

Nashik Municipal Corporation, Nashik
(Gardens & Tree Authority Department)
Sharanpur Road, Nashik- 422002

E-QUOTATION NOTICE

As per provision of Section 7 (b) of the Maharashtra (Urban Areas) Protection & Preservation of the Tree Act 1975 & The order passed by Hon. High Court, Bombay, quotations are invited for doing Tree Census using GPS base Technology and GIS mapping.

The details of Terms & Conditions are available on NMC portal www.nashikcorporation.in as well as in the office of the Garden Superintendent at free of cost.

The offer containing the rate should be addressed and submitted in sealed envelope to The Garden Superintendent, Rajeev Gandhi Bhavan, Sharanpur Road, NMC, Nashik – 422 002, on or before 26 /10/2015 by 15.00 pm.

The Municipal Commissioner, NMC reserves the right to reject all or any of the offers without giving any reason.

Sd/-
Additional Commissioner-1
Nashik Municipal Corporation, Nashik

Scope of work :-

The Quotation is invited for undertaking the work of census of existing trees having woody stem or trunk having a more than 10 cm girth and 3 meters of height upon all lands within jurisdiction of Nasik Municipal Corporation in compliance of the provisions of section 7(b) of the act, the rule (Form A and B) and guideline given by Hon .High Court, Bombay. The scope of work also includes installation of GIS and GPS software along with complete data base on NMC owned master computer.

Technical Specifications as per Hon. High Court at Judicature at Bombay, Civil Appellate Jurisdiction, Public Interest Litigation 93/2009 order dt.20th September 2013 As per the court order following process has to be followed

Scope of Work :-

- (i) The Surveyor logs in with login credentials;
- (ii) Android application authenticates user and gives access for survey;
- (iii) The Surveyor records the requisite details and tree records;
- (iv) The data so recorded is electronically (without human intervention, so that it is not tampered) transferred from android application to the web server;
- (v) On approval of such data by the competent person/authority, it gets inserted into the actual database which then becomes open for public access;
- (vi) All these activities are stored (data log files) where user login date, time, ip and other details can be seen.
- (vii) The technology to be employed should have the following basic features :
 - a) The method for recording of the data should be user friendly and even a surveyor who is not an expert in the operation of hand-held machines should be enable to enter the data. The data fields must be easy to understand and easy to operate ;
 - b) Database of trees & properties must be in accordance with the requirements of the Maharashtra (Urban Areas) Protection & Preservation of Trees Act 1975 and amendments rules of 2009 ;
 - c) The latest technology should be used that will automate the tree census process, and will digitize the tree census data. However, it should be possible to capture latitude, longitude and other tree data with or without the availability of the internet connection. Mapping of each tree should be possible by using GPS locations on Google map or GIS map or GIS application ;
 - d) The application should support all versions of Android mobiles / tablets having compatibility with all screen sizes and various models / makes ;
 - e) It should be possible to store date and time of every data captured for an individual tree, which will make it possible to check the efficiency of an individual surveyor ;
 - f) The transfer of data from the handheld device to the server should be automatic and not manually, so that data so recorded by the surveyor is not tampered ;
 - g) The web application should process and store the data ;

- h) The Server should be cable of storing unlimited data having unlimited hosting space and bandwidth. Web application should be developed using proven and tested programming.

Tools/languages;

- i) Preferably, the Application should be able to generate notice as required by various provisions of the Act and the rules e.g. to the property owner for plantation of deficit number of trees (**Section 7c**) ;
- j) The web application should be developed in such a way that, mapping & tracking of special attention trees; like endemic, rare and endangered trees will be possible ;
- k) Preferably the application should be able to store the observations and suggestions of plant species for plantation in the property based on natural diversity of trees in the area ;
- l) The web application should be able to calculate annual carbon assimilation rate of trees in the city/ward/sub ward/property/individual tree ;
- m)The application should be capable of taking geo-tagged pictures for reference (single image/panoramic view/video) ;
- n) Using web application, anyone should be able to see the tree census data ;
- o) The data so collected and processed must be fully secured, while developing web application, particularly in respect of threats from hackers ;
- p) The server should be capable of storing unlimited data and should have unlimited bandwidth ;
- q) The web application should be capable of gathering and generating different reports such as :
- i. Property wise data ;
 - ii. Area/ward/pin code data ;
 - iii. Scientific name ;
 - iv. Common name ;
 - v. GBH
 - vi. Height
 - vii. Canopy Diameter
 - viii. Carbon sequestration rate
 - ix. Flowering season ;
 - x. Flower colour ;
 - xi. Fruiting season ;
 - xii. Native/exotic trees ;
 - xiii. Growth rate ;
 - xiv. Wild/cultivated tress ;
 - xv. Tree use; and
 - xvi. Tree condition
 - xvii. Most dominant/rare tree species

The data has to be stored on bidder's server initially. Authenticated data by Garden Department should be published on the NMC's web site.

Terms & Conditions :-

- 1) The Agency should carry out the tree census by way of using latest and Modern Technology.
- 2) The Agency should locate the position of each and every tree by use of hand-held GPS devices, Tabs or Mobiles with location accuracy up to 1.0 mtr.
- 3) The Agency should also Mark each and every position of the located tree on Google Maps as well NMC GIS Maps with all the attribute data in the format given by NMC.
- 4) The survey is to be completed in all respect with-in 12 months from the date of work order.
- 5) It will be the responsibility of the Agency to collect the data in the format given by NMC.
- 6) The data entry and mapping of trees on GIS Maps as well as Google Maps will be the responsibility of the Agency.

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QUOTATION FORM

As per provision of Section 7 (b) of the Maharashtra (Urban Areas) Protection & Preservation of the Tree Act 1975 & the order passed by Hon. High Court, Bombay, quotations are invited for following work.

The details of Terms / Conditions for the said work are available on NMC portal www.nashikcorporation.in or in the office of the Garden Superintendent at free of cost.

Sr. No.	Particulars of work	Unit	Rate to be quoted in this column
1.	Firstly, developing Customized Data base Software for Tree Census using GPS base Technology and GIS mapping, The Software to carry out Tree Census should be as per high court's guide-lines. Later-on Doing Tree Census by way of using that developed Customized Data base Software using GPS base Technology and GIS mapping, Conducting physical survey for entire NMC area, Operate, Manage the Tree Census Data including doing data entry etc. complete under Provisions of Tree Act & Rules & as per Hon. Bombay High Court's Order. Doing this work for 25 lakh trees spread all over NMC area.	Per Tree	

Signature

Name

Name of Agency

Address

Mob. No.

Land Line No.

The above offer form duly filled should be addressed and submitted in sealed envelope to The Garden Superintendent, Rajeev Gandhi Bhavan, Sharanpur Road, NMC, Nashik – 422 002, on or before 26 /10/2015 by 15.00 pm.