Sample Tree Inventory Request for Proposals Specifications

Notice: The following specification is provided by the N.C. Forest Service for informational purposes. The prospective user should have their legal counsel review and approve the use of any of this content to meet their needs.

Scope of services

Services to complete a statistical sample tree inventory of the (community name) properties as specified in this document. If these services and terms are acceptable, this document will serve as a contract for services.

Sample tree inventory

The objective is to complete a three to six percent (3-6%) random sample inventory of trees located along community streets, on parklands and other public properties defined in the following.

A.   Inventory methodology
   1. Street trees
        a. Sample 3-6% of street miles
        b. Stratification
              i. Minimum – 4 quadrants
              ii. Zoning districts or other
        c. Sample units are street block segments
        d. Inventory all trees and planting sites on the sample block segment
   2. Park trees & public property
        a. 3-6% of the property area
        b. Stratification
              i. Mowed areas
              ii. Natural areas
   3. Standard error
        a. <=10%
B.   Scope of inventory – Walk each street sample plot, and walk each property sample plot. Identify trees as specified. Catalog tree management and location information for these trees. Make management recommendations as specified.

   1. Trees that will be inventoried.
        a. All trees and street tree planting sites.
        b. Street trees.
              i. All trees and planting sites located within the street right of way (ROW).

        ii. The (community name) will provide the ROW widths for each street, definition of the ROW and /or manpower to identify the ROW.

    c. Park/properties.

        i. Trees located within high target areas and intensively managed landscaped properties. These will include:

            1. Properties that have a high frequency of pedestrians, traffic, parking, buildings and the landscapes that are mowed.

        ii. The margins of the above referenced properties that are either naturalized or bordering adjacent property owners.

        iii. The (community name) will define the scope of the area to be surveyed including survey maps, property limits and or the manpower to define the properties to be surveyed.

B.   Level of inspection and defining management recommendations

    1. Level of inspection - level of inspections as defined by the International Society of Arboriculture's (ISA) Tree Risk Assessment BMP plus work prioritization.

        a. International Society of Arboriculture Level 2 -- A walk-around visual inspection and assessment of the health and structure of the tree from the ground and surrounding site culminating into a management recommendation. The assessment will include the digital collection of the inventory data and the use of hand tools such as a sounding mallet, probing tool and binoculars to further evaluate the defects present in root crown, trunk and crown of the tree. A complete ISA tree risk assessment and rating will not be completed.

    2. Management recommendations – management recommendations for each tree inventoried are defined as follows:

        a. Tree removals

            i. Trees with readily obvious, major defects that present an unacceptable risk of failure under normal weather conditions will be considered for removal. The tree's health and the severity of the defects present will be considered when making a removal recommendation. If one-third or more of a tree's live leaf areamust be removed to remove defective limbs, the tree will be recommended for removal.

        b. Pruning needs

            i. Safety prune

               1. Defective branches 4 inches or larger in diameter.

               2. Branches over street being struck by vehicles.

3. Branches hanging into sight line of pedestrians over sidewalks.
4. Branches resting on streetlights, other structures or utilities.
5. These needs will be prioritized.

    ii. Reduction prune – tree with trunk or large scaffold defects that require reduction pruning to reduce the risk of failure.

    iii. Routine prune – tree to be pruned during routine pruning schedules.

    iv. Train prune – young tree requiring structural train pruning.

    v. Planting sites (streets only)

c. Management priority -- each tree that has had a removal or safety pruning recommendation will be assigned a management priority based on the targets present, occupancy rates and consequences of failure.

    i. Highest

    ii. Medium

    iii. Lowest

C. Tree management data variables -- The following data will be collected for each tree:

  1. Tree data

    a. Street or park/property name (optional)

    b. Address

    c. On-street – street trees only. Street on which the tree is located.

    d. Tree number. Park trees will be the tree tag number attached to each tree.

    e. Side of lot -- front, side rear, or median, north, east, south, north

    f. Tree genus, species and common name -- each tree will be identified to genus and species, and a common name will be provided.

    g. DBH (diameter breast height) -- diameter in inches at 4½ feet above grade measured with a diameter tape or Biltmore stick

    h. Management or work need -- as described in (II) above.

    i. Management priority

    j. Health – Tree biological health or the condition of foliage and twigs expressed as:

       i. Excellent -- exceptional shoot growth, foliar color and density, and absence of dieback or damaging pests.

      ii. Good -- typical condition for the species including shoot growth, foliar color and density, and absence of dieback or damaging pests.

     iii. Fair -- deficiency in one category such as below normal shoot growth, foliar color and density, or presence of dieback or damaging pests.

     iv. Poor -- below typical or deficiency in two or more categories such as shoot growth, foliar color and density, or presence of dieback or damaging pests.

     v. Very Poor -- major deficiency in two or more categories such as shoot growth, foliar color and density, or presence of major dieback or damaging pests.

     vi. Dead -- no living tissues.

k. Structure – tree structure or the condition of structural portions of the tree, expressed as:

     i. Excellent -- exceptional structure with an absence of any structural defects such as decay or weak branch attachments

     ii. Good -- absence of any significant structural defects although minor defects such as low amounts of decay that are unlikely to fail under normal weather conditions may be present.

     iii. Fair -- one significant structural defect is present that may fail under storm conditions, or several minor structural defects can be found.

     iv. Poor -- one or more significant structural defect is present that may fail under normal weather conditions.

     v. Very Poor -- several significant structural defects are present that may fail under normal weather conditions.

l. Overhead utilities -- presence of primary or secondary electrical distribution wires or telephone or street lighting.

m. Site type – type of location the tree is growing in such as lawn area, natural area, border tree, tree lawn, street median or tree pit.

n. Planting area – Most limiting dimension of planting area in feet.

o. GPS coordinates

D   Quality control -- the following quality control checks will be implemented during the inventory.

    1. All data will be reviewed digitally for errors, and errors will be corrected.

    2. One percent of the inventory will be randomly reinspected in the field for error. Most reevaluations will focus on the trees recommended for removal.

  E   Data format
    1. Excel spreadsheet with all data
    2. Shapefile

III.   Inventory report

The consultant shall provide an inventory report summarizing the methodologies and urban forest management statistics outlined as follows.

  1) Inventory methodologies
  2) Management statistics
    a) Species distribution
    b) Diameter distribution
    c) Health distribution
    d) Work need
  3) Tree species exceeding 10% of the total population
    a) Diameter distribution
    b) Health distribution
    c) Work need
  4) Ecosystem services of trees

IV. Fee schedule

Item	*Fee*			
	Street Trees	Park Trees	Public Properties	Total
3% sample – Community population > 250,000				
4% sample – Community population 150,000 - 250,000				
5% sample – Community population 50,000 – 150,000				
6% sample – Community population < 50,000				

V.   Contract requirements

Qualifications

Company/firm

The company must demonstrate in a brief narrative and at least five (5) years of experience in completing municipal address-based and GPS tree inventories. Please supply three references.

Inventory staff

Staff performing the field inventory work must have the following minimum qualifications. Provide a list of their names and qualifications.

1. An associate degree in arboriculture or urban forestry or an International Society of Arboriculture certified arborist and three (3) years of experience completing municipal tree inventories

2. International Society of Arboriculture tree risk assessment qualified