thereof, has a relationship with another Bidder, or any Associate thereof, directly or through common third party/parties, that puts either or both of them in a position to have access to each other’s information about, or to influence the Bid of either or each other; or

f. such Bidder or any Associate thereof has participated as a consultant to PCMC in the preparation of any documents, design or technical specifications of the Project.

*Explanation:*

In case a Bidder is a Consortium, then the term Bidder as used in this Clause 2.1.12, shall include each Member of such Consortium. For purposes of this RFP, Associate means, in relation to the Bidder/Member, a person who controls, is controlled by, or is under the common control with such Bidder/Member. As used in this definition, the expression “Control” means, with respect to a person which is a company or corporation, the ownership, directly or indirectly, of more than 50% (fifty per cent) of the voting shares of such person, or the power to appoint majority of the directors on the board of directors of such company or corporation and/or the power to direct the management and policies of such person by operation of law, agreement or otherwise and with respect to a person which is not a company or corporation, the power to direct the management and policies of such person by operation of law, agreement or otherwise.

2.1.13. A Bidder shall be liable for disqualification and forfeiture of Bid Security if any legal, financial or technical adviser of the Authority in relation to the Project is engaged by the Bidder, its Members or any Associate thereof, as the case may be, in any manner for matters related to or incidental to such Project during the Bidding Process or subsequent to the (i) issue of the LOA or (ii) execution of the Agreement. In the event any such adviser is engaged by the Selected Bidder or Agency, as the case may be, after issue of the LOA or execution of the Agreement for matters related or incidental to the Project, then notwithstanding anything to the contrary contained herein or in the LOA or the Agreement and without prejudice to any other right or remedy of the Authority, including the forfeiture and appropriation of the Bid Security or Performance Security, as the case may be, which the Authority may have thereunder or otherwise, the LOA or the Agreement, as the case may be, shall be liable to be terminated without the Authority being liable in any manner whatsoever to the Selected Bidder or Agency for the same. For the avoidance of doubt, this disqualification shall not apply where such adviser was engaged by the Bidder, its Member or Associate in the past but its assignment expired or was terminated 6 (six) months prior to the date of issue of RFP for the Project. Nor will this disqualification apply where such adviser is engaged after a period of 3 (three) years from the date of commercial operation of the Project.

2.1.14. This RFP is not transferable and can only be used by the person to whom it has been issued.

2.1.15. Any award of Operation pursuant to this RFP shall be subject to the terms of Bidding Documents.

2.2. **Change in composition of the Consortium**
2.2.1. Change in the composition of a Consortium will not be permitted by PCMC after the submission of bids;

2.2.2. The Members of Consortium other than the Lead Member whose Financial Capacity and Technical Capacity has been utilized for the purposes of qualification and are going to be considered for evaluation, should for a period of 1 (one) years from the date of commercial operation of the Project, hold equity share capital not less than 26% (twenty six percent) of the subscribed and paid up equity in the Joint Venture. If the Bidder wishes to utilize the experience of all the Members of the Consortium then the total number of Members in a Consortium shall not exceed 2 (two) members including the Lead Member. Consortium Members whose experience has not been utilized for qualification can have a lesser equity stake in the paid up share capital in the Joint Venture;

2.2.3. The Lead Member should throughout the Operation Period, hold equity share capital not less than 51% (fifty one percent) of the subscribed and paid up equity in the Joint Venture;

2.2.4. Where the Bidder is a Consortium, change in composition of the Consortium shall not be allowed after the Bid Due Date.

2.3. **Change in Ownership**

2.3.1. By submitting the Bid, the Bidder acknowledges that it was qualified and short-listed on the basis of Financial and Technical Capacity of those of its Members who shall, until the 60th month from the date of commercial operation of the Project, hold equity share capital representing not less than 26% (twenty six per cent) of the subscribed and paid-up equity of the Agency and the lead Member shall hold equity share capital representing not less than 51% (fifty one per cent) of the subscribed and paid-up equity of the Agency. The Bidder further acknowledges and agrees that the obligation herein shall be the minimum, and shall be in addition to such other obligations as may be contained in the Agreement, and a breach hereof shall, notwithstanding anything to the contrary contained in the Agreement, be deemed to be a breach of the Agreement respectively, and dealt with as such there under. For the avoidance of doubt, the provisions of this Clause 2.3.1 in respect of Members shall apply only when the Bidder is a Consortium. Where the Bidder is a Bidding Company, it shall be required to hold at least 51% (fifty one percent of the subscribed and paid up equity of the Agency until the expiry of the Operation Period).

2.3.2. By submitting the Bid, the Bidder shall also be deemed to have acknowledged and agreed that in the event of a change in control of a Member whose Financial or Technical Capacity was taken into consideration for the purposes of short-listing and qualification under and in accordance with the RFP, the Bidder shall be deemed to have knowledge of the same and shall be required to inform PCMC forthwith along with all relevant particulars about the same and PCMC may, in its sole discretion, disqualify the Bidder or withdraw the LoA from the Successful Bidder, as the case may be. In the event such change in control occurs after signing of the Agreement but prior to the completion of the Condition Precedent period for the Project, it would, notwithstanding anything to the contrary contained in the Agreement, be deemed to be a breach of the Agreement, and the same shall be liable to be terminated without PCMC being liable in any manner whatsoever to the Agency. In such an event, notwithstanding anything to the contrary contained in the Agreement, PCMC shall be entitled to forfeit and appropriate the Performance Security, as liquidated damages, without prejudice to any other right or remedy that may be available to PCMC under the Bidding Documents or otherwise.
2.4. **Cost of Bidding**

2.4.1. The Bidders shall be responsible for all of the costs associated with the preparation of their Bids and their participation in the Bidding Process. PCMC will not be responsible or in any way liable for such costs, regardless of the conduct or outcome of the Bidding Process.

2.5. **Site visit and verification of information**

2.5.1. Bidders are encouraged to submit their respective Bids after visiting the Project Area and ascertaining for themselves the site conditions, baseline of assets, location, surroundings, climate, availability of power, water and other utilities, access to site, handling and storage of materials, applicable laws and regulations, and any other matter considered relevant by them.

2.5.2. It shall be deemed that by submitting a Bid, the Bidder has:
   a. made a complete and careful examination of the Bidding Documents;
   b. received all relevant information requested from PCMC;
   c. accepted the risk of inadequacy, error or mistake in the information provided in the Bidding Documents or furnished by or on behalf of PCMC relating to any of the matters referred to in Clause 2.5.1 above;
   d. satisfied itself about all matters, things and information including matters referred to in Clause 2.5.1 hereinabove necessary and required for submitting an informed Bid, execution of the Project in accordance with the Bidding Documents and performance of all of its obligations there under;
   e. acknowledged and agreed that inadequacy, lack of completeness or incorrectness of information provided in the Bidding Documents or ignorance of any of the matters referred to in Clause 2.5.1 hereinabove shall not be a basis for any claim for compensation, damages, extension of time for performance of its obligations, loss of profits etc. from PCMC, or a ground for termination of the Agreement by the Agency;
   f. acknowledged that it does not have a Conflict of Interest; and
   g. agreed to be bound by the undertakings provided by it under and in terms hereof.

2.5.3. PCMC shall not be liable for any omission, mistake or error in respect of any of the above or on account of any matter or thing arising out of or concerning or relating to RFP, the Bidding Documents or the Bidding Process, including any error or mistake therein or in any information or data given by PCMC.

2.6. **Verification and Disqualification**

2.6.1. PCMC reserves the right to verify all statements, information and documents submitted by the Bidder in response to the RFP or the Bidding Documents and the Bidder shall, when so required by PCMC, make available all such information, evidence and documents as may be necessary for such verification. Any such verification or lack of such verification by PCMC shall not relieve the Bidder of its obligations or liabilities hereunder nor will it affect any rights of PCMC there under.
2.6.2. Without prejudice to Clause 2.0.6, PCMC reserves the right to reject any Bid and appropriate the Bid Security if:

a. at any time, a material misrepresentation is made or uncovered, or

b. the Bidder does not provide, within the time specified by PCMC, the supplemental information sought by PCMC for evaluation of the Bid.

Such misrepresentation/ improper response shall lead to the disqualification of the Bidder. If the Bidder is a Consortium, then the entire Consortium and each Member may be disqualified/ rejected. If such disqualification/ rejection occurs after the Bids have been opened and the Successful Bidder gets disqualified/ rejected, then PCMC reserves the right to invite a Bidder amongst the qualified Bidders in the descending order of their rank in accordance with Clause 3.6.

2.6.3. In case it is found during the evaluation or at any time before signing of the Agreement or after their execution and during the period of subsistence thereof, including the Operation thereby granted by PCMC, that one or more of the qualification conditions have not been met by the Bidder, or the Bidder has made material misrepresentation or has given any materially incorrect or false information, the Bidder shall be disqualified forthwith if not yet appointed as the Agency either by issue of the LoA or entering into of the Agreement, and if the Successful Bidder has already been issued the LoA or has entered into the Agreement, as the case may be, the same shall, notwithstanding anything to the contrary contained therein or in this RFP, be liable to be terminated, by a communication in writing by PCMC to the Successful Bidder or the Agency, as the case may be, without PCMC being liable in any manner whatsoever to the Successful Bidder or Agency. In such an event, PCMC shall be entitled to forfeit and appropriate the Bid Security or Performance Security, as the case may be, as liquidated damages, without prejudice to any other right or remedy that may be available to PCMC under the Bidding Documents and/or the Agreement, or otherwise.

2.6.4. The Bidder acknowledges and agrees that provisions of this RFP which by their nature or subject matter are intended to survive the completion of the Bidding or to apply throughout the Operation Period shall continue to survive and bind the Bidders throughout the Operation Period.
B. DOCUMENTS

2.7. Contents of the RFP

2.7.1. This RFP comprises the disclaimer set forth hereinafter, the contents as listed below, and will additionally include any Addenda issued in accordance with Clause 2.9 and any clarifications and interpretations issued in accordance with Clause 2.8.

Invitation for Bids
Section 1. Introduction
Section 2. Instructions to Bidders
Section 3. Evaluation of Bids
Section 4. Fraud & Corrupt Practices
Section 5. Pre Bid Conference
Section 6. Miscellaneous

Appendices
I. Letter for Bid
II. Procedure of registration and submission of Bid through e-tendering system
III. Power of Attorney for signing of Bid
IV. Power of Attorney for Lead Member of Consortium
V. Joint Bidding Agreement for Consortium
VI. Anti-Collusion Certificate
VII. Technical and Financial Capacity

2.7.2. The Agreement provided by PCMC along with this RFP as Volume 2 shall be deemed to be part of this RFP.

2.8. Clarifications

2.8.1. Bidders requiring any clarification on the RFP may notify PCMC in writing or by e-mail in accordance with Clause 1.6.8. They should send in their queries on or before the date mentioned in the Schedule of Bidding Process specified in Clause 1.7.

2.8.2. PCMC shall endeavor to respond to the questions raised or clarifications sought by the Bidders. The responses will be sent by e-mail. However, PCMC reserves the right not to respond to any question or provide any clarification, in its sole discretion, and nothing in this Clause shall be taken or read as compelling or requiring PCMC to respond to any question or to provide any clarification including within any specified time limit. PCMC will forward all the queries and its responses thereto, to all Bidders without identifying the source of queries. The responses will be uploaded on PCMC website www.pcmcindia.gov.in.

2.8.3. PCMC may also on its own motion, if deemed necessary, issue interpretations and clarifications to all Bidders. All clarifications and interpretations issued by PCMC shall be deemed to be part of
the Bidding Documents. Verbal clarifications and information given by PCMC or its employees or representatives shall not in any way or manner be binding on PCMC.

2.9. Amendment of RFP

2.9.1. At any time prior to the Bid Due Date, PCMC may, for any reason, whether at its own initiative or in response to clarifications requested by a Bidder, modify the RFP by the issuance of an addendum to the RFP.

2.9.2. Any addendum issued hereunder will be in writing and shall be sent to all the Bidders by email or by uploading on the PCMC website www.pcmcindia.gov.in.

2.9.3. In order to afford the Bidders a reasonable time for taking an addendum into account, or for any other reason, PCMC may, in its sole discretion, extend the Bid Due Date.

C. PREPARATION AND SUBMISSION OF BIDS

2.10. Format and Signing of Bid

2.10.1. The Bidder shall in its Bid provide all the information sought under the Bidding Document. PCMC will evaluate only those Bids that are received in the required formats and complete in all respects.

2.10.2. The Bid shall be typed or written in indelible ink and signed/digitally signed/scanned signed by the authorized signatory of the Bidder who shall also initial each page. In case of printed and published documents, only the cover shall be initialed. All the alterations, omissions, additions or any other amendments made to the Bid shall be initialed by the person(s) signing the Bid. The Bid shall contain page numbers.

2.11. Submission of Bid through e-tendering system

2.11.1. The Bidder shall submit the Bid only through the e-tendering system of PCMC.

2.11.2. The Bidder shall have to register with PCMC for Bidding for this Project. The process of registration and submission is provided in Appendix II.

2.11.3. The Bid shall have to be prepared and submitted as per Clauses 2.10, 2.11, 2.12, 2.13, 2.14, 2.15, 2.16, 2.17, 2.18, 2.19 and 2.20 of this RFP and only through e-tendering system of PCMC. The Bid shall comprise of Qualification and Commercial Proposal.

a) Qualification: The Bidder shall submit the following through e-tendering system for qualifying for the Project.

i. Payment of Rs 5000/- (Rupees five thousand only) through e-tendering system of PCMC towards purchase of RFP document

ii. Payment of Rs. 680535/- (Rupees Six lakh eighty thousand five hundred and thirty five only) as Bid Security through e-tendering system of PCMC

iii. Bid in the prescribed format (Appendix I and Appendix VII) along with Annexes and supporting documents;
iv. Power of Attorney for signing of Bid in the format at Appendix-III;

v. If applicable, the Power of Attorney for Lead Member of Consortium in the format at Appendix-IV;

vi. If applicable, the Joint Bidding Agreement between the Members of Consortiums in the format at Appendix-V;

vii. Anti-Collusion Certificate in the format at Appendix VI;

viii. Certified true copy of the incorporation certificate of the Bidding Company. In the case of a Consortium, certified true copy of the incorporation certificate of each of the Members of the Consortium. In case of a trust, copy of trust deed; in case of a society, copy of Memorandum of Association.; and

ix. A copy of the RFP document and Agreement with each page initialed by the person signing the Bid in pursuance of the Power of Attorney referred to in sub-clause (iv) or (v) hereinabove, as applicable.

x. The Authorization letter from the Original Equipment Manufacturer (OEM) of the hardware & software (specified in scope of work in clause 1.3) stating the compliance to the specification enclosed in Annexure 2, Annexure 3, Annexure 4 and Annexure 5.

xi. The instrument details regarding the DGPS, Digital Total Station and Distometer along with the valid calibration certificate for each geodetic instruments. The information is provided in the format enclosed in Annexure 6.

Any number of documents can be submitted through e-tendering system; however, the size of each individual document (in scanned PDF format) should not exceed 1 MB. If any of the documents mentioned above is not being accepted by the e-tendering system, then the same can be submitted by placing it in a sealed envelope on or before the Bid Due Date. The envelope specified shall clearly bear the following identification:

“Bid for Selection of Agency for undertaking census of trees and development of application for tree management using GIS platform”

and shall clearly indicate the name and address of the Bidder. In addition, the Bid Due Date should be indicated on the right hand top corner of the envelope.

The envelope shall be addressed to:

KIND ATTENTION OF:
Chief Garden Superintendent, Garden Department
Pimpri Chinchwad Municipal Corporation
Yashwantrao Chavan Rose Garden, Nehrunagar Bhosari 411026

TELEPHONE: (+91) 7722060907
Mobile: 9922501518/ 9922501928
FAX: (+91) 20 27425600
If the envelopes are not sealed and marked as instructed above, PCMC assumes no responsibility for the misplacement or premature opening of the contents of the Bid submitted and consequent losses, if any, suffered by the Bidder.

Bids submitted by fax or e-mail shall not be entertained and shall be rejected.

b) **Commercial Proposal**

The Bidder shall quote the Operation Fee only through the e-tendering system of PCMC.

### 2.12. Bid Due Date

2.12.1. Bids should be submitted before **1500 hours IST on or before the Bid Due Date** in the manner and form as detailed in the Bidding Documents.

2.12.2. PCMC may, in its sole discretion, extend the Bid Due Date by issuing an addendum in accordance with Clause 2.9 uniformly for all Bidders.

### 2.13. Late Bids

2.13.1. Bids received by PCMC after the specified time on the Bid Due Date shall not be eligible for consideration and shall be summarily rejected.

### 2.14. Contents of the Bid

2.14.1. Without prejudice to the other provisions of the Bidding Documents, the Bid shall consist of an Operation Fee quoted by the Bidder. The Bidder shall specify the Operation Fee required by him to undertake the Project in accordance with this RFP and the provisions of the Agreement.

2.14.2. Generally, the Project will be awarded to the highest combined score Bidder as per Clause 3.6.

2.14.3. The opening of Bids and acceptance thereof shall be substantially in accordance with the Bidding Documents.

2.14.4. The Agreement enclosed with this RFP shall be deemed to be part of the Bid.

### 2.15. Modification/ substitute/ withdrawal of Bids

2.15.1. The Bidder may modify/ substitute/ withdraw its Bid before the final submission through the e-tendering system. No Bid shall be modified, substituted or withdrawn by the Bidder on or after the Bid Due Date.

2.15.2. Any alteration/modification in the Bid or additional information supplied subsequent to the Bid Due Date, unless the same has been expressly sought by PCMC, shall be disregarded.

### 2.16. Rejection of Bids

2.16.1. Notwithstanding anything contained in this RFP, PCMC reserves the right to reject any Bid and to annul the Bidding Process and reject all Bids at any time without any liability or any obligation for such acceptance, rejection or annulment, and without assigning any reasons therefor. In the
event that PCMC rejects or annuls all the Bids, it may, in its discretion, invite all eligible Bidders to submit fresh Bids hereunder.

2.16.2. PCMC reserves the right not to proceed with the Bidding Process or to modify the Bidding Process at any time, without notice or liability, and to reject any Bid without assigning any reasons.

2.17. Validity of Bids

2.17.1. The Bids shall be valid for a period of not less than 180 (one hundred and eighty) days from the Bid Due Date. The validity of Bids may be extended by mutual consent of the respective Bidders and PCMC, provided that the Successful Bidder shall extend the validity of the Bid until the execution of the Agreement.

2.18. Confidentiality

2.18.1. Information relating to the examination, clarification, evaluation and recommendation for the Bidders shall not be disclosed to any person who is not officially concerned with the Bidding Process or is not a retained professional advisor advising PCMC in relation to or matters arising out of, or concerning the Bidding Process. PCMC will treat all information, submitted as part of the Bid, in confidence and will require all those who have access to such material to treat the same in confidence. PCMC may not divulge any such information unless it is directed to do so by any statutory entity that has the power under law to require its disclosure or is to enforce or assert any right or privilege of the statutory entity and/or PCMC or as may be required by law or in connection with any legal process.

2.19. Correspondence with the Bidder

2.19.1. Save and except as provided in this RFP, PCMC shall not entertain any correspondence with any Bidder in relation to acceptance or rejection of any Bid.

D. BID SECURITY

2.20. Bid Security

2.20.1. The Bidder shall furnish as part of its Bid, a Bid Security referred to in Clause 2.1.5 hereinabove through the e-tendering system of PCMC.

2.20.2. PCMC shall not be liable to pay any interest on the Bid Security deposit so made and the same shall be interest free.

2.20.3. Any Bid not accompanied by the Bid Security shall be summarily rejected by PCMC as non-responsive.

2.20.4. The Bid Security of unsuccessful Bidders will be returned by PCMC, without any interest, within 30 (thirty) days, after execution of the Agreement by the Successful Bidder or when the Bidding Process is cancelled by PCMC. The Bidders shall have to apply for Bid Security refund at the Citizen Facilitation Centre of PCMC. PCMC after due verification shall refund the Bid Security of unsuccessful Bidders. The Successful Bidder’s Bid Security will be converted into Performance Security, without any interest, upon the Agency signing the Agreement.
2.20.5. PCMC shall be entitled to forfeit and appropriate the Bid Security as liquidated damages inter alia in any of the events specified in Clause 2.20.6 herein below and pursuant to other provisions of this RFP providing for a forfeiture of Bid Security. The Bidder, by submitting its Bid pursuant to this RFP, shall be deemed to have acknowledged and confirmed that PCMC will suffer loss and damage on account of withdrawal of its Bid or for any other default by the Bidder during the period of Bid validity as specified in this RFP. No relaxation of any kind on Bid Security shall be given to any Bidder.

2.20.6. The Bid Security shall be forfeited as liquidated damages without prejudice to any other right or remedy that may be available to PCMC under the Bidding Documents and/ or under the Agreement, or otherwise, under the following conditions:

a. If a Bidder engages in a corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice as specified in Section 4 of this RFP;

b. If a Bidder modifies or substitutes (without the prior written approval of PCMC) or withdraws its Bid during the period of Bid validity as specified in this RFP and as extended in accordance with the terms of the Bidding Documents; or

c. In the case of Successful Bidder, if within the specified time limit –

i. it fails to sign and return the duplicate copy of LoA;

ii. it fails to incorporate the Joint Venture or such Joint Venture fails or refuses to sign the Agreement;

iii. the Joint Venture fails to provide the Performance Security in accordance with the Bidding Document;

iv. the Successful Bidder fails or refuses to provide any documents required to be provided by it after its selection.
3. EVALUATION OF BIDS

3.1. Opening and Evaluation of Bids

3.1.1. PCMC will examine and evaluate the Bids in accordance with the provisions set out in this Section 3.

3.1.2. To facilitate evaluation of Bids, PCMC may, at its sole discretion, seek clarifications in writing from any Bidder regarding its Bid and such Bidder shall provide its response within the time period specified by PCMC in this regard.

3.2. Tests of responsiveness

3.2.1. Prior to evaluation of Bids, PCMC shall determine whether each Bid is responsive to the requirements of this RFP. A Bid shall be considered responsive only if:

   a. Payment of Rs 5000/- (Rupees five thousand only) is made through e-tendering system of PCMC towards purchase of RFP document

   b. Payment of Rs. 680535/- (Rupees Six lakh eighty thousand five hundred and thirty five only) is made as Bid Security through e-tendering system of PCMC;

   c. it is received as per the format at Appendix-I and Appendix-VII;

   d. it is received by the Bid Due Date including any extension thereof pursuant to Clause 2.12.2;

   e. it is submitted as stipulated in Clauses 2.10 and 2.11;

   f. it is accompanied by the Power(s) of Attorney as specified in Clauses 2.1.6 and 2.1.7, as the case may be;

   g. it contains certificates from its statutory auditors in the formats specified at Appendix I and Appendix VII of the RFP;

   h. it contains the Authorization letter from the Original Equipment Manufacturer (OEM) of the hardware & software (specified in scope of work in clause 1.3) stating the compliance to the specification enclosed in Annexure 2, Annexure 3, Annexure 4 and Annexure 5.

   i. it contains the instrument details regarding the DGPS, Digital Total Station and Distometer along with the valid calibration certificate for each geodetic instruments. The information is provided in the format enclosed in Annexure 6.

   j. it contains all the information (complete in all respects) as requested in this RFP and/or Bidding Documents (and if formats have been specified, then in those formats);

   k. it does not contain any condition or qualification; and

   l. it is not non-responsive or inconsistent in terms of the Bidding Documents.
3.2.2. PCMC reserves the right to reject any Bid which is non-responsive and no request for alteration, modification, substitution or withdrawal shall be entertained by PCMC in respect of such Bid.

3.3. Selection of Bidder

3.3.1. Subject to the provisions of Clause 2.16.1, the Bidder whose Bid is adjudged as responsive in terms of Clause 3.2.1 and has received the highest score in evaluation of proposal, shall be declared as the successful Bidder (the “Successful Bidder”). In the event that PCMC rejects or annuls all the Bids, it may, in its discretion, invite all eligible Bidders to submit fresh Bids hereunder.

3.3.2. The evaluation of Bids shall be undertaken in the following sequence:

1. Evaluation of Qualification;
2. Evaluation of Commercial Proposal

3.4. Evaluation of Qualification

3.4.1. For the purpose of qualifying under Qualification, the Bidders Technical Proposals should get a score of 70 marks or more out of 100 marks to qualify for further evaluation i.e. opening of the Commercial Proposal and shall be ranked from highest to the lowest on the basis of their technical score ($T$). The Technical Proposal will be evaluated on the basis of Bidder’s experience, its financial capacity and the experience of the Key Personnel. The scoring criteria to be used for Financial Capacity evaluation shall be as stipulated under Clause 3.4.3.2 and the scoring criteria to be used for Technical Capacity evaluation shall be as stipulated under Clause 3.4.4.2 of this RFP document.

3.4.2. To be eligible for evaluation of its Proposal, the Applicant shall fulfil the technical and financial criteria. The total marks for Technical Capacity is 80 marks and for Financial Capacity is 20 marks. Each Bidder shall be assigned a technical score ($T$) based on the evaluation of technical and financial capacity.

I. Technical Capacity – 80 marks
   a) Teaming – 20 marks
   b) Firm’s Experience – 60 marks

II. Financial Capacity – 20 marks

The Bidder shall obtain at least 70 marks or more out of 100 in the Technical Proposal to qualify for the opening of the Commercial Proposal

3.4.3. Evaluation of Financial Capacity

3.4.3.1. In the case of a Consortium, the combined Turnover of those Members, who have and shall continue to have an equity share of at least 26% (twenty six percent) each in the Consortium, shall be considered for the purpose of evaluation. Such Members who have been evaluated under this category shall until 60th months from the date of commercial operation of the Project, hold equity share capital representing not less than 26% (twenty six per cent) of the subscribed and paid-up equity in the Joint Venture and the lead Member shall hold equity share capital representing not less than 51% (fifty one per cent) of the subscribed and paid-up equity in the Joint Venture.
3.4.3.2. Under this category, the Bidder’s shall be evaluated on its Turnover as indicated in the table below (the “Financial Capacity”):

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Financial Capacity</th>
<th>Maximum Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Minimum average annual turnover in the last three years (FY 2015-16, FY 2014-15 and FY 2013-14) of at least Rs. 2 Crore. For minimum average annual turnover of Rs. 2 Crore – 5 marks For every additional average annual turnover of Rs. 1 Crore - 2 marks.</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>Minimum average annual net profit in the last three years (FY 2015-16, FY 2014-15 and FY 2013-14) of at least Rs. 10 Lakh. For minimum average annual net profit of Rs. 10 Lakh – 5 marks For every additional average annual net profit of Rs. 10 Lakh - 2 marks.</td>
<td>10</td>
</tr>
</tbody>
</table>

3.4.3.3. The Bidder shall provide a certificate in the format provided below from its statutory auditor specifying the Turnover in the last three financial year i.e. FY 2015-16, FY 2014-15 and FY 2013-14.

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Financial Year</th>
<th>Annual Turnover (Rs.in million)</th>
<th>Annual Net Profit (Rs.in million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Certificate from the Chartered Accountant

This is to certify that …………………………. (Name of the Applicant) has received the payments shown above against the respective years on account of professional fees.

Name of the Chartered Accountant firm:

Seal of the Chartered Accountant firm

Date:

(Signature, name and designation of the authorized signatory)

Note: Please attach the Audited Balance sheets for the last three years.

3.4.3.4. The Bid must be accompanied by the audited annual reports of the Bidder (or Members who are to be evaluated in case of a Consortium).

3.4.3.5. In case the annual accounts for the latest Financial Year are not audited and therefore the Bidder could not make it available, the Bidder shall give an undertaking to this effect and the statutory auditor shall certify the same. In such a case, the Bidder shall provide the audited annual reports for the preceding year for which the audited annual report is not being provided.

3.4.3.6. The Bidder shall provide details as per format at Annex-II of Appendix-I.
3.4.3.7. Notwithstanding anything to the contrary contained herein, in the event that the Bid Due Date falls within 3 (three) months of the closing of the latest Financial Year of a Bidder, it shall ignore such Financial Year for the purposes of its Bid and furnish all its information and certification with reference to the Financial Year, preceding its latest Financial Year. For the avoidance of doubt, the Financial Year shall, for the purposes of a Bid hereunder, mean accounting year followed by the Bidder in the course of its normal business.

3.4.4. **Evaluation of Technical Capacity**

3.4.4.1. In addition to the Financial Capacity, the Technical Capacity of the Bidder shall be assessed under this category. In the case of a Consortium, any of Members, who have and shall continue to have an equity share of at least 26% (twenty six percent) each in the Consortium, shall be considered for the purpose of evaluation. Such Members who have been evaluated under this category shall from the commercial operation of the Project, hold equity share capital representing not less than 26% (twenty six per cent) of the subscribed and paid-up equity in the Joint Venture and the lead Member shall hold equity share capital representing not less than 51% (fifty one per cent) of the subscribed and paid-up equity in the Joint Venture, until the expiry of the Operation Period.

3.4.4.2. Under this category, the Bidder shall be evaluated on its past work experience (Table 1) and its team of Key Personnel (Table 2) (“Technical Capacity”):

**Table 1: Firms Experience**

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Projects</th>
<th>Details</th>
<th>Maximum Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Experience of field/door to door survey using electronic media or geodetic instruments like handheld devices or mobile devices.</td>
<td>Should have provided door to door survey/field survey using electronic media or geodetic instruments. For the project of minimum area of 3 Sq. Km/20000 household or beneficiary - 2 marks For the project of minimum area of 6 Sq. Km/40000 household or beneficiary - 4 marks For the project of minimum area of 9 Sq. Km/60000 household or beneficiary - 6 marks For the project of area &gt;9 Sq. Km/60000 household or beneficiary - 10 marks Completion Certificate/Work order/Agreement of work.</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>Experience of Software development (Mobile based application/Web Based Application/ERP etc.)</td>
<td>Should have developed, deployed &amp; Go Live of software application. Development of website/integration of payment gateway will not be considered as software development experience under this criteria. For the project of value upto Rs. 50 lakh - 2 marks For the project of value &gt; Rs. 50 lakh - Rs. 1 Crore - 4 marks For the project of value &gt; Rs. 1 crore – Rs. 2 Crore - 6 marks</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Experience of census of trees</td>
<td>Should have completed GIS/GPS based census of trees for Government/ Semi-Government/ Parastatal agency</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>-------------------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>For the project of value &gt; Rs. 2 Crore - 10 marks</td>
<td>Completion Certificate/ Work order/ Agreement of work.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>For the project of 1 - 5 lakh census trees - 3 marks</td>
<td>For the project of 1 - 5 lakh census trees - 3 marks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>For the project of &gt;5 - 10 lakh census trees - 6 marks</td>
<td>For the project of &gt;5 - 10 lakh census trees - 6 marks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>For the project of &gt;10 - 15 lakh census trees - 9 marks</td>
<td>For the project of &gt;10 - 15 lakh census trees - 9 marks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>For the project of &gt;15 - 20 lakh census trees - 12 marks</td>
<td>For the project of &gt;15 - 20 lakh census trees - 12 marks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>For the project of &gt;20 lakh census trees - 15 marks</td>
<td>For the project of &gt;20 lakh census trees - 15 marks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Completion Certificate/ Work order/ Agreement of work.</td>
<td>Completion Certificate/ Work order/ Agreement of work.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Should have completed GIS/GPS based census of trees for Government/ Semi-Government/ Parastatal agency</td>
<td>Should have completed GIS/GPS based census of trees for Government/ Semi-Government/ Parastatal agency</td>
<td></td>
</tr>
<tr>
<td></td>
<td>For the project of value upto Rs. 50 lakh in census of trees - 3 marks</td>
<td>For the project of value upto Rs. 50 lakh in census of trees - 3 marks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>For the project of value &gt; Rs. 50 lakh - Rs. 1 Crore in census of trees - 6 marks</td>
<td>For the project of value &gt; Rs. 50 lakh - Rs. 1 Crore in census of trees - 6 marks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>For the project of &gt; Rs. 1 crore – Rs. 1.5 Core in census of trees - 9 marks</td>
<td>For the project of &gt; Rs. 1 crore – Rs. 1.5 Core in census of trees - 9 marks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>For the project of &gt; Rs. 1.5 – Rs. 2 Crore in census of trees - 12 marks</td>
<td>For the project of &gt; Rs. 1.5 – Rs. 2 Crore in census of trees - 12 marks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>For the project of &gt; Rs. 2 Crore in census of trees - 15 marks</td>
<td>For the project of &gt; Rs. 2 Crore in census of trees - 15 marks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Completion Certificate/ Work order/ Agreement of work.</td>
<td>Completion Certificate/ Work order/ Agreement of work.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Bidder Manpower Capacity</th>
<th>Should have on roll qualified &amp; experienced of Plant Taxonomist/ Botanist/Horticulturists</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>For every 5 persons 1 marks</td>
<td>For every 5 persons 1 marks</td>
</tr>
<tr>
<td></td>
<td>Company Auditor/ Company Secretary/ HR Head certificate and CV of persons should be submitted</td>
<td>Company Auditor/ Company Secretary/ HR Head certificate and CV of persons should be submitted</td>
</tr>
<tr>
<td></td>
<td>Should have on roll Post Graduate in Plant Taxonomy with 5 years of experience.</td>
<td>Should have on roll Post Graduate in Plant Taxonomy with 5 years of experience.</td>
</tr>
<tr>
<td></td>
<td>For every 2 persons 1 marks</td>
<td>For every 2 persons 1 marks</td>
</tr>
<tr>
<td></td>
<td>Company Auditor/ Company Secretary/ HR Head certificate and CV of persons should be submitted</td>
<td>Company Auditor/ Company Secretary/ HR Head certificate and CV of persons should be submitted</td>
</tr>
<tr>
<td></td>
<td>Should have on roll GIS Expert with 5 years of experience.</td>
<td>Should have on roll GIS Expert with 5 years of experience.</td>
</tr>
</tbody>
</table>
For every 2 persons 1 marks
Company Auditor/ Company Secretary/ HR Head
certificate and CV of persons should be submitted

Note: The Bidder has to submit experience certificate as evidence for evaluation.

Table 2: Team Requirements

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Team Details</th>
<th>Maximum Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong></td>
<td><strong>Key Personnel</strong></td>
<td>20</td>
</tr>
</tbody>
</table>
| 1 | **Team Leader (1 Nos)** – M.A Sociology/MSW/ MBA/M.E/ B. Arch/ B. Plan/B.E/BCA/equivalent with 5 years of experience in conducting & managing surveys. **Marking System** a. Educational Qualification:  
  - B. Arch/ B. Plan/B.E/BCA/equivalent - 1 Marks  
  - M.A Sociology/ MBA/MSW/M.E/equivalent – 2 Marks  
  b. Years of Experience  
  - < 05 Years: Not Eligible  
  - >= 05 Years: 2 Marks | 4 |
| 2 | **Landscape Architect (1 Nos)** – Post Graduate or Graduate in landscape architecture with 5 years of domain experience. **Marking System** a. Educational Qualification:  
  - Graduate in Landscape Architecture - 1 Marks  
  - Post Graduate in Landscape Architecture – 2 Marks  
  b. Years of Experience  
  - < 05 Years: Not Eligible  
  - >= 05 Years: 1 Marks | 3 |
| 3 | **Software Development Expert (1 Nos)** - B.E/BCA/M.E/MCA in computer science/ IT / Software Application with at least 5 years of experience in developing and implementing software systems. **Marking System** a. Educational Qualification:  
  - B.E/BCA - 1 Marks  
  - M.E/ MCA – 2 Marks  
  b. Years of Experience  
  - < 05 Years: Not Eligible  
  - >= 05 Years: 1 Marks | 3 |
| 4 | **GIS Expert (1 Nos)** – Post Graduate/ Graduate with degree or diploma in GIS field with 3-5 years of experience in GIS related domain or development. **Marking System** a. Educational Qualification:  
  - Graduate with GIS degree/diploma - 1 Marks  
  - Post Graduate with GIS degree/diploma – 2 Marks  
  b. Years of Experience  
  - < 03 Years: Not Eligible | 4 |
### Team Details

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Max Marking System</th>
<th>Maximum Marks</th>
</tr>
</thead>
</table>
| 5 | **Plant Taxonomist/ Botanist/ Horticulturist (2 Nos)** - Post Graduate/ Graduate in Plant Taxonomy or Botany or Horticulture with 1-3 years of experience.  
**Marking System**  
a. Educational Qualification :  
  - Graduate in Plant Taxonomy or Botany or Horticulture - 1 Marks  
  - Post Graduate in Plant Taxonomy or Botany or Horticulture – 2 Marks  
b. Years of Experience  
  - < 01 Years: Not Eligible  
  - >= 01 Years: 2 Marks | 4 |
| 6 | **On site Operator (2 Nos)** – Graduate/ITI/Diploma with minimum 1 years of experience in data management/ system management/system development.  
**Marking System**  
a. Educational Qualification :  
  - ITI/Diploma/ Graduate - 1 Marks  
b. Years of Experience  
  - < 01 Years: Not Eligible  
  - >= 01 Years: 1 Marks | 2 |

Note: The CVs of all the Key Experts working on this project shall be submitted for evaluation in the format specified in Appendix VII Annex - III.

3.4.4.3. The Bidder should furnish the required Project-specific information and evidence in support of its claim of Technical Capacity, as per format at Annex-II of Appendix-VII. The evidence to be submitted for experience shall include either of the following in the format as specified in Appendix VII (Annex II):

(a) Certificate from the Government Instrumentality for which the project has been developed clearly setting out the nature of project, location, date of commissioning and if the progress of the project was satisfactory;

(b) Certificate from the urban local body for which the project has been developed clearly setting out the nature of project, location, date of commissioning and if the progress of the project was satisfactory; or

(c) Certificate from an appropriate statutory authority clearly setting out the nature of project, location, and date of commissioning and if the progress of the project was satisfactory.

3.4.4.4. Availability of Key Personnel: The Applicant shall offer and make available all Key Personnel meeting the requirements specified in 3.4.4.2 above failing which the proposal shall be rejected. The Authority expects all the Key Personnel to be available during implementation of the Agreement. The Authority will not consider substitution of Key Personnel except for reasons of any incapacity or due to health. Such substitution shall be subject to equally or better qualified and experienced personnel being provided to the satisfaction of the Authority.
3.4.4.5. Condition of Eligibility for Key Personnel: Each of the Key Personnel must fulfill the Conditions of Eligibility as specified in table 2 mentioned in clause 3.4.4.2. Failing which the proposal shall be rejected.

3.4.4.6. If an individual Key Personnel makes a false averment regarding his qualification, experience or other particulars, or his commitment regarding availability for the Project is not fulfilled at any stage after signing of the Agreement, he shall be liable to be debarred for any future assignment of the Authority for a period of 5 (five) years. The award of this Project to the Applicant may also be liable to cancellation in such an event.

3.4.4.7. The Technical Proposal shall not include any financial information relating to the Commercial Proposal.

3.4.4.8. The proposed team shall be composed of experts and specialists (the "Professional Personnel") in their respective areas of expertise and managerial/support staff (the "Support Personnel") such that the Agency should be able to complete the Project within the specified time schedule. The Key Personnel specified in Clause 3.4.4.2 shall be included in the proposed team of Professional Personnel. Other competent and experienced Professional Personnel in the relevant areas of expertise must be added as required for successful completion of this Project. The CV of each such Professional Personnel, if any, should also be submitted in the format at Appendix VII Annex-III.

3.4.4.9. If the Bidder does not get a score of 70 marks or more out of 100 marks in the evaluation of Qualification as per Clause 3.4, then the Bidder shall be disqualified from the Bidding Process and the Bid Security of the Bidder shall be returned as per Clause 2.20.4.

3.4.5. Experience

3.4.5.1. The Experience shall be measured only on the basis of Eligible Projects undertaken in India and elsewhere.

3.4.5.2. For a project to qualify as an Eligible Project:

a. (i) it should have been undertaken as a software development and maintenance basis for providing its output or services to an government or semi government or parastatal agency or Private entity or autonomous body or for providing non-discriminatory access to users in pursuance of its charter, contract, as the case may be. For the avoidance of doubt, a project which constitutes a natural monopoly should normally be included in this category even if it is not based on a long-term agreement with a public entity; or

(ii) it should have been undertaken as an survey and data management project for providing its output to an government or semi government or parastatal agency or private entity or autonomous body or for providing non-discriminatory access to users in pursuance of its charter, contract, as the case may be; or

(iii) it should have been undertaken as an survey, data management, software development and maintenance project for providing its output to an government or semi government or parastatal agency or Private entity or autonomous body or for providing non-discriminatory access to users in pursuance of its charter, contract, as the case may be; and
b. the entity claiming experience should have held, in the company owning the Eligible Project, a minimum of 26% (twenty six percent) subscribed and paid up voting equity share capital during the period for which eligible experience is being claimed.

3.4.5.3. Any entity which has been barred by the Central/any State Government/any Government Instrumentality, or any entity owned or controlled by it, from participating in any project (BOT or otherwise), and the bar subsists as on the date of Bid, would not be eligible to submit a Bid, either individually or as a member of a Consortium.

3.4.5.4. A Bidder including any Member should, in the last 5 (five) Financial Years, have neither failed to perform on any contract, as evidenced by imposition of a penalty by an arbitral or judicial authority or a judicial pronouncement or arbitration award against the Bidder, Member, as the case may be, nor has been expelled from any project or contract by any public entity or Government Instrumentality nor have had any contract terminated by any public entity or Government Instrumentality for breach by such Bidder or Member.

3.4.5.5. The Bidder should furnish the details of Eligible Project experience for the last 10 (ten) Financial Years immediately preceding the Bid Due date.

3.4.5.6. The Bidders must provide the necessary information relating to experience as per format at Annex-I of Appendix-VII. The credentials of eligible Bidders shall be measured in terms of their experience. In case of a Consortium, the Eligible Projects of each of its Members, who have an equity share as set out in Clause 2.2.2 in the Joint Venture, shall be summed up of the Consortium.

3.4.5.7. PCMC, however, at all times retains the right to reject a Bid in cases where PCMC (in its sole opinion), considers the Bid materially inconsistent, deficient, technically unsound or unacceptable in any other respect.

3.4.5.8. The Bidders having a score of 70 marks or more out of 100 marks in the evaluation of Qualification as per Clause 3.4 shall be qualified for evaluation of their Commercial Proposals.

3.5. **Evaluation of Commercial Proposal**

3.5.1. The Commercial Proposal evaluation seeks to understand the commercial terms of the Bidder. Each Commercial Proposal will be assigned a financial score ($F$).

3.5.2. The cost indicated in the Commercial Proposal shall be deemed as final and reflecting the total cost of services. Omissions, if any, in costing any item shall not entitle the firm to be compensated and the liability to fulfill its obligations as per the Scope of Work within the total quoted price shall be that of the Agency. The lowest Commercial Proposal ($C_M$) will be given a financial score ($S_F$) of 100 points. The financial scores of other proposals will be computed as follows:

\[ S_F = 100 \times \frac{C_M}{C} \]

\[(C = \text{amount of Commercial Proposal})\]

3.5.3. The draft format of Commercial Proposal is enclosed as Annexure 1. The Commercial Proposal shall only be submitted through the online etendering system.

3.5.4. The Operation Fee shall cover all the activities specified under the scope of work in the RFP.
3.5.5. The Operation Fee shall be inclusive of all taxes and duties including service tax.

3.5.6. The Operation Fee quoted shall not have any conditionality or deviations from the Agreement or RFP. Bids with conditions attached shall be treated as non-responsive.

3.6. Combined and final evaluation

3.6.1. Proposals will finally be ranked according to their combined technical (ST) and financial (SF) scores as follows:

\[ S = S_T \times T_W + S_F \times F_W \]

Where S is the combined score, and T_W and F_W are weights assigned to Technical Proposal and Commercial Proposal that shall be 0.70 and 0.30 respectively.

3.6.2. The Selected Bidder shall be the first ranked Bidder (having the highest combined score). The second ranked Bidder shall be kept in reserve and may be invited for negotiations in case the first ranked Bidder withdraws or fails to comply with the requirement specified in this RFP.

3.7. Issue of LOA and execution of the Agreement

3.7.1. Subsequent to the identification of the Successful Bidder, a letter of award ("LOA" or "Letter of Award") would be issued to the Successful Bidder by PCMC. Within 7 (seven) days from the date of issue of the LOA, the Successful Bidder shall send an acknowledgement agreeing to comply with the conditions set out therein. PCMC will promptly notify other Bidders that their Proposals have been unsuccessful and their Bid Security shall be returned within 30 (thirty) days, without interest, of the signing of the Agreement with the Successful Bidder. The Successful Bidder shall have to enter into the Agreement within 45 (forty five) days from the date of issue of the LOA. The Successful Bidder on the date of signing of the Agreement shall:

1. Furnish the Performance Security by way of Irrevocable Bank Guarantee/Fixed Deposit Receipt (FDR) for a value of 5% of the value of contract from a nationalized / scheduled bank in favor of Pimpri Chinchwad Municipal Corporation, as required under the Agreement; and

2. Bear the cost of stamp duty of the agreement.

Failure of the Successful Bidder to comply with the requirements mentioned in the above paragraph shall constitute sufficient grounds for the annulment of the LOA, and forfeiture of the Bid Security. In such an event, PCMC reserves the right to:

a. Either invite the next best Bidder to match the Bid submitted by the Successful Bidder; OR

b. Call for fresh Bids from the remaining Bidders; OR

c. Take any such measure as may be deemed fit in the sole discretion of PCMC, including annulment of the Bidding Process.

3.7.2. Structure

a. After the issue of the LOA by PCMC, if the Successful Bidder is a Bidding Consortium it shall enter into a joint venture agreement with the Consortium members for executing the
Project ("JV" or the "Joint Venture"). The Successful Bidder shall ensure that the Joint Venture agreement is provided to PCMC within thirty (30) days from the date of issue of the LoA by PCMC.

b. In the event that the Successful Bidder is a Consortium, the shareholding of the Joint Venture shall be owned directly by the Members in accordance with the terms of the Bidding Documents including the Agreement.

c. The Joint Venture or the Bidding Company shall execute the Agreement within the period prescribed in Clause 1.7 (unless such period is extended by PCMC). Upon or prior to such execution by the Joint Venture or the Bidding Company it shall submit to PCMC the Performance Security in accordance with the Bidding Documents.

3.7.3. PCMC reserves the right to cancel the award in case the Successful Bidder being a Bidding Consortium fails to incorporate the Joint Venture fails or refuses to sign the Agreement and/or does not submit the Performance Security and/or the other documents mentioned in the Bidding Documents.

3.8. Contacts during Bid Evaluation

3.8.1. Bids shall be deemed to be under consideration immediately after they are opened and until such time PCMC makes official intimation of award/rejection to the Bidders. While the Bids are under consideration, Bidders and/or their representatives or other interested parties are advised to refrain, save and except as required under the Bidding Documents, from contacting by any means, PCMC and/or their employees/representatives on matters related to the Bids under consideration.
4. FRAUD AND CORRUPT PRACTICES

4.1 The Bidders and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Bidding Process and subsequent to the issue of the LoA and during the subsistence of the Agreement. Notwithstanding anything to the contrary contained herein, in the LoA, the Agreement, PCMC may reject a Bid, withdraw the LoA, or terminate the Agreement, as the case may be, without being liable in any manner whatsoever to the Bidder or Agency, as the case may be, if it determines that the Bidder or Agency, as the case may be, has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice in the Bidding Process. In such an event, PCMC shall be entitled to forfeit and appropriate the Bid Security and/or Performance Security, as the case may be, as liquidated damages, without prejudice to any other right or remedy that may be available to PCMC under the Bidding Documents and/or the Agreement or otherwise.

4.2 Without prejudice to the rights of PCMC under Clause 4.1 hereinabove and the rights and remedies which PCMC may have under the LoA or the Agreement, or otherwise, if a Bidder or Agency, as the case may be, is found by PCMC to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice during the Bidding Process, or after the issue of the LoA or the execution of the Agreement, such Bidder or Agency shall not be eligible to participate in any tender or RFP issued by PCMC during a period of 2 (two) years from the date such Bidder or Agency, as the case may be, is found by PCMC to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practices, as the case may be.

4.3 For the purposes of this Clause 4, the following terms shall have the meaning hereinafter respectively assigned to them:

(a) “corrupt practice” means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence directly or indirectly the actions of any person connected with the Bidding Process (for the avoidance of doubt, offering of employment to or employing or engaging in any manner whatsoever, directly or indirectly, any official of PCMC who is or has been associated in any manner, directly or indirectly with the Bidding Process or the LoA or has dealt with matters concerning the Agreement or arising therefrom, before or after the execution thereof, at any time prior to the expiry of 1 (one) year from the date such official resigns or retires from or otherwise ceases to be in the service of PCMC, shall be deemed to constitute influencing the actions of a person connected with the Bidding Process); or (ii) acting contrary to applicable anti-bribery or anti-corruption laws;

(b) “fraudulent practice” means a misrepresentation or omission of facts or suppression of facts or disclosure of incomplete facts, in order to influence the Bidding Process;

(c) “coercive practice” means impairing or harming or threatening to impair or harm, directly or indirectly, any person or property to influence any person’s participation or action in the Bidding Process;

(d) “undesirable practice” means (i) establishing contact with any person connected with or employed or engaged by PCMC with the objective of canvassing, lobbying or in any
manner influencing or attempting to influence the Bidding Process; or (ii) having a Conflict of Interest; and

(e) “restrictive practice” means forming a cartel or arriving at any understanding or arrangement among Bidders with the objective of restricting or manipulating a full and fair competition in the Bidding Process.
5. **PRE-BID CONFERENCE**

5.1 Pre-Bid conferences of the Bidders shall be convened at the designated date, time and place. Only duly authorized representatives of the Bidders shall be allowed to participate in the Pre-Bid conference. A maximum of 2 (two) representatives of each Bidder shall be allowed to participate on production of authority letter from the Bidder.

5.2 During the course of Pre-Bid conference, the Bidders will be free to seek clarifications and make suggestions for consideration of PCMC. PCMC shall endeavor to provide clarifications and such further information as it may, in its sole discretion, consider appropriate for facilitating a fair, transparent and competitive Bidding Process.
6. MISCELLANEOUS

6.1 The Bidding Process shall be governed by, and construed in accordance with, the laws of India and the District Court of Pune shall have exclusive jurisdiction over all disputes arising under, pursuant to and/or in connection with the Bidding Documents and/or the Bidding Process.

6.2 PCMC, in its sole discretion and without incurring any obligation or liability or assigning any reason, reserves the right, at any time, to:
   (a) suspend, withdraw and/or cancel the Bidding Process and/or amend and/or supplement the Bidding Process or modify the dates or other terms and conditions relating thereto;
   (b) consult with any Bidder in order to receive clarification or further information;
   (c) retain any information and/or evidence submitted to PCMC by, on behalf of, and/or in relation to any Bidder;
   (d) independently verify, disqualify, reject and/or accept any and all submissions or other information and/or evidence submitted by or on behalf of any Bidder;
   (e) amend, modify or reissue the Bidding Documents or any part thereof;
   (f) to accept or reject any or all of the Bids; and/or
   (g) include additional evaluation criteria or to modify the eligibility criteria for the further short-listing of person for issue of the Bidding Documents during the Bidding Process.
   (h) to consider any variation in the Bid submitted by the Bidder provided such variation is as per the project scope, project structure and as per the terms and conditions of the RFP.

6.3 It shall be deemed that by submitting the Bid, the Bidder agrees and releases PCMC, its employees, agents and advisers, irrevocably, unconditionally, fully and finally from any and all liability for claims, losses, damages, costs, expenses or liabilities in any way related to or arising from the exercise of any rights and/or performance of any obligations hereunder, pursuant hereto and/or in connection herewith and waives any and all rights and/or claims it may have in this respect, whether actual or contingent, whether present or future.
APPENDIX I. Letter for Bid
(Refer Clause 2.1.1 of the RFP)

[On the letter head of the Bidder/Lead Member]

Original or copy No: Dated:

To,

[The ********, ************* *************]

Sub: Selection of Agency for undertaking census of trees and development of application for tree management using GIS platform

Dear Sir,

With reference to your RFP dated *****, I/we, having examined the RFP and understood its contents, hereby submit my/our Bid for the aforesaid project. The Bid is unconditional and unqualified.

1. I/We acknowledge that PCMC will be relying on the information provided in the Bid and the documents accompanying such Bid for selection of the Bidders for the aforesaid Project and I/we certify that all information provided in the Bid and in Annexes I to III to this Letter of Bid are true and correct; nothing has been omitted which renders such information misleading; and all documents accompanying such Bid are true copies of their respective originals.

2. The Bid is being submitted and submissions in this letter are being made for the express purpose of qualifying as a Successful Bidder for the aforesaid Project.

3. I/We shall make available to PCMC any additional information it may find necessary or require to supplement or authenticate the submissions.

4. I/We acknowledge the right of PCMC to reject our Bid without assigning any reason or otherwise and hereby waive my/our right to challenge the same on any account whatsoever.

5. I/We certify that in the last 5 (five) years, I/we/any of the Members have neither failed to perform on any contract, as evidenced by imposition of a penalty by an arbitral or judicial authority or a judicial pronouncement or arbitration award, nor been expelled from any project or contract by any public authority nor have had any contract terminated by any public authority for breach on our part.

6. I/We declare that:

   (a) I/We have examined and have no reservations to the RFP, including any addendum issued by PCMC;

   (b) I/We do not have any Conflict of Interest in accordance with Clauses 2.1.11 and 2.1.12 of the RFP;
(c) I/We have not directly or indirectly or through an agent engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice, as defined in Section 4 of the RFP, in respect of any tender or request for proposal issued by or any agreement entered into with PCMC or any other public sector enterprise or any government, Central or State;

(d) I/We hereby certify that I/we have taken steps to ensure that in conformity with the provisions of Clause 4 of the RFP, no person acting for me/us or on my/our behalf has engaged or will engage in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice; and

7. I/We understand that you may cancel the Bidding Process at any time and that you are neither bound to accept any Bid that you may receive, without incurring any liability to the Bidders, in accordance with Clause 2.16 of the RFP.

8. I/We believe that I/we/our Consortium satisfy(ies) and meet(s) all the requirements as specified in the RFP and are/is qualified to submit a Bid.

9. I/We declare that I/we/any Member, am/are not a member of a/any other Consortium applying for the Project.

10. I/We certify that in regard to matters other than security and integrity of the country, I/we or any Member have not been convicted by a court of law or indicted or adverse orders passed by a regulatory authority which could cast a doubt on our ability to undertake the Project or which relates to a grave offence that outrages the moral sense of the community.

11. I/We further certify that in regard to matters relating to security and integrity of the country, I/we have not been charge-sheeted by any Government Instrumentality or convicted by a court of law.

12. I/We further certify that no investigation by a regulatory authority is pending either against me/us/any Member or against our chief executive officer or any of my/our directors/managers/employees.

13. I/We undertake that in case due to any change in facts or circumstances during the Bidding Process, I/we am/are attracted by the provisions of disqualification in terms of the provisions of this RFP, I/we shall intimate PCMC of the same immediately.

14. The Statement of Legal Capacity as per format provided at Annex-III in Appendix-I of the RFP, duly signed, is enclosed. The Power of Attorney for signing of Bid and the Power of Attorney for Lead Member of Consortium, as per format provided at Appendix III and IV respectively of the RFP, are also enclosed.

15. I/We understand that the Successful Bidder if a Bidding Consortium shall be required to enter into a Joint Venture in accordance with the Bidding Documents prior to execution of the Agreement.

16. I/We hereby irrevocably waive any right, which we may have at any stage at law or howsoever otherwise arising to challenge or question any decision taken by PCMC in connection with the selection of Bidders or in connection with the Bidding Process itself, in respect of the above mentioned Project and the terms and implementation thereof.

17. I/We agree and undertake to abide by all the terms and conditions of the RFP.

18. I/We agree and undertake to be jointly and severally liable for all our obligations under the Agreement as per the provisions set out therein.
19. I/We agree to enter into a Joint Venture agreement (applicable in case of a Bidding Consortium) in accordance with the Bidding Documents, which shall be the Agency under the Agreement.

In witness thereof, I/We submit this Bid under and in accordance with the terms of the RFP.

Yours faithfully,

Date:  
(Signature of the authorized signatory)

Place:  
(Name and designation of the authorized signatory)

(Name and seal of the Bidder/lead Member of the Consortium)
Appendix I ANNEX-I
Details of Bidder

[On the letter head of the Bidding Company/Members of Consortium]

Original or copy No: Dated:

1. (a) Name:
   (b) Country of incorporation:
   (c) Address of the corporate headquarters and its branch office(s), if any, in India:
   (d) Date of incorporation and/or commencement of business (Please provide a true copy of the incorporation certificate):

2. Brief description of the Bidder including details of its main lines of business and proposed role and responsibilities in [this/these Project(s)]:

3. Details of individual(s) who will serve as the point of contact/communication for PCMC:
   (a) Name:
   (b) Designation:
   (c) Company:
   (d) Address:
   (e) Telephone number:
   (f) E-Mail Address:
   (g) Fax number:

4. Particulars of the authorized signatory of the Bidder:
   (a) Name:
   (b) Designation:
   (c) Address:
   (d) Phone number:
   (e) Fax number:

5. In case of a Consortium:
   (a) The information above (1-4) should be provided for all the Members.
   (b) A copy of the Joint Bidding Agreement, should be attached to the Bid.
   (c) Information regarding role of each Member should be provided as per table below:
The role of each Member, as may be determined by the Bidder, should be indicated in accordance with instruction 4 at Annex-II of Appendix VII.

(d) The following information shall also be provided by Bidder for each Member:

**Name of Bidder/member of Consortium:**

<table>
<thead>
<tr>
<th>No.</th>
<th>Criteria</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Has the Bidder/constituent of the Consortium been banned by the Central/any State Government, or any entity controlled by them, from participating in any project (BOT or otherwise).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>If the answer to 1 is yes, does the ban subsist as on the date of Bid?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Has the Bidder/constituent of the Consortium paid liquidated damages of more than 5% (five percent) of the contract value in a contract due to delay or has been penalized due to any other reason in relation to execution of a contract, in the last three years?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. A statement by the Bidder and each of its Members (where applicable) disclosing material non-performance or contractual non-compliance in past projects, contractual disputes and litigation/arbitration in the recent past is given below (Attach extra sheets, if necessary):
Appendix I ANNEX-II

Financial Capacity of the Bidder
(Refer to Clause 3.4 of the RFP)

[On the letter head of the Bidding Company/lead Member]

<table>
<thead>
<tr>
<th>Applicant type</th>
<th>Member Code</th>
<th>Turnover</th>
<th>Net Profit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>Bidding Company</td>
<td></td>
<td></td>
<td>Year 1</td>
</tr>
<tr>
<td>Consortium</td>
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</tr>
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<td>Member 1</td>
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<td>Consortium</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Member 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AVERAGE</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5 A Bidder consisting of a single entity should fill in details as per the row titled Bidding Company and ignore the rows titled Consortium Members. In case of a Consortium, row titled Bidding Company may be ignored.

£ For Member Code, see instruction 4 at Annex-II of this Appendix-VII.
Instructions:

1. The Bidder/ its constituent Consortium Members shall attach copies of the balance sheets, financial statements and Annual Reports preceding the Bid Due Date. The financial statements shall:

   a. reflect the financial situation of the Bidder or Consortium Members;
   
   b. be audited by a statutory auditor;
   
   c. be complete, including all notes to the financial statements; and
   
   d. correspond to accounting periods already completed and audited (no statements for partial periods shall be requested or accepted).

2. Year 1 will be the latest completed financial year, preceding the bidding. Year 2 shall be the year immediately preceding Year 1 and so on. In case the Bid Due Date falls within 3 (three) months of the close of the latest financial year, refer to Clause 3.4.


4. The Bidder shall also provide the name and address of its Bankers to PCMC.

5. The Bidder shall provide an Auditor’s Certificate specifying turnover of the Bidder in accordance with Clause 3.4 of the RFP document.
Appendix I ANNEX-III

Statement of Legal Capacity

(To be forwarded on the letterhead of the Bidder/lead Member of Consortium)

Original or copy No:

Ref. Date:

To,

Dear Sir,

We hereby confirm that we/our Members in the Consortium (constitution of which has been described in the Bid) satisfy the terms and conditions laid out in the RFP.

We have agreed that …………………… (insert member’s name) will act as the lead Member of our consortium.*

We have agreed that ………………….. (insert individual’s name) will act as our representative/will act as the representative of the Consortium on its behalf and has been duly authorized to submit the RFP. Further, the authorized signatory is vested with requisite powers to furnish such letter and authenticate the same.

Thanking you,

Yours faithfully,

(Signature, name and designation of the authorized signatory)

*Please strike out whichever is not applicable.
APPENDIX – II: Procedure of registration & submission of bid through E-Tendering system

A. Registration Process

For participating in the e-tendering process, the Bidder shall register with the Additional Commissioner office of the PCMC. Each registered Bidder will receive a permanent digital key through which the Bidder can participate in the Bid process. It requires minimum 7 (seven) days for receiving the digital key after verification of required documents. The registration process will be carried out through the Additional Commissioner Office of PCMC. The Bidders shall contact Chief Garden Superintendent Garden Department, Yashwantrao Chavan Rose Garden, Nehrunagar, Bhosari 411026, for any technical query regarding receiving of digital key after submission of registration document.

Following is the list of formats required to be filled for registering with PCMC for participating in the Bid through e-tendering system. The forms are also available for download at http://www.pcmcindia.gov.in/e_tender.asp

1. Fill-up the registration form format (refer below in this Appendix ‘A’) duly stamped (company seal) and signed by the person under whose name the company has to be registered.
2. Fill-up the certificate application attestation form (refer below in this Appendix ‘B’).
3. Fill-up the letter of employment (refer below in this Appendix ‘C’). This should be on the company’s letterhead.
4. Fill-up the signature verification letter (refer below in this Appendix ‘D’). It should be either on company’s or banker’s letterhead.

All the true copies to be submitted should be signed by the person under whose name the company is to be registered and should carry the company’s seal. The person under whose name the company is to be registered is not required to be physically present to complete the registration process, if all the required original documents for registration are shown during the registration process. The photograph of the individual on the form should be partly stamped with the company’s seal. Please note that Bidder has to use the standard formats mentioned herein wherever specified to do so. Any deviation from the format specified will result in rejection of the application for registration.

Following is the complete list of supporting documents required for registration process in addition to the forms mentioned above.

1. Original and true copy of the Pan Card of the company.
2. Original and true copy of the Service Tax or Vat Registration number of the company.
3. Original and true copy of the Pan Card of the individual under whose name the company is to be registered.
4. Original and true copy of Certificate of Incorporation or registration of the company.
5. Five passport size photographs of the individual under whose name the company is to be registered. This will be counted separate than the one pasted and stamped on certificate application attestation form.
6. Original and true copies of any three ID proof mentioned in point 5 (a) and (b) under instruction to applicant of certificate application attestation form (refer below in this appendix point B).
7. Original and true copy of residential address proof of the individual under whose name the company is to be registered. The acceptable documents are mentioned in point 5 (a) and (b) under instruction to applicant of certificate application attestation form (refer below in this Appendix ‘B’).

8. Letter of authorization on company’s letterhead mentioning the name of the person under whom the Bidding Company is to be registered. The letter should be signed jointly by the company’s director and the individual. The letter should carry company’s seal. (no standard format is specified).

9. Registration charges of Rs 3000/- (Rupees three thousand only), cash or DD in favor of “The Commissioner, Pimpri Chinchwad Municipal Corporation” payable at Pimpri

B. Bid Submission

A step-by-step procedure with the help of screen shots has been illustrated below to facilitate the bidding through e-tendering system. The Bidder may contact Shri. Vijay Borude at 9922501200 for resolving the technical difficulty in bidding for the Project. PCMC shall not be held responsible for any errors or mistakes arising out of the bidding.

Step 1 - Select the Tender and Make Payment

Note: The respective figures for “tender form fee”, “EMD amount”, “total tender amount”, “paid amount”, “total amount to pay” shall appear on the screen. The Bidder is not required to fill in this information. The Bidder has to select the tender by clicking the drop down “Tender no.” and thereafter click the tab “Make Payment”.

STEP 2 - Click on “Show Tender” tab and click on “Open” tab to Bid for the tender
After payment is made successfully, the bidder shall select the tender and click on “Open” tab for entering the bid for the tender.

**STEP 3 - Insert quote**

Note: The Bidder after making the payment and clicking on the “Open” tab shall view this screen. The Bidder has to click on “Bid” tab and then fill in the rate under “Rate” tab. The system shall automatically calculate the Amount. The bidder has to then click on “Save” tab followed by “Sign” tab and finally “Submit Tender” tab. Only after the “Submit Tender” tab is clicked, the bid is accepted by the e-tendering system. In case the bidder wants to change its bid before clicking on the “Submit Tender” tab and before the final date of submission, the bidder has to click on “Cancel” tab and repeat the process from Step 2.

More details about the e-tendering system operation is available at [http://www.pcmcindia.gov.in/e_tender.asp](http://www.pcmcindia.gov.in/e_tender.asp)
Appendix A – Registration Form Format

(Copy should be submitted in person for registration along with attested (i.e. with company seal and signed by Authorized Representative of the Bidder) true copy. Original document should be carried for verification during registration)

Pimpri Chinchwad Municipal Corporation
Pimpri – 411018.
Application for e-tendering Registration
Name of Department: Garden Dept. (PCMC)

1. Applicant / Company Name

2. Owner/Partner/ Name of Director


4. In Case of Company Reg. Certificate No

5. Office Address

Correspondence Address

Tel. Nos Office Mobile. No

6. Registration for Which Dept. Grade

7. Works executed in the last three years from date of Registration. Attach proof of work as annexure.

A) Shop Act License Validity from Dt. to

B) Service Tax Registration No Validity from Dt. to

C) Pan Card No

Note: - 1) This application is available on Corporation’s web site www.pcmcindia.gov.in

2) Registration valid up to 31st March of every year

Date:-

Place: -  Applicant Signature

________________________________________________________________________

(For office use only)
Undertaking for Registration with PCMC

I __________________________ (Bidding company representative) on behalf of my firm ________________________________ (Name of bidding firm) have submitted the following attested true copy of required documents for registration with PCMC to participate in e-tendering process.

1. Pan card of the company.
2. Service tax registration or vat registration of company.
3. Residence proof and pan card of the individual on whose name the bidding company should be registered. Following documents are accepted as address proof: a) Telephone bill  b) electricity bill  c) passport  d) bank passbook e) voter’s card.
4. Authorization letter on company’s letterhead mentioning the name of the person under whom the bidding company has to be registered.
5. Five passport size photograph of the person under whom the Bidding Company is to be registered.
6. Certificate of incorporation or registration of the company.
7. True copy of three ID proof should be submitted. The acceptable documents are Passport, pan card, license, ration card and election card.

Declaration

I have enclosed all the certified photo copies of documents required for registration along with the registration form. I know that if any document is found false/fraudulent after giving registration by Pimpri Chinchwad Municipal Corporation, I will be responsible to be prosecuted by Pimpri Chinchwad Municipal Corporation as per the provision of Indian Penal Code. I also agree that in the tender, if special documents are required or demanded by Pimpri Chinchwad Municipal Corporation for the efficient execution of tender work, I will submit certified true copies of the special documents by way of scanning the same or PDF files as attachment while submitting the tender online. I also agree that original document will be produced to the registering authority for verification of certified photocopies on the day of submitting the registration form.

Name and Signature of the applicant
Appendix B - Certificate Application Attestation Form

**Instructions**

1. Print out this Form after completing it as required
2. Place a copy of your latest passport-size photograph on the top right corner
3. Bring this Form to your banker for attestation.
   a) You are responsible for all fees charged by the banker
4. Instruct the banker to read the instructions below and complete the acknowledgment.
5. Obtain copies of three forms of ID’s
   a) One widely recognized, government issued Photo-ID such as
      • Passport
      • Driving License
      • Income Tax Identity (PAN) Card
      • Voters ID card
      • Service Identity Card issued to its employees by State/Central Government
   b) Two other ID’s which are nationally valid and which need not necessarily be photo-ID such as
      • Passport
      • Driving Licenses
      • Income Tax Identity (PAN) Cards
      • Voters ID card
      • Service Identity Cards issued to its employees by State / Central Government
      • Ration Card
      • Photo Credit Cards / Debit card
      • Bank / Kisan / Post Office Passbooks
      • Pension Documents such as Ex-Servicemen’s Pension Book / Pension Payment
      • Order
      • Ex-Servicemen’s Widow / Dependent Certificates
      • Mediclaim or similar insurance cards
      • Student SSC / HSC / graduation / post-graduation degrees
      • Birth certificate
      • School leaving certificate
      • Electricity bill
      • Mobile / Telephone bill

You will need to:

a) Make a copy of each of the 3 forms of ID’s
b) Have the copies Notarized / attested by a Notary Public or Class 3 Gazetted Officer or your Banker

6. Make and retain a copy of the completed form in a secure location. You will need to reference your name and e-mail address as listed below should you have a question regarding this certificate application.

7. If your Organization Name is to be included in the certificate then:
   a) Submit Proof of Right to do Business document
   b) Submit the Letter of Employment
   c) Submit the Signature Verification Letter

**Instructions to Banker**
The document you are attesting is part of the enrolment process for a SafeScrypt Digital ID. SafeScrypt requires that the personal identity of the applicant be validated. If you would like more information about Digital IDs or the enrolment process please visit SafeScrypt at www.safescrypt.com.

1. Complete the Acknowledgment in the Certificate Application Attestation Form.
2. The Applicant must hold a valid account in your bank.
3. You may retain a copy of the completed Certificate Application Attestation Form
4. In this context, the Banker is the Branch Manager of the bank where the applicant holds a valid bank account. The banker can also be any other employee of the same bank of a grade equal to or higher than the Branch Manager.
Certificate Application Attestation Form

Applicant Personal Data (as entered on the Online Enrollment Form) with the latest Passport photograph:

Full Name ______________________________________________
E-mail Address___________________________________________
Phone Number___________________________________________
Postal Address __________________________________________

Applicants Signature

Date _______________

Banker to Complete the Following Section

Acknowledgment

The Applicant personally presented himself to me, the Banker, for the purpose of identity Verification.
Signature and photograph of Mr./Mrs./Ms. ________________ who maintains an account with this Bank, as appearing above, is hereby attested, with reference to the records maintained by the Bank.

Bank Manager's Signature: ______________________
Bank Manager's Name: _______________________
Bank Manager's official code number: _______________________
Bank Name and Address: _______________________
Banks Official Phone number: _______________________

(Place Bank Seal/Stamp to the right)
Appendix C - Letter of Employment

Instructions

The Letter of Employment is to be submitted when the Certificate Applicant requires the name of his Organization to be displayed in his certificate. This letter should accompany the POR Document and the Signature Verification Letter. This letter is to be:

1. In the prescribed format only and printed on the letterhead of the Organization in the Certificate Request
2. Completed and Signed by the Authorized Signatory of the Organization, who attested the other documents
3. The Authorized Signatory must affix:
   • The Organizations seal on the document
   • His signature and full name
   • His official telephone number and e-mail id, so that SafeScrypt may contact him in this regard
4. Only a hard copy is valid and must be filed. However, the order can be processed with a faxed copy provided the original will be couriered to us at the earliest.
<< To be printed on the Letter Head of the Company >>

Letter of Employment

Certificate Applicant Information

First Name: _______________________
Last Name: _______________________
Email ID: _________________________

I, (Name of the Authorized Signatory) ________________________, certify that on (Date) ____________,
(Name of the Certificate Applicant) ________________________ is an employee of our organization
(Organization Name) _____________________ and that the Applicant’s Employee ID is (Employee ID)
_______________. I acknowledge by my signature, that the Applicant information in this document is
complete and accurate as per our office records.

(Signature of Authorized Signatory)                                                                 (Company Seal)

Details of Authorized Signatory

Full Name: __________________________
Organization Name: ______________________
Designation: __________________________
Email Address: _________________________
Phone Number: _________________________
Appendix D – Signature Verification Letter

Instructions

The Signature Verification letter is required to verify the identity of the Authorized Signatory who attested the POR document, Telephone Bill and Letter of Employment. This letter is to be:

1. In the prescribed format only and preferably on the letterhead of the Organization in the Certificate Request
2. Completed and Signed first by the Authorized Signatory of the Organization who attested the other documents
3. Completed and signed lastly by the Organizations official Banker
   • The Banker is the Branch Manager of the bank where the Organization has a valid bank account. The banker can also be any other employee of the same bank of a grade equal to or higher than the Branch Manager.
   • The Banker must affix;
     (1) His official seal on the document
     (2) His signature and full name next to his official seal on the document
     (3) His official telephone number, so that SafeScrypt may contact him in this regard
4. Only a hard copy is valid and must be filed. However, the order can be processed with a faxed copy provided the original will be couriered to you at the earliest.
Signature Verification Letter

TO WHOMSOEVER IT MAY CONCERN

This is to Certify that ………………………………………… (Name of the Organization) with the Office at ………………………………………………………………………………. (Address of the Organization) is maintaining a bank account (A/c No. ……………………………) with our Bank …………………………….. (Bank Name), and operating that account in the normal course of its business/activities.

Mr./Ms./Mrs.………………………..……. is the authorized signatory for the operation of the account. His/her signature as appearing below is duly attested (as per the records available with the bank).

(Signature of the Authorized Signatory)  (Signature of the Branch Manager)
Name: ___________________ Name: ___________________
Designation: ___________________ Designation: ___________________
Phone No: ___________________

Date: ___________________  (Bank Seal)
APPENDIX – III:
Power of Attorney for signing of Bid

(Refer Clause 2.1.6 of the RFP)

Know all persons by these presents, [I …………………………………………….. (name of the
company) incorporated under the laws of India and having its registered office at [__] “Company”] do hereby irrevocably constitute, nominate, appoint and authorize Mr./Ms. (name), ………………………. son/daughter/wife of ……………………………………… and presently residing at ………………………, who is presently employed with us and holding the position of ………………………………. , as our true and lawful attorney (hereinafter referred to as the “Attorney”) to do in our name and on our behalf, all such acts, deeds, matters and things as are necessary or required in connection with or incidental to submission of our Bid for Selection of Agency for undertaking census of trees and development of application for tree management using GIS platform pursuant to the RFP dated [__] (“RFP”) issued by the Pimpri Chinchwad Municipal Corporation (the “PCMC”) and for our selection as Successful Bidder including but not limited to signing and submission of all Bids and other documents and writings, participate in pre-bid conferences and other conferences and providing information/responses to PCMC, representing us in all matters before PCMC, signing and execution of all contracts including the Agreement and undertakings consequent to acceptance of our Bid, and generally dealing with PCMC in all matters in connection with or relating to or arising out of our Bid for the said Project and/or upon award thereof to us and/or till the entering into of the Agreement with the Pimpri Chinchwad Municipal Corporation.

AND we hereby agree to ratify and confirm and do hereby ratify and confirm all acts, deed, matters and things lawfully done or caused to be done by our said Attorney pursuant to and in exercise of the powers conferred by this Power of Attorney and that all acts, deeds and things done by our said Attorney in exercise of the powers hereby conferred shall and shall always be deemed to have been done by us.

Capitalized terms not defined herein shall have the meaning assigned to them under the RFP.

IN WITNESS WHEREOF, ………………………....., THE ABOVE NAMED PRINCIPAL
HAVE EXECUTED THIS POWER OF ATTORNEY ON THIS ……… DAY OF
………………., 2…….

For ……………………………

(Signature)

(Name, Title and Address)

Witnesses:

(Notarized)

Accepted

………………………….. (Signature)

(Name, Title and Address of the Attorney)
Notes:
The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required, the same should be under common seal affixed in accordance with the required procedure.

Wherever required, the Bidder should submit for verification the extract of the charter documents and documents such as a resolution/power of attorney in favor of the person executing this Power of Attorney for the delegation of power hereunder on behalf of the Bidder.

For a Power of Attorney executed and issued overseas, the document will also have to be legalized by the Indian Embassy and notarized in the jurisdiction where the Power of Attorney is being issued. However, the Power of Attorney provided by Bidders from countries that have signed the Hague Convention 1961 are not required to be legalized by the Indian Embassy if it carries a conforming Apostille certificate.
APPENDIX – IV: Power of Attorney for Lead Member of Consortium

(Refer Clause 2.1.7 of the RFP)

Whereas PCMC has invited proposals from interested parties for undertaking census of trees and development of application for tree management using GIS platform.

Whereas, the members of the Consortium are interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of the Request for Proposal (RFP) Document and other connected documents in respect of the Project, and

Whereas, it is necessary for the Members of the Consortium to designate one of them as the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the Consortium’s bid for the Project and its execution.

We, ……………… having our registered office at …………………, M/s. ……………………, having our registered office at …………………, and M/s. ……………………, having its registered office at …………………, (hereinafter collectively referred to as the “Principals”) do hereby irrevocably designate, nominate, constitute, appoint and authorize M/s …………………, having its registered office at …………………, being one of the Members of the Consortium, as the Lead Member and true and lawful attorney of the Consortium (hereinafter referred to as the “Attorney”) and hereby irrevocably authorize the Attorney (with power to sub-delegate) to conduct all business for and on behalf of the Consortium and any one of us during the bidding process and, in the event the Consortium is awarded the Project, during the execution of the Project, and in this regard, to do on our behalf and on behalf of the Consortium, all or any of such acts, deeds or things as are necessary or required or incidental to the submission of its bid for the Project, including but not limited to signing and submission of all applications, bids and other documents and writings, accept the Letter of Award, participate in bidders’ and other conferences, respond to queries, submit information/documents, sign and execute contracts and undertakings consequent to acceptance of the bid of the Consortium and generally to represent the Consortium in all its dealings with the Authority, and/or any other Government Agency or any person, in all matters in connection with or relating to or arising out of the Consortium’s bid for the Project and/or upon award thereof till the Agreement is entered into with the Authority.

AND hereby agree to ratify and confirm and do hereby ratify and confirm all acts, deeds and things done or caused to be done by our said Attorney pursuant to and in exercise of the powers conferred by this Power of Attorney and that all acts, deeds and things done by our said Attorney in exercise of the powers hereby conferred shall and shall always be deemed to have been done by us/ Consortium.

IN WITNESS WHEREOF WE THE PRINCIPALS ABOVE NAMED HAVE EXECUTED THIS POWER OF ATTORNEY ON THIS ………………… DAY OF …………………, 20….

For ……………………
(Signature, Name & Title)

For ……………………
(Signature, Name & Title)

For ……………………
(Signature, Name & Title)
(Executants)

(To be executed by all the Members of the Consortium)

Witnesses:

1.

2.

Notes:

• The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required, the same should be under common seal affixed in accordance with the required procedure.

• Wherever required, the Bidder should submit for verification the extract of the charter documents and documents such as a board or shareholders resolution/ power of attorney in favor of the person executing this Power of Attorney for the delegation of power hereunder on behalf of the Bidder.

• For a Power of Attorney executed and issued overseas, the document will also have to be legalized by the Indian Embassy and notarized in the jurisdiction where the Power of Attorney is being issued. However, the Power of Attorney provided by Bidders from countries that have signed The Hague Legislation Convention, 1961 are not required to be legalized by the Indian Embassy if it carries a conforming Apostille certificate.
APPENDIX V

Joint Bidding Agreement
(Refer Clause 2.11.3 (a) (vi) of the RFP)
(To be executed on stamp paper of appropriate value)

THIS JOINT BIDDING AGREEMENT is entered into on this the .......... day of ........... 20... (the “Agreement”)

AMONGST

1. {.......... Limited, a company incorporated under the (Indian) Companies Act, 1956} and having its registered office at ............ (hereinafter referred to as the “First Part” which expression shall, unless repugnant to the context include its successors and permitted assigns);

AND

2. .......... Limited, a limited liability company incorporated under the (Indian) Companies Act, 1956} and having its registered office at ............ (hereinafter referred to as the “Second Part” which expression shall, unless repugnant to the context include its successors and permitted assigns)

3. }

The above mentioned parties of the FIRST and SECOND PART are collectively referred to as the “Parties” and each is individually referred to as a “Party”.

WHEREAS,
A. The Pimpri Chinchwad Municipal Corporation, hereinafter referred to as “PCMC”) has invited Bids by its Request for Proposal No. .......... dated ............ (the “RFP”) for selection of Agency for undertaking census of trees, creation of GIS platform, develop mobile and web based application, providing handholding support and bear all costs associated with the above listed activities during the Operation Period (the “Project”);

B. The Parties are interested in jointly bidding for the Project as members of a Consortium (as defined below) and in accordance with the terms and conditions of the Bidding Documents including the RFP; and

C. It is a necessary condition under the RFP that the members of the Consortium shall enter into a joint bidding agreement and furnish a copy thereof with the Bid.

NOW IT IS HEREBY AGREED as follows:

1. Definitions and Interpretations

* The number of Parties will be shown here, as applicable.
In this Agreement, the capitalized terms shall, unless the context otherwise requires, have the meaning ascribed thereto under the RFP.

2. **Consortium**

The Parties do hereby irrevocably constitute a consortium (the “Consortium”) for the purposes of jointly participating in the Bidding Process for the Project.

The Parties hereby undertake to participate in the Bidding Process only through this Consortium and not individually and/or through any other consortium constituted for the Project, either directly or indirectly.

3. **Covenants**

The Parties hereby undertake that in the event the Consortium is declared the Successful Bidder and awarded the Project, it shall form Joint Venture as required by and in accordance with the Bidding Documents for performing all its obligations as the Agency in terms of the Agreement for the Project.

4. **Role of the Parties**

The Parties hereby undertake to perform the roles and responsibilities as described below.

a) Party of the First Part shall be the lead Member of the Consortium and shall have the power of attorney from all Parties for conducting all business for and on behalf of the Consortium during the Bidding Process and until the Appointed Date under the Agreement when all the obligations of the Joint Venture shall become effective;

b) {Party of the Second Part shall be __________.}

5. **Joint and Several Liability**

The Parties do hereby undertake to be jointly and severally responsible for all obligations and liabilities relating to the Project in accordance with the terms of the RFP, the Agreement and for the performance of the Agency’s obligations under the Agreement.

6. **Shareholding in the Joint Venture**

(a) The Parties agree that the proportion of shareholding among the Parties in the Joint Venture shall be as follows:

First Party:

Second Party:
(b) Subject to the terms of the Agreement, the lead Member shall during the term of the Agreement hold equity share capital not less than 51% (fifty one percent) of the subscribed, paid up and voting equity share capital in the Joint Venture; and

(c) Subject to the terms of the Agreement, the Members whose financial and technical capacities has been utilized for the purposes of qualification and in the Bid shall for a period of 60 (sixty) months from the date of commercial operation of the Project hold equity share capital not less than 26% (twenty six percent) of the subscribed, paid up and voting equity share capital in the Joint Venture.

The Parties undertake that they shall comply with all equity lock-in requirements set forth in the Agreement.

7. **Representation of the Parties**

Each Party represents to the other Parties as of the date of this Agreement that:

b. such Party is duly organized, validly existing and in good standing under the laws of its incorporation and has all requisite power and authority to enter into this Agreement;

c. the execution, delivery and performance by such Party of this Agreement has been authorized by all necessary and appropriate corporate or governmental action and a copy of the extract of the charter documents and board resolution/power of attorney in favor of the person executing this Agreement for the delegation of power and authority to execute this Agreement on behalf of the Member of Consortium is annexed to this Agreement, and will not, to the best of its knowledge:

i. require any consent or approval not already obtained;

ii. violate any applicable law presently in effect and having applicability to it;

iii. violate the memorandum of association and articles of association, by-laws or other applicable organizational documents thereof;

iv. violate any clearance, permit, grant, license or other governmental authorization, approval, judgment, order or decree or any mortgage agreement, indenture or any other instrument to which such Party is a party or by which such Party or any of its properties or assets are bound or that is otherwise applicable to such Party; and

v. create or impose any liens, mortgages, pledges, claims, security interests, charges or any other encumbrances or obligations to create a lien, charge, pledge, security interest, encumbrances or mortgage in or on the property of such Party, except for encumbrances that would not, individually or in the aggregate, have a material adverse effect on the financial condition or prospects or business of such Party so as to prevent such Party from fulfilling its obligations under this Agreement;

d. this Agreement is the legal and binding obligation of such Party, enforceable in accordance with its terms against it; and

e. there is no litigation pending or, to the best of such Party's knowledge, threatened to which
it or any of its affiliates is a party that presently affects or which would have a material adverse effect on the financial condition or prospects or business of such Party in the fulfillment of its obligations under this Agreement.

8. **Termination**

This Agreement shall be effective from the date hereof and shall continue in full force and effect till the full and final satisfaction of all obligations under the Agreement in accordance with the terms thereof, in case the Project is awarded to the Consortium. However, in case the Consortium is either not qualified for the Project or does not get selected for award of the Project as the Successful Bidder, the Agreement will stand terminated, in accordance with the mutual agreement of the Parties.

9. **Miscellaneous**

This Joint Bidding Agreement shall be governed by laws of India.

The Parties acknowledge and accept that this Agreement shall not be amended by the Parties without the prior written consent of PCMC.

IN WITNESS WHEREOF THE PARTIES ABOVE NAMED HAVE EXECUTED AND DELIVERED THIS AGREEMENT AS OF THE DATE FIRST ABOVE WRITTEN.

SIGNED, SEALED AND DELIVERED
For and on behalf of

LEAD MEMBER by:

(Signature)
(Name)                        (Designation)
(Address)

SIGNED, SEALED AND DELIVERED
For and on behalf of

SECOND PART

(Signature)
(Name)                        (Designation)
(Address)

SIGNED, SEALED AND DELIVERED
For and on behalf of
In the presence of:

1. 

2. 

Notes:

1. The mode of execution of the Joint Bidding Agreement should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required, the same should be under common seal affixed in accordance with the required procedure.

2. Each Joint Bidding Agreement should attach a copy of the extract of the charter documents and documents such as resolution/power of attorney in favor of the person executing this Agreement for the delegation of power and authority to execute this Agreement on behalf of the Member of Consortium.

3. For a Joint Bidding Agreement executed and issued overseas, the document shall be legalized by the Indian Embassy and notarized in the jurisdiction where the Power of Attorney has been executed.
APPENDIX VI

Anti-Collusion Certificate
(Refer Clause 2.11.3 (a) of the RFP)
(To be executed on stamp paper of appropriate value)

We undertake that, in competing for (and, if the award is made to us, in executing) the above contract, we will strictly observe the laws against fraud and corruption in force in India namely “Prevention of Corruption Act, 1988” and its subsequent amendments thereof.

We hereby certify and confirm that in the preparation and submission of our Proposal, we have not acted in concert or in collusion with any other Bidder or other person(s) and also not done any act, deed or thing which is or could be regarded as anti-competitive.

We further confirm that we have not offered nor will offer any illegal gratification in cash or kind to any person or agency in connection with the instant Proposal.

Dated this .........................Day of ........................., 2011

....................................................
(Name of the Bidder)

....................................................
(Signature of the Bidder / Authorised Person)

....................................................
(Name of the Authorised Person)
**Appendix VII Annex-I**

**Experience of the Bidder**
(Refer to Clause 3.4.5 of the RFP)

[On the letter head of the Bidding Company/lead Member]

Original or copy No:                                                                                                           Date:

<table>
<thead>
<tr>
<th>Bidder type</th>
<th>Member Code</th>
<th>Experience</th>
<th>Name of the Eligible Project, nature of work and time period for execution of the Eligible Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Bidding Company</td>
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<td>(2) Member of Consortium 1</td>
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<td>(3) Member of Consortium 2</td>
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</tbody>
</table>

**Appendix VII Annex-I**

@ Provide details of only those projects that have been undertaken by the Bidder under its own name specified in Clause 3.4.5 and/or by a project company eligible under Clause 3.4.5. In case the Bid Due Date falls within 3 (three) months of the close of the latest Financial Year, refer to Clause 3.4.

# A Bidder consisting of a single entity should fill in details as per the row titled Single entity Bidder and ignore the rows titled Member of Consortium. In case of a Consortium, the row titled Single entity Bidder may be ignored.

£For Member code, see instruction 4 at Annex-II of this Appendix-VII.
APPENDIX VII Annex II
Details of Eligible Projects
(Refer to Clause 3.4.5 of the RFP)

[On the letter head of the Bidding Company/Members of Consortium/]

Original or copy No:                                                                                                           Date:

Project Code:     Member Code:                      

<table>
<thead>
<tr>
<th>Item (1)</th>
<th>Refer Instruction (2)</th>
<th>Particulars of the Project (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title &amp; nature of the project</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entity for which the project was developed</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Description of Project Work</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Date of commencement of project</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Date of completion</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Equity shareholding (with period during which equity was held)</td>
<td>11</td>
<td></td>
</tr>
</tbody>
</table>

**Instructions:**

1. Bidders are expected to provide information in respect of Eligible Projects in this Annex. The projects cited must comply with the eligibility criteria specified in Clause 3.4.5 of the RFP, as the case may be. Information provided in this section is intended to serve as a backup for information provided in the Bid. Bidders should also refer to the instructions below.

2. For a Bidding Company, the Project Codes would be a, b, c, d etc. In case the Bidder is a Consortium, then for Member 1, the Project Codes would be 1a, 1b, 1c, 1d etc., for Member 2 the Project Codes shall be 2a, 2b, 2c, 2d etc., and so on.

3. A separate sheet should be filled for each Eligible Project.

4. Member code shall indicate NA for Not Applicable in case the Bidder is a Bidding Company. For other Members, the following abbreviations are suggested viz. LM means Lead Member and OM means Other Member.

5. Particulars such as name, address and contact details of owner/authority/agency (i.e. grantor, counter party, etc.) should be provided.

6. Details regarding the different activities that was performed for the eligible projects.

7. The date of commissioning of the project should be indicated.
10. The date of completion of the project should be indicated.

11. The equity shareholding of the Bidder, in the company owning the Eligible Project, held continuously during the period for which eligible experience is claimed, needs to be given (Refer Clause 3.4.5).

12. Experience for any activity relating to an Eligible Project shall not be claimed by 2 (two) or more Members. In other words, no double counting by a Consortium in respect of the same experience shall be permitted in any manner whatsoever.

13. Certificate from the client or the Bidder’s statutory auditor$ must be furnished as per format below for each Eligible Project in addition to the certificate from the client. In jurisdictions that do not have statutory auditors, the auditors who audit the annual accounts of the Bidding Company/Member may provide the requisite certification.

14. Certificate from the statutory auditor regarding Eligible Projects shall be in the following format.

<table>
<thead>
<tr>
<th>Certificate from the statutory auditor regarding Eligible Projects$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Based on its books of accounts and other published information authenticated by it, this is to certify that ………………. (name of the Bidding Company/Member) is/was an equity shareholder in ………………. (title of the project company) and holds/held Rs. ………. cr. (Rupees ……………………… crore) of equity (which constitutes …….% of the total paid up and subscribed equity capital) of the project company from ……………. (date) to ……………….. (date). The project was commissioned on ……………. (date of commissioning of the project), had ………………… number of area surveyed/household/trees surveyed and completed on ……………. (date of completion of the project).</td>
</tr>
<tr>
<td>Name of the audit firm:</td>
</tr>
<tr>
<td>Seal of the audit firm: (Signature, name and designation of the Authorized Signatory)</td>
</tr>
<tr>
<td>Date:</td>
</tr>
</tbody>
</table>

14. Certificate from the Government Instrumentality/Statutory Authority regarding infrastructure experience works shall be in the following format.

---

$ In case duly certified audited annual financial statements containing the requisite details are provided, a separate certification by statutory auditors would not be necessary.

$ In this case the project is owned by the Bidding company, this language may be suitably modified to read: “It is certified that ……………. (Name of the Bidder) developed and/ or owned the ……………. (Name of the project) from …………… (Date) to …………… (Date).”
Certificate from the Government Instrumentality/Statutory Authority regarding experience works

This is to certify that ………………….. (name of the Bidding Company/Member) has executed/is executing ……………… (name of project) for …………………. (name of the Project Owner).

The project has commenced on …………….. (date) had _________ number of area surveyed/household/trees surveyed and the construction of the project ended on …… (date). We are satisfied by the work undertaken by the Bidder/Member.

……………………………….. …………………

15. It may be noted that in the absence of any detail in the above certificates, the information would be considered inadequate and could lead to exclusion of the relevant project in computation of Experience.
APPENDIX VII Annex III – FORMAT OF CURRICULUM VITAE CV OF KEY PERSONNAL

1. Proposed Position:
2. Name of Personnel:
3. Date of Birth:
4. Nationality:
5. Educational Qualifications:
6. Employment Record:
   (Starting with present position, list in reverse order every employment held.)
7. List of projects on which the Personnel has worked

<table>
<thead>
<tr>
<th>Name of project</th>
<th>Description of responsibilities</th>
</tr>
</thead>
</table>

8. Details of the current assignment and the time duration for which services are required for the current assignment.

Certification:
1. I am willing to work on the Project and I will be available for entire duration of the Project assignment as required.
2. I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications and my experience.

Place (Signature and name of the Key Personnel)

(Signature and name of the authorized signatory of the Applicant)

Notes:
1. Use separate form for each Key Personnel

Each page of the CV shall be signed in ink/ digitally signed/ scanned signed by both the Personnel concerned and by the Authorized Representative of the Applicant firm.
ANNEXURE 1: COMMERCIAL PROPOSAL FORMAT

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
<th>Amount in Indian Rupees</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Procure, Supply and deploy the GIS Platform</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. GIS + Image server Application license (1 Nos for core independent or minimum 12 core (i.e. 3 license)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. GIS server hardware (1 Nos)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Desktop GIS (5 Nos)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Satellite image processing software of ERDAS Imagine with extension pack (1 Nos)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Moto G – 4th Generation mobile device (41 Nos)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Distometer (5 Nos)</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Development of web and mobile based software application, undertake census of trees, submission of Tree Census report, submission of Urban Forestry Master Plan and DPR</td>
<td>Rs.</td>
</tr>
<tr>
<td>C</td>
<td>Operation &amp; Maintenance of Project for 60 months</td>
<td>Rs.</td>
</tr>
<tr>
<td>D</td>
<td>Total Cost</td>
<td>D = (A + B + C)</td>
</tr>
</tbody>
</table>

Note:

1. The above quote is to be submitted only through the online eTendering system.
2. The above quote is inclusive of all taxes including service tax. Service tax shall not be paid extra at prevailing rates.
3. All other expenditure required to undertake the Project shall be borne by the Agency.
4. The financial evaluation shall be based only on the total cost of the Commercial Proposal. Under no circumstances the individual components of the financial quote be awarded to two different Agency.
5. All payments shall be made in Indian Rupees and shall be subject to applicable Indian laws withholding taxes if any.
6. The Commercial Proposal shall be for the period of work i.e. 60 months from the date of Commercial Operation Date (COD) or from the date of issue of Application Implementation Certificate by DIT Department of PCMC, whichever is later and payment shall be made based on achievement of milestones.
Annexure 2: Specification for GIS + Image Server Application (Software) License

(The OEM has to specify in its authorization letter the compliance to these specifications.)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Detail specification</th>
<th>Compliant (Yes / No)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>GIS Server: General Requirement</td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>The proposed solution should create a base for creating a parent data infrastructure for geo-spatial data dissemination through the web.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>The system should support conducting the dynamic segmentation and linear analysis over the web.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>The application should allow the users to perform attribute query, spatial query, buffer zoning, spatial intersection, spatial difference and length and area measurement</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>The application should allow users to experience advanced rendering options which includes text/symbol masking with halo, user-defined area-hatching, area, and text display in a single legend entry, Endcap, and midline joint specification viewing of independent texts and symbols, and user-defined styles.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>The system should support, host and deliver information on the service-oriented architecture, and should allow interoperability such that different client systems can request data in native application.</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>The application should allow users to views the data with different symbology styles like differentiating feature records based on attributes or types, dynamic label generation with conflict detection, and translucency of all raster data and area colour fill.</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>The system should allow the users to perform advanced spatial analysis like geocoding, routing, buffering and attribute based analysis.</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>System should support server-side geocaching for feature classes which are not frequently updated</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>System should support hierarchical legends, and watermarks</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>The system should be able to consume real-time enterprise published spatial data. It should be able to consume the third-party published OGC web-services.</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>There should be an option to create footprint (Both extent based and Precise) automatically for the datasets. This feature allows end-user to view the extents of any data in a spatial map without actually downloading or selecting it.</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Support for Coordinate Transformation and user definable datum. An administrator should be able to create and add custom coordinate system, and should support all EPSG codes, also The proposed solution should support coordinate transformation on the fly via OGC Coordinate transformation CT 1.0.</td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>The proposed solution should support following RDBMS’s for cataloguing:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Postgres 9.0 onwards</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. Sqlserver 2008 onwards</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. Oracle 10G R2 onwards</td>
<td></td>
</tr>
<tr>
<td>Sr. No.</td>
<td>Detail specification</td>
<td>Compliant (Yes / No)</td>
</tr>
<tr>
<td>--------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>14.</td>
<td>The proposed solution should be completely comprehensive in supporting multiple protocols. The proposed solution should have ECWPJPIP along with the OGC Web Services like WMS, WFS, WCS, WFS-T, and WMTS and all in one package.</td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>Supported operating system for the server should be Microsoft Windows Server 2008 \ 2012 64-bit.</td>
<td>Yes</td>
</tr>
<tr>
<td>16.</td>
<td>The solution should run and support Windows server 64 bit architectures, Should run in a true 64 bit mode on a 64 bit OS i.e. the application server must run on 64 bit mode.</td>
<td>Yes</td>
</tr>
<tr>
<td>17.</td>
<td>It should be Configurable to a mail server for email notifications</td>
<td>No</td>
</tr>
<tr>
<td>18.</td>
<td>The proposed solution should support for GML at the client as well as at the server side.</td>
<td>No</td>
</tr>
<tr>
<td>19.</td>
<td>In addition to the OGC Web Services, the system also should support SLD: the OGC styling language to portray maps from WMS, WFS and WCS services.</td>
<td>Yes</td>
</tr>
<tr>
<td>20.</td>
<td>The proposed solution should offer updating feature and vector data through Transactional WFS (WFS-T) interface.</td>
<td>Yes</td>
</tr>
<tr>
<td>21.</td>
<td>To ensure maximum data interoperability, all vector and attribute must be stored natively in industry standard RDBMS. The proposed solution should have the capability to consume and serve data directly from supported RDBMS without any bridge or middleware.</td>
<td>Yes</td>
</tr>
<tr>
<td>22.</td>
<td>Should be able to catalog geotagged images captured using various types of mobile devices such as mobile phones, tablets and UAVs.</td>
<td>Yes</td>
</tr>
<tr>
<td>23.</td>
<td>Should support a Service Oriented Architecture (SOA).</td>
<td>Yes</td>
</tr>
<tr>
<td>24.</td>
<td>The GIS server should be highly scalable</td>
<td>Yes</td>
</tr>
<tr>
<td>25.</td>
<td>It should support deployment in cluster environment</td>
<td>Yes</td>
</tr>
<tr>
<td>26.</td>
<td>The software should also provide APIs for developers to build custom web mapping applications like- It should have API’s for Javascript.</td>
<td>Yes</td>
</tr>
<tr>
<td>27.</td>
<td>The application server and database servers must be supported on both Windows</td>
<td>Yes</td>
</tr>
<tr>
<td>28.</td>
<td>Should support multiple number of Editing and viewing clients.</td>
<td>Yes</td>
</tr>
<tr>
<td>29.</td>
<td>Should support standard Web server / application server like IIS, Tomcat etc</td>
<td>Yes</td>
</tr>
<tr>
<td>30.</td>
<td>Should support server side geoprocessing tasks</td>
<td>Yes</td>
</tr>
<tr>
<td>31.</td>
<td>The server should have the capability to query across multiple map services.</td>
<td>Yes</td>
</tr>
<tr>
<td>32.</td>
<td>Should have Centrally managed data, models, maps, and applications</td>
<td>Yes</td>
</tr>
<tr>
<td>33.</td>
<td>It should provide a web publishing wizard so that users can publish websites without the need to programming.</td>
<td>Yes</td>
</tr>
<tr>
<td>Sr. No.</td>
<td>Detail specification</td>
<td>Compliant (Yes / No)</td>
</tr>
<tr>
<td>--------</td>
<td>---------------------------------------------------------------------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>34.</td>
<td>Server based GIS Software should offer server-based analysis and geoprocessing.</td>
<td></td>
</tr>
<tr>
<td>35.</td>
<td>Should have Scale based Cached Tile delivery for better performance and fast accessibility</td>
<td></td>
</tr>
<tr>
<td>36.</td>
<td>Server based GIS should Support any client and device including mobile, smart clients, web browsers (Internet Explorer, Google Chrome and Firefox) and desktop applications.</td>
<td></td>
</tr>
<tr>
<td>37.</td>
<td>Server Software should run as a native 64-bit application and should support Windows 64-bit.</td>
<td></td>
</tr>
<tr>
<td>38.</td>
<td>Should have out of the box Web Application Functionalities like pan, zoom, identifying features on a map, measure distance, overview window, find place, query attribute, search attribute, editing, geoprocessing tasks, adding base maps etc.</td>
<td></td>
</tr>
<tr>
<td>39.</td>
<td>It must be possible to integrate GIS Server services with enterprise applications.</td>
<td></td>
</tr>
<tr>
<td>40.</td>
<td>The application should provide an out-of-the-box, configurable mobile application that allows dynamic query and update server data remotely. The mobile application should be able to integrate with GPS devices.</td>
<td></td>
</tr>
<tr>
<td>41.</td>
<td>Software should support vector tiles.</td>
<td></td>
</tr>
</tbody>
</table>

**2. GIS Server: Processing**

1. The proposed solution should consume data directly from the Oracle Spatial, Sql Server Spatial and PostGreSQL 8.5 with PostGIS without any bridge or middleware directly from native tables. | |
2. The proposed solution should have “On-The-Fly Projection”, and “On-The-Fly Mosaic” functionalities. | |
3. The proposed solution should perform complex raster processes like DRA, Reprojection on the fly, Contract enhancement both on server side on the fly. | |
4. Should be able to execute the spatial models using the 2D browser Client. | |
5. Should have “On-The-Fly Reprojection” and “On-The-Fly Mosaic” functionalities. | |
6. Should support advanced image processing options such as band list ordering, kernels, look up tables, hill shading, band algebra/formulas and transforms to accommodate the variety of new sensors | |

**3. GIS Server: Data Upload \ Download \ Sharing**

1. Apart from this, the proposed solution should have data download functionality for image \ Raster extraction and delivery. Data served via WCS can be used to accomplish this task. This system allows the administrator to configure download options through HTTP or FTP. Metadata information can be clubbed together with the data and end-user can download the contents in a zipped file. | |
<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Detail specification</th>
<th>Compliant (Yes / No)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>While downloading raster datasets, user must be able to specify the following:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Interpolation technique</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. Data format</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. Spatial resolution</td>
<td></td>
</tr>
<tr>
<td></td>
<td>d. bands</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>There must be a support for multiple Coverage data and output formats like NITF,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>compresses GeoTIFF, JPEG2000, DTED, ECW, etc.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>In addition to this, there should be an additional support for KML and GeoRSS output</td>
<td></td>
</tr>
<tr>
<td></td>
<td>formats for most of our services.</td>
<td></td>
</tr>
</tbody>
</table>

4. **GIS Server: Catalogue & Metadata**

1. The cataloguing must be based on OGC standard CS-W and an ebRIM profile.

2. System should be able to catalog and manage large point cloud files and stream over the internet into end-user applications.

3. The proposed solution should have a “full” ISO 19115/19119/19139 support for resource and service metadata management and encoding. So in the end WYSIWYG. An administrator can edit and update the metadata information.

4. The solution should catalog geospatial information by harvesting metadata and persist it in a central, searchable catalog. Simple harvesting from SAN with thousands of imagery with footprints & thumbnails should take approximately less than 30 seconds per raster dataset (Excluding pyramid generation ‘if required’).

5. The proposed solution should support Batch Metadata Editing over an ISO 19115 Metadata Schema.

5. **GIS Server: Data Portrayal and delivery over Web Client**

1. The Web client must be able to interactively add following data services on the fly on the client side by defining and maintaining data sources:
   - a. Bing Maps
   - b. Google Maps
   - c. Open Street Map
   - d. 3D Map Tiles
   - e. 3D Objects
   - f. GeoRSS
   - g. OGC CSW
   - h. OGC WMS
   - i. OGC WFS
   - j. WFS-G
   - k. WPS-CT
<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Detail specification</th>
<th>Compliant (Yes / No)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>OGC WCTS</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>OGC WMTS</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Open LS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Web client must support scale based printing interface wherein the user must be able to specify the following parameters:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Page size (A3, A3)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. Orientation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. Scale</td>
<td></td>
</tr>
<tr>
<td></td>
<td>d. DPI Settings</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>The system must stream high volumes of data over an Enhanced Compressed Wavelet Protocol</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>The proposed solution should perform complex raster processes like DRA, Reprojection on the fly, Contrast enhancement both on server side as well as on client side on the fly on a browser.</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>The system should support clipping and/or downloading of raster and vector data by authorised users. Should support downloading of datasets including raster, vector, terrain, LAS, and business data (documents, movies, any electronic content)</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>A web-based administration console should provide the means for creating and configuring all aspects of server side engines, web services, and web applications in one place.</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>The system should support online editing of feature data (geometry and attributes) through the advanced spatial controls. System should allow the user to create and edit vector data.</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>The system should enable users of the standard gazetteer service to query by place name using OGC WFS-G.</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>System should allow searches based on Data and metadata as well as geographic locations such as cities, region and point of interests.</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>System should have capability to retrieve information from the catalog services (CSW 2.0.2 ISO AP 1.0)</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>It should have capability to perform attribute or spatial queries on data from selected sources.</td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>The proposed solution should perform interactive Symbology over OGC compliant SLD on server side.</td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>The proposed solution should support for GML2 and GML3: the only open geospatial data model language to define and exchange your objects.</td>
<td></td>
</tr>
<tr>
<td>Sr. No.</td>
<td>Detail specification</td>
<td>Compliant (Yes / No)</td>
</tr>
<tr>
<td>---------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>14.</td>
<td>The web Client should have a scale bands configuration on the client side, wherein a client should be able to define different scales and also define what all layers must be visible on what scale configurations.</td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>An administrator can define or generate the feature model to serve the vector data as an OGC WFS. Irrespective of the data format, coverage data can be served as an OGC WCS.</td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>In addition to the OGC Web Services, the system also should support SLD: the OGC styling language to portray maps from WMS, WFS and WCS services.</td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>An administrator should be able to provision updating feature and vector data through Transactional WFS (WFS-T) interface.</td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>Over a thousand Coordinate Transforms and user definable datum is supported. An administrator can create and add custom coordinate system to this system, for this The proposed solution should support all EPSG codes.</td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>The web client should have a 3D rendering option, which should switch the map view in 2D-3D toggle, based on already registered 3D maptiles and 3D Objects, it should render the whole mapview in 3D mode.</td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>The proposed solution should perform interactive symbology over OGC compliant SLD both on server side and Client Side.</td>
<td></td>
</tr>
</tbody>
</table>

6. GIS Server: System requirements

<table>
<thead>
<tr>
<th></th>
<th>The system should support the following:</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>The system should have a true 64 bit support.</td>
</tr>
<tr>
<td>3</td>
<td>The system should be cloud compatible.</td>
</tr>
<tr>
<td>4</td>
<td>The system should be scalable on IT standards. It should allow and support the extension of functionalities and capabilities through hardware or software-based clustering. This is to allow and support the highest up-time and availability with stability.</td>
</tr>
<tr>
<td>5</td>
<td>The system should support hosting the application over secured channel like SSL.</td>
</tr>
<tr>
<td>6</td>
<td>The system should support integration of existing user management and authentication mechanism like Active Directory, LDAP, JAAS, etc.</td>
</tr>
<tr>
<td>7</td>
<td>The system must have perpetual license or it should be minimum 12 cores (three licenses).</td>
</tr>
<tr>
<td>Sr. No.</td>
<td>Detail specification</td>
</tr>
<tr>
<td>---------</td>
<td>----------------------</td>
</tr>
<tr>
<td>9</td>
<td>The system should support connecting and reading directly from different industry-popular databases like Oracle, PostGRES, and Microsoft ® SQL Server (without any middleware).</td>
</tr>
<tr>
<td>10</td>
<td>The administrator should be able to monitor the performance and quality of the application.</td>
</tr>
</tbody>
</table>
| 11      | The administrator should be able to manage the application from a single location wherein the administrator can configure:  
   a. Web-services  
   b. Server parameters  
   c. Logging configuration  
   d. Cache configuration  
   e. Visual folder configuration |                     |
| 12      | For better performance and efficient map display, the system should have to facility to enable caching of data on server-side for features which are not frequently updated. |                     |

### 7. GIS Server: Data management and dissemination requirements

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Compliant (Yes / No)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The data management and data dissemination components should support the following:</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>The system should be able to read different data formats (stored in file systems or database) directly (in its original state) without any external or proprietary connectors or translation.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>The system should be able to read popular raster formats like IMG, GeoTIFF, ECW, and JPEG 2000. Vector stored as SHP, GML, KML, DGN, DWG, and ESRI File Geodatabase (FGDB) should be supported along with those stored in database of Oracle, PostGIS, and Microsoft ® SQL Server.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>The system should be able to support industry-standard data types, industry-standard data formats, unlimited file size or database size, unlimited number of files or tables, and unlimited number of users.</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>The system should support, host and deliver information on the service-oriented architecture, and should allow interoperability such that different client systems can request data in native application, without the need to change the data format, its location and/or its transmission protocol.</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>The system should allow different levels of business logics to be embedded to allow different application requesting for the same set of information in different way; as per the needs and requests.</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>The system should be able to catalog the data directly and should publish the data in open standards (as OGC web services), so that the clients can request for same via such open interfaces and open protocols.</td>
<td></td>
</tr>
<tr>
<td>Sr. No.</td>
<td>Detail specification</td>
<td>Compliant (Yes / No)</td>
</tr>
<tr>
<td>--------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>8</td>
<td>The system should be able to access, publish, and consume the raster datasets, vector datasets, point-cloud data, and non-spatial data like videos, documents, pictures, and any electronic content.</td>
<td></td>
</tr>
<tr>
<td>09</td>
<td>The system should support different open interfaces and web-services as OGC WMS, OGC WMTS, OGC WFS, OGC WFS-T, OGC CS-W, OGC WPS, OGC WMC, KML, GeoRSS, SLD and GML.</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>The system should enable users of the standard gazetteer service to query by place name using OGC WFS-G.</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>The Web Map Service (WMS) should be 1.1.1 and 1.3.0 Compliant.</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>The Web Feature Service (WFS) should be 1.1.0 Compliant.</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>The system must have the facility to publish the map / analysis results directly over the web.</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>The system should support hosting the spatial models via OGC WPS so that the users can access the models from compatible applications.</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>The system should be able to catalog the third-party published web-services.</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>The system should allow the catalog to publish the catalogued information through REST interface so that other systems can also discover these published services. The interface should be RESTful and the application should be able to consume the catalog in JSON, TXT, HTML and GeoRSS formats.</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>The system should be able to consume real-time enterprise published spatial data. It should be able to consume the third-party published OGC web-services.</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>The system should allow administrators to manage the published web-services so that they can apply necessary security, restrictions and expose the relevant interfaces.</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>The system should automatically harvest the metadata and should be able to translate metadata definition of spatial data to ISO 19115 standard.</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>The system should support interoperability wherein the same data can be accessed by different systems through OGC web-services. The client application should be able to consume these web-services for their application needs on any system; be it web browsers, desktop systems or mobile devices.</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>The system should support integrating externally stored non-spatial information like MIS data.</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>System should allow the user to discover and view LAS-formatted point cloud data without downloading the dataset on Desktop, Mobile &amp; Web Browsers.</td>
<td></td>
</tr>
<tr>
<td>Sr. No.</td>
<td>Detail specification</td>
<td>Compliant (Yes / No)</td>
</tr>
<tr>
<td>--------</td>
<td>---------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>23</td>
<td>System should be capable of adding geospatial context to Computer Aided Drafting (CAD) files.</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>System should allow the users to easily discover and retrieve Computer Aided Drafting (CAD) data using keyword and spatial searches.</td>
<td></td>
</tr>
</tbody>
</table>

### 8. GIS Server: Web-services and web-portal requirements

<p>| 1      | The system should be able to support industry-standard data types, industry-standard data formats, unlimited file size or database size, unlimited number of files or tables, and unlimited number of users. | |
| 2      | The application should allow the web-services to be extended such that it can be requested and consumed by different levels of users, different types of users, different departments and by different applications with ease. | |
| 3      | The application should have standard and modern map navigation tools of pan and zoom. | |
| 4      | The application should support loading base-maps to the viewer that can be hosted by Google Maps, Bing Maps, Virtual Maps, and Open Street Maps. | |
| 5      | The system should be able to generate a map from one or more feature data sources (OGC WMS, OGC OpenLS (OLS) Presentation Service). | |
| 6      | The system should support hierarchical legends, and watermarks. | |
| 7      | The application should allow the users to perform attribute query, spatial query, buffer zoning, spatial intersection, spatial difference and length and area measurement. | |
| 8      | The application should allow users to choose the output format in JPEG, PNG or SVG for feature services. | |
| 9      | The application should allow users to views the data with different symbology styles like differentiating feature records based on attributes or types, dynamic label generation with conflict detection, and translucency of all raster data and area colour fill. | |
| 10     | The application should allow users to experience advanced rendering options which includes text/symbol masking with halo, user-defined area-hatching, area, and text display in a single legend entry, viewing of independent texts and symbols, and user-defined styles. | |
| 11     | The application should support client requests to print the spatial data with attributes over any sized page (ranging from A0 to A4). | |
| 12     | The system should support clipping and/or downloading of raster and vector data by authorised users. The supported raster format should be ECW, JPEG2000, IMG, and TIFF. The supported vector should be SHP, GML, and KML. | |</p>
<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Detail specification</th>
<th>Compliant (Yes / No)</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>The system should also allow clipping and downloading of point cloud data in LAS format.</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>The system should support streaming of large raster data through ECWP and JPIP.</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>The system should support online editing of feature data (geometry and attributes) through the advanced spatial controls.</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>The system should allow the users to perform advanced spatial analysis like geocoding, routing, buffering and attribute based analysis.</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>The system should support conducting the dynamic segmentation and linear analysis over the web.</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>The system-hosted web-based application should have the facility to render the different spatial data (raster, vector, maps, terrain, and point cloud) in the web-browser.</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>The application should have the facility wherein the user can opt to view in 2D or 3D environment.</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>The application should support on-the-fly mosaic and on-the-fly re-projection of the spatial data hosted by the system.</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>The application should allow users to apply advanced filter functions like Less than, Greater than, Equals along with spatial operations like bounding box, intersection, within, and disjoint.</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>The application should support localisation for the user interface and for the data (where the data has localised information).</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>System should have ability to simulate buildings and other 3D features.</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Should be able to create form-based, task specific workflows for the browser that primarily support attributive data but also may contain a spatial component.</td>
<td></td>
</tr>
</tbody>
</table>

### 9. GIS Server: Security

Fine grained security system. The proposed solution should secure data depending on the following parameters:

- a. Spatial extent (for restricted areas)
- b. Depending on a scale
- c. Depending on the data and type of user.
- d. Depending on resolution (Globally i.e. Irrespective of any users or datasets)

An administrator can set permissions and restrictions. Feature like ‘polygon masking’ that hides the restricted or sensitive information from the end-users is mandatory. An administrator should be able to configure spatial masking security, and re-sampling resolution.
<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Detail specification</th>
<th>Compliant (Yes / No)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>With fine grained security the solution should actually serve same data for different kind of users for different purposes. Data provisioning should also be included.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>The proposed solution supports authentication compatible to many IT standard technologies like Active Directory, LDAP, Database, CAS, JAAS, etc.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>A user logged in from a particular department will have access to the base maps along with the admin layers designated to that respective department only.</td>
<td></td>
</tr>
</tbody>
</table>
Annexure 3: Specification for GIS Server Hardware
(The OEM has to specify in its authorization letter the compliance to these specifications.)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>GIS Server Hardware Specification Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Chassis Configuration: Chassis with up to 24, 2.5&quot; Hard Drives and 2, 2.5&quot; Flex Bay Hard Drives</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Processor: Intel Xeon E5-2699 v4 2.2GHz 55M Cache 9.60GT/s QPI Turbo HT 22C/44T (145W) Max Mem 2400MHz, 18 Core</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Additional Processor: Intel Xeon E5-2699 v4 2.2GHz 55M Cache 9.60GT/s QPI Turbo HT 22C/44T (145W) Max Mem 2400MHz, 18 Core</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Processor Thermal Configuration: 2 CPU Standard</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>Memory Configuration Type: Performance Optimized</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>Memory DIMM Type and Speed: 2400MT/s RDIMMs</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>Memory Capacity: 32GB RDIMM, 2400MT/s, Dual Rank, x4 Data Width</td>
<td>4</td>
</tr>
<tr>
<td>9</td>
<td>Database Software: Microsoft SQL Server 2014 STD, 5 User CALs</td>
<td>1</td>
</tr>
<tr>
<td>11</td>
<td>RAID Configuration: C6 - RAID 10 for H330/H730/H730P (4-24 HDDs or SSDs in pairs)</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>RAID Controller: PERC H730P RAID Controller, 2GB NV Cache</td>
<td>1</td>
</tr>
<tr>
<td>13</td>
<td>Hard Drives: 1.8TB 10K RPM SAS 12Gbps 512e 2.5in Hot-plug Hard Drive</td>
<td>8</td>
</tr>
<tr>
<td>14</td>
<td>Hard Drives (PCIe SSD/Flex Bay): 200GB Solid State Drive SATA Mix Use MLC 6Gbps 512n 2.5in Flex Bay Drive</td>
<td>2</td>
</tr>
<tr>
<td>15</td>
<td>Power Management BIOS Settings: Performance BIOS Setting</td>
<td>1</td>
</tr>
<tr>
<td>16</td>
<td>Advanced System Configurations: UEFI BIOS Setting</td>
<td>1</td>
</tr>
<tr>
<td>17</td>
<td>Power Supply: Dual, Hot-plug, Redundant Power Supply (1+1), 750W</td>
<td>1</td>
</tr>
<tr>
<td>18</td>
<td>Power Cords: Rack Power Cord 2M (C13/C14 10A)</td>
<td>2</td>
</tr>
<tr>
<td>19</td>
<td>PCIe Riser: Risers with up to 4, x8 PCIe Slots + 2, x16 PCIe Slots</td>
<td>1</td>
</tr>
<tr>
<td>20</td>
<td>TPM Module: PowerEdge Server FIPS TPM 2.0</td>
<td>1</td>
</tr>
<tr>
<td>21</td>
<td>Embedded Systems Management: Server Management Sytem</td>
<td>1</td>
</tr>
<tr>
<td>22</td>
<td>Network Daughter Card: QLogic 57800 2x10Gb BT + 2x1Gb BT Network Daughter Card</td>
<td>1</td>
</tr>
<tr>
<td>23</td>
<td>Bezel: Quick Sync Bezel</td>
<td>1</td>
</tr>
<tr>
<td>24</td>
<td>Rack Rails: ReadyRails™ Sliding Rails With Cable Management Arm</td>
<td>1</td>
</tr>
<tr>
<td>25</td>
<td>Server Accessories: 8X DVD-ROM, USB, External</td>
<td>1</td>
</tr>
<tr>
<td>26</td>
<td>Additional Shipping Box Labels: Order Configuration Shipbox Label (PO Number, Ship Date, Model, Processor Speed, HDD Size, RAM)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Service</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>-------------------------------------------------------------------------</td>
<td>---</td>
</tr>
<tr>
<td>27</td>
<td>Service: 3Yr Basic Warranty - Next Business Day - Minimum Warranty</td>
<td>1</td>
</tr>
<tr>
<td>28</td>
<td>Extended Service: 3Yr Pro Support Plus and 4hr Mission Critical</td>
<td>1</td>
</tr>
</tbody>
</table>
Annexure 4: Specification for GIS Desktop Software License

(The OEM has to specify in its authorization letter the compliance to these specifications.)

1. **Raster and Vector data formats:**
   - Software should support the vector and raster formats
   - Microsoft Access, ArcInfo Coverages, ArcViewShape Files, File Geodatabase (FGDB), MicroStation .dgn Files, MicroStation GeoGraphics, AutoCAD Files, FRAMME, MGE, I/CAD .map Files, GML, KML, OGC WCS, OGC WMS, OGC WFS, OGC WFS-T, Oracle Object Model (including spatial types), Microsoft SQL Server (including spatial types), PostgreSQL/PostGIS (including spatial types), File Geodatabase (FGDB)

   Cat, rle, cit, rgb, doq, btf, TIFF, GeoTIFF, BigTIFF, BigGeoTIFF, ESRI GRID, ESRI GRID Stack, ESRI BIL, BIP and BSQ, JFIF (JPEG), DTED, CIB, CADRG, PIX, MrSID, ers, alg, DigitalGlobe TIL, HDF, ECW2, ECW3, LAS, Silicon Graphics FIT, Bitmap (.bmp), png, IRS, Spot, NOAA, MODIS, HYPERION, ASTER, TM, Quick bird, Cartosat 1/2, ORBI Image, IKONOS, ORBIView, Resourcesat1&2, RISAT1 sensor Support, TerraModel Project files (.pro), Oracle 10 G support.

2. **General Tools and Utilities:**
   - Software should support Inserting Georeferenced Images
   - Software should adjust the Image Display
     - Contrast, Brightness
     - Invert Colors (Greyscale, Color, or Binary)
     - Define Foreground and Background Colors
     - Turn on or off background transparency
   - Software should support to create Image Footprints
   - Software should support creating a New Library Connection
   - Software should support organizing Libraries
   - Software should support creation of data catalogs with following functions
     - Creating a New Catalog
     - Creating a New Catalog Connection
     - Managing Catalog Connections
     - Importing Catalog Records
     - Exporting Catalog Records
     - Associating Catalog Records
   - Software should integrate a Microsoft Bing Maps aerial/map/birds-eye display window (Bing Maps license required). Users can match the Bing Maps view to the Map Window and synchronize views.
   - Software should synchronizes with a Pictometry display window (Pictometry license and software required). Users can link the Pictometry view to the Map Window and synchronize views.
   - Software should support to use a Snapshot of a Map Window

3. **Basic & Advanced Feature Placement & Editing Tools:**
   - Software should support following Construction Aids with keyboard shortcuts
• Bearing/Bearing Intersection
• Delta X and Delta Y
• Delta X and Delta Y From Point
• Distance and Direction
• Distance and Direction From Point
• Distance/Distance Intersection
• Orthogonal
• Close Orthogonal
• Parallel To
• X and Y
• Perpendicular From
• Perpendicular To
• Distance Along Feature
• Offset
• Use Existing
• Azimuth
• Bearing
• Deflection Angle

- Software should support adding and continuing a feature geometry
- Software should support updating of attribute fields
- Software should support updating Attributes Using Text
- Software should support Copying Attribute Definitions
- Software should support Copying Attributes
- Software should support Editing Feature Geometry with following functions:
  • To Move a Vertex in a Feature Geometry
  • To Move a Vertex by Precision Keyin
  • To Move a Vertex in Coincident Geometry
  • To Insert a New Vertex in a Feature Geometry
  • To Edit Geometry using Snap and Break
  • To Edit Vertex Height
  • To Delete a Vertex in a Feature Geometry
  • To Edit a Circle Geometry
  • To Edit an Arc Geometry
  • Moving a Vertex Using Construction Aids
- Software should support Generating Base Geometry
- Software should support Simplifying Geometry
- Software should support Smoothing Geometry
- Software should support Moving Feature Geometry, Images, or Labels
- Software should support Partially Deleting a Linear Feature with following functions:
  • To Select and Partially Delete a Linear Feature in Object-Action Mode
  • To Select and Partially Delete Linear Features in Action-Object Mode
- Software should support splitting Features with following functions:
  • To Split Features with Simple Geometries
  • To Split Features Containing Geometry Collections
  • To Split a Linear Feature with the Split by Point Mode
  • To Split Features with the By Existing Features Mode
  • Using Construction Aids to Split Features
- Software should support Merging Features
- Software should support Copying Features
- Software should support Copying a Feature Parallel
- Software should support Spinning Geometry with following functions
  • To Select and Spin Features After the Spin Command is Active
- Software should support Trimming Linear Features
- Software should support Trimming a Linear Feature to Intersection
Software should support Extending a Linear Feature
Software should support Extending a Linear Feature to an Intersection
Software should support Extending Two Lines to Intersection
Software should support Constructing a Circular Fillet
Software should support To Construct a Fillet and Trim Excess
Software should support Rotating Features with following functions
  • To Select and Rotate Features in Object-Action Mode
  • To Select and Rotate Features in Action-Object Mode
Software should support Reversing Direction of a particular edit
Software should support Redigitizing Geometry
Software should support Inserting an Intersection
Software should support Undoing Placement and Editing Modifications
Software should support Redoing Placement and Editing Modifications
Software should support for setting the Default Height of a feature
Software should support Snapping features and Rasters with following functions
  • Setting SmartSnaps
  • Setting SmartSnap Tolerances
  • Setting Vector with following
    • Intersection Snap
    • End Point Snap
    • Vertex Snap
    • On Element Snap
    • Origin Snap
    • Midpoint Snap
    • Tangent Snap
    • Perpendicular Snap
  • Setting Raster snaps with following
    • Intersection Snap
    • End of Line Snap
    • Corner Snap
    • Open Symbol Snap
    • Closed Symbol Snap
    • Center Snap
Software should support Measuring Angles with following functions
  • To Measure an Angle with the Segment Mode
  • To Measure an Angle with the Four Point Mode
Software should support survey data & have option for coordinate geometry key-in and
digitizing tools for input and maintenance of Point, Line and Area features.

4. **GPS Tracking:**
   - Software should access GPS data in real time to track positions on a map view and efficiently
     populate or update features.

5. **Vector & Raster Registration:**
   - Software should support registering raster & vector data and Digitizing Features
   - Software should support Creating, Editing, Deleting, and Reporting on a Digitizer Setup with
     following functions
     • To Create a New Digitizer Setup by Entering Tablet/Map Control-Point Pairs
     • To Create a New Digitizer Setup by Entering All Source Points First
     • To Edit a Digitizer Setup
     • To Report on a Digitizer Setup
     • To Delete a Digitizer Setup
   - Software should support Registering Vector Data
- Software should support Registering an Image with following functions
  - To Register an Image by Creating New Registration
  - To Register an Image by Applying an Existing Registration
  - To Edit a Saved Image Registration
  - To Re-register an Image by Editing the Registration
  - To Report on an Image Registration
  - To Delete a Registration

- Software should support automatic geometric correction from valid ephemeris information
- Software should support Manual georeferencing applied to any raster data
  - Affine
  - Polynomial (1st to 10th order)
  - Rubber Sheeting
  - Reprojection

- Software should allow to edit Ground Control Points (GCPs)
- Software should have the ability to select GCP from Map, Image, Vector, Keyboard, Bing Maps or OSM.
- Software should have automatic coordinate conversion capability
- Software should have automatic error reporting capability
- Software should have automatic point prediction capability
- Software should support Nearest Neighbor, Bilinear, or Cubic Convolution resampling methods
- Software should allow for User-defined pixel sizes, geographic subsets, etc.
- Software should support over 1000 projected coordinate systems.
- Software should support over 65 spheroids and 500 datums.
- Software should have the capability for adding more spheroids and datums
- Software should support Vertical datums, including vertical datum transformations
- Software should support for both standard and user-defined projection libraries, allowing thousands of projection systems to be defined

6. **Data Integration, Validation & Clean-up Tools:**
- Software should support Dynamic queued edit
- Software should provide Geometry Information
- Software should support Validation of a Geometry with following rules
  - Unknown Geometry
  - Invalid Geometry
  - Uncontained Holes
  - Overlapping Holes
  - Invalid Coordinates
  - Area Loop
  - Invalid Geometry Component
  - Z Out of Range
  - Not Monotonic
  - Not Flat
  - Z Spike
- Software should support auto correct Geometry with following rules
  - Empty Geometry
  - Too Few Vertices
  - Unclosed Areas
  - Zero Length Lines
  - Zero Coverage Areas
  - Kickbacks / Duplicate Points
  - Kink
  - Loop in Line
  - Short Vector
- Null Geometry
- Superfluous Geometry Component
- Fragmented Geometry
- Duplicate Feature
- Area Not Closed in Z Plane
- Z Breaks

- Software should support Validation of Connectivity with following rules
  - Shared Edge
  - Shared Face
  - Sliver
  - Gap

- Software should support auto correct Connectivity with following rules
  - Trim Overshoots
  - Extend Undershoots
  - Unbroken Intersecting Geometry
  - Non-coincident Intersecting Geometry
  - Node Mismatches
  - Dead End
  - Short Vector

- Software should support Analyzing Geometry with following functions
  - To Generate Geometric Statistics
  - To Delete Small Areas or Short Lines

7. Vector Analysis:

- Software should support Dynamic Queues and Static Queues

- Software should support Queued Edits with following functions
  - Advancing the Queue when a Status Changes
  - Adding Items to a Select Set
  - Clearing the Queued Edit Legend when a Queue Closes
  - Showing the Number of Items in a Queue
  - Deleting a Queue
  - Creating a Subqueue
  - Displaying queue statistics
  - Deleting Queue Items by Status
  - Using the Queued Edit Quick Status dockable Control
  - Sorting a Queue in ascending and descending order

- Software should support Creating and Modifying Searches with following functions
  - To Create a New Search
  - To Edit a Search
  - To Delete a Search

- Software should support defining an Attribute Filter Query

- Software should support defining a Spatial Query with following functions
  - Touch
  - Within distance of
  - Contained
  - Are Contained By
  - Entirely Contained
  - Entirely Contained By
  - Overlap
  - Meet
  - Are Spatially Equal

- Software should support defining Query Filters

- Software should support defining a Native Query with following connections
  - To Define an Oracle Native Query without the need of any database engine or
middleware

- To Define an MGSM Native Query
- Defining a Linear Network Query

Software should support Defining Queries from Select Sets

Software should support Managing Queries

Software should support Displaying a Query with following functions

- Displaying Queries Using the Queries Command
- Displaying Queries in the Active Data Window
- Displaying Queries in a New Data Window

Software should support merging feature classes and queries

Software should support aggregating features

Software should support clearing queries from a Map Window

Software should support editing a query

Software should support deleting a query

Software should support unloading queries

Software should support creating a Join

Software should support using Spatial Intersection

  - Touch
  - Contained
  - Are Contained By
  - Entirely Contained
  - Entirely Contained By
  - Overlap
  - Meet
  - Are Spatially Equal

Software should support Using Spatial Difference with following functions

- From Feature – Subtract Feature = Result
  - Area – area = area or nothing
  - Line – area = line or nothing
  - Line – line = line or nothing
  - Point – area = point or nothing
  - Point – line = point or nothing
  - Point – point = point or nothing
- From Feature – Subtract Feature
  - Area – line
  - Area – point
  - Line – point

Software should support editing attribute selection queries through the Queries Command

Software should support combining features with editing union queries through the Queries Command

Software should support creating a Buffer Zone

Software should support creating Functional Attributes(including custom functions) with following expressions

Software should support following expressions

  - Date & Time
    - DATE, DAY, HOUR, MINUTE, MONTH, NOW, SECOND, TIME, TODAY, WEEKDAY, YEAR
  - Geometry
    - ALIGNMENT, ANGLE, AREA, CENTERPOINT, COMPRESS, CONVERTTEXTCOLLECTION, CREATECOLLECTION, CREATEPOLYGON, CREATEPOLYLINE, CREATETEXTPOINT, DENSIFY, DISTANCE, DOTDENSITY, ENDPOINT, EXTERIOR, FILTERAREAL, FILTERLINEAR, FILTERPOINT, FORMATMEAS, GEOMETRIES, GRAPHICSTEXTBOX, GRAPHICSTEXTSTRING, HOLES, IMAGEFILENAME, IMAGEPOLYGON,
LENGTH, MBR, MERGE, MOVE, MOVEBYDISTDIR, ORIENTATION, ORIGIN, PERIMETER, POINTS, REVERSE, SEGMENTS, SETZ, SIMPLIFY, SMOOTH, SPIN, STARTPOINT, UNIT, X, Y, Z,

- Logical
  - FALSE, IF, TRUE
- Math & Trig
  - ABS, ACOS, ASIN, ATAN, ATAN2, CEILING, COS, DEGREES, EVEN, EXP, FLOOR, INT, LN, LOG, LOG10, MOD, ODD, PI, POWER, RADIANS, RAND, ROUND, SIGN, SIN, SQR, SQRT, TAN, TRUNC
- Misc.
  - CAST, FIRST, ISNULL, LAST, NEWGUID, NULL, STATUS
- Statistical
  - AVEDEV, AVERAGE, AVG, CORREL, COUNT, COVAR, DEVSQ, GEOMEAN, HARMMEAN, LOOKUP, MAX, MEDIAN, MIN, STDEV, STDEVP, SUM, VAR, VARP
- Text
  - CONCATENATE, FILENAME, FILEPATH, FIND, FORMATATTRIBUTE, LEFT, LEN, LOWER, LTRIM, MID, PROPER, REPLACE, REPT, RIGHT, RTRIM, SEARCH, TEXT, TRIM, UPPER, VALUE
- View
  - BLUE, DISPLAYSCALE, GREEN, NOMINALMAPSCALE, RED, RGB
  - Software should create and display Functional Attributes
  - Software should edit Functional Attributes
  - Software should Delete Functional Attributes
  - Software should support Geocoding with following functions
    - Finding an Address
    - Geocoding Multiple Addresses
    - Geocoding Addresses with Multiple Datasets
    - Intersection Geocoding
    - Publish Address Geocoding Index
    - Define Parsing Rules
    - Define Geocoding Model
  - Software should support to Export the Query to GML

8. Presentation, rendering & advanced labeling functionalities:
- Software should support Point Styles (AutoCAD Drawing Files, MicroStation Cell Files, SVG Files), Linear Styles, Areal Styles, Text Styles, Compound Styles (mix of point, line, and areal geometry)
- Software should support style properties
  - Size
  - Width
  - Rotation
  - Color
  - Alignment
  - Offset
  - Patterning
  - Transparency
  - Tinting
  - End Caps
  - Midline Joins
  - Text Halos
Software should support Creating, Editing, and Managing Styles with following functions
- To Create a Named Style
- To Edit a Named Style
- To Rename a Named Style
- To Delete a Named Style
- To Edit the Style of a Legend Entry
- To Edit Advanced Style Options

Software should support Animating Styles with following functions
- To Set Animation
- To Turn Off Animation

Software should support thematic maps styling
- Range
- Unique Value
- Pie/bar charts

Software should support creating a new library for symbology

Software should support creating a thematic display with following functions
- To add a standard entry to the Legend
- To add range thematic entries to the Legend
- To add unique value entries to the Legend

Software should support Displaying or Hiding the Legend

Software should support keyboard shortcuts while working with the legend entries as below
- CTRL-A -- Selects all legend entries
- HOME -- Goes to the top of the legend.
- END -- Goes to the end of the legend.
- PAGE UP -- Goes up one page of the legend.
- PAGE DOWN -- Goes down one page of the legend.
- LEFT, RIGHT, UP, and DOWN arrows -- Navigates the treeview, expanding/collapsing nodes.
- CTRL-C -- Copies the selected legend entries.
- CTRL-X -- Cuts the selected legend entries.
- CTRL-V -- Pastes the previously cut or copied legend entries.
- SHIFT and CTRL -- Used in conjunction with selecting legend entries in a Windows-standard manner.
- DELETE -- Deletes the selected legend entries.

Software should support Adding a WMS Legend Entry with following functions
- To Add a WMS Legend Entry
- To Edit a WMS Legend Entry

Software should support Inserting Labels Interactively

Software should support Inserting Leader Lines

Software should support resolving text conflicts if any

Software should support Layout Window viewing commands as below
- To Zoom the Map Window or Layout Window by Point
- To Zoom In the Map Window or Layout Window by Rectangle
- Panning in the View
- Update Command in layout window
- Working Sheets Command in the layout window
- Background Sheets Command in the layout window

Software should support dynamic Labeling with following options
- Toggle On/Off
- Auto Refresh

Software should support static Labels with following options
- Display
- Refresh
- Suppress/Restore
- Change Properties
• Highlight Feature
• Compose/Decompose
• Stack
• Reposition
• Duplicate

- Software should support Label Manager with following options
  • Create Shared Rules/Styles
  • Set Label Priorities
  • Set Label Obstacles
  • Define Properties
    • Text
    • Fonts
    • Size
    • Color
    • Symbols
    • Expression Builder – Defines how labels are built from text attributes
  • Label Placement Rules
  • Label Position
  • Label Stacking
  • Font Reductions
  • Line Crossing
  • Overlap Labels
  • Offsets
  • Leader Lines
  • Centerlines
  • Divided Highways
  • Repeat Labels
  • Overhang
  • Extend Boundary
  • Place at Dominant Angle

9. **Raster/Grid Analysis:**

- Software should support Map Algebra with following functionalities
  • Mix Mode Arithmetic
  • Operations
    • Monadic
    • Dyadic (Math)
    • Dyadic (Relational)
    • Dyadic (Logical)
    • Trigonometric functions
    • Logarithmic functions
    • Mode functions
    • List functions
  • Classification
    • Clump
    • Explicit Cross Tabulation
    • Group
    • Hotspot Detection
    • Implicit Cross Tabulation
    • Recode
    • Supervised
    • Thiessen
  • Interpolation
    • Density
• Inverse Distance Weighing (IDW)
• Triangulation
• Ordinary Kriging
• Ordinary Kriging Suite
• Spline
• Layers
• Export
• Edit Window
• Mosaic
• Subscene
• Reproject
• Import
• Rasterize
• Vectorize

- Software should support Visualization tools
  - Blending
  - Color Composite
  - Overlay
  - Shaded Relief

- Software should support Zone tools
  - Area
  - Buffer
  - Characterize Boundary
  - Detect Edges
  - Fill Gaps
  - Perimeter

- Software should support Path tools
  - Characterize Linkage
  - Distance Cost
  - Length
  - Segmentation

- Software should have Statistical Analysis tools
  - Local Scan
  - Random
  - Zonal Score

- Software should support have Surface tools
  - Aspect
  - Curvature
  - Downhill Accumulation
  - Downhill Path
  - Fill Depressions
  - Fill Pits
  - Flow Concentration
  - Grade
  - Inflection Angle
  - Insulation
  - Isoline /contours Generation
  - Reverse Path
  - Smooth
  - SubBasin Delineation
  - Update Geometry Z Values
  - Viewshed
  - Volume

- Software should Create elevation footprints
10. **Layout, Printing & Plotting:**
   - Software should support Cartographic Grid Placement
   - Software should support Reference Index
   - Software should support Map Composition Environment
   - Software should support Map Window Printing
   - Software should support Map Book Generation
   - Software should support Inserting Objects in a Layout Sheet
   - Software should support Batch Plotting Utility

11. **Parcel Management Tools:**
   - Software should support Coordinate Geometry (COGO)
   - Software should Validate Parcels
   - Software should Fix Parcels
   - Software should support Parcel Numbering
   - Software should support Parcel Labeling
   - Software should support Parcel Split
   - Software should support Parcel Join
   - Software should support Parcel Fabric Adjustment with following functionalities
     - Create Control Point Links
     - Adjust Geometry
     - Control Point Link Collections o Query Control Point Links
     - Query Link Residuals
     - Delete Adjustments
   - Software should support Parcel Relationships and Rules
   - Software should have Parcel Management Tools
     - Select by Polygonal Fence
     - Locate Features by Attribute Search
     - Locate Features by Query
     - Review Attributes
     - Square Geometry
     - Label Segments
     - Label Coordinates
     - Sequential Attribution
     - Topo Select
     - Synchronize Geometry
     - Related Feature Rules
     - Related Feature Properties

12. **Linear Reference Model, Linear Network & Network management Functionalities:**
   - Software should track and analyze data that is associated with locations along a linear network
   - Software should support LRS Precision Location
     - LRS Model Selection
       - Measure, Measure with Internal/External Markers
       - Duration, Duration with Internal/External Markers
     - Key Field Selection – Primary, Secondary, Tertiary, and Quaternary
     - 2D or 3D Geometric Length consideration
     - Reverse Geometry option
     - Insert Feature using Precision Location
   - Software should support Dynamic Segmentation with following functionalities
     - Select an event table from any connection
     - Use queries of an event table
• Use 2D or 3D Geometric length
• Segment linear and point event data
• Support multiple event reference methods
  • Measure
  • Projected XY coordinates
  • Longitude/Latitude
  • Marker Offset
  • Duration
• Supports single or multi-level LRS features
• Supports datum-based events
• Resolves multiple events at same location
• Supports rotated point events

- Software should allow for the management and analysis of linear networks found in many public work department workflows (water, gas, electricity, etc.).
- Software should support Feature Validation on new and existing data
- Software should support Network Tracing and Analysis
- Software should support Dimensioning and labeling functions
- Software should have the ability to define AFM associations and rules
- Software should populate Connectivity tables for existing features
- Software should support rules based digitizing/editing for new data

13. **Floating licensing advantages:**
- Software should be able to Float Licenses on to other machines on the network.
- Software should be able to Float Individual software modules.

14. **Ease of Use:**
- Software should be completely a GUI software i.e. no Command mode
- Software GUI should be an Integrated Ribbon Interface and highly User friendly Interface.
- Software should have common tools used throughout the suite
- Software should have Context-sensitive, Hypertext-linked On-Line Help
- Software should have Extended Tooltips
- Software should have extensive PDF help and user guides and tutorials

15. **Additional Specifications**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Specifications</th>
<th>Compliance (Yes/No)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Should be able to store spatial Data in industry standard RDBMS Format</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Should allow you to define a spatial query against SQL spatial types in a spatial database to create a layer (query layer) that can be viewed and queried in GIS Software.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Create/manage/use spatial bookmarks</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Use map templates to standardize maps</td>
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<tr>
<td>5.</td>
<td>Interactively set transparency for all data</td>
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<tr>
<td>6.</td>
<td>Create layers or shortcuts to geographic data that store symbology for Displaying features.</td>
<td></td>
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<tr>
<td>7.</td>
<td>Thematic classifications like: Single symbol, Unique value, Match to predefined style, Graduated colors or symbols, Proportional symbols, Chart mapping including pie and bar chart.</td>
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<tr>
<td>8.</td>
<td>Should support rule based symbology and cartographic representations of map entities.</td>
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<tr>
<td>9.</td>
<td>Reshape and Move a Feature to Align One Specified Point with Another (Warp), Orient a Symbol to a Specific Angle.</td>
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<tr>
<td>10.</td>
<td>The software should have Elevation data Display facility like Contour with Index Contours, DEM - Hillshade with Sun Position Control,</td>
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<tr>
<td></td>
<td>Feature Description</td>
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<tr>
<td>11.</td>
<td>Image classification like thematic classes, Individual band settings, Color maps, Contrast, Brightness.</td>
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<tr>
<td>12.</td>
<td>Should have Image rectification tools for easily georeferencing existing scanned images.</td>
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<tr>
<td>13.</td>
<td>On-the-fly automatic labeling, multi-labeling, interactive labeling, rotation of labels from an attribute field, interactive label placement, predefined label styles &amp; finally save labels as a data layer</td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>Software should provide Raster handling tools like contrast, brightness, transparency, gamma stretch, dynamic range adjustment, ignore background value, nadir top-up, contrast stretch, display resampling method, zoom to raster resolution, swipe layer, and flicker layer</td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>Export graphics to: Windows bitmap (BMP), Tagged image file format (TIFF), Layered Portable document format (PDF), Joint Photographic Experts Group (JPEG), Adobe Illustrator (AI), etc.</td>
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</tr>
<tr>
<td>16.</td>
<td>Features should support file attachments, which should provide a flexible way to store additional information in any format related to your features. For example, if you have a feature representing a building, you could use attachments to add multiple photographs of the building taken from several angles, along with PDF files containing the building's deed and tax information.</td>
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</tr>
<tr>
<td>17.</td>
<td>Software should have inbuilt tools to Display Real-Time Location Points from a GPS Receiver, Dynamically Center the Map on the Current GPS Point and Store GPS points.</td>
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<tr>
<td>18.</td>
<td>All toolbars should be dockable according to user convenience.</td>
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<tr>
<td>19.</td>
<td>Create layers from all supported data sources including coverage feature classes; shapefiles; CAD, raster, and geodatabase feature classes; or tables containing x, y coordinates.</td>
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<tr>
<td>20.</td>
<td>Create group layers from multiple data sources including vector overlays on top of raster data.</td>
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<tr>
<td>21.</td>
<td>Software should support documentation/Metadata management.</td>
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<tr>
<td>22.</td>
<td>On-the-fly re-projections and transformations of the Layers should be supported</td>
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<tr>
<td>23.</td>
<td>Set display projection of map using predefined or custom parameters (includes specifying geographic coordinate system or datum).</td>
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<tr>
<td>24.</td>
<td>There should be a facility to Interactively Measure Distances, Areas and Feature Using Any Units in Planar and geographic co-ordinate system</td>
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<tr>
<td>25.</td>
<td>Facility to display Aerial and Projection distances.</td>
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<tr>
<td>26.</td>
<td>During Parcel editing software should detect construction points that lie very close to neighboring lines and highlight them in the construction grid.</td>
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<tr>
<td>27.</td>
<td>Edit multiple layers simultaneously with undo/redo operations</td>
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<tr>
<td>28.</td>
<td>Should be able to control &amp; create rule based topology for the spatial database.</td>
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<tr>
<td>29.</td>
<td>Feature construction tools including: Point-and-click feature location with mouse, Streaming locations with mouse, x, y coordinate input with keyboard coordinate input with keyboard.</td>
<td></td>
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<tr>
<td>30.</td>
<td>Feature edits tools including: Move, rotate, delete, copy, and paste, Reshape, Split and trim, Divide into N-parts or into specified intervals, Vertex editing (add, delete, and move), etc.</td>
<td></td>
</tr>
</tbody>
</table>
31. Spatial adjustment tools including: Transformation, Edge matching, Attribute transfer.
32. Create Fields to Store Coordinate Geometry (COGO) Measurements.
33. Snap to vertex, endpoint, midpoint, or along the edge of features & layer wise snapping
34. On-the-fly dynamic joins between different databases
35. Create statistics & various statistical operations, viz. create charts and reports, Populate values based on expression, Summarize data.
36. Should be able to plot data on the map directly from the tables.
37. UNICODE support for Multilanguage attributes
38. Import/Export Geospatial Data
39. Find tool to find data based on metadata and location.
40. Direct Read of Vector Data like Shapefiles, Coverages, Geodatabase, VPF, etc.
41. Direct Read of Raster (all industry standard Raster formats)
42. Should have the facility that enables you to easily use and distribute data in many formats
43. Should have Comparison options like Feature Compare, File Compare, Raster Compare, Table Compare, TIN Compare
44. Should have the facility to interactively change brightness, contrast, and transparency, set resampling method - Nearest neighbor, bilinear interpretation, and Cubic convolution of the raster database.
45. Should be able to operate on Windows Vista, Windows 7, 8, 10.
46. Should have the functionality of creating GUI based workflows and models
47. Should have the capability to web enable the GUI based workflows and models without any customization
48. Should support publishing and encryption of GIS maps for the purpose of Viewing and Querying GIS data by multiple royalty free GIS data readers
49. Perform interactive perspective viewing, including pan and zoom, rotate, tilt, and fly-through simulations with speed controls, for presentation, analysis, or export for display on the Web.
50. Software should have the facility of time slider user interface controls to visualize temporal data
51. Software should be capable of authoring the layers with time information
52. Software should have report generation tool for creating and managing reports.
53. Should have the capability to web enable the 3D models without any customization.
54. Generate three-dimensional surfaces from attributes
55. View a surface from multiple viewpoints, query a surface, determine what is Visible from a chosen location on a surface, and create a realistic perspective image draping raster and vector data over a surface
56. Perform interactive perspective viewing, including pan and zoom, rotate, tilt, and fly-through simulations with speed controls.
57. It should be able to display 2D and 3D content simultaneously in a single application window.
<p>| | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>59.</td>
<td>It should have a true 64 bit component to combines data visualization, editing, and analysis using local content, content from Online, or content from in premise cloud for both 2D and 3D data.</td>
</tr>
<tr>
<td>60.</td>
<td>Should support python scripting language for development of customized workflow</td>
</tr>
<tr>
<td>61.</td>
<td>User should have an option to work with a contemporary ribbon interface.</td>
</tr>
<tr>
<td>62.</td>
<td>Should be able to use both keyboard and mouse shortcuts for navigation and/or tool execution</td>
</tr>
<tr>
<td>63.</td>
<td>3D navigation activities like pan, zoom, tilt should be managed exclusively by mouse or keyboard control</td>
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<tr>
<td>64.</td>
<td>Should be able to create Space Time Cube which takes potentially very large point datasets and builds a multidimensional data structure for analysis</td>
</tr>
<tr>
<td>65.</td>
<td>Software should be able to provide an Emerging hotspot analysis</td>
</tr>
<tr>
<td>66.</td>
<td>Software should allow you to add data to a mosaic dataset with the images from a supported frame camera</td>
</tr>
</tbody>
</table>
|67.| • Should be able to connect to with spatially enabled databases • Should support standard based metadata • Should support multiple map windows • Should support visualisation of both 2D and 3D data in map windows • 2 Dimensional and 3 Dimensional data should be simultaneously visible in same project scope. • Should have ability to consume base maps in various view configurations like street, topographical, imagery, oceanic etc • Should be able to open non-spatial tabular data and data should be available for viewing, selection, edits and query. • Should support python scripting language for development of customised workflow • Should have advanced geoprocessing tools • Should support On-the-fly automatic labeling, multi-labeling, interactive labeling, rotation of labels from an attribute field, interactive label placement, predefined label styles & finally save labels as a data layer • Should have a contemporary ribbon interface • Should have a pattern dependent quick access toolbar for commonly used tools and functionalities • Should have option of displaying both screen tips. • Should have option of creating and storing spatial bookmarks • There should be a separate Web scene pane for visualisation of web scene data • Should support 2D and 3D environment • Create group layers from multiple data sources including vector overlays on top of raster data • Facility to display Aerial and Projection distances in 2D and 3D scenario • Feature edits tools including: Move, rotate, delete, copy, and paste, Reshape, Split and trim, Divide into N-parts or into specified intervals, Vertex editing (add, delete, and move) etc • Model real-world surface features such as buildings
- Perform interactive perspective viewing, including pan and zoom, rotate, tilt, and fly-through simulations with speed controls
- Should be able to use both keyboard and mouse shortcuts
- 3D navigation activities like pan, zoom, tilt should be managed exclusively by mouse or keyboard control
Annexure 5: Specification for Satellite Image Processing Software License

(The OEM has to specify in its authorization letter the compliance to these specifications.)

1. **Raster and Vector data formats:**
   - Software should support the raster formats
     TIFF, GeoTIFF, BigTIFF, BigGeoTIFF, ESRI GRID, ESRI GRID Stack, ESRI BIL, BIP and BSQ, JFIF (JPEG), DTED, CIB, CADRG, PIX, Mr.SID, ers, alg, DigitalGlobe TIL, HDF, ECW2, ECW3, LAS, Silicon Graphics FIT, Bitmap (.bmp), png, IRS, Spot, NOAA, MODIS, HYPERION, ASTER, TM, Quick bird, Cartosat 1/2, ORBI Image, IKONOS, ORBIView, Resourcesat1&2, RISAT1 sensor Support. Oracle 10 G support.
   - Software should support the Vector formats
     ArcInfo coverages (8.x, 7.x, 6.x & 3.5), Geodatabases, Shapefile, mdb, GML, KML, VPF, DXF, DWG, DGN/IGN files, ESRI SDE Vectors, TerraModel Project files (.pro). Oracle 10 G support.
   - Software should support the OGC Services
     WMS 1.0, WMS 1.1.1, WCS 1.0, WMS 1.3.0, WCS 1.0.0, WFS

2. **Data Visualization tools:**
   - Software should have multiple image display types
   - Software should overlay multiple data types (Unlimited data layers)
   - Software should support for files over 2 GB in size
   - Software should have Geographic linking & Sync Views
   - Software should Open & Preview Raster as Image Chain
   - Software should have Dynamic roam, Dynamic North Arrow & Scale Bar
   - Software should have Inset view
     - Highlight specific regions at higher detail
     - Annotate inside the inset
     - Configure position, size, style, and zoom
   - Software should have Geo-Point tool
   - Software should send view or map composition to Microsoft PowerPoint/Word or JPEG
   - Software should support fractional zoom, rectangle zoom and continuous zoom
   - Software should support Continuous rotate, Zoom to a specific scale
   - Software should support On-the-fly resampling
   - Software should have Image histogram modification tools
   - Software should save and reload multiple LUTs
   - Software should recode class values
   - Software should support Filtering for thematic images (Neighborhood Analysis)
   - Software should support Visual change detection between any data types
     - Ribbonized for ease of use
     - Swipe / Blend / Flicker
     - Interactive direction swipe
• Automatic Blend and swipe with fine controls over directions and speed
• Detailed layer control
• Multi-layer “play through” animation
  ▪ Software should have Inquire cursor and inquire box, including MGRS support
  ▪ Software should have Measurement tool with following options
    • Point locations
    • Ribbonized for ease of use
    • Lengths, bearings, and angles
    • Polygonal areas and perimeters
    • Cylinder lying on ground
    • Ellipse
    • Region grow
    • Height from layover, shadow tip, or shadow base
    • Zenith and elevation
    • Control of units and coordinate systems for reporting
    • Write measurements directly to vector attribute or on-screen annotation
  ▪ Software should have Profile tools like
    • Spectral profile for hyper spectral analysis
    • Spectral reference libraries
    • Spatial profile for cross-section, surface distance and line-of-sight analysis
    • Surface profile for rapid isometric surface views
    • Point cloud profile and measurement
  ▪ Software should have surface profile for rapid isometric surface views
  ▪ Software should have GPS live-link
    • Display location in Viewer based on NMEA-0183 communication
    • Drive View based on GPS coordinates in real time
  ▪ Software should support Batch Processing options (Record and Repeat common Functions)
  ▪ Software should have Interpolation techniques: linear or non-linear rubber sheeting
  ▪ Software should have GEO Raster Read/Write into ORACLE 10g (Enterprise solutions)
  ▪ Software should create an unlimited number of ECW2 /ECW3 and JPEG2000 compressed images from input images with either export or direct-write
  ▪ Software should support TIFF, BigTIFF, BigGeoTIFF and JPEG file reading and creation
  ▪ Software should have ability to convert Pixels to ASCII and ASCII to Pixels
  ▪ Software should open Bing Maps/ Open street maps/ Customized Maps within viewer and overlay with Image or vector data.
  ▪ Software should have Utility for bulk and batch loading of raster and feature data to Oracle Spatial
  ▪ Software should populate to open GeoRaster structure and metadata
  ▪ Software should extend GeoRaster structure with proprietary information
• Geometric models such as RPCs
• NITF metadata for advanced exploitation
• Thumbnails to aid in geospatial selection
  ▪ Software should accept drag & drop imagery / vector in any format that software can directly read
  ▪ Software should have Intelligent (sensor-specific) band combination selectors
  ▪ Software should manage and access project data through the Retriever
  ▪ Software should have Image Drape tool for creating perspective views on platforms supporting OpenGL
  ▪ Software should have Integrated Stretch Panel for defining radiometric enhancements
  ▪ Software should have DRA (Live Update) works with all Stretch types
  ▪ Software should have gallery of pre-defined color ramps for quickly colorizing imagery
  ▪ Software should have Preserve color option
  ▪ Software should map input data and metadata to database attribute fields
  ▪ Software should create Annotation layers
    • Manually digitize objects
    • Objects include text, polylines, rectangles, ellipses, polygons, symbols, arcs, and points
    • Style editor
    • Freehand (streaming) polyline editor
    • Lock annotation rotation angle
    • Assisted digitizing of boundaries, ribbons and center-lines using radiometric boundaries with hotkeys to switch between collection modes
  ▪ Software should load shapefiles into Oracle Spatial Geometry features
  ▪ Software should Define/confirm Oracle Coordinate system
  ▪ Software should display Oracle Spatial reference ID (SRID) for selected file
  ▪ Software should support Spatial index
  ▪ Software should have Oracle Spatial Table Manager:
    • Utility that helps you add, remove, and edit the different rows and columns associated with an Oracle Spatial Table.

3. **General Tools and Utilities:**
  ▪ Software should have file chooser mechanism
    • Recent list of files accessed
    • “Go to” list of directories accessed
    • Select multiple files at once
    • Preview thumbnail
    • “All Rasters” and “All Vectors” filters
  ▪ Software should quickly customize the interface to the production environment through the Preference Editor
  ▪ Software should have ability to set Keyboard Shortcuts for Commands
Software should have Subset tool, Text editor, Layer information tools, View binary data, Coordinate calculator

Software should have Customizable interface using my workflow - a set of tools which are selected by the user.

- My workflow – each user or team can therefore define their own workflows

Software should have the ability to minimize Ribbon, Minimize contents menus, Dockable windows

Software should have the ability to Turn on/off existing Tabs

Software should have the ability to Rename Tabs

Software should have the ability to Re-order, reorganize and remove existing Groups, buttons and controls

Software should have the ability to Control display properties of command buttons and controls

Software should have the ability to add (and name) new Tabs and Groups

Software should have the ability to populate new Groups by drag-n-dropping Commands

Software should have the ability to add new buttons to launch Spatial Models

Software should have Quick access tools

Software should have Smart Control

- Provides View controls embedded within the Viewer itself.

Software should allow to change interface colors

Software should allow to change the styles of the vector layers & symbols on the fly

Software should have the ability to measure the height of features based on the layover / lean of the features from Calibrated Image

Software should have the ability to measure the height of features based on the shadow.

- position of the Sun should be known (or can be derived based on the date and time that the image was captured)

Software should save Viewer layouts, save projects and sessions

Software should have spreadsheet functionality via the CellArray™

Software should convert fonts to symbol libraries

Software have Image Catalog for raster data - a database that serves as an image library, softcopy search, and information management system with following functionalities

- Attribute-based querying of records (images)
- View image footprints on reference maps
- Customize reference maps
- Display selected images

4. **Vector Data handling capabilities:**

- Software should read/write/create Shapefile and ArcInfo coverage
- Software should create points, arcs and polygons
- Software should allow to create and enter attribute data
- Software should allow to Cut, copy, paste, and delete features
- Software should have Splining, densifying, and generalization tools
- Software should support Automatic feature extraction using different tracing modes like
  - Rubber band mode
  - Discrete Mode
  - Streaming Mode
- Software should able to digitize and split existing polygons with shared boundaries
- Software should support reshaping an existing feature
- Software should support adding hyperlinks to Microsoft Windows applications or web pages from vector features
- Software should support Subsetting shapefile
- Software should have Unlimited undo levels
- Software should support User-defined symbolization
- Software should support Simple Windows context-based style galleries
- Software should support Node and arc snapping
- Software should support Split and unsplit arcs
- Software should have ability to specify weed and grain tolerance
- Software should support Splining, densifying, and generalization
- Software should support Arc reshaping
- Software should support Drag and drop individual arc vertices or arc segments
- Software should have the ability to reproject vectors to another projection
- Software should support Buffer Analysis
- Software should support thematic raster to vector conversion

5. **Geometric Correction Tools:**
- Software should support automatic geometric correction from valid ephemeris information
- Software should support Manual georeferencing applied to any raster data
  - Affine
  - Polynomial (1st to 10th order)
  - Rubber Sheeting
  - Reprojection
- Software should allow to edit Ground Control Points (GCPs)
- Software should have the ability to select GCP from Map, Image, Vector, Keyboard, Bing Maps or OSM.
- Software should have automatic coordinate conversion capability
- Software should have automatic error reporting capability
- Software should have automatic point prediction capability
- Software should support Nearest Neighbor, Bilinear, or Cubic Convolution resampling methods
- Software should allow for User-defined pixel sizes, geographic subsets, etc.
- Software should support over 1000 projected coordinate systems.
- Software should support over 65 spheroids and 500 datums.
- Software should have the capability for adding more spheroids and datums
- Software should support Vertical datums, including vertical datum transformations
- Software should support for both standard and user-defined projection libraries, allowing thousands of projection systems to be defined
- Software viewer should reproject images on the fly
- Software Mapmaker should reproject images on the fly
- Software should Reproject rasters or vectors including batch processing
- Software should Read/create ESRI world files and projection files (.prj)
- Software should support Multiple CPU support (Multiprocessing)

6. **Orthocorrection : Sensor-based modeling and single-frame:**
   - Software should support Frame camera, Digital camera, ALOS AVNIR Rigorous Orbital model, ALOS PRISM Rigorous Orbital model, ALOS PRISM with RPC, ASTER Rigorous Orbital model, CARTOSAT RPC, CSM (community sensor model) version 3.0.1, DEIMOS RPC, DPPDB, EROS 1A & 1B Rigorous Orbital model, FORMOSAT2 Rigorous Orbital model, GEOEYE-1 Rigorous Orbital model, GEOEYE RPC, IKONOS NITF, IKONOS RPCs, IND High Res RPC, IRS-1C/1D, KOMPSAT RPC, KOMPSAT-III RPC, Landsat TM, MSS, ETM+, MODIS, NITF RPC, ORBIMAGE Rigorous Orbital model, PLEIADES RPC, PLEIADES Rigorous Orbital model, QuickBird RPC, QuickBird/WorldView (including NCDRD format) Rigorous Orbital model, RADARSAT, RAPIDEYE RPC, RESOURCESAT 1 & 2, SPOT 5 Rigorous Orbital model, SPOT Pan, XS, XI, SPOT 6 RPC, SPOT 6 Rigorous Orbital model, TH-01 (TianHui-01) RPC, THEOS1 – Rigorous Orbital model, WorldView1 2 & 3 RPC, ZY-3 RPC
   - Software should be able to ingest external DEM for Orthocorrection

7. **Map Composer Capabilities:**
   - Software should create or access individual custom maps of user-defined size.
   - Software should allow to add multiple data frames containing one or more data layers each
   - Software should automatically generate grid ticks, lines and graticules
   - Software should create Titles, Neat lines, bounding boxes, symbols etc.
   - Software should create Annotation, Logos, North arrows, Scale bars
   - Software should automatically generated legends
   - Software should support user-definable styles
     - Build customized map templates
     - Automatically generate USGS maps at standard scales
     - Automatically generate international map series at any scale
     - Industry-standard printer languages and devices
     - Automatically populate dynamic elements in the map view
     - Automatically provide a map location overview
   - Software should have Customizable template gallery
   - Software should support Industry-standard printer languages and devices
Software should allow to copy and paste into Map frame using Microsoft clipboard (PowerPoint, Word, etc.)

8. **Advanced Mosaicing Tool:**
   - Software should have User interface to manage all aspects of the mosaic process including graphics and image display options
   - Software should support advanced color balancing, dodging and matching capabilities to produce seamless mosaics.
   - Software should allow to Stitch multiple images with:
     - Differing or like resolution (pixel sizes)
     - Differing or like projection systems
     - Geometrically calibrated images
   - Software should support Color balancing
     - Manual or semi-automated
     - Define abnormal areas for exclusion from processing
     - Surface-fitting removes spatially varying illumination effects like Hot spots.
     - Preview color balancing effects
   - Software should support Histogram matching
   - Software should use existing lookup tables (LUTs) to perform color balancing
   - Software should support automatic seamlines / Manual editing of seamlines
   - Software should allow to Preview images, its outlines, overlap areas and seamlines
   - Software should support real-time display of seamline edits
   - Software should display the image names within the footprint for easier identification
   - Software should have full control over the algorithm applied at each image overlap region
   - Software should output into a single file or cut into multiple files based on AOI’s or vector layer.
   - Software should allow to specify output projection cell size and data type
   - Software should support automatic image loading and unloading based on user setting for large product efficiency
   - Software should have multiple options for ordering and sorting imagery
   - Software should support Multiple CPU support (Multiprocessing)

9. **Image Processing and Spatial Analysis Tools:**
   - Software should have Radiometric enhancement tools
     - Rescale data
     - Rapid Atmospheric Correction
     - Noise reduction & Periodic noise removal
     - Landsat 7 reflectance and radiance conversion
     - Destripe Landsat
     - Replace bad lines
• Histogram match
• Histogram equalization
• Topographic normalize

- Software should have Spectral enhancement tools
  • Layer stack
  • Principal component & Inverse principal component
  • Independent component
  • Tasseled cap transformation
  • Decorrelation stretch
  • RGB to IHS
  • IHS to RGB
  • RGBI Shaded Relief
  • Spectral mixer

- Software should have Spatial enhancement tools
  • Resample/reproject
  • Degrade
  • Convolution filters
  • Non-directional edge detection
  • Texture analysis
  • Wallis adaptive filter
  • Crisp
  • Statistical filter
  • Homomorphic filter
  • Morphological operators
  • Focal (neighborhood) analysis
  • Wallis adaptive filter

- Software should support various Resolution merging techniques (Panchromatic & Multispectral)
- Software should have Pan Sharpening Technique for WorldView-2 (8 band data)
- Software should support Fourier analysis
- Software should support topographic analysis like, Slope, Aspect, Shaded relief & Painted relief & Viewshed Analysis
- Software should support Vector to raster and Vice versa

10. **Surface Interpolation / Terrain tools:**
- Software should be should provide an effective means of interpolating a continuous raster surface from discrete input data.
- Software should support multiple input data sources.
- Software should support Interpolation techniques: linear or non-linear rubber sheeting (Delaunay Triangulation)
- Software should allow for User-definable output
- Software should read LAS, ASCII, raster, vector, and breakline data, and output terrain files in various formats
- Software should Split or merge terrain files
- Software should have additional preprocessing options such as terrain point thinning and filtering
- Software should generate contours with options such as smoothing contours

11. **Multispectral Classification Tools:**
- Software should support ISODATA, K Means Classifier methods
- Software should support Fuzzy classification
- Software should support Rule based classification using ancillary information.
- Software should support Classifiers like maximum likelihood, mahalanobis distance, parallel piped, Spectral Angle Mapper, Spectral Correlation Mapper or minimum distance rules
- Software should support Hybrid parametric/non-parametric classification
- Software should allow to create Signature
- Software should allow to Select, evaluate, manipulate and edit signatures
- Software should allow to use User-defined AOI point, ellipse, rectangle, polygon, or polyline objects
- Software should support Sophisticated feature-space signature editing, extraction and evaluation
- Software should support Contingency matrices
- Software should support Separability measures
- Software should allow to use User-specified bands per combination
- Software should support Univariate and covariance statistics
- Software should support Feature space (scattergram) plotting
- Software should support Signature ellipse plotting
- Software should support Image to feature space linking
- Software should support Non-parametric signature extraction
- Software should support Signature merge, delete, and replace
- Software should allow to set layers to use in classification process
- Software should allow Manual editing of parallelepiped limits
- Software should allow to set output class values, colors, probabilities and classification order
- Software should support Post-classification class editing
- Software should support Classification accuracy assessment
- Software should generate Random or user-defined ground truth locations
- Software should automatically generate accuracy reports
- Software should calculate Kappa statistics, error matrices and accuracy totals
- Software should support Sub-pixel Classification
- Software should support Indices (Band Algebra)
  - Vegetation indices (VI, NDVI, TNDVI, MSAVI2, WorldView-specific Indices, etc.)
  - Other indices (iron oxide, clay minerals, ferrous minerals, mineral composite, water/snow/ice, etc.)
- Sensor specific band selection
- Adjust formulas with variables
- Preview results in real time
  - Software should support RGB clustering
  - Software should support Geophysical Processing
    - Horizon Dip
    - Horizon Azimuth
    - Horizon RTS (real time shading)
    - Pseudo Color
  - Software should have Discriminant Function Change (DFC) Detection
  - Software should have Zonal change detection
  - Software should support Image differencing

12. **LIDAR Data processing capabilities:**
  - Software should Visualize, Analyze, and manage your point clouds.
  - Software should allow you to simultaneously view point clouds in 2D,3D
  - Software should support 2D View display and styling
  - Software should View by return and/or classification and/or file
  - Software should support Link 2D and 3D views, clip to 2D extent and follow 2D
  - Software should support 3D terrain offset
  - Software should have the ability to change z-scale and point size
  - Software should allow to Style points by return, classification, elevation, file, RGB, intensity
  - Software should support Standard Profile across and along a defined box
  - Software should have ability to roam the profile along a vector corridor
  - Software should support overall profile of corridor defined by a polyline
  - Software should have ability to measure in Profile and export measurements
  - Software should delete and reclassify selected points in Profile or 2D view with undo/redo
  - Software should measure in 2D View or 3D View
  - Software should have area Operators for editing by selection (Constant Z, Bias)
  - Software should allow to view Point cloud metadata
  - Software should read MrSID compressed LAS
  - Software should have ability to add projection to point cloud
  - Software should support RGB Encoding using ortho image.
  - Software should support Ground Classification using slope and area rules
  - Software should allow subset of LIDAR datasets
  - Software should filter point cloud by classification
  - Software should split and merge point clouds.
  - Software should classify point clouds as bare earth, buildings, or vegetation
  - Software should perform Volumetric ((cut/fill) analysis
  - Software should reproject Point Cloud data
Software should allow to Profile Roam using Existing Vector
Software should support LAS attribute Viewing – Table view & Form view
Software should support Compressed, Fast Point Cloud Display

13. **Raster GIS Analysis Tools:**

- Software should support Object-based graphical tool for the rapid definition of integrated raster and vector data analyses and spatial modeling.
- Software should use graphical flow charts to quickly perform sophisticated GIS analysis.
- Software should combine GIS and image processing functions in the same spatial model.
- Software should combine raster, vector and attribute data in a single model.
- Software should allow to apply a model to new data or a different geographical area at the push of a button.
- Software should make use of python scripting.
- Software should provide real-time preview of output.
- Software should support Cut, copy, and paste objects.
- Software should quickly modify and re-run your model.
- Software should support to run a model directly or generate a script for integration with the main software.
- Software should support different vector operators.
- Software should support Calling Model into Model.
- Software should publish the model as a Web Processing Service (WPS).
- Software should allow to easily create simple User input dialogs and batch jobs.
- Software should have ability of running only parts of the model.
- Software should integrate sub models, external models, and command line executables.
- Software should show execution progress for each model component.
- Software should support error reporting.
- Software should allow Send To Word / PPT / JPEG.
- Software should have Model Operators.
  - Analysis, Bitwise, Boolean, Classification, Color, Conditional, Data Generation, Distance, Enhancement, Flow Control, Focal, Math and Trig, Matrix, Point Cloud, Python, Relational, Size, Stack, Statistical, String, Surface, Vector and Zonal etc.
- Software should switch seamlessly between display modes for preview image.
  - Multispectral
  - Panchromatic
  - Pseudocolor
  - Thematic
  - Relief
- Software should have Integrated Stretch Panel for defining radiometric enhancements.
- Software should support Multiple CPU support (Multiprocessing).

14. **Hyper Spectral Analysis tools:**
- Software should allow the user to access hyperspectral imagery from which they wish to quickly extract material mapping information with the minimum of user interaction.

- Software should support Standard task-based workflows
  - Anomaly Detection
  - Target Detection
  - Material Mapping
  - Material Identification

- Software should support Hyperspectral image preprocessing steps
  - Band wavelength/width specification
  - Bad band identification
  - Spectral subset
  - Spatial subset
  - Atmospheric Adjustment
  - Minimum Noise Fraction

- Software should have Spectral libraries provided
  - ASTER
  - JPL
  - USGS
  - Import new versions of the above libraries
  - Import SITAC libraries
  - Import SPECMIN libraries

- Software should include Spectral Analysis Workstation
  - Multi-pane workspace providing access to all the tools, functionalities and viewers for interactively analyze hyperspectral imagery, spectral signatures and other data displays
  - Three geospatially-linked views (main view, an overview view of the whole image extent and a zoom view showing magnified detail of a specific location)
  - Embedded Spectral Plot tools - Embedded Spectral Libraries - Drag and drop interaction between image pixels, plots and libraries
  - Access to all preprocessing and task processes

- Software should support Spectral Analysis Methodologies
  - Orthogonal Subspace Projection (OSP)
  - Spectral Angle Mapper (SAM)
  - Spectral Correlation Mapper (SCM)
  - Constrained Energy Minimization (CEM)

- Software should support Bow & Tie correction.

15. **Google Earth Integration:**
- Software should have a Google Earth tab within the interface if Google Earth is detected on the computer.
- Software should be able to match the Google Earth view through 2D / 3D viewer and even synchronize the views.
- Software should Link and operate Google earth from viewer
- Software should be able to export image footprints and annotation layers from viewer to KML files.
- Software should be able to export vector layers from viewer to KML files.

16. **Parallel Batch Processing capabilities:**
   - Software should support Serial process capabilities, parallel processing capability - such as re-projection, compression, or image enhancement functions etc.
   - Software should support Serial / parallel processes to run simultaneously for each Image Processing software license. Multiple floating licenses of Image Processing software may be accessed to go far beyond four parallel processes.
   - Software should support distributed processing (like Condor) where Batch processing is supported

17. **Floating licensing advantages:**
   - Software should be able to Float Licenses on to other machines on the network.
   - Software should be able to Float Individual software modules.

18. **Ease of Use:**
   - Software should be completely a GUI software i.e. no Command mode
   - Software GUI should be an Integrated Ribbon Interface and highly User friendly Interface.
   - Software should have common tools used throughout the suite
   - Software should have Context-sensitive, Hypertext-linked On-Line Help

**Add-ons-Specifications**

19. **Terrain Visualization and fly-through:**
   - Software should have 3D raster draping option
   - Software should drape Aerial photography, satellite imagery, scanned maps and thematic images
   - Software should support 3D vector drape using Arc info Coverages.
   - Software should navigate the scene using mouse controls or user-defined
   - Software should have the ability to create flight paths, create 3D movies, or “fly” automatically to a selected database feature
   - Software should have the capabilities to add annotation, vector GIS layers, symbols, billboards, and texture mapped 3D objects to create realistic views of the study area.
   - Software should create buildings by extending ArcInfo coverages or annotation in the “Z” direction using a user selected attribute as the height.
   - Software should support Preprocesses data layers for faster, smoother fly-through and scene manipulation
   - Software should perform intervisibility calculations
- Software should create 3D movies for presentations
- Software should overlay and control the opacity of multiple raster, vector, and annotation layers
- Software should query geographic location and pixel categories/values while moving the cursor across the 3D environment
- Software should query attributes for vector data rendered as 3D objects
- Software should modify styling for vector points, lines, or polygons rendered as 3D objects
- Software should display annotation text and symbols as “billboards”
- Software should support Interactive 3D stereo display mode
- Software should support sky background and atmospheric fog options
- Software should support sun position and lens flare simulation
- Software should support simulate night-time and night-vision device environments
- Software should Import realistic 3D models (e.g., 3D DXF, MultiGen OpenFlight, etc.)
- Software should create flight paths to 3D models.
- Software should support placing specified models in polygons randomly
- Software should support simulate fog / mist / smog or cloud layer
- Software should support adding water layers(s) to the scene

20. **Automatic Synchronization/Rectification Tools**
- Software should support automatic geo-referencing and edge-matching and ortho-rectification.
- Software should also support wizard based GUI
- Software should have embedded viewers and tools in the workstation provide rapid review of results.
- Software should support should support multi sensor, multi resolution data.
- Software should accept multiple input data for Geo-referencing in a single project.
- Software should generate automatic points between input image(s) and reference image.
- Software should support edge matching method, where automatically points should be generated in the overlap region to pull misaligned features into alignment.
- Software should support automatically open the referenced image and the output file in a viewer, where user can use the swipe/blend/flicker to check the matching / alignment.

21. **Advanced Change detection Functionalities:**
- Software should use project-based workflows to manage
  - Pre-processing
  - Change detection
  - Change filtering
  - Change results viewing & interpretation
- Software should incorporate multiple change detection algorithms
  - Magnitude
  - Tasseled Cap
  - Primary Color (RGB)
• Single Band
• Band Slope

Software should incorporate Change thresholding
• Interactive change threshold tool
  ▪ Provides you with a more intuitive and dynamic way to set critical change thresholds
• Automatic percent change threshold tool
  ▪ Allows rapid, repeatable automatic processing

Software should allow you to filter change results based on specific spatial and spectral characteristics, including
• Spectral class
• Material type
• Area of change
• Shape of change

Software should provide mis-registration filter to minimize the effect of false alarms due to poorly co-registered image pairs

Software should automatically crops analysis down to just the area in common to the image pair

Software should able to perform image to image radiometric normalization with accommodation for the effect of clouds and cloud shadow

Software should have Geo-linked windows that pan and zoom together with automatic synchronization

Software should ability to overlay the change results on top of original imagery

Software should have change magnifier tool that allows rapid investigation of before and after areas

Software should have flicker and swipe tools available off the toolbar

Software should have Contrast and Brightness enhancements tools easily applied to all image layers

Software should have Interactive spectral segmentation tool that allows for removal of spectral classes not of interest across entire image

Software should be able to export the change detection results to shapefile format

Software should have customized display for the interpretation and monitoring of subtle changes of specific sites

22. **Collection, Interpretation and Visualization of 3D GIS information from stereo imagery:**

• Software should collect true, real-world 3D GIS data from triangulated/RPC’s based Stereo Imagery
• Software should have time-saving, semi-automated feature collection tools for collecting roads, buildings and parcels
• Software should collect 3D information from any type of camera, including aerial, digital, and video
• Software should collect and store 3D GIS data as 3D Shapefiles with Attributes.
• Software should have the options to automatically collect attribute information like length, area, perimeter during 3D data capture.
• Software should support verifying the accuracy of existing GIS vectors and digital stereo models
• Software should have the ability to directly output and immediately use 3D Shapefiles in Image Processing / Remote Sensing & GIS Products
• Software should support viewing 3D GIS in stereo and in a 3D perspective window simultaneously
• Software should OpenGL and stereo-in-a-window technology
• Software should various 3D digitizing devices.
• Software should anaglyph stereo and hardware stereo (i.e., stereo emitter, glasses, and stereo graphics card)
• Software should have the ability to adjust band combinations for color and multi-spectral stereo imagery
• Software should support user preferences and options & can be set per user and remembered during work sessions
• Software should support options like continuous zooming, automatic panning, Image roaming, fixed cursor mode, automated terrain following cursor.
• Software should support satellite sensors like Worldview, IKONOS, SPOT, and Cartosat etc...
• Software should adjust the color, size, and shape of the 3D floating mark
• Software should be able to do measurements in 3D stereo environment.
• Software should have the options to Convert 2D Shapefiles to 3D Shapefiles & Viceversa
• Software should Import and export existing GIS datasets using the flexible ASCII import capabilities
Annexure 6: Instrument Details for Census of Trees

The details of the instruments to be deployed for undertaking the census of trees.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Instrument</th>
<th>Serial No. of the Instrument</th>
<th>Number of Instrument deployed for Survey (Nos.)</th>
<th>Is calibration Certificate for geodetic instruments enclosed (Yes/No)*</th>
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* Note: Kindly enclose the copy of the calibration certificate for each of the geodetic instruments for evaluation, failing which the proposal shall be considered as non-responsive.
Volume 2 – AGREEMENT

November 2016
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The Agreement is mutually agreed and entered into on this ____ day of ____ (month), Two thousand and _____ at Pimpri.

BETWEEN

Pimpri Chinchwad Municipal Corporation (hereinafter referred as “Corporation”), having its principal office at Pimpri Chinchwad Municipal Corporation main building, Pune Mumbai Road, Pimpri - 411018 and represented by Shri ____________________, the Additional Commissioner, Pimpri Chinchwad Municipal Corporation for the city of Pimpri Chinchwad Municipal Corporation (hereinafter called the “Additional Commissioner” in which expression are included unless such inclusion is inconsistent with the context, his successor or successors for the time being holding the office of the Additional Commissioner and in view of the powers delegated to the Additional Commissioner by the Commissioner vide his Order no. _______ dated __________, of ONE PART,

AND

____________, a company\(^1\) incorporated under provisions of the (Indian) Companies Act, 2013 or a trust registered under the Act, having its Registered office at __________, hereinafter referred to as “Concessionaire” which expression shall unless repugnant to the context include its successors and permitted assigns, OF THE OTHER PART.

\(^1\) In case of a Consortium, the Lead member would be required to sign the Agreement.
WHEREAS


2. The Authority intends to manage and implement the GIS bases tree census management system for managing the tree permissions and monitoring of tree cover in the city (the “Project”).

3. In that context, PCMC is desirous of appointing the agency for undertaking the scope of work highlighted in the Clause 2.1

4. For this purpose, PCMC had invited competitive proposals from eligible Bidders for implementing the Project and in response thereto received proposals from several Bidders including the Concessionaire for implementing the Project.

5. PCMC, after evaluating the aforesaid Proposals accepted the Proposal submitted by the Concessionaire M/s________________ and issued Letter of Award vide letter No,___________ dated ________ to the Concessionaire for implementing the Project.

6. The Parties hereto are required to enter into the Agreement being these presents to record the terms, conditions and covenants of the Agreement.

NOW THIS AGREEMENT witness as follows:

1 Definitions and Interpretation

1.1 Definitions

1. **Affected Party**: shall mean the party claiming to be affected by a Force Majeure event in accordance with clause 11.

2. **Agreement**: shall mean this Agreement and including schedules hereto.

3. **Applicable Law**: shall mean all laws in force and effect as of date hereof and which may be publicized or brought into force and effect hereinafter in India including judgements, decrees, injunctions, writs or orders of any court of record, as may be in force and effect during the subsistence of this Agreement and applicable to the Project/Concessionaire.

4. **Applicable permits**: shall mean all clearances, permits, authorizations, consents and approvals required to be obtained or maintained by the Concessionaire under applicable law, in connection with the Project during the subsistence of this Agreement.

5. **Arbitration Act**: shall mean the Arbitration and Conciliation Act, 1996 and shall include any amendment to or any re-enactment thereof as in force from time to time.

6. **Authority**: Means any agency, legislative, judicial or executive authority, public or statutory person, whether autonomous or not, of the GoI (Government of India) or GoM (Government of Maharashtra) or any local authority including the PCMC, its division or any other sub-division or instrumentality or any thereof.

7. **Commencement Date**: shall mean the date of signing of this Agreement.

8. **COD**: shall mean the Commercial Operations Date of the Project which shall be the date on which the work order is issued.
9. **Commissioning Period:** shall mean the period from the Commencement Date and ending on the COD.

10. **Consortium:** shall mean the consortium consisting of <<enter consortium partner's/partners' name>> forming/acting pursuant to the Joint Deed Agreement dated <<enter the date of JDA of Consortium>> entered into by them, for the purpose of submitting their proposal for undertaking the Project.

11. **DIT:** shall mean Department of Information & Technology of Pimpri Chinchwad Municipal Corporation.

12. **Emergency:** shall mean a condition or situation that is likely to endanger the safety of the individuals on or about the project or which poses an immediate threat of material damage to any of the project facilities.

13. **Encumbrance:** shall mean any encumbrance such as mortgage, charge, pledge, lien, hypothecation, security interest, assignment, privilege or priority of any kind having the effect of security or other such obligations and shall include without limitation any designation of loss payees or beneficiaries or any similar arrangement under any insurance policy pertaining to the project, claims for any amounts due on account of taxes, cesses, electricity, water and other utility charges.

14. **Good Industry Practice:** shall mean the exercise of that degree of skill, diligence, prudence and foresight in compliance with the undertakings and obligations as under this Agreement, which would reasonably and ordinarily be expected of a skilled and an experienced person engaged in the implementation, operation and maintenance or supervision or monitoring thereof, of any of them of a project similar to that of the project.

15. **Government Agency:** shall mean Government of India (GoI), Government of Maharashtra (GoM), Pimpri Chinchwad Municipal Corporation or any other state government or central government department, commission, board, body, bureau, agency, authority, instrumentality, court or other judicial or administrative body, central, state or local, having jurisdiction over the Concessionaire, or the performance of all or any of the services or obligations of the Concessionaire under or pursuant to this Agreement.

16. **Lead Member:** In case the Concessionaire is a Bidding Consortium, the Lead Member (LM) shall be that Consortium Member vested with the prime responsibility of undertaking the Project. The Lead Member shall necessarily make the maximum equity contribution in the Joint Venture, and this equity contribution shall not be less than 51%.

17. **Letter of Award:** shall mean the letter issued by PCMC to the successful bidder.

18. **Material Adverse Effect:** shall mean a material adverse effect on

   i. The ability of the Concessionaire to exercise any of its rights to perform/discharge any of its duties/obligations under and in accordance with the provisions of this Agreement and/or

   ii. The legality-validity, binding nature or enforceability of this Agreement
19. **Material Breach**: shall mean a breach by either party of any of its obligations under this Agreement, which has or is likely to have a material adverse effect on the project and which such party shall have failed to cure.

20. **Operation Fee**: shall mean the amount quoted by the Bidder in the Commercial Proposal for the Operation Period after Commercial Operation Date (COD) for the purpose of undertaking the scope of work in Clause 2.1 of RFP. The **Operation Fee** shall be inclusive of all taxes and duties including the service tax.

21. **Concessionaire**: means _____________________________, a company/trust/society having its registered office in ______ who has been appointed as “Concessionaire” by Pimpri Chinchwad Municipal Corporation for the Project, includes the Concessionaire’s personnel, representatives, successors and permitted assignees.

22. **Parties**: means the parties to the Agreement and “party” means one of them, as the context may admit or require.

23. **Performance Security**: means the deposit provided by the Concessionaire as a guarantee for the performance of its obligations and is in accordance with clause 6.1.1.

24. **Performance Parameters**: shall mean the parameters as set forth in 8.1

25. **Person**: means (unless otherwise specified or required by the context), any individual, company, corporation, partnership, joint venture, unincorporated organisation, government or government agency or any other legal entity.

26. **Project**: shall mean undertaking census of trees; development & deployment of mobile and web based census application, providing GIS platform and bear all costs associated with the above listed activities during the Operation Period.

27. **Project Company/Joint Venture**: means a company/consortium implementing this Project. In case the Concessionaire is a Bidding Consortium, the Lead member and the Technical Member shall hold an equity stake of not less than 51% and 26% respectively in the Project Company/Joint Venture.

28. **Project Officer**: shall mean a dedicated team of PCMC officials comprising respective officials of the Zone for the Project Area, who will be headed by the head of the department of Garden who are competent to act as Project Officer for supervision and monitoring of compliance, more particularly to undertake, perform, carry out the duties, responsibilities, services and activities set forth in the work specifications.

29. **Project Area** shall mean all the areas within the jurisdiction of PCMC

30. **Project Facilities**: shall mean the office space, furniture, computers, electricity connection and any other facility/assets provided by PCMC for operation and maintenance of the Project.

31. **Sub-Contractor**: shall mean any person with whom the Concessionaire has entered into/may enter into any material contract for this project.

32. **Tax**: shall mean and include all taxes, fees, cesses, levies that may be payable by the Concessionaire under the Applicable Law.
33. **Technical Member:** In case the Concessionaire is a Bidding Consortium, the Technical Member would be the Consortium Member who has been evaluated for Technical Capability and who would make an equity contribution of at least 26% in the Project Company.

34. **Termination:** shall mean the early termination of this Agreement pursuant to termination notice or otherwise in accordance with the provisions of this Agreement.

35. **Termination Date:** shall mean the date specified on the termination notice as the date on which the termination occurs.

36. **Termination Notice:** shall mean the notice of intended termination by the party entitled to terminate this Agreement to the other party setting out, inter alia, the underlying event of default.

### 1.2 Interpretations

In this Agreement, unless the context otherwise requires

1. Any reference to a statutory provision shall include such provision as is from time to time modified or re-enacted or consolidated so far as such modification or re-enactment or consolidation applies to, or is capable of being applied to any transaction entered into herein under;

2. References to Applicable Laws shall include the laws, acts, ordinances, rules, regulations, notifications, guidelines or bylaws which have the force of law;

3. The words importing singular shall include plural and vice versa, and words denoting natural persons shall include partnerships, firms, companies, corporations, joint ventures, associations, organisations or other entities (whether or not having a separate legal entity);

4. The headings are for convenience of reference only and shall not be used in, and shall not affect, the construction or interpretation of this Agreement;

5. The words “include” and “including” are to be construed without limitation;

6. Any reference to day, month or year shall mean a reference to a Gregorian calendar day, calendar month or calendar year respectively;

7. The schedules to this Agreement form an integral part of this Agreement as though they were expressly set out in the body of this Agreement;

8. Any reference at any time to any Agreement, deed, instrument, license or document of any description shall be construed as reference to that Agreement, deed, instrument, license or other document as amended, varied, supplemented, modified or suspended at the time of such reference;

9. Reference to recitals, clause(s), sub-clause(s), or schedule(s) in this Agreement shall, except where the context otherwise requires, be deemed to be references to recitals, clause(s), sub-clause(s), and schedule(s) of or to this Agreement;

10. Any Agreement, consent, approval, authorisation, notice, communication, information or report required under or pursuant to this Agreement from or by any other party or by Project Officer shall be valid and effectual only if it is in writing under the hands of duly authorised representative of such party or Project Officer in his behalf and not otherwise;
11. Any reference to any period commencing “from” a specified day or date and “till” or “until” a specified day or date shall include both such days and dates.

2 The Agreement

2.1 Project Scope

2.1.1 The scope of the Project includes the following:

The Project shall include adhering to the procedure for census of trees; providing equipment’s and manpower for undertaking the census of trees; procuring and supplying GIS platform; developing software application for management of trees and maintaining the system for the next 5 years.

The scope of work includes the following.

1. Procedure for Census of trees: The Concessionaire shall adhere to the following procedure for the census of trees.

   a. The concessionaire shall supply the GIS platform with Comprehensive Maintenance Contract (CMC) contract of 5 years as per clause 2.1.1(2).

   b. The concessionaire shall develop the mobile and web based application and receive the Application Readiness Certificate from DIT Department of PCMC.

   c. Geo-referencing the electoral ward boundaries/ tree zone and Zone boundaries of PCMC using DGPS and ETS.

   d. Undertake census of trees of ward no. 27 (Morewadi) and display the information on the GIS platform and web based application. Obtain Application Implementation Certificate from DIT department of PCMC.

   e. The Concessionaire shall deploy the following equipment’s for undertaking the census of trees.

      i. Android based mobile device & handheld printer – The device shall be used for census of trees for capturing tree photograph, generate unique code, capturing other details like tree girth, feeding latitude and longitude information and print unique code of tree and affix it on the tree.

      ii. The minimum specification of android based mobile devices to be used during the tree census survey are – Moto G – 4th Generation having specification camera: 13 MP; Android: 6.0.1; Processor: 1.5 GHz; Ram: 2GB; Internal Memory: 16 GB; and Battery: 3000 mAH with turbo power charging.

      iii. Distometer – The device shall be used for capturing the height of the trees. The specifications of the distometer to be used for the census of trees are - ISO 16331-1 certified measuring accuracy: ± 1 mm; Range: up to 150 m; Measuring units: m, ft, in; X-Range Power Technology: Yes; Distance in m: 10, 50, 100 m; of the laser dot in mm: 6, 30, 60 mm; Point finder with 4x zoom: Yes; Memory: 30 displays; Measurements per set of batteries: up to
5000; Multifunctional end-piece: automatic recognition; and Protection class: IP65 – water jet protection and dust-tight.

iv. Differential Global Positioning System (DGPS) instrument – The device shall be used for demarcating the ground points (one ground point per Sq. Km area).

v. Electronic Total Station (ETS) instrument - The device shall be used for capturing the locational details (latitude and longitude) of ward boundaries.

f. The web based and mobile based applications shall seamlessly capture data from the field instruments and publish on the GIS server using the GIS desktop software.

g. For the web based application, a digital library (database) of indigenous trees shall be created. The digital library shall contain tree details like common name, botanical name, flowering season, flower photo, fruit photo, native/exotic, tree photo, carbon sequestration rate and tree use.

h. The Concessionaire shall deploy two plant taxonomist/ botanist/ horticulturist for verification of field census data captured using mobile devices using the web based application for creating the census of trees report as per format required under Maharashtra (Urban Areas) Protection and Preservation of Trees Act 1975 and the Maharashtra (Urban Areas) Protection and Preservation of Trees Rules 2009.

i. All the geodetic devices used for census of trees shall have a valid calibration certificate, failing which it shall not be used for the census of trees.

j. The census of the trees shall be done using electronic devices only i.e mobile handheld devices and distometer. No manual or paper based field survey & data capturing is permitted.

2. **Procure and Supply the GIS Platform:** The concessionaire shall procure, supply, maintain and manage for 5 years from the date of obtaining Application Implementation Certificate from DIT department of PCMC, the GIS platform for PCMC which include the following activities.

a. Procure, Supply and deploy to DIT department, GIS + Image server Application license i.e Intergraph Geo Spatial Server or ArcGIS for Server only with unrestricted user license with 5 years maintenance & upgradation contract in the name of PCMC. Also procure, supply and organise by OEM at PCMC, 5 days, 100 user training (field & classroom) at PCMC in batch of 10 persons along with refresher training of 5 days to the 100 users in batch of 10 persons. The technical specification of the GIS + Image Server Application license is enclosed as Annexure 2. The server Original Equipment Manufacturer (OEM) shall provide certification for the training given to PCMC and will also be required to authenticate the complete GIS system implementation at each iteration of development & implementation during the 5 years.

b. Procure, supply, install and deploy GIS server hardware for the GIS + Image server software application. The technical specification of the server hardware is enclosed as Annexure 3. The GIS server hardware specification is for 36 core server. The GIS +
Image server Application license i.e Intergraph Geo Spatial Server or ArcGIS for Server only with unrestricted user license specified in clause 2.1.1 (2a) above shall be core independent or minimum 12 core (3 license).

c. Procure, Supply and deploy to DIT department, 05 concurrent user license (shareable across multiple desktop computers) of Desktop GIS i.e Geo Media with Transportation Manager and 3D extensions or ArcGIS for Desktop with Network Analyst and 3D extension with 5 years maintenance and upgradation contract in the name of PCMC. Also procure and supply and organize by OEM 5 days, 100 user training (field & classroom) at PCMC in batch of 10 persons along with refresher training of 5 days to the 100 users in batch of 10 persons. The Desktop GIS Original Equipment Manufacturer (OEM) shall provide certification for the training given to PCMC. The technical specification of the Desktop GIS application is enclosed as Annexure 4.

d. The GIS + Image server software and the Desktop GIS software product supplied under this Project shall be of the same Original Equipment Manufacturer (OEM).

e. Procure, Supply & deploy to DIT department, single user license of satellite image processing software of ERDAS Imagine with extension pack with 5 years maintenance and upgradation contract in the name of PCMC. Also procure, supply and organize by OEM at PCMC the 5 days, 50 user training (field & classroom) at PCMC in batch of 10 persons along with refresher training of 5 days to the 50 users in batch of 10 persons. The ERDAS Imagine Original Equipment Manufacturer (OEM) shall provide certification for the training given to PCMC. The technical specification of the image processing is enclosed as Annexure 5.

f. Procure and supply forty one (41) number of Moto G – 4th Generation mobile device with 3G data connectivity of 4 GB data service per month, for a period of 60 months, for operating the mobile application and validating the survey. The minimum specification of the device are – camera: 13 MP; Android: 6.0.1; Processor: 1.5 GHz; Ram: 2GB; Internal Memory: 16 GB; Battery: 3000 mAH with turbo power charging; and power charger.

g. Procure, supply and maintain five distometer for audit of tree census work. The specification of the distometer is – ISO 16331-1 certified measuring accuracy: ± 1 mm; Range: up to 150 m; Measuring units: m, ft, in; X-Range Power Technology: Yes; Distance in m: 10, 50, 100 m; of the laser dot in mm: 6, 30, 60 mm; Point finder with 4x zoom: Yes; Memory: 30 displays; Measurements per set of batteries: up to 5000; Multifunctional end-piece: automatic recognition; and Protection class: IP65 – water jet protection and dust-tight. Also procure and supply 2 days, 50 user training (field & classroom) at PCMC in batch of 10 persons along with refresher training of 2 days to the 50 users in batch of 10 persons.

3. Development Stage: Developing android based mobile application and web based application for the management of processes of Tree Authority of PCMC: The following activities are included in the scope of application development.
a. Undertake Business Process Reengineering (BPR) of the various processes and service of the Tree Authority of PCMC. Develop GIS system oriented process and system for managing the funds, permissions, services monitoring and inspection of work.

b. Create satellite image based change detection system using the image processing software supplied to detect the increase or decrease in tree count/tree cover in the city.

c. Undertake Ortho-rectification of the satellite image provided by PCMC using photogrammetry software every 6 months. The Concessionaire shall undertake DGPS ground point survey for creation of Digital Elevation Model for ortho-rectification.

d. Development of Mobile Application: The mobile application for census of trees shall have the following functionality.

   i. Able to capture data in both online and offline connectivity mode.

   ii. Able to authenticate the surveyor/user whenever he login’s to the application.

   iii. Automate the capture and transfer of all the field reading from all the field devices to the GIS server.

   iv. Automate the capture and transfer on GIS server the latitude and longitude from the digital total station.

   v. Generate unique ID for each surveyed tree. The generated code number shall have reference of zone & ward no.

   vi. The application shall be compatible with handheld printers to print the unique ID on ground during the survey for attaching the sticker on each census tree and then capture the photograph of the tree.

   vii. Able to capture all tree related details for preparing the Census Information Format I & II.

   viii. Should be compatible with Android 6.0.1

   ix. Able to capture the photo of the tree, access existing census data from server, access PCMC satellite image from server or google map etc. on the handheld mobile devices.

   x. The system requirement specification (SRS) for the mobile application shall be finalized by the DIT department of PCMC.

   e. **Develop web based GIS application:** The web based application for tree management shall have the following functionality.
i. Map the tree on the satellite image of PCMC with the description of the tree like tree local name, scientific name, latitude, longitude, tree height, width and photo.

ii. Create digital library of trees details and its statistics in the city with photographs (of tree, its flower and leaves) for the plant taxonomist/botanist/horticulturist to verify the tree census data from centralized office location.

iii. Create audit and validation process using tree photograph, unique ID and latitude and longitude generated from the devices.

iv. Create census data confirmation and validation process for DIT and Garden Department of PCMC.

v. Ability to edit the information regarding the existing trees.

vi. Ability to export tree list as .kml and .csv files.

vii. Automatically calculate ecosystem benefits (greenhouse gases and air quality) based on tree’s species and diameter.

viii. Audit trail for all modifications through login in the system.

ix. The application shall track and display the user/surveyor travel path (route), his distance covered etc.

x. Editing the tree layer for adding/deleting/modifying the locations and the attributes.

xi. View and query the tree data and retrieve results as combinations of graphical plots, textual reports, maps, images etc. as applicable.

xii. Administration module for users and right creation on the tree layer.

xiii. GIS Layers Management: The Enterprise wide application shall have the following features.

- Switching On/Off of layers.
- Attribute viewer
- Query Panel
- Predefined Query
- Map Contents
- Navigation of Map
- Buffer for Proximity Analysis
Selection of Agency for undertaking census of tree and development of application for tree management using GIS Platform

- OGC compliant map service

xiv. Develop seamless process of capturing the tree survey data with photograph and locational details (latitude and longitude) with time stamp and porting the same on the PCMC’s GIS server without modification through human intervention.

xv. Develop seamless process for tree cutting permissions; site inspection; tree authority NoC for building permission; tree authority NoC for flex structures; inspection of illegal tree cutting notification & documentation; funds collection and refund.

xvi. Develop integration with Building permission application management system (BPAMS), Central Accounting Application and Sky Sign & Licenses Permission application of PCMC.

xvii. The application shall able to generate various reports ward wise, zone wise, tree wise etc. as per the requirement of the Garden Superintendent.

xviii. The application should be able to generate tree cover analysis, carbon sequestration in Kg/Ha., carbon assimilation rate using remote sensing and GIS tools for city area every year.

xix. The system requirement specification (SRS) for the mobile application shall be finalized by the DIT department of PCMC.

xx. The complete software development life cycle for the development of the application shall be followed from creating SRS, Sign Off, Development and Customisation, Integration, Internal Testing and User Acceptance Testing.

f. The development period for mobile and web based application shall be 6 months (1 month SRS + 4 month development + 1 month testing) from the date of work order.

g. The software architecture of the web based application shall be in latest open source platform – Front End: Java and Database: Postgresql.

h. Prepare the User Acceptance Testing criteria document, take sample data for UAT and take approval of the Garden Deptt. of PCMC.

i. System Documents and User Documents shall follow the ITIL (Information Technology Infrastructure Library) standards. This documentation should be submitted as the project undergoes various stages of implementation and the Concessionaire shall upkeep all manuals and documents during the tenure of the contract. Indicative list of documents include.

i. Project Commencement Documentation: Project Plan detailing the activities with milestones & timelines.

ii. User Manuals: As required for operationalization of the system.
iii. System Manual: Covering detailed information required for the administration of the portal.


4. Operation, Maintenance and Management of GIS platform, mobile and web application for a period of 5 years from obtaining Application Implementation Certificate from DIT department of PCMC: The following activities shall be covered during the operation, maintenance and management period.

a. The Concessionaire shall submit the detailed project implementation plan to the Project Officer.

b. Census shall be undertaken for trees whose trunk or stem is having a minimum girth of ten (10) centimeter and height of three (3) meter above ground level.

c. The Census of trees must be a head count of all the existing trees upon the 177 sq. km jurisdiction of PCMC which exclude the defence establishment.

d. The tree which is included in the head count shall be marked with the typical symbolic mark (for visual identification during audit) so as to indicate that the survey is carried on site.

e. Prepare municipal wards wise Project plan for undertaking census of trees. Undertake pilot survey of ward no. 27 (Morewadi) to validate the functionality of mobile and web based application and setup process for validation of surveyed data.

f. The Tree Census Report shall provide the plantation requirement to meet the norms of section 7(h) and section 7(c) of the Maharashtra (Urban Areas) Protection and Preservation of trees Act, 1975.

g. The team of professionals for the Project shall undertake the tasks and provide there time (input) as detailed below.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Designation</th>
<th>No. of Posts</th>
<th>Nature of Work</th>
<th>Minimum Time Period on the Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Team Leader</td>
<td>1</td>
<td>• Preparation of Project Implementation Plan.</td>
<td>12 Man Month</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Ensure submission of timely deliverables &amp; updating Project Officer on Project Progress.</td>
<td></td>
</tr>
<tr>
<td>Sr. No.</td>
<td>Designation</td>
<td>No. of Posts</td>
<td>Nature of Work</td>
<td>Minimum Time Period on the Project</td>
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</tr>
<tr>
<td>2</td>
<td>Landscape Architect</td>
<td>1</td>
<td>Prepare design for Urban Forestry Street.</td>
<td>12 Man Month</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Prepare Urban Forestry Master Plan, and Detailed Project Report on Urban Forestry for PCMC for submission to Urban Development Department, GoM under AMRUT, recommending locations in the city and quantity and type of plantation (Schedule E).</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Prepare estimation for the implementation of Urban Forestry Master Plan</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Software Development Expert</td>
<td>1</td>
<td>Interacting with Users on SRS and UAT</td>
<td>0.5 Man Month</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Assistance in Testing of Software.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>GIS Expert</td>
<td>1</td>
<td>Developing GIS queries and Data management.</td>
<td>0.5 Man Month</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Creating GIS Analysis Reports</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Plant Taxonomist / Botanist/ Horticulturist</td>
<td>2</td>
<td>Authenticating field Tree Census data.</td>
<td>24 Man Months</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Preparation of tree census report.</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>On Site Operator</td>
<td>2</td>
<td>Handholding Support for managing and operating and updating the new GIS Software</td>
<td>60 Man Month</td>
</tr>
</tbody>
</table>
Selection of Agency for undertaking census of tree and development of application for tree management using GIS Platform

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Designation</th>
<th>No. of Posts</th>
<th>Nature of Work</th>
<th>Minimum Time Period on the Project</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td>for Tree Authority of PCMC.</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>• Undertake training of Municipal Staff on the usage of new system</td>
<td></td>
</tr>
</tbody>
</table>

h. Every 6 months, PCMC is expected to provide the satellite image of the city. The concessionaire shall using the change detection system (using ERDAS Imagine software) identify the new trees or trees that are cut from the previous satellite image. The Concessionaire shall through field visit update the web based system database regarding the newly identified trees or reduced trees.

i. Develop new GIS queries for creating data maps and reports for analysis by the municipal staff.

j. **Geo-referencing of Ward Boundaries/ census boundaries on the satellite image of PCMC:** This shall include the following activities.

1. Using calibrated DGPS create one (1) ground point per square kilometer area of PCMC. The ground point shall be established on permanent ground structure. For each ground point also capture three reference points on the permanent structure to trace the ground point.

2. Using the DGPS ground point undertake calibrated Electronic Total Station (ETS) based survey and demarcate the existing ward boundaries and derive the locational details (latitude and longitude) of the census trees.

3. For ETS ensure the traverse closure every 5km.

k. Hosting the web based application on the GIS server supplied.

l. Provide complete online and onsite support for the web based GIS application, mobile application, GIS server software, GIS Desktop software and hardware equipment’s supplied in the Project.

m. Setup centralized team of plant taxonomist/ botanist/ horticulturist (2 Nos) to verify and validate from the tree photographs, the tree species and related details during the census of trees.

n. Organize & provide training of one day to minimum 100 PCMC staff in batch of 20 regarding mobile, web based application and disto-meter twice every year.
o. Provide data and network connectivity in all electronic devices supplied & deployed for census of trees under this Project for data communication with the server and bear the cost of data connectivity of all field devices.

p. Shall undertake assessment of locations during the survey to identify the new plantation zones/areas and provide recommendation on the number of plantation and type of plantation to improve the carbon sequestration in Kg/ha.

q. Provide dedicated manpower of two persons on site within 7 days from obtaining the Application Implementation Certificate from DIT department of PCMC. The persons will provide daily handholding support to operate, manage and train the PCMC staff in the newly developed system. The handholding support will be for a period of 60 months from the date of issue of Application Implementation Certificate by the DIT department of PCMC.

r. The two member onsite team is expected to manage the operations and train the municipal staff in the newly developed system, equipment’s and licensed software’s.

s. The selected Concessionaire shall maintain the mobile app, web based application, server hardware, GIS + Image Server Application and GIS desktop Application for 5 years from the date of issue of Application Implementation Certificate from DIT department of PCMC. The Concessionaire shall provide the comprehensive warranty for all hardware, software components both on field and off-field support during the maintenance period.

t. Handback the application code to DIT Department of PCMC after undertaking software testing from CERT empaneled consultant or STQC first time at the time of issue of Application Implementation Certificate and 2nd or last time at the end of the contract period.

u. The precision & accuracy of the survey shall be verified by deploying the 3rd Party Independent Auditor by PCMC. 2% of the accepted Commercial proposal value shall be used by PCMC for the services of the 3rd Party Independent Auditor.

v. Bear all cost, expenses and charges for instruments, development, operation, implementation & maintenance of scope of work.

2.2 Commencement Date

The Commencement Date shall be the date of signing of this Agreement.

2.3 Grant of Right

Subject to and in accordance with the terms and conditions and covenants set forth in this Agreement, PCMC hereby grants and authorises the Concessionaire to undertake the scope of work and to exercise and/or enjoy the rights, powers, benefits, privileges, authorisations and entitlements as set forth in this Agreement.
2.4 Acceptance of Agreement

In consideration of the rights, privileges and benefits conferred upon the Concessionaire, and other good and valuable consideration expressed herein, the Concessionaire hereby accepts the Agreement and agrees and undertakes to perform/discharge all of its obligations in accordance with the provisions hereof.

2.5 Start of Operations

The Concessionaire shall commence the operation in the entire Project area within 15 (fifteen) days from the COD, subject to the satisfaction or waiver of the Conditions Precedent contained in this Agreement.

2.6 Operation Period

2.6.1 The Operation Period will be for a period of 60 (sixty) months from the Commercial Operations Date or the date of issue of Application Implementation Certificate, whichever is later.

2.7 Extension of Operation Period

The Operation Period may be extended at the existing agreement rate for a period of maximum 12 (twelve) months for successful handback of the Project.

2.8 Exclusivity of the Agreement

The Concessionaire shall be the sole and exclusive person entitled to undertake the Project in the Project Area in line with the scope of work assigned to the Concessionaire in this Agreement and PCMC agrees that no agreement or arrangement permitting such activities by any other party shall be entered into by PCMC during the Operation Period.

3 Conditions Precedent

3.1 Responsibilities of the Concessionaire

The Concessionaire shall fulfill the following conditions precedent within 30 (thirty) days from the Commencement Date:

a. The Concessionaire shall have executed and delivered a Performance Security in favour of PCMC for a value of 5% of the value of contract in the form of Irrevocable Bank Guarantee/Fixed Deposit Receipt (FDR) from a nationalised bank/scheduled bank.

b. The Concessionaire shall appoint a project manager with experience in managing the census of trees. The Concessionaire shall provide resume of the project manager to PCMC. The project manager shall prepare a project plan entailing the details to execute the scope of work in the Project. The project manager shall also submit the methodology for carrying out Project along with the census format and obtain approval from the Project Officer of PCMC.

c. The Concessionaire shall provide to PCMC the details of the staff employed for the Project. With that reference the Concessionaire shall provide pan card, identity card of employee to PCMC.

d. The Concessionaire shall provide resume of staff who shall be deployed at the site for managing the Project. It shall be the responsibility of the Concessionaire to provide skilled and trained staff.
e. The Concessionaire shall have received the applicable permits and clearances from concerned authorities under relevant laws applicable.

f. The Concessionaire has to bring its own computer with internet connection, stationary, printers and maintain the same for its staff.

3.2 Responsibilities of PCMC

PCMC shall fulfill the following conditions precedent within 30 (thirty) days from the Commencement Date:

a. PCMC shall provide support to the Concessionaire in obtaining timely approvals, permissions and authorisations for performance of obligations for the project including permission to access the premises for the census of trees.

b. Submit copies of the council resolution authorising PCMC to execute the Agreement.

c. For undertaking the work, PCMC will provide to the Concessionaire, office space for two persons with computer and internet connectivity.

d. PCMC will provide the existing information about the base map & GIS layers.

e. Provide space for deployment of server for mobile and web based application system.

f. Provide integration details of accounting software and Building Permission Application Management System (BPAMS) software of PCMC.

3.3 Cost of satisfying the conditions precedent

The cost of satisfying the above conditions precedent shall be borne by the respective Parties responsible for satisfaction of the Conditions Precedent.

3.4 Non-fulfilment of the Conditions Precedent

a. In case of non-fulfilment of the Conditions Precedent attributable to reasons beyond the control of the Concessionaire or PCMC, the period for satisfaction of Conditions Precedent may be extended by mutual consent of the Concessionaire and PCMC.

b. If any of the conditions precedent contemplated in clauses 3.1 and 3.2 has not been satisfied in full or has not been waived, within the time stipulated or such extended time that the Parties may agree upon, then in such event either party shall have the right to terminate this Agreement by 30 (thirty) days notice in writing to the other party, given at any time thereafter, but prior to such conditions precedent being satisfied or waived, and if the conditions precedent are not satisfied or waived within such notice period, upon expiry of such notice, this Agreement shall terminate.

c. If the Agreement is terminated due to non-satisfaction of Conditions Precedent set forth in clause 3.1 except set forth in clause 3.1(b), the Concessionaire shall not be compensated in any manner whatsoever and the Performance Security shall be forfeited and encashed.

d. If the Agreement is terminated due to non-satisfaction of Conditions Precedent set forth in clause 3.2 and clause 3.1 (b), then PCMC shall release the Performance Security.
4 Handover of existing Project Facilities

4.1 Handover of existing Project Facilities

a. Within 30 (thirty) days from the Commencement date, PCMC shall handover the existing Project Facilities as per SCHEDULE A:

b. Upon the Concessionaire being granted access to the existing Project Facilities, the Concessionaire shall have the right to enter the Project Facilities.

4.2 Rights, Title and Use of Project Facilities

a. The Concessionaire shall have the right to the use of Project Facilities in accordance with the provisions of this Agreement and for this purpose; it may regulate the entry into or use of the same by third parties except PCMC.

b. The Concessionaire shall not part with or create any encumbrance on the whole or any part of the Project Facilities, save and except as set forth and permitted under this Agreement.

c. The Concessionaire shall not use the Project Facilities for any purpose other than for the purpose of the Project and purposes incidental or ancillary thereto.

Provided that such access or use shall not result in a material adverse effect and that PCMC in the event of any physical damage to the Project Facilities on account thereof, ensure that the Project Facilities are promptly restored at the cost and expenses of the Concessionaire.

4.3 Peaceful Possession

PCMC hereby warrants that the Concessionaire shall, subject to complying with the terms and conditions of this Agreement, remain in peaceful possession and enjoyment of the existing Project Facilities during the Operation Period. In the event the Concessionaire is obstructed by any person claiming any right, title or interest in or over the Existing Project Facilities or any part thereof or in the event of any enforcement action including any attachment, appointment of receiver or liquidator being initiated by any person claiming to have any interest in/charge on the existing Project Facilities or any part thereof, PCMC shall if called upon by the Concessionaire, defend such claims and proceeding and also keep the Concessionaire indemnified against any consequential loss or damages which the Concessionaire may suffer, on account of any such claim of right, title, interest or charge.

Provided further, that to the extent such access and use allowed by the Concessionaire affects the performance of any of its obligations hereunder, the Concessionaire shall not be deemed or construed to be in breach of its obligations nor shall it incur/ suffer any liability on account thereof.

5 Project Officer

5.1 Project Officer

a. PCMC shall form a team of PCMC officials comprising officials of the Garden Department, Tree Authority and DIT Deptt, of PCMC in the Project Area, who will be headed by the Garden Superintendent, Garden Department who shall act as the Project Officer.

b. The roles and responsibilities of the Project Officer shall include that set out in clause 5.2.
5.2 Role and responsibilities of work of the Project Officer

The Project Officer is expected to play a positive and independent role in discharging its functions, thereby facilitating the smooth implementation and operation of the Project facilities. The role of the Project Officer is to:

1. Review, monitor and where required by the Agreement, approve activities associated with the operation and maintenance of the Project to ensure compliance by the Concessionaire with the commissioning and further operation and maintenance;

2. Ensure that the procedure is followed in accordance with the provisions of this Agreement
   a. Designate tests on equipment and machinery, if needed;
   b. Provide administration of the Agreement in full and in complete accordance with applicable laws;
   c. Provide timely approval and permissions to access the premises for the census of trees.
   d. Conduct a general inspection of the Project Facilities as and when required, to ascertain conformity to the Agreement;
   e. Address issues relating to Concessionaire disputes.
   f. Compute payment for the work under this agreement.
   g. The Project Officer shall provide the server for the newly developed mobile & web based survey application management system of PCMC under this tender.
   h. The Project Officer shall, in the ordinary course, maintain a record of the activities; this would include records in respect of the following:
      i. Manpower deployed and other organisational arrangements of the Concessionaire;
      ii. Reviews of documents submitted to it by the Concessionaire to meet the commissioning requirements such as schedules, and reports;
      iii. Inspections undertaken and notices/instructions issued to the Concessionaire;
      iv. Review of compliance with the commissioning requirements;
      v. Payments;
      vi. Force majeure events;
      vii. Breaches and defaults by the parties.

6 Concessionaire’s obligations

In addition to and not in derogation or substitution of any of its other obligations under this Agreement, the Concessionaire shall have the following obligations:

6.1 Financial Obligations

6.1.1 Performance Security

   a. The Performance Security shall be 5% of the value of the contract.
b. The Bid Security of Rs. 680535/- (rupees six lakh eighty thousand five hundred and thirty five only) shall be converted into performance security.

c. Further, the Concessionaire shall, for due and punctual performance of its obligations hereunder relating to the project, deliver to PCMC, simultaneously with the execution of this Agreement, an irrevocable Bank Guarantee/Fixed Deposit Receipt (FDR) from a nationalised bank/ scheduled bank, for a value of 5% of the value of contract. The Performance Security shall be kept valid for the Operation Period or any such extended period. The bank guarantee should be in the format provided in SCHEDULE F.

d. The Concessionaire has submitted an amount of Rs. ______________ (Rupees ___________ only) as Performance Security in the form of bank guarantee, number ________________, drawn from <bank name & branch address> dated:______, valid till __________, in favour of Pimpri Chinchwad Municipal Corporation, for the performance of the obligations under this Agreement. The Concessionaire shall renew the Performance Security 2 (two) months before the expiry of the Performance Security. Failure to do so on part of the Concessionaire, PCMC shall encash & forfeit the Performance Security and terminate this Agreement.

e. Provided that if the Agreement is terminated due to any event other than the Concessionaire event of default, the Performance Security if subsisting as of the termination date shall, subject to PCMC’s right to receive amounts, if any, due from the Concessionaire under this Agreement, be duly discharged and released to the Concessionaire.

f. The Concessionaire shall keep the Performance Security replenished at all times at a level as specified in sub clause (a) above. Such replenishment may be required if the PCMC has withdrawn/ deducted from the Performance Security owing to a default/ reimbursement of expenses which was initially borne by PCMC and the replenishment shall have to be done by the Concessionaire within 5 working days of the withdrawal by PCMC from the Performance Security. Failure to do so on part of the Concessionaire shall result in an event of default by the Concessionaire.

6.2 Operational Obligations

6.2.1 Project implementation: Census of trees and team deployment

PCMC at COD shall handover the office space to the Concessionaire for managing the work of the census of trees.

The Concessionaire shall during the Operation Period shall perform the following tasks:

1. Bear all cost for undertaking the Project.
2. Operate and maintain the Project Facilities in accordance with the terms and conditions of this Agreement.
3. Procedure for Census of trees: The Concessionaire shall adhere to the following procedure for the census of trees.

   a. The concessionaire shall supply the GIS platform with Comprehensive Maintenance Contract (CMC) contract of 5 years as per clause 2.1.1(2).
b. The concessionaire shall develop the mobile and web based application and receive the Application Readiness Certificate from DIT Department of PCMC.

c. Geo-referencing the electoral ward boundaries/ tree zone and Zone boundaries of PCMC using DGPS and ETS.

d. Undertake census of trees of ward no. 27 (Morewadi) and display the information on the GIS platform and web based application. Obtain Application Implementation Certificate from DIT department of PCMC.

e. The Concessionaire shall deploy the following equipment’s for undertaking the census of trees.

i. Android based mobile device & handheld printer – The device shall be used for census of trees for capturing tree photograph, generate unique code, capturing other details like tree girth, feeding latitude and longitude information and print unique code of tree and affix it on the tree.

ii. The minimum specification of android based mobile devices to be used during the tree census survey are – Moto G – 4th Generation having specification camera: 13 MP; Android: 6.0.1; Processor: 1.5 GHz ; Ram: 2GB; Internal Memory: 16 GB; and Battery: 3000 mAH with turbo power charging.

iii. Distometer – The device shall be used for capturing the height of the trees. The specifications of the distometer to be used for the census of trees are - ISO 16331-1 certified measuring accuracy: ± 1 mm; Range: up to 150 m; Measuring units: m, ft, in; X-Range Power Technology: Yes; Distance in m: 10, 50, 100 m; of the laser dot in mm: 6, 30, 60 mm; Point finder with 4x zoom: Yes; Memory: 30 displays; Measurements per set of batteries: up to 5000; Multifunctional end-piece: automatic recognition; and Protection class: IP65 – water jet protection and dust-tight.

iv. Differential Global Positioning System (DGPS) instrument – The device shall be used for demarcating the ground points (one ground point per Sq. Km area).

v. Electronic Total Station (ETS) instrument - The device shall be used for capturing the locational details (latitude and longitude) of ward boundaries.

f. The web based and mobile based applications shall seamlessly capture data from the field instruments and publish on the GIS server using the GIS desktop software.

g. For the web based application, a digital library (database) of indigenous trees shall be created. The digital library shall contain tree details like common name, botanical name, flowering season, flower photo, fruit photo, native/exotic, tree photo, carbon sequestration rate and tree use.

h. The Concessionaire shall deploy two plant taxonomist/ botanist/ horticulturist for verification of field census data captured using mobile devices using the web based application for creating the census of trees report as per format required under
Selection of Agency for undertaking census of tree and development of application for tree management using GIS Platform


i. All the geodetic devices used for census of trees shall have a valid calibration certificate, failing which it shall not be used for the census of trees.

j. The census of the trees shall be done using electronic devices only i.e mobile handheld devices and distometer. No manual or paper based field survey & data capturing is permitted.

4. **Procure and Supply the GIS Platform**: The concessionaire shall procure, supply, maintain and manage for 5 years from the date of obtaining Application Implementation Certificate from DIT department of PCMC, the GIS platform for PCMC which include the following activities.

a. Procure, Supply and deploy to DIT department, GIS + Image server Application license i.e Intergraph Geo Spatial Server or ArcGIS for Server only with unrestricted user license with 5 years maintenance and upgradation contract in the name of PCMC. Also procure, supply and organise by OEM at PCMC, 5 days, 100 user training (field & classroom) at PCMC in batch of 10 persons along with refresher training of 5 days to the 100 users in batch of 10 persons. The technical specification of the GIS + Image Server Application license is enclosed as Annexure 2. The server Original Equipment Manufacturer (OEM) shall provide certification for the training given to PCMC and will also be required to authenticate the complete GIS system implementation at each iteration of development & implementation during the 5 years.

b. Procure, supply, install and deploy GIS server hardware for the GIS + Image server software application. The technical specification of the server hardware is enclosed as Annexure 3. The GIS server hardware specification is for 36 core server. The GIS + Image server Application license i.e Intergraph Geo Spatial Server or ArcGIS for Server only with unrestricted user license specified in clause 6.2.1 (4a) above shall be core independent or of minimum 12 core (3 license).

c. Procure, Supply and deploy to DIT department, 05 concurrent user license (shareable across multiple desktop computers) of Desktop GIS i.e Geo Media with Transportation Manager and 3D extension or ArcGIS for Desktop with Network Analyst and 3D extension with 5 years maintenance and upgradation contract in the name of PCMC. Also procure and supply and organize by OEM 5 days, 100 user training (field & classroom) at PCMC in batch of 10 persons along with refresher training of 5 days to the 100 users in batch of 10 persons. The Desktop GIS Original Equipment Manufacturer (OEM) shall provide certification for the training given to PCMC. The technical specification of the Desktop GIS application is enclosed as Annexure 4.

d. The GIS + Image server software and the Desktop GIS software product supplied under this Project shall be of the same Original Equipment Manufacturer (OEM).

e. Procure, Supply & deploy to DIT department, single user license (shareable across multiple desktop computers) of satellite image processing software of ERDAS
Imagine with extension pack with 5 years maintenance and upgradation contract in the name of PCMC. Also procure, supply and organize by OEM at PCMC the 5 days, 50 user training (field & classroom) at PCMC in batch of 10 persons along with refresher training of 5 days to the 50 users in batch of 10 persons. The ERDAS Imagine Original Equipment Manufacturer (OEM) shall provide certification for the training given to PCMC. The technical specification of the image processing is enclosed as Annexure 5.

f. Procure and supply forty one (41) number of Moto G – 4th Generation mobile device with 3G data connectivity of 4 GB data service per month, for a period of 60 months, for operating the mobile application and validating the survey. The minimum specification of the device are – camera: 13 MP; Android: 6.0.1; Processor: 1.5 GHz; Ram: 2GB; Internal Memory: 16 GB; Battery: 3000 mAH with turbo power charging; and power charger.

g. Procure, supply and maintain five distometer for audit of tree census work. The specification of the distometer is – ISO 16331-1 certified measuring accuracy: ± 1 mm; Range: up to 150 m; Measuring units: m, ft, in; X-Range Power Technology: Yes; Distance in m: 10, 50, 100 m; of the laser dot in mm: 6, 30, 60 mm; Point finder with 4x zoom: Yes; Memory: 30 displays; Measurements per set of batteries: up to 5000; Multifunctional end-piece: automatic recognition; and Protection class: IP65 – water jet protection and dust-tight. Also procure and supply 2 days, 50 user training (field & classroom) at PCMC in batch of 10 persons along with refresher training of 2 days to the 50 users in batch of 10 persons.

5. Development Stage: Developing android based mobile application and web based application for the management of processes of Tree Authority of PCMC: The following activities are included in the scope of application development.

   a. Undertake Business Process Reengineering (BPR) of the various processes and service of the Tree Authority of PCMC. Develop GIS system oriented process and system for managing the funds, permissions, services monitoring and inspection of work.

   b. Create satellite image based change detection system using the image processing software supplied to detect the increase or decrease in tree count/tree cover in the city.

   c. Undertake Ortho-rectification of the satellite image provided by PCMC using photogrammetry software every 6 months. The Concessionaire shall undertake DGPS ground point survey for creation of Digital Elevation Model for ortho-rectification.

   d. Development of Mobile Application: The mobile application for census of trees shall have the following functionality.

      i. Able to capture data in both online and offline connectivity mode.

      ii. Able to authenticate the surveyor/user whenever he login’s to the application.
iii. Automate the capture and transfer of all the field reading from all the field devices to the GIS server.

iv. Automate the capture and transfer on GIS server the latitude and longitude from the digital total station.

v. Generate unique ID for each surveyed tree. The generated code number shall have reference of zone & ward no.

vi. The application shall be compatible with handheld printers to print the unique ID on ground during the survey for attaching the sticker on each census tree & then capture the photograph of the tree.

vii. Able to capture all tree related details for preparing the Census Information Format I & II.

viii. Should be compatible with Android 6.0.1

ix. Able to capture the photo of the tree, access existing census data from server, access PCMC satellite image from server or google map etc. on the handheld mobile devices.

x. The system requirement specification (SRS) for the mobile application shall be finalized by the DIT department of PCMC.

e. **Develop web based GIS application:** The web based application for tree management shall have the following functionality.

i. Map the tree on the satellite image of PCMC with the description of the tree like tree local name, scientific name, latitude, longitude, tree height, width and photo.

ii. Create digital library of trees details and its statistics in the city with photographs (of tree, its flower and leaves) for the plant taxonomist/ botanist/ horticulturist to verify the tree census data from centralized office location.

iii. Create audit and validation process using tree photograph, unique ID and latitude and longitude generated from the devices.

iv. Create census data confirmation and validation process for DIT and Garden Department of PCMC.

v. Ability to edit the information regarding the existing trees.

vi. Ability to export tree list as .kml and .csv files.

vii. Automatically calculate ecosystem benefits (greenhouse gases and air quality) based on tree’s species and diameter.

viii. Audit trail for all modifications through login in the system.
ix. The application shall track and display the user/surveyor travel path (route), his distance covered etc.

x. Editing the tree layer for adding/deleting/modifying the locations and the attributes.

xi. View and query the tree data and retrieve results as combinations of graphical plots, textual reports, maps, images etc. as applicable.

xii. Administration module for users and right creation on the tree layer.

xiii. GIS Layers Management: The Enterprise wide application shall have the following features.

   - Switching On/Off of layers.
   - Attribute viewer
   - Query Panel
   - Predefined Query
   - Map Contents
   - Navigation of Map
   - Buffer for Proximity Analysis
   - OGC compliant map service

xiv. Develop seamless process of capturing the tree survey data with photograph and locational details (latitude and longitude) with time stamp and porting the same on the PCMC’s GIS server without modification through human intervention.

xv. Develop seamless process for tree cutting permissions; site inspection; tree authority NoC for building permission; tree authority NoC for flex structures; inspection of illegal tree cutting notification & documentation; funds collection and refund.

xvi. Develop integration with Building permission application management system (BPAMS), Central Accounting Application and Sky Sign & Licenses Permission application of PCMC.

xvii. The application shall able to generate various reports ward wise, zone wise, tree wise etc. as per the requirement of the Garden Superintendent.

xviii. The application should be able to generate tree cover analysis, carbon sequestration in Kg/Ha., carbon assimilation rate using remote sensing and GIS tools for city area every year.
xix. The system requirement specification (SRS) for the mobile application shall be finalized by the DIT department of PCMC.

xx. The complete software development life cycle for the development of the application shall be followed from creating SRS, Sign Off, Development and Customisation, Integration, Internal Testing and User Acceptance Testing.

f. The development period for mobile and web based application shall be 6 months (1 month SRS + 4 month development + 1 month testing) from the date of work order.

g. The software architecture of the web based application shall be in latest open source platform – Front End: Java and Database: Postgresql.

h. Prepare the User Acceptance Testing criteria document, take sample data for UAT and take approval of the Garden Deptt. of PCMC.

i. System Documents and User Documents shall follow the ITIL (Information Technology Infrastructure Library) standards. This documentation should be submitted as the project undergoes various stages of implementation and the Concessionaire shall upkeep all manuals and documents during the tenure of the contract. Indicative list of documents include.

   i. Project Commencement Documentation: Project Plan detailing the activities with milestones & timelines.
   
   ii. User Manuals: As required for operationalization of the system.
   
   iii. System Manual: Covering detailed information required for the administration of the portal.


6. Operation, Maintenance and Management of GIS platform, mobile and web application for a period of 5 years from obtaining Application Implementation Certificate from DIT department of PCMC: The following activities shall be covered during the operation, maintenance and management period.

   a. The Concessionaire shall submit the detailed project implementation plan to the Project Officer.

   b. Census shall be undertaken for trees whose trunk or stem is having a minimum girth of ten (10) centimeter and height of three (3) meter above ground level.

   c. The Census of trees must be a head count of all the existing trees upon the 177 sq. km jurisdiction of PCMC which exclude the defence establishment.

   d. The tree which is included in the head count shall be marked with the typical symbolic mark (for visual identification during audit) so as to indicate that the survey is carried on site.
e. Prepare municipal wards wise Project plan for undertaking census of trees. Undertake pilot survey of ward no. 27 (Morewadi) to validate the functionality of mobile and web based application and setup process for validation of surveyed data.

f. The Tree Census Report shall provide the plantation requirement to meet the norms of section 7(h) and section 7(c) of the Maharashtra (Urban Areas) Protection and Preservation of trees Act, 1975.

g. The team of professionals for the Project shall undertake the tasks and provide there time (input) as detailed below.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Designation</th>
<th>No. of Posts</th>
<th>Nature of Work</th>
<th>Minimum Time Period on Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Team Leader</td>
<td>1</td>
<td>Preparation of Project Implementation Plan.</td>
<td>12 Man Month</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Ensure submission of timely deliverables &amp; updating Project Officer on Project Progress.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Landscape Architect</td>
<td>1</td>
<td>Prepare design for Urban Forestry Street.</td>
<td>12 Man Month</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Prepare Urban Forestry Master Plan, and Detailed Project Report on Urban Forestry for PCMC for submission to Urban Development Department, GoM under AMRUT, recommending locations in the city and quantity and type of plantation (Schedule E).</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Prepare estimation for the implementation of Urban Forestry Master Plan</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Software Development</td>
<td>1</td>
<td>Interacting with Users on SRS and UAT</td>
<td>0.5 Man Month</td>
</tr>
</tbody>
</table>
### Request for Proposal - Volume 2  Agreement

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Designation / Notes</th>
<th>No. of Posts</th>
<th>Nature of Work</th>
<th>Minimum Time Period on the Project</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Expert</td>
<td></td>
<td>- Assistance in Testing of Software.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>GIS Expert</td>
<td>1</td>
<td>- Developing GIS queries and Data management.</td>
<td>0.5 Man Month</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>- Creating GIS Analysis Reports</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Plant Taxonomist / Botanist/ Horticulturist</td>
<td>2</td>
<td>- Authenticating field Tree Census data.</td>
<td>24 Man Months</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Preparation of tree census report.</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>On Site Operator</td>
<td>2</td>
<td>- Handholding Support for managing and operating and updating the new GIS Software for Tree Authority of PCMC.</td>
<td>60 Man Month</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Undertake training of Municipal Staff on the usage of new system</td>
<td></td>
</tr>
</tbody>
</table>

h. Every 6 months, PCMC is expected to provide the satellite image of the city. The concessionaire shall using the change detection system (using ERDAS Imagine software) identify the new trees or trees that are cut from the previous satellite image. The Concessionaire shall through field visit update the web based system database regarding the newly identified trees or reduced trees.

i. Develop new GIS queries for creating data maps and reports for analysis by the municipal staff.

j. **Geo-referencing of Ward Boundaries/ census boundaries & tree position identification on the satellite image of PCMC:** This shall include the following activities.

  1. Using calibrated DGPS create one (1) ground point per square kilometer area of PCMC. The ground point shall be established on
permanent ground structure. For each ground point also capture three reference points on the permanent structure to trace the ground point.

2. Using the DGPS ground point undertake calibrated Electronic Total Station (ETS) based survey and demarcate the existing ward boundaries and derive the locational details (latitude and longitude) of the census trees.

3. For ETS ensure the traverse closure every 5km.

k. Hosting the web based application on the GIS server supplied.

l. Provide complete online and onsite support for the web based GIS application, mobile application, GIS server software, GIS Desktop software and hardware equipment’s supplied in the Project.

m. Setup centralized team of plant taxonomist/ botanist/ horticulturist (2 Nos) to verify and validate from the tree photographs, the tree species and related details during the census of trees.

n. Organize & provide training of one day to minimum 100 PCMC staff in batch of 20 regarding mobile, web based application and disto-meter twice every year.

o. Provide data and network connectivity in all electronic devices supplied & deployed for census of trees under this Project for data communication with the server and bear the cost of data connectivity of all field devices.

p. Shall undertake assessment of locations during the survey to identify the new plantation zones/areas and provide recommendation on the number of plantation and type of plantation to improve the carbon sequestration in Kg/Ha.

q. Provide dedicated manpower of two persons on site within 7 days from obtaining the Application Implementation Certificate from DIT department of PCMC. The persons will provide daily handholding support to operate, manage and train the PCMC staff in the newly developed system. The handholding support will be for a period of 60 months from the date of issue of Application Implementation Certificate by the DIT department of PCMC.

r. The two member onsite team is expected to manage the operations and train the municipal staff in the newly developed system, equipment’s and licensed software’s.

s. The selected Concessionaire shall maintain the mobile app, web based application, server hardware, GIS + Image Server Application and GIS desktop Application for 5 years from the date of issue of Application Implementation Certificate from DIT department of PCMC. The Concessionaire shall provide the comprehensive warranty for all hardware,
software components both on field and off-field support during the maintenance period.

t. Handback the application code to DIT Department of PCMC after undertaking software testing from CERT empaneled consultant or STQC first time at the time of issue of Application Implementation Certificate and 2nd or last time at the end of the contract period.

u. The precision & accuracy of the survey shall be verified by deploying the 3rd Party Independent Auditor by PCMC. 2% of the accepted Commercial proposal value shall be used by PCMC for the services of the 3rd Party Independent Auditor.

v. Bear all cost, expenses and charges for instruments, development, operation, implementation & maintenance of scope of work.

7. Provide on-site manpower for timely implementation of the project.

8. All the census information shall be tabulated in both English and Marathi.

9. The Concessionaire shall provide computers/laptops, printers, stationary and internet connection to its staff for managing the work. PCMC shall only provide the office space.

10. In the event that the Concessionaire has failed to operate and maintain the Project Facilities and such failure has not been remedied despite a notice to that effect issued by the Project Officer or PCMC (“Notice to remedy”), PCMC may, without prejudice to any of its other rights/remedies under this Agreement, be entitled to cause the repair and maintenance of the Project Facilities at the risk and cost of the Concessionaire. The Concessionaire shall without demur pay on demand 125 % of the costs incurred by PCMC on account of such repair and maintenance within 7 (seven) working days of receipt of PCMC claim thereof. Failure to pay shall entitle PCMC to recover such costs from any dues payable by PCMC to the Concessionaire and/ or from the performance guarantee provided by the Concessionaire.

11. Be responsible for the conduct of the staff employed for this Project while on duty.

12. Have requisite organization and designate and appoint suitable officers/representatives as it may deem appropriate to supervise the project, to interact with the Project Officer/ PCMC and to be responsible for all necessary exchange of information required pursuant to this Agreement.

13. The Concessionaire shall meet every 30 (thirty) days with the Project Officer to ensure that the Project management is of desired quality. The minutes of the meeting of such meetings shall be prepared and documented.

14. In the event, that the Concessionaire or any other staff of the Concessionaire is known to have entered into corrupt practices, then the Concessionaire shall immediately terminate such staff/employee from this Project. PCMC shall have the right to undertake inspection of such cases on its own or through its appointed representatives. In the event, if PCMC identifies such malpractices then it shall have the right to terminate this Agreement.
15. Suspend forthwith the whole or part of the operations upon receiving a written notice from the Project Officer who may require the Concessionaire to suspend the activities in whole or part if in the reasonable opinion of the Project Officer; the operations are being carried on in a manner that is not in conformity with the terms and conditions of this Agreement.

16. The Concessionaire shall be deemed to be in material breach if the Project Officer acting reasonably and in accordance with the provisions of this Agreement, has determined that due to breach of its obligations by the Concessionaire:

   a. There has been a failure/undue delay in carrying out activities with respect to census of trees, uploading data on GIS server and operation of the newly created system.
   b. There has been a serious and persistent let-up in adhering to the requirements and thereby the project facilities or any part thereof is not safe for operations.
   c. There has been a persistent breach of terms and conditions of this Agreement. For avoidance of doubt, persistent breach shall mean:
      i. Any breach by the Concessionaire which has not been remedied by the Concessionaire, as required under the provisions of this Agreement despite a notice to remedy in respect thereof issued by the Project Officer / PCMC, and/or
      ii. Recurrence of a breach by the Concessionaire, during the pendency of notice to remedy by the Project Officer / PCMC requiring the Concessionaire to remedy a breach, and/or
      iii. Repeated occurrence of a breach notwithstanding that earlier breaches have been remedied pursuant to notice to remedy or otherwise.
      iv. Upon occurrence of a material breach, PCMC shall, without prejudice to and notwithstanding any other consequences provided thereof under this Agreement, depending upon the nature of obligation in respect of which a material breach has occurred, be entitled to both levy a penalty and thereafter terminate this Agreement if the breach is serious in nature.
6.2.2 Applicable Permits

The Concessionaire shall in respect of the Project, procure the Applicable Permits and be in compliance thereof at all times during the Operation Period.

6.2.3 Expiry of the Agreement

Upon expiry of this Agreement, the Concessionaire shall hand back the Project Facilities to PCMC, including any improvements made thereon. PCMC may provide an extension in the contract period for the maximum period of one year at the prevailing rate as per this agreement if PCMC deems it necessary for the proper handback of the project. The computation of payment shall be on monthly basis. The Commercial proposal value as per this agreement shall be divided by 18 and paid to the Concessionaire on monthly basis for the extended period.

6.2.4 Environmental compliance

The Concessionaire shall, at all times, ensure that all aspects of the Project Facilities and processes employed in the operation and maintenance thereof shall conform with the laws pertaining to the environment, health, safety aspects.

6.3 General obligations

The Concessionaire shall at its own cost and expense:

a. Investigate, study, operate and maintain the Project
b. Obtain all Applicable Permits as required by or under the Applicable Law and be in compliance thereof at all the times during the Operation Period;
c. Shall indemnify PCMC in respect of any claims made against it (PCMC) in relation to the use of licences, permits, and/or any intellectual property, used/required for the Project.
d. Procure and maintain in full force and effect, as necessary appropriate proprietary rights, licences, agreements and permissions for materials, methods, processes and systems used in or incorporated into the Project.
e. Make efforts to maintain harmony and good industrial relations among the personnel employed in connection with the performance of its obligations under this Agreement and shall be solely responsible for compliance with all labour laws and solely liable for all possible claims and employment related liabilities of its staff employed in relation with the Project and hereby indemnifies PCMC against any claims, damages, expenses or losses in this regard and that in no case and shall for no purpose shall PCMC be treated as employer in this regard.
f. Be responsible for all the health, security, environment and safety aspects of the Project at all times during the Operation Period.
g. Shall at all times obtain and maintain necessary insurance, workmen compensation insurance policies throughout the Operation Period for the other employees deployed for this Project.
h. Upon receipt of a request thereof, afford access to the Project Facilities to the authorised representatives of PCMC for the purpose of ascertaining compliance with the terms, covenants and conditions of this Agreement.
i. Pay all taxes, duties, outgoings, including utility charges relating to the Project.
j. Establish a standard protocol for addressing complaints from persons in the Project Area to the satisfaction of the Project Officer.

k. Shall indemnify the PCMC against all third-party claims of infringement of Intellectual property Rights in any form including patent, trademark or industrial design rights arising from use of the Goods or any part thereof in India.

6.4 Shareholding

The Concessionaire shall ensure that:

a. The Lead Member shall necessarily make the maximum equity contribution in the Joint Venture, and this equity contribution shall not be less than 51% of the total equity in the Joint Venture, which shall not be diluted till the end of the Operation Period.

b. The Technical Member shall necessarily make equity contribution in the Joint Venture, and this equity contribution shall not be less than 26% of the total equity and the Member so evaluated would have to hold at least 26% in the Joint Venture, which shall not be diluted till the end of the Operation Period.

6.5 Accidents:

a. It shall be the Concessionaire’s responsibility to protect against accidents on the works. He shall indemnify PCMC against any claim for damage or injury to persons or property resulting from and in the course of work and also under the provision of the Acts mentioned herein below.

On the occurrence of an accident arising out of works which results in death or which is so serious as to be likely to result in death, the Concessionaire shall within 24 hours of such accident, report in writing to the Project Officer, the fact stating clearly and in sufficient details the circumstances of such accident and the subsequent action. All other accounts on the works involving injuries to person or damages to property other than that of the Concessionaire shall be promptly reported to the Project Officer, stating clearly and in sufficient details the facts and circumstances of the accidents and the action taken. The Concessionaire shall indemnify and keep indemnified the Corporation against all losses and claims for injuries or damage to any person or any property whatsoever which may arise out of or in consequences of the Project and against all claims, demands, proceedings, damages, costs, charges and expenses whatsoever in respect of or in relation thereto.

The Concessionaire shall at all times indemnify the Corporation against all claims, damages or compensation under the provisions of,

a. Payment of Wages Act, 1936
b. Minimum Wages Act, 1948
c. Employers Liability Act, 1938
d. The Workmen’s Compensation Act, 1923
e. Industrial Dispute Act, 1947
f. Indian Factories Act, 1948
g. Maternity Benefit Act, 1961
h. Any other law applicable
Or any modifications thereof and the rules made thereunder from time to time or as a consequence of any accident or injury to any workman, whether in the employment of the Concessionaire or not, save and expect where such accident or injury and against all sum or sums which may with the consent of the Concessionaire be paid to compromise or compound any such claims without limiting its obligations and liabilities as above provided. The Concessionaire shall insure against all claims damages or compensation payable under the various Acts mentioned above or any modifications thereof or any other law relating thereto.

In the event of an accident in respect of which compensation may become payable under any Act as referred in the sub-clause (a) or any other act including all modifications thereof whether such compensation may become payable by the Concessionaire or by PCMC, PCMC shall retain whole or part of the payment due and payable to the Concessionaire such sum or sums of money as may in the opinion of PCMC sufficient to meet such liability, on receipt of award from the Labour Commissioner in regards to the quantum of compensation the difference in amount will be adjusted.

6.6 No breach of obligations

The Concessionaire shall not be considered to be in breach of its obligations under this Agreement nor shall it incur or suffer any liability if and to the extent performance of any of its obligations under this Agreement is affected by or on account of any of the following:

a. Force Majeure event, subject to clause 11

b. PCMC’s event of default

c. Compliance with the instructions of the Project Officer /PCMC or the directions of any government agency other than instructions issued as a consequence of a breach by the Concessionaire of any of its obligations hereunder.

d. Closure of the Project Facilities or part thereof with the approval of the Project Officer /PCMC.
7 **PCMC’s Obligations**

In addition to and not in derogation or substitution of any of its other obligations under this Agreement, PCMC shall have the following obligations:

### 7.1 Specific obligations

a. PCMC shall subscribe to the Agreement within 45 (forty five) days of issue of the Letter of Award.

b. PCMC shall grant in a timely manner all such approvals, permissions and authorisations which the Concessionaire may require or is obliged to seek from PCMC under its Agreement, in connection with implementation of the Project and the performance of its obligations.

c. PCMC shall provide office space, server space, electricity connection and access to slum database to the Concessionaire. It is hereby clarified that the Concessionaire shall not use the database of consumer information provided by PCMC and updated and collected by the Concessionaire during the course of the Project for any other commercial purpose; any act of this may lead to termination of the Agreement and PCMC shall forfeit the Performance Security of the Concessionaire.

### 7.2 General Obligations

PCMC shall

a. Where appropriate provide necessary assistance to the Concessionaire in securing Applicable Permits;

b. Observe and comply with all its obligations set forth in this Agreement.

8 **Performance evaluation**

### 8.1 Performance Parameters, Penalties and Incentives

a. The service quality level shall be ascertained through a Performance Parameter system detailed below. All the penalties shall be levied independent of the other penalties mentioned under this clause. The performance parameters shall be assessed & penalties shall be levied from the 3rd month from the date of the work order.

1. **Delay in completion of Census of trees** – The Concessionaire is expected to complete the Census of trees within 24 months from the COD and submit the Tree Zone wise data for census of tress. If the Concessionaire fails to do so, then PCMC shall penalise the Concessionaire as per below

   Number of days after 24 months from the date of the work order to the date of submission of tree zone wise Census of trees data for all zones x Rs. 1000. Such penalty will be limited to 5% of the accepted commercial proposal.

2. **Complaints** – If a complaint is reported regarding inclusion of false Census data, incomplete census data record or duplication of data record in the census and after scrutiny by the PCMC officer it is found so, this shall be treated as non-performance of the Concessionaire and the Concessionaire shall be penalised at Rs. 100 per false or incomplete census data or duplicate data record up to 500 number of such census record.
3. **Availability of Project Team** – If the onsite team of two members team is not absent from site for more than 7 consecutive days from the date of issue of Application Implementation Certificate from DIT department of PCMC (excluding municipal holidays) then Rs. 1000 per day per person shall be the penalty for non-availability of the persons.

4. **Non Performance of Site Team** – In the event that the two member site team does not perform the activities specified in the scope of work and PCMC issues a written intimation through mail or letter such instances shall be treated as non-performance of the Concessionaire. Failure to rectify the event within 5 days from the date of written intimation shall invite penalty of Rs. 1000 per day from the 6th day till the rectification is accepted by the Project Officer.

5. **Software Bug Resolution** - System bugs resolution time shall be less than 2 days from the time of written intimation. Bug reporting shall be from the field staff of the PCMC department/ DIT Department/ Project Officer. A penalty of Rs. 500 per day beyond 2 days of written intimation until bug fixation mail is issued by the DIT department of PCMC shall be levied. If the same bug reoccurred within 15 days of fixation then the penalty shall be Rs. 1000 per day from the date of the written intimation till the fixation of the bug.

b. The cumulative penalty for the project shall be restricted to maximum limit of 7% of the accepted commercial proposal.

c. Incase, the accessibility to the premises for census of trees is not provided/obtained from PCMC or owner of premises beyond two (2) months of written request by the Concessionaire and the census of trees work could not be completed, under such circumstances, the payment for the work shall be released without any deductions as per the payment schedule. However, if during the period of contract the permission is obtained/provided by PCMC or by the owner of the premises, then the Concessionaire has to undertake the census of trees work and upload its data on the server.

d. The acceptable deviation regarding the height and girth of the censused tree shall be in the range of 2% to 5% for quality control.

e. Such performance evaluation shall be carried on for each Zone by the concerned Project Officer of PCMC. In case, the Concessionaire has failed to meet the Performance Parameters, then PCMC shall levy penalties as stipulated in section 8.1a of this Agreement and shall deduct such amount from the payment to be made to the Concessionaire. The Penalties shall be computed and levied from the COD.

f. The Concessionaire shall not be deemed to have provided deficient service, and therefore shall not be liable for any penalties or fines, if he is unable to perform his duties or is prevented from performing his duties, due to any force majeure event as mentioned in clause 11, or due to inaccessibility of Project Area due to reasons like road blockade, municipal construction works etc.

1. Provided that such reason(s) are bought to the notice of the Project Officer as soon as the Concessionaire or any person authorised on his behalf becomes aware of the same.
2. The Project Officer shall evaluate the reasons on a case to case basis and shall inform the Concessionaire of his decision, as to whether he deems the reason fit to excuse the Concessionaire from carrying on his duties in the inaccessible area till the time access is restored or he deems the reason unfit and hence the Concessionaire shall be obligated to carry on his duties as usual.

9 Payments

Subject to the provisions of this Agreement and in consideration of the Concessionaire accepting and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in this Agreement, PCMC agrees and undertakes to pay the Operation Fee to the Concessionaire at the achievement of the deliverables, subject to further calculations as per this clause and the Performance Evaluation.

<table>
<thead>
<tr>
<th>Key Deliverable No.</th>
<th>Description of Deliverables</th>
<th>Timeline</th>
<th>Payment (% of accepted commercial proposal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>KD1</td>
<td>Procure, supply and successful deployment of GIS server hardware, GIS server software licence, GIS Desktop License, Image Processing software license, Distomer and Mobile Devices and obtaining equipment supply certificate from DIT Deptt. of PCMC</td>
<td>T² + 4³</td>
<td>25%</td>
</tr>
<tr>
<td>KD2</td>
<td>Completion of training of GIS server software licence, GIS Desktop software License, Image Processing software license, Distomer and Mobile Devices</td>
<td>T + 15</td>
<td>5%</td>
</tr>
<tr>
<td>KD3</td>
<td>Development, Deployment, GoLive and obtaining Application Implementation Certificate from DIT department of PCMC</td>
<td>T + 6</td>
<td>5%</td>
</tr>
<tr>
<td>KD4</td>
<td>Submission of draft Urban Forestry Master Plan Report and draft Detailed Project Report (DPR) as per Schedule E for PCMC (2 Hard copies &amp; Soft copy)</td>
<td>T + 6</td>
<td>2%</td>
</tr>
<tr>
<td>KD5</td>
<td>Submission of final Urban Forestry Master Plan Report and final DPR as per Schedule E for PCMC (3 Hard copies &amp; Soft copy)</td>
<td>T + 7</td>
<td>2%</td>
</tr>
<tr>
<td>KD6</td>
<td>Submission &amp; importing of tree census zone wise (electoral ward wise) data on server for A Zone.</td>
<td>T + 12</td>
<td>3%</td>
</tr>
<tr>
<td>KD7</td>
<td>Submission &amp; importing of tree census zone wise (electoral ward wise) data on server for B Zone.</td>
<td>T + 15</td>
<td>3%</td>
</tr>
<tr>
<td>KD8</td>
<td>Submission &amp; importing of tree census zone wise (electoral ward wise) data on server for C Zone.</td>
<td>T + 18</td>
<td>4%</td>
</tr>
<tr>
<td>KD9</td>
<td>Submission &amp; importing of tree census zone wise (electoral ward wise) data on server for D Zone.</td>
<td>T + 21</td>
<td>4%</td>
</tr>
<tr>
<td>KD10</td>
<td>Submission &amp; importing of tree census zone wise (electoral ward wise) data on server for E Zone</td>
<td>T + 24</td>
<td>3%</td>
</tr>
<tr>
<td>KD11</td>
<td>Submission &amp; importing of tree census zone wise (electoral ward wise) data on server for F Zone</td>
<td>T + 24</td>
<td>3%</td>
</tr>
</tbody>
</table>

² Date of Issue of Work Order
³ Time Period in Months from the date of issue of Work Order
<table>
<thead>
<tr>
<th>KD12</th>
<th>Validation &amp; Approval of census data by the Project Officer.</th>
<th>T + 24</th>
<th>5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>KD13</td>
<td>Submission of draft Census of Trees Report (2 Hard copies &amp; Soft copy)</td>
<td>T + 24</td>
<td>2%</td>
</tr>
<tr>
<td>KD14</td>
<td>Submission of final Census of Trees Report (3 Hard copies &amp; Soft copy)</td>
<td>T + 24</td>
<td>2%</td>
</tr>
<tr>
<td>KD15*</td>
<td>Monthly payment from date of obtaining Application Implementation Certificate from DIT department of PCMC for providing two onsite staff and maintenance of hardware, software and equipment’s in the Project</td>
<td>T + 24</td>
<td>30%*</td>
</tr>
</tbody>
</table>

**Total** | 98% |

* Note: The payment for the milestone shall be divided by 60 and paid in equal monthly instalment after the issue of Application Implementation Certificate by the DIT department of PCMC.

### 9.1 Payment Computation

a. The payment to the Concessionaire shall be made on a monthly basis and on deliverable submission basis.

b. The payment to the Concessionaire shall be made from the COD.

c. The payment to the Concessionaire shall be subjected to deduction of any Penalties for non-compliance to the Performance Parameter as mentioned in section 8.1.

d. The payment for the period starting from COD shall be as per the rates quoted in the Commercial Proposal.

e. The computation of the payment shall be as per the formulae given below.

\[ P = (O_t \times P_p) - P_n \]

Where

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>Payment for achievement of Key Deliverables (KD)</td>
<td>Rs</td>
</tr>
<tr>
<td>O_t</td>
<td>Operation Fee as per the rate quoted in the Commercial Proposal</td>
<td>Rs</td>
</tr>
<tr>
<td>P_p</td>
<td>Percentage of payment for achievement of KD as per payment schedule in clause 9</td>
<td>%</td>
</tr>
<tr>
<td>P_n</td>
<td>Penalties as per clause 8.1 (a)</td>
<td>Rs</td>
</tr>
</tbody>
</table>
9.2 **Mechanism for payment**

a. The Concessionaire shall submit an invoice as per the SCHEDULE B: to the PCMC for release of payment.

b. All payments to the Concessionaire by PCMC shall be made by way of electronic clearance system (ECS) in the bank account of the Concessionaire.

c. The Project Officer also reserves the right to institute an independent audit of the records of the operations of the Concessionaire to satisfy that the proof provided by the Concessionaire are accurate.

**10 Accounts and Auditing**

a. The Concessionaire is required to maintain separate and proper books of accounts for the Project as per the prevalent (Indian) Companies Act, 2013 or _____ and applicable provisions of the relevant acts, laws and rules in India.

b. The Concessionaire shall make arrangements for getting these books audited by an independent auditor annually within 60 (sixty) days of close of financial year.

c. The Concessionaire shall make available the audit report and the auditor’s statement along with copies of the books for inspection by PCMC within 10 (ten) days of completion of such audit and the accounts audited should be as per the prevalent provisions of the Indian Companies Act, 1956.

**11 Force Majeure**

11.1 **Definition of Force Majeure**

Force Majeure shall mean any event or circumstance or combination of events or circumstances set out below that materially and adversely affects any Party in the performance of its obligations in accordance with the terms of this Agreement, but only if and to the extent that such events and circumstances are not within the affected Party’s reasonable control, and/or the effects of which the affected Party could not have prevented through prudent business practices or, through reasonable skill and care, including through the expenditure of reasonable sums of money;

a. the effect of any natural element or other Act of God, including, but not limited to any rain storm leading to flooding of the Project Area, lightning, earthquake, cyclone or other natural disaster;

b. fire or explosion, each case not being due to (a) inherent defects of the equipment comprising the Project (b) the failure to operate the Project in accordance with prudent business practices or (c) circumstances within the reasonable control of the affected Party’s contractors;

c. act of war (whether declared or undeclared), sabotage, terrorism or act of public enemy, (including the acts of any independent unit or individual engaged in activities in furtherance of a program of irregular warfare), acts of belligerents or foreign enemies (whether accorded diplomatic recognition or not), blockades, civil disturbance, revolution, rebellion or insurrection, exercise of military or usurped power, or any attempt at usurpation of power;

d. strikes, labour disruptions or any other industrial disturbances in Pimpri City as a whole and not specific to the Project which restrict the Concessionaire from performing his duties;
e. any governmental Concessionaire’s unreasonable delay, denial or refusal to grant or renew or any unreasonable revocation of any required permit, license, approval or authorisation, including Governmental Authorisations, provided that such adverse governmental action or inaction did not result from the Concessionaire’s non-compliance with any Applicable Law or any condition to the granting or maintenance of any such permit, license, approval or authorisation that was in effect on the date of signing this Agreement;

f. the expropriation or compulsory acquisition by any Government Concessionaire of (a) any shares in the Project Company if the result would be to acquire control of the subject Project Company or (b) any assets or rights of the Project Company.

g. early termination of this Agreement by PCMC for reasons of national security or national emergency

11.2 Exclusions from Force Majeure

Force Majeure shall expressly not include the following conditions, except to the extent resulting from a Force Majeure:

a. Unavailability, late delivery of equipment, materials, spare parts or consumables for the Project;

b. A delay in the performance of any contractor or supplier

c. Non-performance resulting from normal wear and tear typically experienced in a Project of this kind; and non-performance caused by, or connected with, the non-performing Party’s (a) negligent or intentional acts, errors or omission (b) failure to comply with any of the Laws of India, or (c) breach of, or default under this Agreement.

11.3 Notification Obligations

The Party claiming the Force Majeure shall inform the other Party of any event or circumstance of Force Majeure as soon as reasonably practicable. The affected Party shall thereafter furnish weekly reports with respect to its progress in overcoming the adverse effects of such event or circumstance and as soon as reasonable practicable shall submit to the other Party information supporting the claim for relief under this clause.

The Party claiming Force Majeure shall give notice to the other Party of the cessation of the relevant event or circumstance of Force Majeure and the cessation of the effects of such event or circumstance of Force Majeure on the enjoyment by such Party of its rights or the performance by such Party of its obligations under this Agreement as soon as practicable after becoming aware of such cessation.

11.4 Consequences of Force Majeure

a. Neither Party shall be responsible or liable for or deemed in breach thereof because of any failure or delay in complying with its obligations under or pursuant to this Agreement solely due to one or more Force Majeure or its or their effects or by any combination thereof, and the periods allowed for the performance by the Parties of such obligation(s) shall be extended on a day-for-day basis; provided, however, that no relief shall be granted to the Party claiming Force Majeure pursuant to this clause to the extent that such failure or delay would have nevertheless been experienced by that Party had such Force Majeure not occurred.
b. Except as otherwise provided in this clause, any time period specified for the performance of any obligation hereunder by the affected Party shall be extended by a period equal to the duration of the Force Majeure event or circumstance provided that the affected Party shall not be entitled to any such extension to the extent that such delay or failure to perform would have occurred, irrespective of the Force Majeure event or circumstance.

c. Either Party shall have the right to terminate the Agreement in the event of pendency of the Force Majeure conditions for a consecutive period of 120 (one hundred and twenty) days.
12 Events of default and termination

12.1 Events of default

Event of default shall mean either Concessionaire event of default or PCMC event of default or both as the context may admit or require.

a. Concessionaire event of default

Any of the following events shall constitute an event of default by the Concessionaire ("Concessionaire event of default") unless such event has occurred as a result of one or more reasons set out in clause 6.4:

i. Non Performance reported as per Clause 8.1a;

ii. The Concessionaire has failed to replenish the Performance security within 5 (five) working days of the encashment by PCMC of the earlier Performance Security;

iii. The Concessionaire has failed to make any payments due to PCMC and more than 90 (ninety) days have elapsed since such payment default;

iv. The Concessionaire is in material breach of any of its obligations under this Agreement and the same has not been remedied for more than 60 (sixty) days from the date of issuance of notice by PCMC;

v. Any representation made or warranty given by the Concessionaire under this Agreement is found to be false or misleading;

vi. The Concessionaire has abandoned the Project Facilities;

vii. The Concessionaire has unlawfully repudiated this Agreement or has otherwise expressed an intention not to be bound by this Agreement;

viii. The Concessionaire has suffered an attachment levied on any of its assets which has caused or is likely to cause a material adverse effect on the project and such attachment has continued for a period exceeding 90 (ninety) days.

ix. Any other instance explicitly mentioned in this Agreement as having constituted an event of default.

b. PCMC event of default

Any of the following events shall constitute an event of default by PCMC ("PCMC" event of default), unless caused by the Concessionaire event of default or a force majeure event:

i. PCMC has failed to make any payments due to the Concessionaire and more than 180 (one hundred and eighty) days have elapsed since such default;

ii. PCMC is in material breach of any of its obligations under this Agreement and has failed to cure such breach within 60 (sixty) days of receipt of notice thereof issued by the Concessionaire;

iii. PCMC has unlawfully repudiated this Agreement or otherwise expressed its intention not to be bound by this Agreement;

iv. Any representation made or warranties given by PCMC under this Agreement has been found to be false or misleading.
12.2 Termination due to event of default

a) Termination Notice

If a party having become entitled to do so decide to terminate this Agreement pursuant to the preceding sub clause (a) or (b), it shall issue termination notice setting out:

i. In sufficient detail the underlying event of default;

ii. The termination date, which shall be a date occurring not earlier than 60 (sixty) days from the termination notice;

iii. The estimated termination payment including the details of computation thereof; and,

iv. Any other relevant information

b) Withdrawal of Termination Notice

Notwithstanding anything inconsistent contained in this Agreement, if a party who has been served with the termination notice cures the underlying event of default to the satisfaction of the other party at any time before the termination occurs, the termination notice shall be withdrawn by the party which had issued the same.

Provided that the party in breach shall compensate the other party for any direct costs/consequences occasioned by the event of default which caused the issue of termination notice.

c) Termination payments

Upon termination of this Agreement on account of PCMC event of default, the Concessionaire shall be entitled to withdraw the Performance Security, if subsisting.

Upon termination of this Agreement on account of the Concessionaire’s event of default, PCMC shall be entitled to appropriate the Performance Security.

The Concessionaire shall continue to receive the Operation Fee for the services provided in accordance with the Agreement until the termination of this Agreement in a manner as stipulated in the clause 9.
12.3 Rights of PCMC on termination

a. Upon termination of this Agreement, PCMC have the power and authority to:
   i. Enter upon and take possession and control of the Project Facilities forthwith;
   ii. Prohibit the Concessionaire and any person claiming through or under the
       Concessionaire from using/dealing with the Project Facilities;

b. Upon termination of this agreement due to a Concessionaire or PCMC event of default, PCMC
   shall not have any right of possession over the assets of the Concessionaire.

c. Notwithstanding anything contained in this Agreement, PCMC shall not, as a consequence of
   termination or otherwise, have any obligation whatsoever including but not limited to obligations
   as to compensation for loss of employment, continuance or regularisation of employment,
   absorption or re-employment on any ground, in relation to any person in the employment of or
   engaged by the Concessionaire in connection with the Project, and the handover of the Project
   Facilities by the Concessionaire to PCMC shall be free from any such obligation.

13 Hand back and Transfer Requirements

13.1 Ownership

Without prejudice and subject to the Agreement, the ownership of the Project Facilities provided by
PCMC to the Concessionaire, including all modifications, renovations and improvements made
therein by the Concessionaire, shall at all times remain that of PCMC.

13.2 Concessionaire’s Obligations

The Concessionaire shall at the end of the Operation Period hand back all of its vacant and peaceful
possession of the existing Project Facilities including fixed assets provided by PCMC to the
Concessionaire and improvements made therein by the Concessionaire, to PCMC free of cost and in
good operable condition.

a. At least 6 (six) months before the expiry of the Operation Period a joint inspection of the Project
   Facilities shall be undertaken by PCMC, Project Officer and the Concessionaire. PCMC/ Project
   Officer shall, within 45 (forty five) days of such inspection prepare and furnish to the
   Concessionaire a list of works/jobs, if any, to be carried out. The Concessionaire shall promptly
   undertake and complete such works/jobs at least three months prior to the expiry of the Operation
   Period and ensure that the Project Facilities continue to meet such requirements until the same are
   handed back to PCMC.

b. PCMC/ Project Officer shall within 45 (forty five) days of the joint inspection undertaken under
   preceding clause (b) prepare and furnish to the Concessionaire a list of items, if any, with
   corresponding distinctive descriptions, which are to be handed back to PCMC.

c. The Concessionaire hereby acknowledges PCMC’s rights specified in Clause 12.3 enforceable
   against it upon Termination and its corresponding obligations arising thereof. The Concessionaire
   undertakes to comply with and discharge promptly all such obligations.

13.3 PCMC’s Obligations

PCMC shall, subject to PCMC’s right to deduct amounts from the Performance Security towards:
a. Carrying out works/jobs listed under Clause 13.2, which have not been carried out by the Concessionaire
b. Purchase of items, which have not been handed back to PCMC in terms of Clause 13.2 and
c. Any outstanding dues, which may have accrued in respect of the Project during the Operation Period

Duly discharge and release to the Concessionaire, the amounts in the Performance Security account or balance therein after deductions in respect to (a), (b) and (c) above, as the case may be, upon issuance of certificate from Project Officer regarding compliance by the Concessionaire with the Hand back and Transfer Requirements.

14 Joint Committee

A Joint Committee of 5 (five) members, comprising of 2 (two) members from PCMC and 2 (two) members from Concessionaire and 1 (one) neutral member appointed by both the parties shall be set up for this Project. The objective of Joint Committee shall be to arrive at amicable decisions in case of any disputes or disagreement with respect to this Project and this Agreement.

15 Dispute Resolution

Save where expressly stated to the contrary in this Agreement, any dispute, difference or controversy of whatever nature between the Parties and/or their associates/nominees, howsoever arising under, out of or in relation to this Agreement, at first level shall be referred to the Joint Committee.

In the event the dispute remains unresolved, then the same shall be referred to a PCMC Dispute Resolution Committee chaired by the Commissioner of PCMC and comprising of the Internal Auditor of PCMC, the Chief Accounts Officer of PCMC, the Garden Superintendent and the Concessionaire. The decision of this Committee shall be final and binding on the Parties.
15.1 Performance during dispute

Pending the resolution of any dispute, the parties shall continue to perform their respective obligations under this Agreement without prejudice to a final adjustment in accordance with such resolution.

16 Representations and warranties

16.1 Representations and warranties of the Concessionaire

a. The Concessionaire represents and warrants to PCMC that: It is duly organised, validity existing and in good standing under the laws of India;

b. It has full power and authority to execute, deliver and perform its obligations under this Agreement and to carry out the transactions contemplated hereby;

c. It has taken all necessary corporate and other action under Applicable Laws and its constitutional documents to authorise the execution, delivery and performance of this Agreement;

d. It has the financial standing and capacity to undertake the project;

e. This Agreement constitutes its legal, valid and binding obligation enforceable against it in accordance with the terms hereof;

f. The execution, delivery and performance of this Agreement will not conflict with, result in the breach of, constitute a default under or accelerate performance required by any of the terms of the Concessionaire’s memorandum and articles of association or any applicable laws or any covenant, Agreement, understanding, decree or order to which it is a party or by which it or any of its properties or assets are bound or affected;

g. There are no actions, suits, proceedings or investigations pending or to the Concessionaire’s knowledge threatened against it at law or in equity before any court or before any judicial, quasi-judicial or other authority, the outcome of which may constitute Concessionaire event of default or which individually or in the aggregate may result in material adverse effect;

h. It has complied with all applicable laws and has not been subject to any fines, penalties, injunctive relief or any other civil or criminal liabilities which in the aggregate have or may have material adverse effect;

i. Subject to the receipt by the Concessionaire from PCMC of any amount due under any of the provisions of this Agreement, in the manner and to the extent provided for under the applicable provisions of this Agreement all rights and interests of the Concessionaire in and to the Project Facilities shall pass to and vest in PCMC on the termination date free and clear of all encumbrances without any further act or deed on the part of the Concessionaire or PCMC

j. No representation or warranty by the Concessionaire contained herein or in any other document furnished by it to PCMC or to any government agency in relation to Applicable Permits contains or will contain any untrue statement of material fact or omits or will omit to state material fact necessary to make such representation or warranty not misleading.

k. No bribe or illegal gratification has been paid or will be paid in cash or kind by or on behalf of the Concessionaire to any person to procure the Project

l. Without prejudice to any express provision contained in this Agreement, the Concessionaire acknowledges that prior to the execution of this Agreement, the Concessionaire has after a
complete and careful examination made an independent evaluation of the project requirements and the information provided by PCMC, and has determined to its satisfaction the nature and extent of risks and hazards as are likely to arise or may be faced by the Concessionaire in the course of performance of its obligations hereunder.

m. The Concessionaire also acknowledges and hereby accepts the risk of inadequacy. Mistake or error in or relating to any of the matters set forth above and hereby confirms that PCMC shall not be liable for the same in any manner whatsoever to the Concessionaire.

16.2 Representations and warranties of PCMC

PCMC represents and warrants to the Concessionaire that:

a. PCMC has full power and authority to grant the Project;

b. PCMC has taken all necessary action to authorise the execution, delivery and performance of this Agreement;

c. This Agreement constitutes PCMC legal, valid and binding obligation enforceable against it in accordance with the terms hereof;

d. There are no legal suits or other legal proceedings pending or threatened against PCMC in respect of the Project Facilities or the Project.

16.3 Obligation to notify change

In the event that any of the representations or warranties made/given by a party ceases to be true or stands changed, the party who had made such representation or given such warranty shall promptly notify the other of the same.

17 Miscellaneous

17.1 Governing law and jurisdiction

This Agreement shall be governed by the laws of India. The courts at Pimpri-Chinchwad shall have jurisdiction over all matters arising out of or relating to this Agreement.

17.2 Waiver

a. Waiver by either party of any default by the other party in the observance and performance of any provision of or obligations under this Agreement:

i. Shall not operate or be construed as a waiver of any other or subsequent default hereof or of other provisions or obligations under this Agreement;

ii. Shall not be effective unless it is in writing and executed by a duly authorised representative of such party; and

iii. Shall not affect the validity or enforceability of this Agreement in any manner.

b. Neither the failure by either party to insist on any occasion upon the performance of the terms, conditions and provisions of this Agreement or any obligation hereunder nor time or other indulgence granted by a party to the other party shall be treated or deemed as waiver/breach of any terms, conditions or provisions of this Agreement.

17.3 Survival
Termination of this Agreement

a. Shall not relieve the Concessionaire or PCMC of any obligations already incurred hereunder which expressly or by implication survives termination hereof, and

b. except as otherwise provided in any provision of this Agreement expressly limiting the liability of the either party, shall not relieve the either party of any obligations or liabilities for loss or damage to the other party arising out of or caused by acts or omissions of such party prior to the effectiveness of such termination or arising out of such termination.

17.4 Amendments

This Agreement and the schedules together constitute a complete and exclusive understanding of the terms of the Agreement between the parties on the subject hereof and no amendment or modification hereto will be valid and effective unless agreed to by all the parties hereto and evidenced in writing.

17.5 Notices

Unless otherwise stated, notices to be given under this Agreement including but not limited to a notice of waiver of any term, breach of any term of this Agreement and termination of this Agreement, shall be in writing and shall be given by hand delivery, recognised international courier, mail, telex or facsimile transmission and delivered or transmitted to the parties at their respective addresses set forth below:

**If to PCMC:**

Additional Commissioner, PCMC
Pimpri Chinchwad Municipal Corporation

**If to the Concessionaire:**

The Chief Executive

Limited

Or such address, telex number or facsimile number as may be duly notified by the respective parties from time to time, and shall be deemed to have been made or delivered.

In the case of any communication made by letter, when delivered by hand, by recognised international courier or by mail (registered, return receipt requested) at that address, and

In the case of any communication made by telex or facsimile, when transmitted properly addressed to such telex number or facsimile number.

17.6 Severability

If for any reason whatsoever any provision of this Agreement is or becomes invalid, illegal or unenforceable or is declared by any court of competent jurisdiction or any other instrumentality to be invalid, illegal or unenforceable, the validity, legality or enforceability of the remaining provisions
shall not be affected in any manner, and the parties shall negotiate in good faith with a view to agreeing upon one or more provisions which may be substituted for such invalid, unenforceable or illegal provisions as nearly as is practicable. Provided that the failure to agree upon any such provisions shall not be subject to dispute resolution under this Agreement or otherwise.

17.7 No partnership

Nothing contained in this Agreement shall be construed or interpreted as constituting a partnership between the parties. Neither party shall have any authority to bind the other in any manner whatsoever.

17.8 Language

All notices required to be given under this Agreement and all communications, documentation and proceedings which are in any way relevant to this Agreement shall be in writing and in English language.

17.9 Exclusion of implied warranties etc.

This Agreement expressly excludes any warranty, condition or other undertaking implied at law or by custom or otherwise arising out of any other Agreement between the parties and any representation by any party not contained in a binding legal Agreement executed by the parties.

17.10 Counterparts

This Agreement may be constituted in two counterparts, each of which when executed and delivered shall constitute an original of this Agreement but shall together constitute one and only one Agreement.

17.11 Costs

The Concessionaire shall bear all the costs related to the signing and registration of this Agreement including but not limited to stamp duties and registration charges.

IN WITNESS WHEREOF THE, PARTIES HAVE EXECUTED AND DELIVERED THIS AGREEMENT AS OF THE DATE FIRST ABOVE WRITTEN.

SIGNED, SEALED AND DELIVERED

For and on behalf of PCMC by: For and on behalf of the Concessionaire by:

Signature
Name
Designation

In the presence of:
**SCHEDULE A: LIST OF ASSETS PROVIDED BY PCMC**
The Concessionaire shall submit the invoice in the following format.

(On the letter head of the Concessionaire)

Ref no.: Date:

Invoice No.:

To,

carden Superintendent, Garden Department
Pimpri Chinchwad Municipal Corporation
Pimpri

Subject: Submission of invoice for the Project - Undertaking census of tree and development of application for tree management using GIS Platform

Reference: Work order no.______ dated ______.

Dear Sir/ Madam,

With reference to the aforementioned subject, please find below the details for invoice

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Particular</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Total Commercial Proposal - (A)</td>
<td>Rs.</td>
</tr>
<tr>
<td>2</td>
<td>Key Deliverable No. (KD) Achieved - (B)</td>
<td>KD Number</td>
</tr>
<tr>
<td>3</td>
<td>Percentage payment for achievement of Key Deliverable as per clause 9 – (C)</td>
<td>%</td>
</tr>
<tr>
<td>4</td>
<td>Applicable Operation Fee – (D = A x C)</td>
<td>Rs.</td>
</tr>
<tr>
<td>6</td>
<td>Deduct Penalties (Rs in figures) – (E)</td>
<td>Rs.</td>
</tr>
<tr>
<td>7</td>
<td>Payment (Rs in figures) – (F = D - E)</td>
<td>Rs.</td>
</tr>
</tbody>
</table>

Regards,

Signature

Authorised Persons’s Name
SCHEDULE C:

FORMAT I: CENSUS OF TREES

1. Ward wise Tree distribution in Zones

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Name of Tree (Common Name)</th>
<th>Ward No</th>
<th>Total No. of Trees</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
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</tbody>
</table>

Total

Note: This table shall be prepared for each Zone of PCMC

2. Land ownership wise Tree distribution in Ward

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Name of Tree (Common Name)</th>
<th>Central Government</th>
<th>State Government</th>
<th>Industrial</th>
<th>Gardens</th>
<th>Roads</th>
<th>Private Land</th>
<th>Others</th>
<th>Total</th>
</tr>
</thead>
</table>

Total

Note: The information needs to be provided for each existing electoral ward / tree Zone of PCMC

3. Land ownership wise tree distribution in Zone

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Name of Tree (Common Name)</th>
<th>Central Government</th>
<th>State Government</th>
<th>Industrial</th>
<th>Gardens</th>
<th>Roads</th>
<th>Private Land</th>
<th>Others</th>
<th>Total</th>
</tr>
</thead>
</table>

Total

Note: The information needs to be provided for each Zone of PCMC

4. Ward wise Tree Classification

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Name of Tree (Common Name)</th>
<th>Carbon Sequestration Capacity (Ht 4 mtr or standard height)</th>
<th>Category of tree</th>
<th>Fruit</th>
<th>Ornamental</th>
<th>Others (Pls Specify)</th>
<th>Total</th>
</tr>
</thead>
</table>

Total

Note: The details needs to be provided for each existing electoral ward / tree Zone of PCMC
5. Zone wise Tree Classification

**Table 5: Classification of Tree in A/B/C/D/E/F Zone**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Tree (Common Name)</th>
<th>Cabon Sequestration Capacity (Ht 4 mtr or standard height)</th>
<th>Category of tree</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td></td>
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<td>Fruit</td>
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<td></td>
<td>Ornamental</td>
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<td></td>
<td>Others (Pls Specify)</td>
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<td>Total</td>
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Note: The details needs to be provided for each Zone of PCMC

6. Prabhag wise List of trees with Botanical Name

**Table 6 : Botanical details of Trees**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Tree (Common Name)</th>
<th>Botanical Name</th>
<th>Family</th>
<th>Importance according to Cabon Sequestration Capacity in the Grade Scale of 1 to 100</th>
<th>Total</th>
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Note: The details needs to be provided for each Zone of PCMC

7. Tree Details

**Table 7: Ward wise Details of Census Trees**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Tree (Common Name)</th>
<th>GIS Coordinates</th>
<th>Tree Stem or trunk Girth (Cm)</th>
<th>Tree Height (Meter)</th>
<th>Tree Age</th>
<th>Tree Condition (Protection required for Survival or Tree can survive naturally)</th>
<th>Importance according to Cabon Sequestration Capacity in the Grade Scale of 1 to 100</th>
<th>Total</th>
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</table>

Note: Details need to be provided for each Census tree for each existing electoral ward/ tree Zone of PCMC

8. Ward wise tree with uses

**Table 8: Uses of tree in Ward No x or y or z of PCMC**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Tree (Common Name)</th>
<th>Aesthetic Use</th>
<th>Cultural Use</th>
<th>Ecological Use</th>
<th>Economic Use</th>
<th>Importance according to Cabon Sequestration Capacity in the Grade Scale of 1 to 100</th>
<th>Total</th>
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Note: Details need to be provided for each existing electoral ward/ tree Zone of PCMC
**SCHEDULE D: FORMAT II: REQUIREMENT OF PLANTATION**

1. Need for additional Plantation in Ward

**Table 9: Ward wise Plantation Requirement**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>No. of trees Required as per Norms</th>
<th>No. of existing tree</th>
<th>Gap in tree plantation</th>
<th>Is there a scope of Plantation (Public Open Land - Yes/No)</th>
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</table>

Note: Details need to be provided for each Ward of PCMC

2. Suggestions on type of tree plantation

**Table 10: Top 20 trees suggested for Plantation in each Ward No.**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Tree (Common Name)</th>
<th>Aesthetic Value in the Grade Scale of 1 to 100</th>
<th>Cultural Value in the Grade Scale of 1 to 100</th>
<th>Economic Value in the Grade Scale of 1 to 100</th>
<th>Cabon Sequestration Capacity in the Grade Scale of 1 to 100</th>
<th>Cost of Plantation in Grade Scale of 1 to 100</th>
<th>Natural Survival Capacity of tree in PCMC atmosphere</th>
<th>No. of Trees to be planted to meet Act standard norms</th>
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Note: Details need to be provided for each Ward of PCMC. Note: Allergic plants should not be recommended.

3. Need for Plantation requirement in Zone

**Table 11: Plantation Requirement in A/B/C/D/E/F Zone**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>No. of trees Required as Norms</th>
<th>No. of existing tree</th>
<th>Gap in tree plantation</th>
<th>Is there a scope of Plantation (Public Open Land - Yes/No)</th>
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</table>

Note: Details need to be provided for each Zone of PCMC

4. Suggestions on type of tree plantation in Zone

**Table 12: Zone wise planting suggestion**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Tree (Common Name)</th>
<th>Aesthetic Value in the Grade Scale of 1 to 100</th>
<th>Cultural Value in the Grade Scale of 1 to 100</th>
<th>Economic Value in the Grade Scale of 1 to 100</th>
<th>Cabon Sequestration Capacity in the Grade Scale of 1 to 100</th>
<th>Cost of Plantation in Grade Scale of 1 to 100</th>
<th>Natural Survival Capacity of tree in PCMC atmosphere (High/Moderate/Low)</th>
<th>No. of Trees to be planted to meet Act standard norms</th>
</tr>
</thead>
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</table>
Selection of Agency for undertaking census of tree and development of application for tree management using GIS Platform

Note: Details need to be provided for each Zone of PCMC. Note: Allergic plants should not be recommended.

5. Top 50 Natural Survival (High/Moderate) tree for PCMC

Table 13: Suggestive Natural Survival Trees for PCMC

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Tree (Common Name)</th>
<th>Natural Survival Capacity of tree in PCMC atmosphere (High/Moderate)</th>
<th>Aesthetic Value in the Grade Scale of 1 to 100</th>
<th>Cultural Value in the Grade Scale of 1 to 100</th>
<th>Economic Value in the Grade Scale of 1 to 100</th>
<th>Carbon Sequestration Capacity in the Grade Scale of 1 to 100</th>
<th>Cost of Plantation in Grade Scale of 1 to 100</th>
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</table>

Note: Allergic plants should not be recommended.

6. Top 50 High Carbon Sequestration Capacity tree for PCMC

Table 14: Suggestive High Carbon Sequestration Capacity tree for plantation

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Tree (Common Name)</th>
<th>Carbon Sequestration Capacity in the Grade Scale of 1 to 100</th>
<th>Natural Survival Capacity of tree in PCMC atmosphere (High/Moderate)</th>
<th>Aesthetic Value in the Grade Scale of 1 to 100</th>
<th>Cultural Value in the Grade Scale of 1 to 100</th>
<th>Economic Value in the Grade Scale of 1 to 100</th>
<th>Cost of Plantation in Grade Scale of 1 to 100</th>
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</table>

Note: Allergic plants should not be recommended.
The detailed project report on Urban Forestry shall include

- The existing status on tree plantation in the city.
- Gap analysis on the tree plantation requirement.
- Recommendation on the plantation varieties suitable to improve tree cover and air quality.
- Estimation and Funding Requirement.
- Urban Forest Street Designs, storm water management for plantation and risk management
- Plantation protection plan including exotic and invasive pest & diseases protection plan.
SCHEDULE F: PERFORMA OF PERFORMANCE SECURITY

THIS DEED OF GUARANTEE executed on this the __________day of __________ at __________________ by __________________ (Name of the Bank) having its Registered office at __________________ and having its branch office at __________, Pimpri, hereinafter referred to as “the Guarantor” which expression shall unless it be repugnant to the subject or context thereof include successors and assigns;

In Favour of

Pimpri Chinchwad Municipal Corporation (hereinafter referred as “Corporation”), having its principal office at Pimpri Chinchwad Municipal Corporation main building, Pune Mumbai Road, Pimpri - 411018, which expression shall unless it be repugnant to the subject or context thereof include its, successors and assigns;

Whereas

By the Concession Agreement (“the Concession Agreement”) being entered into between Corporation and ____, a company incorporated under the Companies Act, 2013, having its registered office at ______________, (“the Concessionaire”), the Concessionaire has been granted the Concession Rights for conducting census of trees and development of application for tree management using GIS platform (hereinafter referred to as “the Project”).

A. In terms of clause 6.1.1 of the Concession Agreement, the Concessionaire is required to furnish to Corporation, an unconditional and irrevocable bank guarantee for an amount of Rs. ____________ (Rupees __________ only) as security for due and punctual performance / discharge of its obligations under the Concession Agreement.

B. At the request of the Concessionaire, the Guarantor has agreed to provide bank guarantee, being these presents guaranteeing the due and punctual performance / discharge by the Concessionaire of its obligations relating to the Project.

NOW THEREFORE THIS DEED WITNESSETH AS FOLLOWS:

Capitalised terms used herein but not defined shall have the meaning assigned to them respectively in the Concession Agreement.

1. The Guarantor hereby irrevocably guarantees the due and punctual performance by M/s _________________ (hereinafter called “the Concessionaire”) of all its obligations relating to the Project and in connection with achievement of obligations of the Concessionaire in accordance with the Concession Agreement.

2. The Guarantor shall, without demur, pay to Corporation sums not exceeding in aggregate Rs. __________/- (Rupees __________ only), within five (5) calendar days of receipt of a written demand thereof from Corporation stating that the Concessionaire has failed to meet its obligations under the Concession Agreement. The Guarantor shall not go into the veracity of any breach or
failure on the part of the Concessionaire or validity of demand so made by Corporation and shall pay the amount specified in the demand notwithstanding any direction to the contrary given or any dispute whatsoever raised by the Concessionaire or any other Person. The Guarantor’s obligations hereunder shall subsist until all such demands are duly met and discharged in accordance with the provisions hereof.

3. In order to give effect to this Guarantee, Corporation shall be entitled to treat the Guarantor as the principal debtor. The obligations of the Guarantor shall not be affected by any variations in the terms and conditions of the Concession Agreement or other documents or by the extension of time for performance granted to the Concessionaire or postponement/non exercise / delayed exercise of any of its rights by Corporation or any indulgence shown by Corporation to the Concessionaire and the Guarantor shall not be relieved from its obligations under this Guarantee on account of any such variation, extension, postponement, non exercise, delayed exercise of any of its rights by Corporation or any indulgence shown by Corporation, provided nothing contained herein shall enlarge the Guarantor’s obligation hereunder.

4. This Guarantee shall be irrevocable and shall remain in full force and effect until ______ unless discharged / released earlier by Corporation in accordance with the provisions of the Concession Agreement. The Guarantor’s liability in aggregate be limited to a sum of Rs. __________/- (Rupees _______ Only).

5. This Guarantee shall not be affected by any change in the constitution or winding up of the Developer / the Guarantor or any absorption, merger or amalgamation of the Concessionaire / the Guarantor with any other Person.

6. The Guarantor has power to issue this guarantee and discharge the obligations contemplated herein, and the undersigned is duly authorised to execute this Guarantee pursuant to the power granted under ______________ .

IN WITNESS WHEREOF THE GUARANTOR HAS SET ITS HANDS HEREUNTO ON THE DAY, MONTH AND YEAR FIRST HEREINABOVE WRITTEN.

SIGNED AND DELIVERED

by ______________________________ Bank

by the hand of Shri _________________________

its ____________________and authorised official.

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Sixty and six months from the date of signing the Concessionaire Agreement