City of Fayetteville Staff Review Form

City Council Agenda Items and Contracts, Leases or Agreements

10/16/2012
City Council Meeting Date
Agenda Items Only

Megan Dale (MD)	Park Planning / Urban Forestry	Parks and Recreation
Submitted By	**Division**	**Department**

Action Required:

Approval of a bid waiver and a Memorandum of Agreement with Arkansas Forestry Commission to participate in an Urban Tree Canopy Assessment, as required by Chapter 167.03(C) Urban Forest Analysis.

$24,995	$80,000	Forestry, Safety and ADA Compliance
Cost of this request	Category / Project Budget	Program Category / Project Name
4470.9470.5314.00	$0	Urban Forest Analysis
Account Number	Funds Used to Date	Program / Project Category Name
02045.1201	$80,000	Sales Tax Fund
Project Number	Remaining Balance	Fund Name

Budgeted Item [x] **Budget Adjustment Attached** [ ]

Connie Edmonston — 9-27-12
Department Director — Date

Previous Ordinance or Resolution # _____

Original Contract Date: _____

Original Contract Number: _____

9-28-12
City Attorney — Date

Paul A. Becker — 9-29-2012
Finance and Internal Services Director — Date

Received in City Clerk's Office 09-27-12 P03:39 RCVD

10-3-12
Chief of Staff — Date

Received in Mayor's Office ENTERED 9/28/12

10/9/12
Mayor — Date

Comments:

Fayetteville ARKANSAS
www.accessfayetteville.org

THE CITY OF FAYETTEVILLE, ARKANSAS
DEPARTMENT CORRESPONDENCE

CITY COUNCIL AGENDA MEMO

To: Mayor Lioneld Jordan and City Council

Thru: Don Marr, Chief of Staff
Connie Edmonston, Parks and Recreation Director C.E.
Alison Jumper, Park Planning Superintendent

From: Megan Dale, Urban Forester MD

Date: 16 October 2012

Subject: **Urban Tree Canopy Assessment Grant – Bid Waiver and Memorandum of Agreement between Arkansas Forestry Commission and City of Fayetteville**

PROPOSAL

Staff is requesting approval of a bid waiver and a Memorandum of Agreement with the Arkansas Forestry Commission to participate in an urban forest canopy assessment. Chapter 167: Tree Preservation and Protection states that an Urban Tree Canopy Assessment must be completed every 10 years. The last study was done in 2002 and a new study is due to be completed this year.

The Arkansas Forestry Commission (AFC) desires to partner with the City of Fayetteville (COF) to participate in an urban forest canopy assessment which is part of a regional program through the USDA Forest Service. The AFC and COF will work with a consultant to provide an assessment of the Urban Tree Canopy (UTC) for COF. This UTC Assessment will include both public and private trees. Partial funding is provided by the USDA Forest Service.

The study is part of a three state project where tree canopy analyses will be conducted in Arkansas, Tennessee, and Mississippi. Other Arkansas cities participating in the study include Little Rock, North Little Rock, Jonesboro, and West Memphis.

The objectives for the City of Fayetteville are to obtain a current classification of land cover, conduct an analysis of the urban tree canopy, and determine ecosystem benefits that area derived from urban forests. This study will help the city in setting canopy goals, revising policies, promoting the benefits of trees, and developing sound management plans.

AFC advertised a Request for Proposals in accordance with all state bidding requirements that included deliverables desired by the City of Fayetteville. AFC and COF staff evaluated the proposals and selected Plan-It Geo to perform the work. The performance of the Program will be determined by the deliverables as outlined in the Request for Proposals provided by AFC.

The funding for Fayetteville's portion of the project will be under the administration of the Urban Forestry Coordinator of AFC and the Urban Forester for COF. Funds will be paid by the City of Fayetteville directly to Plan-It Geo, therefore requiring a bid waiver.

All work for the City of Fayetteville's canopy study will be complete by November 30, 2012.

RECOMMENDATION:
Staff recommends approving a bid waiver and a Memorandum of Agreement with Arkansas Forestry Commission to participate in an Urban Tree Canopy Assessment, as required by Chapter 167.03(C) Urban Forest Analysis.

BUDGET IMPACT:
Total project cost is $44,995. Arkansas Forestry Commission agrees to provide funding in the amount of $20,000. Matching funds in the amount of $24,995 are budgeted in the Sales Tax Fund in project 02045.1201, Urban Forest Analysis.

Attachments:
Chapter 167 Tree Preservation and Protection
Memorandum of Agreement with Arkansas Forestry Commission
RFP advertised by AFC
Purchase Order Request

ORDINANCE NO. _____

AN ORDINANCE TO WAIVE FORMAL COMPETITIVE BIDDING AND APPROVE A MEMORANDUM OF AGREEMENT BETWEEN THE ARKANSAS FORESTRY COMMISSION AND THE CITY OF FAYETTEVILLE TO PAY $20,000.00 AND $24,995.00 RESPECTIVELY TO PLAN-IT GEO TO CONDUCT A TREE CANOPY ANALYSIS FOR FAYETTEVILLE

WHEREAS, Section 167.03 of the Fayetteville Code, **Tree Registry and Urban Forest Analysis** requires the City to "initiate a tree canopy analysis in 2012"; and

WHEREAS, the Arkansas Forestry Commission has agreed to pay $20,000.00 of the $44,995.00 needed to pay Plan-It Geo (which was competitively selected through a Request for Proposals process) for the tree canopy analysis.

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NOW, THEREFORE BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF FAYETTEVILLE, ARKANSAS:

Section 1: That the City Council of the City of Fayetteville, Arkansas hereby determines that such circumstances make formal competitive bidding impractical and therefore waives formal competitive bidding and agrees to enter into a Memorandum of Agreement with the Arkansas Forestry Commission to cost share the services of Plan-It Geo to obtain the necessary tree canopy analysis for Fayetteville which will be shared by the Commission and Fayetteville and authorizes Mayor Jordan to execute this Agreement which requires the City to pay $24,995.00 and the Commission to pay $20,000.00.

PASSED and **APPROVED** this 16th day of October, 2012.

APPROVED: ATTEST:

By: _____ By: _____

LIONELD JORDAN, Mayor **SONDRA E. SMITH**, City Clerk/Treasurer

MEMORANDUM OF AGREEMENT
BETWEEN
ARKANSAS FORESTRY COMMISSION
AND
CITY OF FAYETTEVILLE

Whereas the Arkansas Forestry Commission (AFC) desires to partner with the City of Fayetteville (COF) to participate in an urban forest canopy assessment which is part of a regional program through the USDA Forest Service. The AFC and COF will work with a vendor to provide an assessment of the Urban Tree Canopy (UTC) for COF. This UTC Assessment will pertain to both public and private trees. Funding is provided by the USDA Forest Service (USDA FS).

This project is one of a series of assessments being developed for a landscape scale Urban Tree Canopy project that encompasses cities in Arkansas, Tennessee, and Mississippi. This project will "allow communities to have tree canopy assessments done for their urban forests and provide them with the tools needed to develop canopy goals and strategies to improve green infrastructure."

The objectives for the City of Fayetteville are to obtain a current classification of land cover, conduct an analysis of the urban tree canopy, and determine ecosystem benefits that are derived from the urban forests. This will assist COF in setting canopy goals, revising policies, promoting the benefits of trees, and developing sound management plans. UTC assessment protocols integrate high resolution land cover aerial multispectral photography with planimetric datasets such as building and streets to determine an area's existing UTC. The UTC geographic information system analyses also define land-use areas, including impervious layers, and the percentages of these lands that are covered by trees.

The Area of Interest (AOI) is 55.4 square miles defined by the city limits of the COF, in Washington County, Arkansas.

The funding for this project will be under the administration of the Urban Forestry Coordinator of AFC and the Urban Forester for COF. The performance of the Program will be determined by the deliverables as outlined in the Request for Proposals provided by AFC that the vendor, Plan-It Geo, bid on and was awarded. All requirements as agreed to by AFC and COF in said proposal will be provided by Plan-It Geo.

AFC agrees to provide funding in the amount of $20,000 and the matching in the amount of $24,995 will be provided by the COF.

The contract period will be from August 30, 2012 to November 30, 2012.

AGREED TO BY:

Patti Erwin

Patti Erwin

Urban Forestry Program Coordinator

Title

9/17/12

Date

AGREED TO BY:

Lioneld Jordon

Mayor

Title

Date

MEMORANDUM OF AGREEMENT
ARKANSAS FORESTRY COMMISSION & the CITY OF FAYETTEVILLE
PROPOSED BUDGET
9/14/2012

CORE RFP TASKS	**COST**
Project/Contract Management	$1,500
Data Collection	$1,000
Land Cover Classification	$10,500
Accuracy Assessment	$1,000
UTC Analysis and Mapping	$4,500
Ecosystem Services Analysis	$5,000
Urban Forest Management Scenarios	$3,500
Powerpoint, Report & Delivery	$7,999
Sub-Total	$34,995
ADDITIONAL TASKS	
2-pg Summary Factsheet	$2,000
Training Workshop	$3,250
Potential Planting Sites & Prioritization	$4,250
Total Project Costs	$44,995

City Of Fayetteville - Purchase Order (PO) Request

(Not a Purchase Order)

All purchases under $2500 shall be used on a P-Card unless medical or 1099 service related. (Call x256 with questions)

All PO Request shall be scanned to the Purchasing e-mail: Purchasing@ci.fayetteville.ar.us

Requisition No.:		Date: 10/16/2012	
P.O Number:		Expected Delivery Date:	
Vendor #:	Vendor Name: Plan-It Geo, LLC	Mail Yes:__ No:__	
Address: 6382 Utica Street	Fob Point:	Taxable Yes:__ No:__	Quotes Attached Yes:__ No:__
City: Arvada	State: CO	Zip Code: 80003	Ship to code:
Divison Head Approval: Allison Summer			
Requester: Megan Dale, Urban Forester		Requester's Employee #: 3617	Extension: 470

Item	Description	Quantity	Unit of Issue	Unit Cost	Extended Cost	Account Numbers	Project/Subproject #	Inventory #	Fixed Asset #
1	**2012 Urban Tree Canopy Assessment**	**1**	**Lump Sum**	**24,995.00**	**$24,995.00**	**4470.9470.5314.00**	**2045.1201**		
2					$0.00				
3					$0.00				
4					$0.00				
5					$0.00				
6					$0.00				
7					$0.00				
8					$0.00				
9					$0.00				
10					$0.00				
*	Shipping/Handling		Lot		$0.00				

Special Instructions:

Any applicable tax is included in the lump sum price.

-

Subtotal:	$24,995.00
Tax:	
Total:	$24,995.00

Approvals:

Mayor: _____ Department Director: _____ Purchasing Manager: _____

Finance & Internal Services Director: _____ Budget Manager: _____ IT Manager: _____

Dispatch Manager: _____ Utilities Manager: _____ Other: _____

Revised 1/2/2008

CHAPTER 167: TREE PRESERVATION AND PROTECTION

167.01 Purpose

It is the purpose of this chapter to preserve and protect the health, safety, and general welfare, and preserve and enhance the natural beauty of Fayetteville by providing for regulations of the preservation, planting, maintenance, and removal of trees within the city, in order to accomplish the following objectives:

(A) *Objectives.*

(1) To preserve existing tree canopy;

(2) To create a healthful environment for Fayetteville residents, businesses, and industries;

(3) To moderate the harmful effects of sun, wind, and temperature changes;

(4) To buffer noise, air and visual pollution;

(5) To filter pollutants from the air that assist in the generation of oxygen;

(6) To reduce storm water runoff and the potential damage it may create;

(7) To stabilize soil and prevent erosion, with an emphasis on maintaining tree canopy on hillsides defined as canopied slopes in Chapter 151;

(8) To provide habitat for birds and other wildlife;

(9) To preserve riparian banks and beds, and prevent sedimentation;

(10) To screen incompatible land;

(11) To promote energy conservation; and

(12) To protect and enhance property values.

(B) *Principles.* This chapter shall be enforced according to the following principles:

(1) Preservation shall be the first, best, and standard approach.

(2) If preservation cannot be achieved, on-site mitigation shall next be pursued.

(3) If on-site mitigation cannot be achieved, off-site preservation shall be pursued.

(4) If off-site preservation cannot be achieved, off-site forestation shall be pursued.

(5) If none of the above approaches can be achieved, payment shall be made to the tree escrow account.

(Code 1991, §162.01; Ord. No. 3699, §1 4-20-93; Ord. No. 4100, §2 (Ex. A), 6-16-98; Ord. No. 4340, 10-2-01)

167.02 City Of Fayetteville Tree Preservation, Protection, And Landscape Manual

The urban forester, in cooperation with other members of city staff, shall promulgate and periodically revise forms, procedures and regulations to implement this chapter and publish this information in the *City of Fayetteville, Tree Preservation, Protection, and Landscape Manual.*

(A) Copies of the *Tree Preservation, Protection, and Landscape Manual* are to be made readily available to the public and shall include, but need not be limited to:

(1) Specific criteria for gaining city approval of tree preservation plans;

(2) The format and content of reports and plans the applicant must submit to the city pursuant to this chapter;

(3) Tree protection during construction;

(4) A glossary of important terms used in this chapter;

(5) Size and species requirements for trees planted for on-site mitigation or off-site forestation;

(6) Maintenance of trees (including but not limited to pruning, irrigation, and protection from disease).

(B) The Tree and Landscape Advisory Committee shall review and may recommend revisions to the *Tree Preservation, Protection, and Landscape Manual* at least every three years to reflect changes in arboricultural and horticultural practices, lists of preferred tree species, city policies, or the content of this chapter.

(Ord. No. 4340, 10-2-01)

167.03 Tree Registry And Urban Forest Analysis

(A) *Tree Registry.* Trees and groups of trees which are documented to be of historic merit, of an uncommon or endangered species, or are of extraordinary value due to their age, size, or type,

may be registered in the City of Fayetteville's tree registry. It shall be the duty of the urban forester to maintain and keep this registry on file in the urban forester's office.

(B) *Voluntary registration.* Registration of trees shall be voluntary and may be done by the owner(s) of the property on which the tree is located. Registration shall not run with the land unless the property owner wishes to use an express trust to transfer a benefit in the tree or groups of trees to the city. Registered tree owners are entitled to consultation with the Tree and Landscape Advisory Committee and/or the urban forester concerning proper care and protection of the tree, as well as an evaluation of the tree's condition.

(C) *Urban Forest Analysis.* The city shall initiate a tree canopy analysis and an Urban Forestry Effects Model study or their current equivalent studies within the current geographical boundaries of the city by December 31, 2012. Thereafter, the city should conduct these studies every ten (10) years.

(Ord. No. 4340, 10-02-01; Ord. 5427, 8-2-11)

167.04 Tree Preservation And Protection During Development

(A) *Applicability.* The provisions of this section shall apply to proposed subdivisions, and large scale developments required by other chapters of the Unified Development Code to go through the city's permitting process. Persons seeking to build one single-family dwelling unit, or duplex, are specifically exempt from the provisions of this section except when the land is located within the Hillside/Hilltop Overlay District; then all the provisions of this ordinance shall apply. Planned Zoning Districts should meet the percent minimum tree canopy based upon their primary use, but may be allowed a lesser tree canopy requirement as part of the overall Master Plan approved by the City Council.

(1) *Subdivisions and large scale developments.* Applicants seeking approval of proposed subdivisions and large scale developments shall submit a site analysis plan, analysis report, and tree preservation plan with the preliminary plat or site plan. There shall be no land disturbance, grading, or tree removal until a tree preservation plan has been submitted and approved, and the tree protection measures at the site inspected and approved.

(2) *Grading permit.* An abbreviated tree preservation plan, as set forth in §167.04(H)(3), shall be submitted with the application for grading permits on projects that are not required to go through subdivision or large scale development process. There shall be no land disturbance, grading, or tree removal until an abbreviated tree preservation plan has been submitted and approved, and the tree protection measures at the site inspected and approved.

(3) *Building permits.* Tree preservation requirements apply to all permit applications for nonresidential construction, and the construction of multi-family residential buildings composed of three or more dwelling units. An abbreviated tree preservation plan, as set forth in § 167.04 (H)(3), shall be submitted with the application for building permits on projects that are not required to go through the subdivision or large scale development process. There shall be no land disturbance, grading, or tree removal until an abbreviated tree preservation plan has been submitted and approved, and the tree protection measures at the site inspected and approved.

(4) *Parking lots.* Tree preservation requirements apply to all permit applications for the construction of parking lots with five or more spaces. An abbreviated tree preservation plan, as set forth in §167.04 (H)(3), shall be submitted with the application for permits on projects that are required to go through the subdivision or large scale development process. There shall be no land disturbance, grading, or tree removal until an abbreviated tree preservation plan has been submitted and approved, and the tree protection measures at the site inspected and approved.

(5) *Hillside/Hilltop Overlay District.* Undeveloped land located within the Hillside/Hilltop Overlay District shall submit a site analysis plan, analysis report, and tree preservation plan with the preliminary plat or site plan. Single and two family residential development shall submit an abbreviated tree preservation and site plan at the time of obtaining a building permit. Structural changes to buildings located in the Hillside/Hilltop Overlay District that do not result in an enlargement of the building footprint or roof dripline shall not require an abbreviated tree preservation plan. There shall be no land disturbance, grading, or tree removal until a tree preservation plan has been submitted and approved, and the tree protection measures at the site inspected and approved.

The Arkansas Forestry Commission

Urban & Community Forestry Program

Request for Proposals

The State expects vendors to propose creative, competitive solutions to the agency's stated problem and needs, as specified below.

OVERVIEW OF PROJECT

The Arkansas Forestry Commission Urban & Community Forestry (AFC) program is currently seeking a vendor to provide an assessment of the Urban Tree Canopy (UTC) for the City of Fayetteville (COF). This Urban Tree Canopy Assessment will pertain to both public and private trees. This funding is provided by the USDA Forest Service (USDA FS). The contract period will be from August 30, 2012 to November 30, 2012.

This RFP is one of a series of RFPs being developed for a landscape scale Urban Tree Canopy project that encompasses cities in Arkansas, Tennessee, and Mississippi. This project will "allow communities to have tree canopy assessments done for their urban forests and provide them with the tools needed to develop canopy goals and strategies to improve green infrastructure."

The Area of Interest (AOI) is 55.4 square miles defined by the city limits of the City of Fayetteville, in Washington County, Arkansas. The link to the COF GIS data download page can be found at:

http://gis.accessfayetteville.org/SpatialDirect/translationServlet?SSFunction=prepareFetch
(last accessed August 2, 2012)

1) set max extents
2) in the boundary list
3) select "City Limits"

There are several programs that can be used for ecosystem benefits calculations in conjunction with urban tree canopy studies; for example, AMERICAN FORESTS CITYGreen®, i-Tree Vue, and the urban watershed runoff model TR55 (NRCS).

This UTC assessment will use 2010 National Agricultural Imagery Program (NAIP) leaf-on aerial digital imagery of 1 meter pixel resolution for the image classification to develop the UTC layer and other deliverables for the City of Fayetteville.

All intermediate datasets and layers, and final data developed or created for this project will be the property of the Arkansas Forestry Commission and the City of Fayetteville. This project is awarded through AFC in cooperation with and funding from the USDA Forest Service State & Private Forestry. The USDA is an equal opportunity provider and employer.

Definitions
For the purpose of this RFP, the following definitions will be used:

AOI	Area of interest; an area of 55.4 square miles as currently defined by the City of Fayetteville, Arkansas
AFC	Arkansas Forestry Commission Urban & Community Forestry Program
Awarded Vendor	The organization/individual that is awarded and has an approved contract with the AFC for the services identified in this RFP.
CITYGreen®	A Windows based GIS application extension for ArcView® software.
COF	City of Fayetteville, Arkansas
Existing UTC	The area that is covered by trees, leaves and branches existing at the time of imagery data acquisition.
i-Tree Vue	A program that makes use of a city's current land cover GIS layer to assess a community's tree canopy and the ecosystem services provided by the urban forest. Basic scenarios can be modeled for various urban tree canopy changes.
Land Cover	Land cover is the description of the physical surface of the earth. Land covers include: grass, asphalt, trees, bare ground, water, etc.
Land Use	Land use is a description of how people *utilize* the land and the socio-economic activity that occurs on the land; urban and agricultural land uses (including forestry) are two of the most commonly known land use classes. Urban land use can be further divided into sub-classes like: residential, commercial, public, etc. For this study, land-use is defined by the current COF land-use GIS layer downloaded from their website (see ***Overview*** for link).
MMU	Minimum mapping unit.
NAIP	National Agricultural Imagery Program.
NRCS	Natural Resource Conservation Service, USDA
Possible UTC	The area where trees can possibly be planted; this includes grass and bare ground as assessed at the time of imagery data acquisition.

TR55	An NRCS model that provides a quantitative measure of stormwater characteristics based on landcover.
USFS	United States Department of Agriculture Forest Service.
UFS	Urban Forestry South (USDA FS in Athens, Georgia)
UTC	Urban Tree Canopy

Objective

The objectives for the City of Fayetteville are to: obtain a current classification of land cover, conduct an analysis of the urban tree canopy and determine ecosystem benefits that are derived from the urban forests. This will assist the City in setting canopy goals, revising policies, promoting the benefits of trees, and developing sound management plans.
UTC assessment is a starting point to understanding, managing and preserving the City of Fayetteville's investments in both public and private trees and will provide tools to develop local urban forestry management plans, and goals and policies to sustain the existing Urban Forest (UF). UTC assessment protocols integrate high resolution land cover aerial multispectral photography with planimetric datasets such as building and streets to determine an area's existing UTC. The UTC geographic information system analyses also define land-use areas, including impervious layers, and the percentages of these lands that are covered by trees. With this analysis and the values of the impact UTC has on ecosystem services (air quality, energy conservation, stormwater runoff and water quality), decision makers can plan and make better decisions about integrating trees into their urban infrastructure. Additionally, the modeling of various percent UTC scenarios demonstrate the effects of increases or declines in the UTC on these ecosystem benefits and can be used to set UTC goals. UTC assessment or study results also show where there are the greatest opportunities to plant trees and increase the UTC.

SCOPE OF WORK
The awarded vendor will be responsible for an image classification and specified assessment of the Area of Interest. This AOI encompasses the city limits of Fayetteville, Arkansas.

REQUIREMENTS AND TASKS
The awarded vendor must perform the following tasks, complete those tasks to the specified standards and submit each component of those tasks as deliverables to the Arkansas Forestry Commission and the City of Fayetteville.

The awarded vendor must consult with AFC (and indirectly COF & USFS) prior to beginning the project with a proposed outline (if different than the RFP submitted), any clarifications on deliverables, and final methodology for classification and accuracy assessment.

Specifically, the awarded vendor will:
1. Utilize the 2010 NAIP imagery (4-band orthorectified digital aerial photography – 1 meter resolution) to extract the following land cover.

- Classifications will include: bare ground, open space/grass, impervious layers (parking lots and generalized building areas), and other commercial and industrial areas, roads, water features and UTC.
- Tables, graphs and geospatial data created by the analysis will be provided for the report; the percent and acres of UTC, land cover classifications in acres and percentages, the UTC ecosystem services, and scenarios of the impacts of increasing and decreasing UTC to these services.

2. GIS datasets and layers must be delivered in a form compatible with ArcGIS - ESRI software version 10.

3. Accuracy Standards
The grantee and its GIS subcontractor will provide an accuracy assessment including the detailed error assessment methodology narrative, the intermediate GIS layers that show locations of points used for the accuracy assessment, a layer that shows locations of any training sites used in the classification process, and the resulting error matrix.

4. In the RFP, clearly indicate all licensed and open-source software that the contractor intends on using for this project.

Quality Assurance (QA) and Quality Control (QC)

The analysis will achieve a minimum of 92% user's accuracy for tree canopy and impervious classes. Overall accuracy must ≥90%.

Based on the vendor's classification methodology and other considerations, the RFP response must clearly define the minimum mapping unit (MMU) that will be developed for all deliverables. Based on the objectives of the project, MMU should probably be ≤9 square meters.

The AFC in cooperation with the USFS will perform a QA/QC check on the image classification deliverables. The error assessment methodology for the QA/QC will be based on *Assessing the Accuracy of Remotely Sensed Data : Principles and Practices* (2nd Edition) Congalton Russell G and Kass Green, CRC Press, Boca Raton, FL 2008

All appropriate accuracy assessment techniques will be employed including: Kappa (KHAT statistic) and MARGFIT (normalization). A fuzzy error matrix approach will be used if deemed appropriate. USDA FS (UFS) will consult with NOAA and USFS remote sensing specialists on the protocol.

Vendor will provide UFS datasets needed for accuracy verification as soon as the vendor has completed their assessment for the project. This should occur by mid/late-October. (See timeline.) This should include the final classified raster layer with metadata, the

narrative description of the classification methodology, the contractor's error matrix, and the narrative describing the contractor's error assessment methodology.

Deliverables

A. Land Cover Classifications
Develop digital GIS/spatial data sets; these data sets will be used to complete the required tasks.

- Classifications will include: bare ground, open space/ grass, impervious layers (parking lots and generalized building areas), and other commercial and industrial areas, roads, water features and UTC.
- Tables, graphs and geospatial data created by the analysis will be reported for the report; the percent and acres of UTC, land cover classifications in acres and percentages, the UTC ecosystem services, and scenarios of the impacts of increasing and decreasing UTC to these services.

B. GIS Datasets

- All final raster and vector GIS datasets
- All significant intermediary GIS datasets (AFC and USFS reserves the right to request specific intermediary data sets as deemed necessary in the review and delivery acceptance process)

C. Urban Tree Canopy (UTC) Analysis and Mapping

1. The vendor must provide a report of existing UTC, and Possible UTC broken out into the following land use categories:
   a) Agricultural
   b) Residential
   c) Commercial
   d) Industrial
   e) Public land
   f) Public Right-of-Way

2. The vendor must generate maps, statistics, tables, spreadsheets and charts identifying the following:
   a) Existing UTC in acres and percentages of total for AOI.
   b) Existing UTC in acres and percentages of total for each land use category (obtained from other GIS layers) for AOI.
   c) Possible UTC acres to plant (riparian zones, open spaces, front lawns, etc.) and percentages of total for AOI.
   d)Possible UTC acres and percentages of total for each land use categories in the AOI.

D. Ecosystem Benefits Analysis

Awarded vendor must prepare reports, graphs, spreadsheets and/or tables which capture air quality, water quality, stormwater runoff, and carbon sequestration values for the tree canopy for the AOI. Note: Included indicators must also be quantified in resource units and dollars.

1. Air pollution removed by existing UTC as:
   a) Pounds removed per year; and,
   b) Dollar value of removed air pollutants per year.
2. Carbon storage and sequestration as:
   a) Total tons stored
   b) Total tons sequestered annually
3. Stormwater Management as:
   a) Water quantity – runoff volume
   b) Total stormwater savings.

E. Urban Forest Management Scenarios

Using existing UTC the awarded vendor must develop and record models for:

1. 2004 - 2012 Comparison
   a) Determine decrease in benefits due to canopy lost.
   b) Prepare 2012 benefits of canopy from the 2010 NAIP classification benefits (we are assuming the benefits from 2010 are current benefits).
   c) Chart where development happened(focus on impervious surface).
   d) Chart where canopy was removed.
   e) Chart where canopy was replaced.
   f) Determine if the trees that were planted in 2004 (where chart shows development) matured and compensated for the loss of trees removed?

2. Target areas to plant trees
   a) Note areas that are most vulnerable to the urban heat island
   b) Notes area that could benefit from additional wildlife habitat such as linkages & density improvement.
   c) Note areas for potential planting spaces (classified by current land use)

3. Identify our city's current % of canopy coverage analyze data from #1
   a) The national recommendation is 40% canopy cover.
   b) Is our tree preservation ordinance effective?
   c) If our ordinance is not achieving the 40% target, we would like recommendations noting where it failed.

4. Management
   Gain or loss for city property trees (parks, and trails) these areas

Awarded vendor must provide the Arkansas Forestry Commission (AFC) with one original CD disk and one identical copy, two identical copies for the City of Fayetteville and one copy for the USFS.

PowerPoint Presentations
The awarded vendor must develop a PowerPoint Presentation with talking points for the AOI. The presentation must be made to the AFC and COF and oriented and suitable for elected officials and decision makers. The presentations will encompass; the data, summary of methods and results. COF will set up the presentation. The AOI presentations must be on one primary disk and two backup disks.

Report and Data Disks
The awarded vendor must:

1. Produce 20 spiral-bound copies of a report that documents the results and methodology.
2 Record an electronic version of the spiral-bound report on five (5) disks. The disk must include the reports, data, graphs, spreadsheets, charts, maps, and PowerPoint show talking points and data. This requirement must be included in the 20 spiral bound reports.

Note: Both the spiral-bound reports and disk must be submitted to AFC and COF.

Timeline

1. RFP released on August 20, 2012
2. Pre-deadline conference call with AFC, COF, and UFS to answer questions about the project, requirements, and deliverables. August 24, 2012
3. RFP deadline September 10, 2012
4. Vendor notification and contract award date September 12, 2012
5. UFS Accuracy Assessment by November 16, 2012
6. Complete all the required tasks - to include deliverable acceptance - no later than November 26, 2012.
7. Submit all bills to AFC and City of Fayetteville no later than November 16, 2012.

NOTE: These dates represent a tentative schedule of events. The State reserves the right to modify these dates at any time.

Minimum RFP Components

Narrative

Vendors must clearly describe and reference (peer-reviewed) the image classification methodology they will utilize. Based on methodology and the data available for the project, vendors will define the MMU they will target & achieve at the specified accuracy requirements.

Vendors must clearly describe the accuracy assessment methodology (including software components) that will be used to develop and analyze the error matrix.

Deliverables

Describe any deviation from deliverables specified in this RFP. This may include vendor clarification language if needed. A simple statement "All deliverables will be produced as specified in the RFP" is sufficient.

Company Background and References

Name, address and telephone number of the vendor's point of contact for a contract resulting from this RFP.

A list and/or a brief description of the applicant's experience with image classification and/or UTC studies.

Vendors should provide a minimum of three (3) references from similar projects performed for private, state and/or large local government clients within the last three years.

RFP & Project Contacts

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