Interlocal Agreement
CITY OF AUSTIN
RECOMMENDATION FOR COUNCIL ACTION

AGENDA ITEM NO.: 4
AGENDA DATE: Thu 02/02/2006

SUBJECT: Approve the negotiation and execution of an interlocal agreement between the City and the CAPITAL AREA COUNCIL OF GOVERNMENTS (CAPCOG) for the purpose of acquiring new aerial photography and other Geographic Information Systems (GIS) related data through the existing contract between CAPCO and Sanborn Mapping, Inc., in an amount not to exceed $400,000.

AMOUNT & SOURCE OF FUNDING: Funding in the amount of $400,000 is available in the Operating Budget of the Financial and Administrative Services Department, Communications and Technology Management Office.

FISCAL NOTE: There is no unanticipated fiscal impact. A fiscal note is not required.

REQUESTING DEPARTMENT: Financial and Administrative Services - Communications and Technology Management

DIRECTOR'S AUTHORIZATION: Vickie Schubert

FOR MORE INFORMATION CONTACT: Dean LaBonte, 974-2700; Karen Sharp, 974-1402

PRIOR COUNCIL ACTION: N/A

BOARD AND COMMISSION ACTION: N/A

PURCHASING: N/A

MBE / WBE: N/A

This action approves the negotiation and execution of an interlocal agreement between CAPCO and the City of Austin. The agreement will be valid through September 30, 2006 for the purpose of acquiring aerial photography and other Geographic Information Systems (GIS) data for over 1,000 square miles including the City of Austin's Extraterritorial Jurisdiction and/or Utility Service area.

This project will result in the delivery of data in a digital format, which will be shared by all departments working on GIS related projects. The data is designed to meet the immediate needs of the City's strategic initiatives for homeland security, public safety, infrastructure management, land development activities and quality of life. Specifically, the aerial photography will update the 2003 photography and data that support the "Base Map" for all users within the City and the public at large.

In addition, this data can be used for site checks, analyzing and depicting crime scenes, demographics, land use, drainage fee determination, traffic analysis and general change analysis. Various work groups locate, reference, and/or verify mapped and unmapped features using the aerials. Desktop availability of this easily understood graphic information improves decision-making and minimizes time spent on field checks and data or information gathering.

SANBORN

CAPCOG - GeoMap 2006 Update Scope of Services - Fee Schedule

As per the contract between the Capital Area Council of Governments ("CAPCOG") and The Sanborn Map Company, Inc. ("Sanborn") and the pending inter-local agreements ("Agreements") between the participating entities ("Participants") and CAPCOG, the attached table indicates the services selected by the Participants for the 2006 GeoMap Update Project. The table also indicates the regional cost reduction that can be realized if all the Participants execute the anticipated Agreements. If any of the quantities are altered due to increased or decreased participation, the figures per Participant will need to be adjusted per the CAPCOG contract. Upgrades may be available once the final tabulation of all Participants and funding is completed.

Statement of Work

Sanborn will be producing and delivering an assortment of digital imagery, topographic and planimetric data for the 2006 project. The goods and services selected by the Participants under the above referenced contractual agreements are listed on the attachment and graphically represented on the attached map inserts. More specific information about the products and processes can be found in the Sanborn Proposal contained in the CAPCOG contract.

The following tasks will be performed to support generation of these goods and services:

- Acquisition of digital imagery R,G,B and near IR for the production of 6-inch, 12-inch and 24-inch pixel orthophotography products with associated airborne GPS/IMU data
- Collection of ground control point locations, existing and new control points as necessary to support the analytical aerial triangulation of the digital imagery for the purposes of orthophotography and planimetric mapping
- Softcopy stereo compilation of new and updated DEM/DTM data and planimetric data as necessary to achieve the specified goods and services
- Ortho-rectification using new and existing DEM/DTM data; existing DEM/DTM data will be updated for ortho-rectification purposes unless contours are also being purchased in the areas selected for ortho-rectification
- Creation of new and update of existing planimetric features; feature lists will vary based on map scale and funding availability
- Creation of new DTM and contour data in the selected areas

Procedures

Sanborn will acquire digital aerial imagery at an altitude to achieve an *equivalent* negative scale of 1"=600', 1"=1500' and 1"=2,500 along an optimal flight line pattern. Prior to initiating the aerial imagery mission, a proposed flight line map will be developed using digital boundaries provided by the Participants. The flight plan will be submitted to the Participants's Project Manager for approval prior to initiating the aerial imagery mission. The aerial mission will proceed upon receipt of Participants's signed approval and authorization to proceed.

Sanborn will use a combination of conventional ground control augmented by airborne GPS/IMU (AGPS/IMU) data to control the FAAT. Sanborn will maximize the use of existing ground survey stations as control and checkpoints for the generation of orthophotographs. Suitable existing NSRS geodetic control will be used, supplemented where necessary by new semi-permanent ground control points. Ties will be made to existing Order B (two or more) and First Order horizontal control, and to vertical control of suitable (Second Order or better) quality, to ensure conformity with the specified datums (NAD83 and NAVD88). Vertical control will be established via a combination of Second Order digital geodetic leveling and First Order GPS surveys. Final coordinates will be provided on the Texas Plane Coordinate System, Central Zone in units of the U.S. Survey Foot.

Upon completing Austin's ground control phase, Sanborn will prepare and submit a final Survey Report. A Control Diagram will also be prepared which will address all existing and newly established control used as a basis for the subsequent photogrammetric work.

Fully analytical aerial triangulation will be performed on the new photography and control to support Softcopy compilation. The existing DTM and planimetrics will be updated using Softcopy compilation methods.

Softcopy photogrammetry workstations will be used to superimpose the existing 2003 DEM/DTM data and planimetric data against the new digital imagery. The existing DEM/DTM will be updated as necessary to allow for ortho-rectification of the new imagery and to produce new or update existing planimetric data as appropriate.

The Participants 1"=100', 1"=200' and 1"=400' Map Scale Orthophotography, planimetric and topographic features will be updated using the spring 2006 digital imagery.

The new or updated DEM/DTM will be applied to the digital imagery to differentially rectify the image to eliminate distortion. Once the imagery has been rectified, it will be structured and formatted in a seamless image database and re-sampled to the appropriate resolution. The final deliverable will be images in tiled GeoTIFF format with world files.

Accuracy Specifications

The accuracy specifications for the project will be as follows:

- ASPRS Class 1 Accuracy Standards for Large Scale Maps (100, 200 and 400)

Deliverables

- Project Initiation Phase
  - Project Work Plan (preliminary and final)
- Aerial Photography Phase
  - Flight line plan and control diagram
  - AGPS/IMU data
  - Post processed digital imagery
- *Survey Control Phase*
  - Control diagram
  - One hard copy and one digital (ASCII) file of the report outlining results of the ground Global Positioning Satellite observations
  - GPS observations, results, observation logs, and data analysis and adjustments
- Aerial Triangulation Phase
  - One copy of FAAT Report
- Digital Orthophoto Phase
  - One set of digital orthophotography in TIFF/TFW format DVD's that are compliant with the Digital Imaging Acceptance Criteria that is included in the Project Work Plan
  - One set of compressed digital orthophotography in MrSID format
- Planimetric and Elevation Data
  - Updated or new digital elevation (DEM) or terrain (DTM) models
  - Digital Arc Info files of planimetric data
- Data for DTM/DEM in ASCII file format

Acceptance Criteria

The following guidelines establish the Acceptance Criteria between Sanborn and the Participants. The review period is subject to an acceptance rating in a unit of delivery (i.e. tile). Sanborn divides the acceptance criteria into 3 distinct categories; each of which is subject to an acceptance rating that we base on the total number of features e.g., database attributes in a unit of delivery (i.e. tile). The three categories of acceptance criteria are, (1) data accuracy, (2) orthophotography accuracy, and (3) review periods.

1. Data Accuracy:

(a) Data Base Design:

Sanborn is responsible for achieving 100.0 percent accuracy when comparing compliance between the files/database and the database design/scheme specifications and all the topological system requirements (computer checkable). These requirements are system specific and necessitate a list of details, such as,

- inclusively, the database record is all features that the database design/scheme defines as having a database record;
- the database record includes only correct database relationships;
- features (data elements) correspond to a specific database record;
- attributes populate with valid value ranges;
- location of data within the map extent; and
- precision, fuzzy, and dangle tolerances are specific.

(b) Edge-Matching:

Sanborn is responsible for achieving 100.0 percent accuracy when edgematching (i.e., graphic cross-tile connection) all linear features within a delivery area. The point (x,y) at which a linear element crosses one tile, is the same value in the next tile.

(c) Snapping:

Sanborn is responsible for achieving 100.0 percent accuracy when snapping features that are part of a topologically structured coverage (i.e., polygon), and 98.0 percent for non-topologically structured linear features within 1/1000' (.001 feet for 100-scale mapping).

2. Orthophotography Accuracy:

Sanborn has developed a comprehensive Quality Control (QC) Plan for measuring the quality of digital orthophoto imagery. The QA Plan identifies specific standards and criteria to determine an acceptance value for criteria including the following:

- Horizontal Image Accuracy - typically based upon the project accuracy standards.
- Image Quality - depends on mosaicking , edgematching, brightness, shadows, and contrast.
- Other Issues - radial displacement, water reflections, and system anomalies.

Sanborn has developed and published Digital Imaging Acceptance Criteria for producing digital orthophotography for the Participants project. This document required signatures of both Sanborn's and the Participants's Project Managers as an agreement to the criteria to be applied during the production and QC of the orthoimagery by Sanborn and Quality Assurance of the Final Products by the Participants.

3. Review Periods:

(d) Participants's Web-based Review Period:

The Participants completes all web-based computer checks or tests on the data within 30 days of notice that the imagery has completed all QC checks by Sanborn and PBSJ and is determined acceptable for delivery. The Participants shall have 30 days to notify Sanborn of the status of the file as either (1) accepted (2) ready for delivery, or (3)

rejected (required additional re-work and QC by Sanborn without a complete edit).

(e) Participants's Post Delivery Review Period:

The Participants completes all computer checks or tests on the data within 30 days of delivery of the imagery. The Participants shall have 30 days to notify Sanborn of the status of the file as either (1) accepted (2) rejected (required additional re-work and QC by Sanborn without a complete edit).

(e) The Participants's Rejected Products:

The Participants reserves the right to reject the delivery area (web-based check) or complete database (final delivery) if, in the Participants's judgment, the file is unusable for the quality assurance process, i.e., and unreadable media.

(f) Sanborn's Review Period:

Sanborn validates and corrects all calls for redelivery of edited/rejected computer checked digital files within 30 days of notice or receipt from the Participants. If the final data delivery requires a redelivery because of failing to meet the acceptance criteria, then Sanborn's obligation is to review the entire data delivery or dataset and correct all errors or nonconformities found.

(g) Acceptable Error Rate:

Errors falling within the acceptance criteria (under 1 percent are within the contractual limits.

Invoicing and Payment Terms

Sanborn shall invoice monthly for percent complete. Payment terms for all valid invoices received are NET30 from date of invoice.

Production and Fee Schedule

Sanborn will commence work upon receipt of the signed work order from CAPCOG. Final data will be completed and delivered on or before the date contained in the Project Work Plan schedule. Delivery of final data is dependent upon actual date of acquisition of photography. Adjustments to the production and fee schedule will be made for any events that delay production.