

Department of Procurement Services

August 29, 2003

Addendum Number 1

**To
REQUEST FOR PROPOSALS (“RFP”)**

For

GLOBAL BUILDING MONITORING SERVICES

Specification No. **704**

For which Proposals were scheduled to be received no later than 4:00 p.m., Chicago time on, Friday, September 12, 2003, in the Department of Procurement Services, Bid and Bond Room (Room 301 of City Hall). The information contained in this Addendum Number 1 is incorporated by reference into the original Request For Proposals (RFP) issued on June 30, 2003.

This document contains:

- 1. Notice of Additional Time in Which to Respond;**
- 2. Clarifications;**
- 3. Changes to Section I.F.2.k., Required Information, “Respondent’s Professional Qualifications and Specialized Experience”;**
- 4. Changes to Section II.B., Global Building Monitoring and Control System Functional Requirements, “Scope”;**
- 5. Addition to Section II.I., Operator Report Generation;**
- 6. Changes to Section I.G., Evaluation Criteria;**
- 7. Changes to Section I.H., Respondent Selection Process;**
- 8. Answers to 64 questions submitted prior to and during the RFP Pre-submittal Conference on Thursday, July 17, 2003; and**
- 9. Attached are the following exhibits: Exhibit C, GBMS Summary; Exhibit E, Request for Services (Cost Proposal Template); Exhibit G, Approved GIS Vendor List, Updated March, 2002; Exhibit H, City of Chicago Business Information System Architecture Handbook; and Exhibit I, GIS Data Standards.**

Respondent must acknowledge receipt of this Addendum Number 1 by including the attached Acknowledgment in their Proposals.

I. NOTICE OF ADDITIONAL TIME IN WHICH TO RESPOND:

Please be advised that the City of Chicago has extended the deadline for responding to the RFP for Global Building Monitoring Services. **PROPOSALS ARE NOW DUE NO LATER THAN 4:00 P.M. CHICAGO TIME ON TUESDAY, SEPTEMBER 30, 2003, IN THE BID AND BOND ROOM (ROOM 301,CITY HALL, 121 NORTH LASALLE STREET, CHICAGO, ILLINOIS 60602).**

II. CLARIFICATIONS

Section I.E.1, “Summary Scope of Services” of the RFP refers to elements of GBMS, including “implementation of efficient energy management programs and procedures” and “energy performance contracting.” The City seeks to clarify that as part of these elements of GBMS, the City will accept proposals for a range of energy-related capital improvements and management services designed to reduce operating costs at its facility(s). These services and improvements will allow the City to:

- a) Incur no or minimal capital costs
- b) Achieve annual long-term savings in lifecycle costs which are measured and verified,
- c) Produce significant environmental benefits, and
- d) Finance the project through Respondent proposed financing options.

The Respondent must have the demonstrated technical and managerial capabilities to provide a comprehensive set of technical services including, but not limited to, an investment grade audit, design, acquisition, installation, and training for new and/or existing energy systems as well as project monitoring and cost savings measurement and verification. Additional services may include operation and maintenance for all improvements and/or training of Customer’s staff on maintenance and operation of systems. Monitoring and verification services shall include appropriate measurement and timely reporting of the performance and savings from the project. The Respondent is encouraged, but not required, to respond to both the GBMS and other energy-related capital improvements and services portions of the RFP. The City may make separate awards for the GBMS and other energy-related capital improvements and services if deemed in the best interests of the City.

III. CHANGES TO SECTION I.F.2., REQUIRED INFORMATION.

Section I.F.2.k., Required Information, “Respondent’s Professional Qualifications and Specialized Experience” is revised as follows:

1. The content of proposal must include the following documents, in addition to the requirements set forth in Section I.F.2.k.:

A complete list of general and mechanical contractors and manufacturers the Respondent has worked with to install DDC systems on recent projects of comparable type, size, scope, and magnitude:

- A complete list of customers the Respondent has provided an extended warranty to for a GBMS;
- A complete list of customers currently using the proposed maintenance management software;
- A complete list of customers for whom the Respondent performed commissioning services for a multiple facility DDC system; and
- A complete list of renewable energy technologies implemented as part of an energy contract.

2. In addition to the requirements set forth in Section 1.F.2.k, the content of proposal must include the following documents from recent projects of comparable type, size, scope, and magnitude:

- Sample investment grade technical energy audit;
- Sample savings measurement and verification plan;
- Sample project commissioning plan for a large DDC system;
- Sample system documentation for operators for a large multiple facility DDC system; and
- Sample energy performance contract with technical schedules or other financing plan.

IV. CHANGES TO SECTION II.B., GLOBAL BUILDING MONITORING SYSTEMS, FUNCTIONAL REQUIREMENTS, “SCOPE”.

The Scope is revised as follows:

Section II.B on page 1 regarding functional requirements is revised with the addition of ten (10) concepts to the original six (6) concepts as follows:

The system must be designed in accordance with the functional requirements. Particular attention will be paid to the following concepts:

1. Installation
2. Scalability
3. Portability
4. Compatibility
5. Future Expansion
6. CivicNet Integration (future)
7. Optimization of DDC efficiency by trending, to diagnose and tune the system

8. Analysis of customer operating cost savings opportunities
9. Energy saving capital improvements analysis
10. Quantification of operations and maintenance savings
11. Measurement of the improvements in lighting, air temperature, flow, and quality, humidity, space pressurization, acoustics, reliability of equipment, etc.
12. Strategy for accelerating the implementation of cost savings opportunities while maintaining superior quality control
13. Maximization of synergistic design savings opportunities
14. Quantification of environmental benefits produced from the project
15. Quantification of the system savings to the utility from avoided line losses and capacity savings
16. Minimization of capital costs thru proper equipment sizing and design

V. ADDITION TO SECTION II.I., OPERATOR REPORT GENERATION.

Section II.I., Operator Report Generation is revised to include the following item number 3:

Sophisticated, detailed Operator Report Generation both for purposes of management and audit of performance is a critical element of the services. Therefore, Respondent must submit as part of its response a thorough, detailed reporting proposal which provides technical information and addresses the business uses and benefits of reporting. The final version of the reporting standards and formats will be determined during the contract negotiation process.

VI. CHANGE TO SECTION I.G., EVALUATION CRITERIA.

Section I.G., Evaluation Criteria, is revised as follows:

1. Section I.G.1.d., “Technical Competence” is deleted and replaced with “The EC will assess Respondent’s ability to meet the requirements outlined in the scope of services as evidenced by Respondent’s experience with Global Building Monitoring Systems, efficient energy management programs and procedures, and energy performance contracting as demonstrated by its technical proposal as required by Section I.F.2.c. I.F.2.k. Technical Proposal and its overview and Section I.F.2.k. Respondent’s Professional Qualifications and Specialized Experience.”
2. Section I.G.3., “Maintenance and Operation” is deleted and replaced with “The EC will assess the details of the Respondent’s operation and maintenance program recommended to maintain an operable system, including: primary responsibility for the daily operation of the systems; monitoring and verification of energy consumption; actions to be taken in the event of a complete system failure; procedures for addressing system problems; and regular maintenance plan. Further, the EC will assess the quality of Respondent’s monitoring, maintenance, and measurement and verification services on recent projects.

VII. CHANGE TO SECTION I.H., RESPONDENT SELECTION PROCESS.

Section I.H., Respondent Selection Process is revised as follows:

1. Section I.H.1. is deleted and replaced with:

During the review of proposals, the EC, in its sole discretion, may invite any of the Respondents to clarify in more detail information that was submitted in the Respondent's proposal; or ask any of the Respondents to respond to additional questions and clarifying details related to any GBMS elements identical in Section I.E.1. Further, the EC may also review any other information that is available to it, including but not limited to, information gained by checking references and by investigating a Respondent's financial condition.

2. Section I.H.7. is deleted and replaced with:

The City reserves the right to terminate this RFP solicitation at any stage if the Chief Procurement Officer determines this action to be in the City's best interests. The receipt of Proposals or other documents will in no way obligate the City of Chicago to enter into any contract of any kind with any party.

In the event a final agreement is entered into with one of the Respondents, all goods, services and pricing made available to the City will also be made available to each of the City's Sister Agencies under such City Agreement, (or under separate agreement with such Sister Agency). If such Sister Agency participation occurs, any price decreases or discounts for additional volumes or changes in mixture of goods and services that are available to the City or any Sister Agency will be credited to both based on the aggregate volume and or mix of goods and services under all such agreements.

VIII. QUESTIONS AND ANSWERS

FINANCING AND PROCUREMENT QUESTIONS:

1. Is a bid bond required? How much?
A bid bond is not required.
2. Can a plastic spiral be used to bind the proposals?
Yes.
3. Will an electronic version of the cost template be available?

Yes, please refer to Exhibit E, Request for Services attached to this Addendum.

4. Is there a specific format or file type that is preferred for the CD copy of the proposal?
Please see Section I.4, page 3 of the RFP, which specifies that the CD must be “IBM compatible CD format”.
5. I want to hire an MBE/DBE, but the company is under applying for such certification? How can I deal with the situation?
Please advise the company to contact the Certification Unit that they are being considered as a subcontractor for this project and the proposal due date is September 30, 2003 and to request that their application be expedited. However, there is no guarantee that this company will be certified by the proposal due date. Therefore, your firm should have another subcontractor lined up for that contingency.
6. Is this the first time this project has gone out to bid? If not, why is it being rebid?
An earlier version of this project was bid. The scope of services of the earlier version was significantly revised.
7. Teaming: Does the proposal have to originate from one company/entity or can it include proposals from multiple team members to cover different pieces?
The proposal must be submitted by a legally recognized business entity. Please refer to Section I.2.a., “Cover Letter”. The City anticipates that in order for Respondents to fulfill all of services required under this RFP and to comply with M/WBE goals Respondents will have subcontractors and/or form limited partnerships or joint ventures. However, it is up to each individual Respondent how they present their proposals as long as they meet the submittal requirements. Also, please refer to the definition for “team” on page one (1) of the RFP as follows: “...means all of the team members including the prime contractor, subcontractors, manufacturers, and suppliers.”
8. As a prime contractor, will we be required to use the subs listed in the proposal, indefinitely into the future? The sub may not be available or desirable in the future.
The substitution and addition of subcontractors during the term of any contract are subject to the approval of the Chief Procurement Officer.
9. After proposals are received, is there going to be an opportunity to formally present/explain the proposal and answer questions? Mandatory, optional, or by request?
Please refer to Section I.H., “Respondent Selection Process”. Further, any request for more information by the Evaluation Committee (“EC”) is optional. However, if the Respondent does not respond to the request for information by the EC, their proposal may not be considered for further evaluation by the EC.

10. Is there an estimated or swag value as to what the City is anticipating spending?
No, the City is going to look to the proposals.
11. Please elaborate on plans for project financing. Can a vendor finance this project over term?
Yes. Also, please refer to RFP Section I.F.2.j. and Exhibit E attached to this Addendum.
12. How will this project be funded? Will Federal Homeland Security dollars be considered for the security component of the project?
Funding has no bearing on vendor's proposal. No Federal Homeland Security dollars will be used for this project.
13. If all the bids are above the budget for the project, will it be rebid or will a vendor still be selected?
Please see RFP Sections I.F.-H.

GENERAL QUESTIONS:

1. What is off the shelf hardware/software?
The intent of the GBMS is to create a system that can be competitively bid for installation, maintenance and upgrades. "Off the shelf" means non-proprietary, non-custom, and readily available from multiple sources.
2. Who will maintain the drawings?
The Department of General Services will maintain the basic architectural floor plan backgrounds incorporating any future floor plan revisions. It is anticipated that the electronic files will be accessed by a server provided and maintained by the Controls Contractor at OCC and that the Controls Contractor must maintain graphics associated with HVAC/Security/Lighting/Power monitoring and control systems. It is anticipated the standard graphics will be provided to contractors constructing any new facilities.
3. Who will maintain the as-built drawings?
All as-built, record drawings associated with work completed under this contract must be compiled and maintained by the Controls Contractor in both hard copy and electronic files. The Department of General Services will provide as-built documents of facilities, where available, for other work not completed under this contract. As-built documents must be incorporated into a comprehensive document by the Controls Contractor.

4. Who will maintain the O&M manuals?
The Controls Contractor must maintain hard copies of the O&M manuals. It is also required that the O&M manuals be electronically integrated into the GBMS to simplify access and maintenance.
5. Who will maintain the training documents and videos?
The Controls Contractor must maintain the training documents and videos. It is also required that the training documents and videos be electronically integrated into the GBMS to simplify access and maintenance.
6. In Section 1 Page 5 Item C it states “Objectives, items 1-12” There are only 10 items, are there any items missing?
There are no items missing, Section 1, page 5, item C contains a typographical error. It should read “1-10”.
7. Has the Department of General Services identified a solution/model from another city?
No.
8. Does Lonworks technology have to be used? Are LonMark certified devices a requirement?
The City acknowledges that there may be more than one way to meet the intent of this RFP. However, it cannot be understated that any acceptable method must be based on open protocol architecture including at the device level. LonWorks technology and LonMark certified devices provide the level of integration the Department of General Services requires to create a system that can be competitively bid for implementation, maintenance, service and upgrades well into the future. Any proposed alternate technology must prove it meets these requirements.
9. Will you have an independent commissioning agent hired directly by the City or are you expecting the bidders to hire an independent commissioning agent?
It is anticipated that the City will have independent commissioning agents through existing Term Agreements, rather than through the Controls Contractor. However, the payment of the fees associated with the commissioning is the responsibility of the Controls Contractor.

LEGACY SYSTEM QUESTIONS:

1. GBMS Requirements – Legacy Systems Manufacturer, Model number, type of system, detailed drawings available?
The quantity and type of Legacy control systems is unknown. Include a list of the legacy controls manufacturers that can be integrated with your system along with the associated costs for implementing the gateway. Expand on the cost template

spreadsheet if necessary.

2. GBMS Requirements – Legacy Systems Assuming that the existing buildings have pneumatics, what is to be done with the pneumatics?
The answer will be determined on a site-by-site basis. Contractor must re-use actuators if possible and economically/physically feasible. Contractor must replace pneumatic thermostats with electronic temperature sensing.
3. GBMS Requirements – Legacy Systems. Is the pneumatics disposed of?
The answer will be determined on a site-by-site basis. The contractor must re-use actuators if possible and economically/physically feasible. The contractor must replace pneumatic thermostats with electronic temperature sensing. Components that are removed must be returned to the Department of General Services for their use/disposal.
4. GBMS Requirements – Legacy Systems. Who owns the replaced components?
The Department of General Services.
5. What are the specific legacy systems presently installed that will need to be integrated into the GBMS?
The quantity and type of Legacy control systems is unknown. Include a list of the legacy controls manufacturers that can be integrated with your system along with the associated costs for implementing the gateway. Expand on Exhibit E Request for Services template if necessary.

GIS SOFTWARE, GRAPHICAL USER INTERFACE AND FACILITY DRAWING QUESTIONS:

1. Where is the list of approved GIS vendors as stated in Section II Page 4, Item D.1?
Please refer to Exhibit G, Approved GIS Vendor List attached to this Addendum.
2. Re: Section II, Page 5, Section G, Para 1 (City Enterprise Network cannot support digital CCTV): What bandwidth will be allocated per location for digital CCTV.
Provide the bandwidth requirements for your system based on the camera requirements for each category facility. Suggest camera update rate variances and the associated bandwidth requirements for each rate. Propose a sequence of operation to vary the update rate based on events.
3. Section II Page 4 Item 3 refers to the BIS System Architecture Handbook. Where is this available?

Please refer to Exhibit H, City of Chicago Business and Information Services System Architecture Handbook attached to this Addendum.

4. Respondent must provide estimates of the required maximum bandwidth requirements with each building installation; does the City have any specific minimum bandwidth requirements?
See answer number 2, this section.

5. Re: Section III, Page 3, part D: To what extent will the City allow for customization of the GIS software beyond the stated paragraph in part D? Will you allow the vendor to modify GIS software if the requirements are determined not to be met with out of the box GIS software?
No customization of the BIS/GIS software will be allowed beyond that noted. However, the interface between the GIS and the facility backgrounds may be customized to a degree, as long as it remains non-proprietary.

6. Re: the Graphical User Interface, H.1., will the City accept GIF, JPG and BMP format generated from the CAD drawings?
Contractor must use the existing GIS as a mapping system and interface for floor plan backgrounds for the GBMS GUI. Contractor must utilize work that has already been performed to develop a geographical mapping system with the addition of detailed floor plans for individual facilities. The contractor must overlay real time GBMS information on top of the floor plan (foot print) backgrounds. Contractor must create additional screens detailing the specific control system devices (e.g. AHUs, VAVs, Lighting, Security, etc.) The format used to create additional screens is dependent on the proposed solution; specify the format in your submittal. The solution must be easy to maintain, i.e. do not duplicate the drawings; use the existing GIS database/Department of General Services architectural backgrounds.

7. Re: the Graphical User Interface, H.6., will the City supply the AutoCAD drawings or floor plans?
Existing building drawings are available for a majority of the facilities. However, for the purposes of this RFP and due to security issues, the drawings will not be available for respondents' review.

8. How will the drawings be provided to the BAS system?
As stated, electronic files will be accessed by a server at the OCC. The Department of General Services will provide files for existing facilities as either AutoCAD or scanned images. As new facilities come online, AutoCAD drawings will be required as part of the project closeout.

9. Are existing building drawings available?
See answer number 7, this section.

CITY FACILITY QUESTIONS:

1. GBMS-02 through 08 How many of the Category 1, 2 and 3 are there?
As previously stated, this RFP is to be unit price based. Exact quantities of City facilities will not be provided. However, strictly for informational purposes only, and not to be construed as a definitive count, the following will provide a general, approximate idea of the numbers and square footage of the facilities in each category.

CATEGORY	SQUARE FOOTAGE	# OF FACILITIES
1	under 10,000	335
1	10,000-15,000	50
2	15,001-25,000	30
3	25,001-75,000	45
3	over 75,000	25

2. Re: Maintenance Management: How do we price the City's existing equipment information? Is there a list for the equipment to determine how much time will be involved in entering data?
The proposal is based on the 3 categories of building types. Expand the list of unit price items shown on Exhibit E, Request for Services template as necessary to provide clearly defined unit costs for all items required to provide a complete, fully operational system. The thoroughness of the Respondent's template will be part of the review/selection process.
3. How will this be priced using the cost template?
Expand the list of unit price items shown on Exhibit E, Request for Services template as necessary to provide clearly defined unit costs for all items to provide a complete, fully operational system. The thoroughness of the Respondent's template will be part of the review/selection process. The appropriate unit costs and total number of points will then be applied at each facility to determine the total cost for that facility.

4. Please provide further definition as to specifics regarding Building Types. Provide a building profile including the following information:
- a. Square footage
 - b. Number of floors above (below) grade
 - c. Building construction
 - d. Building use and occupancy by %
 - e. Mechanical equipment type (technology)

See answer to number 1, this section. Approximate square footage of facilities is provided. Responses to the remainder of question will not be provided at this time.

Please expand Exhibit E, Request for Services template as required.

5. Any restraints placed on building and systems access (normal working hours)
In the majority of facilities, work can occur during “normal” business hours (6:00am to 5:00pm). However, the facilities are also occupied; therefore, work must be performed in a manner to cause the least disruption. In addition all building systems must remain operational during working hours unless previous arrangements with the Department of General Services are made. There may be a few instances where the Department of General Services will request after hours work due to the nature of the facility or specific activities, but those instances will be the exception.
6. For pricing purposes and MBE/WBE requirements, how many of each category building type will be included in Phase 1?
The exact number of facilities in each category to be included in Phase I is unknown at this time. The number is dependent upon a number of variables including but not limited to: the successful Respondent; proposed time frames; Respondent’s resources; available funding and financing; etc.
7. Equipment sizes, quantities, lighting fixtures, and current hours of operation are needed for each building category in order to estimate energy savings, is this available?
Please refer to Exhibit C, GBMS Summary, attached to this Addendum, for general information. The specific information requested will be provided to the successful Respondent.
8. To estimate installation costs, it would help to know the approximate square footage of each category of building. Please provide.
See answer to number 1, this section.
9. What are the point requirements for each mechanical subsystem listed and shown in Appendix D?
Please refer to Exhibit C, GBMS Summary that includes points for chilled water systems, AHU’s, boilers, and miscellaneous points.
10. What level of front-end engineering will be completed (i.e. By A&E firm) for each project as they come up? This will affect the amount of application engineering required on projects.
Include engineering costs in your proposal. This RFP document represents the extent of the engineering that will be provided by the Department of General Services. Construction Administration and Commissioning will be provided by the Department of General Services to clarify the design and insure the intent of the GBMS is realized.

OPERATIONAL CONTROL CENTER QUESTIONS:

1. Re: OCC Area, Detailed drawings will be required, when will they be available?
Although 2133 W. Lexington is identified as the location for the OCC, this is not necessarily finalized. To clarify, the Department of General Services will provide a “vanilla” box space in an existing facility in the required square footage. The facility will be provided with MEP/FP infrastructure services, including emergency power, as required by the Controls Contractor. The Controls Contractor, working with Department of General Services architects, is responsible for setting up the room in an efficient/effective manner with all furniture consoles and equipment, including cable tray and or raised floor, necessary to provide a complete and fully operational OCC.
2. What is the square footage we are constructing and designing?
See answer to number 1, this section.
3. Is the OCC fed from an existing AC unit in the building?
See answer to number 1, this section.
4. The text of the RFP (Section IV Page 1) asks the Respondent to furnish “all required equipment and the complete turnkey design, and construction of the interior space of the OCC.” However, Drawing GBMS 02 denotes that the DEPARTMENT OF GENERAL SERVICES OCC at 2133 W. Lexington is not in contract by City.
See answer to number 1, this section.
5. Section IV Page 1 Calls for selected Respondent to supply/design/construct interior space for the OCC, including the PC”s, projector etc. However, drawing GBMS 02 shows this work as not in contract. Who provides the hardware shown on GBMS 02?
See answer to number 1, this section.
6. Is there an opportunity to inspect the proposed OCC location prior to the proposal deadline?
See answer to number 1, this section.
7. Describe the space that will be made available at the OCC for the build out.
See answer to number 1, this section.
8. Regarding the OCC, does “spare” emergency electrical capacity exist at the facility that will meet the requirements of the RFP and the new OCC?
See answer to number 1, this section.

ELECTRICAL QUESTIONS:

1. Re: Load curtailment: Is there a list of defined electrical loads?

A list of defined electrical loads can be provided, but only at a time when savings projections and/or curtailment contracts are being considered

2. Re: Typical loads, how do you automate water coolers? How many water coolers? Where are they located? What is the power rating of each unit?

We do not have automated water coolers. The number of water coolers is undefined.

3. Do you want to curtail emergency generators?

The City wants to use generators in a peak-shaving capacity with respect to curtailment.

SECURITY QUESTIONS:

1. In Phase 1, how many of each building category has existing security systems?

As previously stated, this RFP is to be unit price based. Since the exact facilities in Phase I are not yet known (see answer to number 6, City Facilities section), this information cannot be provided.

2. Do buildings with existing security systems require more intrusion detection devices? If so, please clarify quantity and type of detectors requested.

To be determined on a site-by-site basis. Expand Exhibit E, Request for Services template as required to include additional unit prices for security system devices and/or possible options.

3. Regarding buildings that get a new security system, please clarify quantity and type of intrusion detectors requested.

See answer to number 2, this section.

4. What are the specific camera types (GBMS 03 Camera 1 and 2 etc.)? Presently installed that will be integrated to the new DVR system? In the event that the existing cameras are not compatible with the new DVR system, what can we expect?

There are currently a variety of camera types installed in City facilities. Controls Contractor must indicate what camera manufacturers are compatible with their DVR system. In addition, expand the cost template to include interfacing with other cameras that may not be compatible.

CIVICNET QUESTIONS:

1. What is the status of the CivicNet project?

Status of CivicNet should not be a consideration for this proposal. The RFP process for the CivicNet project is ongoing.

2. What is the timing for the implementation of Civic Net?
See answer to number 1, this section.

3. Can you explain the scope of CityNet IP network and the relationship to this project? Please elaborate on the timing of the implementation and how it might impact a proposal (i.e. VPN, security, access in each building.)
Not at this time.

IX. ATTACHMENTS

Exhibit C, GBMS Summary; Exhibit E, Request for Services (Cost Proposal Template); Exhibit G, Approved GIS Vendor List, Updated March, 2002; Exhibit H, City of Chicago Business Information System Architecture Handbook; and Exhibit I, GIS Data Standards.

Exhibit C
GBMS Summary

TYPICAL BOILER	Digital Input	Digital Output	Analog Input	Analog Output
Start/Stop Enable/Disable		X		
Supply Water Temperature			X	
Return Water Temperature			X	
Steam Pressure			X	
Outside Air Temperature			X	
Low Water	X			

Notes:

1. Maintain standard "on-board" boiler controls. Monitor, enable/disable and alarm only.
2. Standard reset sequence on outside air and zone temperatures.

**Exhibit C
GBMS Summary**

TYPICAL AHU	Digital Input	Digital Output	Analog Input	Analog Output
Supply Fan start/stop		X		
Return Fan start/stop		X		
Discharge air temperature			X	
Mixed air temperature			X	
Return air temperature			X	
Heating valve				X
Cooling valve				X
Fan status supply	X			
Fan status return	X			
Outside air damper				X
Mixed air damper				X
Return air damper				X
Freeze stat	X			
Filter status	X			
VFD supply fan				X
VFD return fan				X
Static pressure			X	
Smoke detector	X			
Outside air temperature			X	

Notes:

1. Do not use multiple controllers per AHU.
2. AHU controller will have a sufficient point capacity for each air handling unit.
3. VFD points are for VAV AHUs only.

**Exhibit C
GBMS Summary**

	Digital Input	Digital Output	Analog Input	Analog Output
MISCELLANEOUS POINTS				
Energy Monitoring				
Energy Monitoring	X		X	
Power			X	
Demand			X	
Peak			X	
Pump packages				
On/off		X		
Status	X			
Lead/Lag		X		
Alarm	X			
Air Compressors				
Status	X			
PSI			X	
Alarm	X			
On/off		X		
VFD's				
Duct Static pressure			X	
Alarm	X			
On/off		X		
Percent run				X

Exhibit C
GBMS Summary

TYPICAL CHILLED WATER SYSTEM/PER CHILLER	Digital Input	Digital Output	Analog Input	Analog Output
Enable/Disable		X		
Start/Stop		X		
Condensor water pump status	X			
Condensor water pump on/off		X		
Chilled water pump status	X			
Chilled water pump on/off		X		
Chilled water setpoint				X
Leaving water temperature			X	
Return water temperature			X	
Circulating pump1 status	X			
Circulating pump1 on/off		X		
Circulating pump2 status	X			
Circulating pump2 on/off		X		
Condensor water supply temperature			X	
Condensor water return temperature			X	
Cooling tower status	X			
Cooling tower speed				X
Cooling tower start/stop		X		

**Exhibit C
GBMS Summary**

Facility size		Category 1	Category 2	Category 3
CCTV System	Existing No.of CCTV Cameras to be Re-used	2	4	12
	Number of New CCTV Cameras	2	4	12
	Intrusion Detection Integraton (Y/N?)	Y	Y	Y
Building Control Systems	Contol Network Architecture Option	LonWorks	LonWorks	LonWorks
	No.of HVAC DDC Controllers	6	11	218
	No.of HVAC Control & Monitoring Points	58	188	1294
	Standby Power Systems Integration (Y/N?)	N	Y	Y
	No. of Energy Meters/ Sub-meters	2	4	6
	No. Lightng Relays and Contactors	4	12	24
	No.of Fire Alarm Points Monitored	2	2	2
GUI Requiremets	HVAC System Graphics	4	10	27
	Lighting System Graphics	1	2	4
	Securtiy & Fire Alarm System Graphics	1	3	4
	No. of GBMS Graphics	6	15	35

Notes:

1. Use these pages to figure points lists for individual equipment being controlled.
2. Price the equipment shown on the individual drawings for each Category.
3. For pricing purposes, use the number of nodes specifically outlined on each drawing.
4. Include the number of energy meters and submeters identified in this list. Identify the type of meter to be used and method of interface into GBMS.

Exhibit E
Request for Services (Cost Proposal)

Description	Drawing: GBMS-03/06		Drawing: GBMS-04/07		Drawing: GBMS-05/08	
	Category 1	Category 1	Category 2	Category 2	Category 3	Category 3
	Quantity	Unit Cost	Quantity	Unit Cost	Quantity	Unit Cost
1. System Design - Overall						
2. System Design - Facility Level						
3. Network Equipment - Global						
a. GUI Server						
b. Database Server						
c. Digital Video Server						
d. Fire/Security Receiver						
e. Router						
f. Modem (if required)						
g. Computer Workstation						
4. Software						
a. GUI (browser based)						
b. Relational Database						
c. Network Management						
d. Device Configuration						
e. Digital Video						
f. Maintenance Management						
g. Energy/Data Analysis						
5. HVAC Control Equipment						
a. Air Handling Unit						
b. Variable Air Volume Box						
c. Constant Volume Box						
d. Sensors (all required)						
e. Fan Coil						
f. Programmable						
g. Rooftop Unit						
6. Intrusion Detection Equipment						
a. Main Controller						
b. Sensors (all required)						
c. Annunciation (A/V)						
d. Communication						

e. Video Camera						
f. Digital Video Recorder						
g.						
7. Card Access Equipment						
a. Controllers (all required)						
b. Proximity Card Reader						
c. Door Strike						
d. Door Contact						
e. Annunciator						
f. Communication						
g. Proximity Cards						
8. Lighting Control Equipment						
a. Controller						
b. Relay						
c. Light sensor						
d. Motion Detector						
e. Override Switch						
f.						
g.						
9. Network Equipment - Facility						
a. Network Controller						
b. LON Router						
c. LON Repeater						
d. Category 5 cable						
e. Switch/Hub						
f. Modem						
g.						
10. Development/Integration						
a. Arcview GIS						
b. Legacy System						
c. Energy Accounting						
d. Maintenance Management						
e. Digital Video (CCTV)						
f. Alarm Management						
g. OCC Comand/Control						
11. Report Generation						
a. HVAC						
b. Intrusion Detection						

c. Card Access						
d. Lighting						
e. Legacy System						
f. Historical Trending						
g. Custom						
12. Training						
a. GUI - Overall						
b. HVAC						
c. Intrusion Detection						
d. Card Access						
e. Lighting						
f. Legacy System						
g. Data Analysis						
13. Labor Rates						
a. Project Manager						
b. Programmer						
c. Electrician						
d. Pipe Fitter						
e. Technician						
f. Design Engineer						
g. Construction Manager						

Exhibit E
Request for Services (Cost Proposal)

	Installation	Programming	Commissioning	
Description	Unit Cost	Unit Cost	Unit Cost	Primary Reference
1. System Design - Overall				Sections II, III and IV, GBMS-02-08
2. System Design - Facility Level				Sections II, III and IV, GBMS-03-08
3. Network Equipment - Global				Section II, GBMS-02-08
a. GUI Server				Section II.H, GBMS-02
b. Database Server				Section II.H-L, GBMS-02
c. Digital Video Server				Section III.B, GBMS-02
d. Fire/Security Receiver				Section III.A, GBMS-02
e. Router				Section II.E, GBMS-02
f. Modem (if required)				Section III.H, GBMS-02-08
g. Computer Workstation				Section IV.F-G, GBMS-02
4. Software				Section II.G-L
a. GUI (browser based)				Section II.H, Section III.D.18
b. Relational Database				Section II.L
c. Network Management				Section III.C-D
d. Device Configuration				Section III.C-D
e. Digital Video				Section III.B
f. Maintenance Management				Section II.L
g. Energy/Data Analysis				Section II.L
5. HVAC Control Equipment				Section III.A, C-G, GBMS-03-08
a. Air Handling Unit				Section III.A, C-G, GBMS-03-08
b. Variable Air Volume Box				Section III.A, C-G, GBMS-03-08
c. Constant Volume Box				Section III.A, C-G, GBMS-03-08
d. Sensors (all required)				Section III.A, C-G, GBMS-03-08
e. Fan Coil				Section III.A, C-G, GBMS-03-08
f. Programmable				Section III.A,C-G, GBMS-03-08
g. Rooftop Unit				Section III.A, C-G, GBMS-03-08
6. Intrusion Detection Equipment				Section III.A, B, GBMS-06-08
a. Main Controller				Section III.A, B, GBMS-06-08
b. Sensors (all required)				Section III.A, B, GBMS-06-08
c. Annunciation (A/V)				Section III.A, B, GBMS-06-08
d. Communication				Section III.A, B, GBMS-06-08
e. Video Camera				Section III.A, B, GBMS-06-08

f. Digital Video Recorder				Section III.A, B, GBMS-06-08
g.				
7. Card Access Equipment				Two doors per facility
a. Controllers (all required)				Two doors per facility
b. Proximity Card Reader				Two doors per facility
c. Door Strike				Two doors per facility
d. Door Contact				Two doors per facility
e. Annunciator				Two doors per facility
f. Communication				Two doors per facility
g. Proximity Cards				Two doors per facility
8. Lighting Control Equipment				Section III.A, C-G, GBMS-03-08
a. Controller				Section III.A, C-G, GBMS-03-08
b. Relay				Section III.A, C-G, GBMS-03-08
c. Light sensor				Section III.A, C-G, GBMS-03-08
d. Motion Detector				Section III.A, C-G, GBMS-03-08
e. Override Switch				Section III.A, C-G, GBMS-03-08
f.				
g.				
9. Network Equipment - Facility				Section II, III, IV, GBMS-02-08
a. Network Controller				Section III.D, GBMS-03-08
b. LON Router				GBMS-03-08
c. LON Repeater				GBMS-03-08
d. Category 5 cable				GBMS-03-08
e. Switch/Hub				GBMS-03-08
f. Modem				Section III.H, GBMS-03-08
g.				
10. Development/Integration				Section II, III, IV, GBMS-02-08
a. Arcview GIS				Section II.C, GBMS-02
b. Legacy System				Section II.B-C, GBMS-02-08
c. Energy Accounting				Section II.L, GBMS-02-08
d. Maintenance Management				Section II.L, GBMS-02-08
e. Digital Video (CCTV)				Section III.B, GBMS-02-08
f. Alarm Management				Section II.H, GBMS-02-08
g. OCC Comand/Control				Section IV, GBMS-02
11. Report Generation				Section II.I
a. HVAC				Section II.I
b. Intrusion Detection				Section II.I
c. Card Access				Section II.I

d. Lighting				Section II.I
e. Legacy System				Section II.I
f. Historical Trending				Section II.J
g. Custom				Section II.I
12. Training				Section I.F.2.D, I.G.2
a. GUI - Overall				Section I.F.2.D, I.G.2
b. HVAC				Section I.F.2.D, I.G.2
c. Intrusion Detection				Section I.F.2.D, I.G.2
d. Card Access				Section I.F.2.D, I.G.2
e. Lighting				Section I.F.2.D, I.G.2
f. Legacy System				Section I.F.2.D, I.G.2
g. Data Analysis				Section I.F.2.D, I.G.2
13. Labor Rates				Include yearly escalation rate
a. Project Manager				Include yearly escalation rate
b. Programmer				Include yearly escalation rate
c. Electrician				Include yearly escalation rate
d. Pipe Fitter				Include yearly escalation rate
e. Technician				Include yearly escalation rate
f. Design Engineer				Include yearly escalation rate
g. Construction Manager				Include yearly escalation rate

Note: This template is to be used as a guide for the development of a complete cost proposal. It is expected that the respondent will customize this form to clearly define all of the elements of the proposed GBMS system.

Exhibit G
Approved GIS Vendor List
(Updated March, 2002)

Company	Contact	Address	City, State, Zip	Phone	E-Mail
Apex Geospatial Data Svcs	<u>Al Nauman</u> , President James N. Frinzi	400 N. Loop - 1604 East, Ste. 300	San Antonio, TX 78232	210-404- 9585 X101	al@apexinc.com jfrinzi@apexinc.com
Baker Engineering	Kevin P. Hayes	801 W. Adams St. Ste., 600	Chicago, IL 60607	312-575- 3907	kphayes@mbakercorp.co m
BaySys/GeoIT Technology	Bart Koenig	1620 S. Ashland Ste., 106	Green Bay, WI 54304	920-432- 1820	bartk@baysys-gis.com
BTG	Rick Judd	8125 W. Gulf Boulevard	Treasure Island, FL 33706	727-363- 4431	rjudd@titan.com
Burns & McDonnell	Stephen M. Linnemann	820 W. Jackson Blvd., Ste. 300	Chicago, IL 60607	312-454- 0674	chicagomd@burnsmcd.co m
Digital Engineering Corporation	Kate Gunther	5525 Twin Knolls Rd., Ste. 321	Columbia, MD 21045	410-715- 2300	kgunther@digitalcorp.com
Earth Tech	Leon F. DeSouza Paul Cegelski Cliff Inbau	5575 DTC Parkway, Ste. 200 4135 Technology Pkwy	Englewood, CO 8011 Sheboygan, WI 53083	303-694- 6660 920-458- 8711	paul_cegelski@earthtech.c om cliff_inbau@earthtech.com
ESRI	Frank H. Baxter	1305 Corporate Ctr. Drive	St. Paul, MN 55121	651-454- 0600	
GeoAnalytics	Carol Miller Peter Thum Tim Torres	950 Lee Street, Ste. 202	DesPlaines, IL 60016	847-824- 6404	ttorres@GeoAnalytics.com
GeoDecisions	John J. Linhart	222 S. Riverside Plaza, Ste. 1860	Chicago, IL 60606	312-454- 9494	jlinhart@gfnet.com
GeoSpan	Theodore M. Lachinski	10900 - 73rd Ave. North, Ste. 136	Maple Grove, MN 55369	763-493- 9320	tedl@geospan.com
GIS Solutions	Tim Johnson	2612 Farragut Drive, 2 nd Floor	Springfield, IL 62704	217-546- 3635	
Merrick & Company	Brian Raber	2450 S. Peoria Street	Aurora, CO 80114	303-751- 0741	brian.raber@merrick.com

Company	Contact	Address	City, State, Zip	Phone	E-Mail
Michigan State Industries	Carol Woodman	141 First Street	Columbia, MI 49036	517-278-6942 X543	woodmaca@michi.go
Pangaea Information Technologies, Ltd	Miki Ferenczy	247 S. State Street, Ste. 1325	Chicago, IL 60604	312-986-9471	
Patrick Engineering	Hernardo Madronero	55 E. Monroe, Ste. 3450	Chicago, IL 60603-5710	312-201-7950	hmadronero@patrickengineering.com
PlanGraphics	Gary Reed	112 East Main Street	Frankfort, KY 40601-2314	502-223-1501	garyreed@plangraphics.com
Roy F. Weston	Sandra McCullough	70 W. Madison, Ste. 1990	Chicago, IL 60602	312-424-3306	
SDI	Chris Payne	180 N. LaSalle St., Ste. 1500	Chicago, IL 60601	312-580-7513 or 312-446-4565	cpayne@sdichicago.com
TASC, Inc.	Brett Cameron	4805 Stonecroft Blvd.	Chantilly, VA 20151	703-793-3700	bgcameron@tasc.com
Westin Solutions Through Tech	Dean Schoeder	203 N. LaSalle St., Ste. 2100	Chicago, IL 60601	312-558-1691	dschoeder@we-in.com
GreatArc Technologies, Inc.	Michael Scanlon	205 W. Wacker Drive, Suite 1320	Chicago, IL 60606	312-726-4848	solutions@greatarctech.com

Exhibit H
City of Chicago Business Information System Architecture Handbook

CITY OF CHICAGO
BUSINESS AND INFORMATION SERVICES
SYSTEM ARCHITECTURE HANDBOOK

City Hardware and Software Standards Overview

INTRODUCTION

This document provides a high-level list of current City standards for its hardware and software environments and is intended for City department use. This does not mean that other software and hardware, which might have been previously listed as standard, may not be used or supported, but the following items should be purchased for any new initiative or growth/replacement needs. City departments will also need to determine if the standard hardware/software item has been deployed in their department, if needed for a new initiative.

Any proposals for non-standard hardware or software purchases or questions/comments should be forwarded to the Business and Information Services (BIS) Architecture team for review.

An asterisk (*) denotes standards currently under review (in all sections in this document).

CURRENT MAINFRAME/SERVER STANDARDS – PLATFORMS AND FUNCTIONALITY

Operating System (O/S)	Hardware Platform	Functionality					
		File	Database	Application	Web	Email	Print
Novell Netware 4.2	Compaq	Bundled with O/S	n/a	n/a	n/a	Groupwise 5.5	Bundled with O/S
Solaris 8 (Unix)	Sun Microsystems	n/a	Oracle 8.1.7	*	Apache	n/a	n/a
Windows 2000 Server	Dell, Compaq	*	Oracle 8.1.7	Citrix Metaframe XPA 1.0	*	*	*
O/S 390	Hitachi (IBM compatible)	n/a	Oracle 8.1.7	n/a	n/a	n/a	n/a

CURRENT CLIENT WORKSTATION STANDARDS

Operating System (O/S)	Hardware Platform	Functionality					
		Word Proc.	Spread-sheet	Presentation	E-mail	Web Browser	Database
Windows 2000 Professional	Dell, Compaq	MS Word 2000	MS Excel 2000	MS Powerpoint 2000	Group-Wise 5.5	MS Internet Explorer 5.5	MS Access 2000

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BUSINESS AND INFORMATION SERVICES
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City Hardware and Software Standards Overview

CURRENT STANDARDS – HANDHELD DEVICES

Operating System (O/S)	Personal Information Management	Custom Applications
RIM	X	
Palm	X	
Windows CE/Pocket PC	X	X

GUIDELINES FOR SELECTING HANDHELD DEVICES: Rugged devices may be required depending on the environment that the handheld will be used in. Handheld applications can be developed using one of three models: 1) run completely on the handheld (completely disconnected), 2) run on the handheld but exchange data with a backend system either wirelessly or by synchronizing (occasionally connected) or 3) run on the handheld or through a browser and require a full time connection to the backend system (fully connected). It is strongly encouraged that all developed systems use the occasionally connected model due to the limitations of wireless technology.

CURRENT STANDARDS – UTILITIES – MAINFRAME/SERVER PLATFORMS

Operating System (O/S)	Hardware Platform	Utilities						
		Back-up	Scheduling	DB Back-up	FTP	Virus Protection	Hardware Monitoring	File System Mgmt
Novell Netware 4.2	Compaq	Harbor or Veritas Backup Exec. 6.01	Bundled with O/S	Harbor 5.x	Bundled with O/S	McAfee 4.6*	Compaq Insight Mgr 7.0	Bundled with O/S
Solaris 8 (Unix)	Sun Microsystems	Legato	CA Scheduler	Legato DMO 2.1 (RMAN)	WinFTP	n/a	Sun RSM	Veritas Volume Mgr 3.2
Windows 2000 Server	Dell, Compaq	Veritas Backup Exec 8.6	Bundled with O/S	Veritas Oracle Backup Module	Bundled with O/S	*	Compaq: insight Mgr 7.0 Dell: Open Mgr	Bundled with O/S
O/S 390	Hitachi (IBM compatible)	FDR 5.3	CA7 3.3	DFSMS v1, r. 4.0	Bundled with O/S	n/a	Bundled with O/S	DFSMS v1, r. 4.0

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CURRENT STANDARDS - CLIENT WORKSTATION UTILITIES/CLIENTS

Operating System (O/S)	Back up	Virus Protection	Terminal Emulation	Other client tools	Network	PIM Integration
Windows 2000 Professional	Ghost 6.0	McAfee*	EXTRA (part of LanWorkPlace)	Citrix, Intel LANDesk Client, J-initiator	TCP/IP and IPX/SPX	Intellisync Gold 5.0.2

CURRENT STANDARDS – MAJOR APPLICATION TYPES

Application Type	City Standard
Financials – general ledger, payroll, accounts receivable & payable, purchasing	Oracle applications
Human Resource tracking	Oracle applications
GIS	ArcGIS
Work order tracking	Motorola (Suncoast)
Inspections/Permitting related to City infrastructure/services	Motorola (Suncoast)
Inspections/Permitting related to a building	Hansen
Licensing	IRIS
Ad-hoc Reporting	Business Objects
Imaging – document storage	Imedge
Imaging – workflow	IBM
Internet	Broadvision
Custom Development	Java*

*A standard Java development suite is being selected.

Exhibit I GIS Data Standards

1. Technical Data Specifications

Chicago GIS (Geographical Information System) Data conforms to the standards below:

Datum: NAD 83
Projection: State Plane Illinois East
FIPS Zone: 1201
Units: US Foot
Precision: 1:10,000 (*1:1,000 is acceptable for most uses*)

When providing spatial data formats to the City, please provide your specifications for Datum, Projection, FIPS Zone, Units, and Precision.

2. MetaData Standards

The City of Chicago has adopted the **Federal Geographic Data Committee's (FDGC) "Content Standard for Digital Metadata" Version 2 - 1998** as its meta data standard.

This standard is required by federal and governmental agencies, and has also been adopted for use by the National Map for homeland security. The table below contains the portions of the FGDC standard that are applicable and required for Chicago GIS data.

FGDC Field	Chicago Custom?	BIS Name	Definition	Valid Values, Defaults
1.1 Citation			Information to be used to reference the data set.	
<i>1.1 Citation Information</i>				
<i>1.1.1 Originator</i>		Origin Dept-ID	The name of an organization or individual that developed the data set.	Default to "City of Chicago"
<i>1.1.2 Publication Date</i>			The date when the data set is published or otherwise made available for release.	
<i>1.1.3 *Title</i>		Layer Title	Layer name	
<i>1.1.4 * Geospatial Data Presentation Form</i>				
<i>1.1.5 *Online Linkage</i>		Location		
1.1.6 Nickname	Y	Nickname		
1.1.7 Originating Department	Y	Origin Dept-ID		Default to "BIS"
1.2 Description			A characterization of the data set, including its intended use and limitaitons	
<i>1.2.1 Abstract</i>		Description	A brief narrative summary of the data set - What is it?	
<i>1.2.2 Purpose</i>			A summary of the intentions with which the data set was developed - why was this created?	
<i>1.2.3 Supplemental Information</i>		Comments	Other descriptive information about the data set	"free text"

FGDC Field	Chicago Custom?	BIS Name	Definition	Valid Values, Defaults
1.3 Time Period of Content			Time period(s) for which the data set corresponds to the currentness reference.	
<i>1.3.1 Time Period Information</i>				
<i>1.3.1.1 Calendar Date</i>		Content Date	The year (and optionally month, or month and day) for which the data set corresponds to the ground.	
<i>1.3.2 Currentness Reference</i>		Currentness	The basis on which the time period of content information is determined.	"Ground Condition"; "Publication Date"; "Other"
1.4 Status			The state and maintenance information for the data set	
<i>1.4.1 Progress</i>		Progress	The state of the data set.	Complete, In Progress, Planned
<i>1.4.2 Maintenance and Update Frequency</i>		Maint Cycle	The frequency with which changes and additions are made to the data set after the initial data set is completed.	Continually;"Daily";"Weekly";"Monthly";"Annually";"Bi-Annual";"Per Election Cycle";"Per Census Cycle";"Irregular";"None Planned";"Other"
1.5 Spatial Domain			The geographic areal domain of the data set	
Bounding Coordinates			The limits of coverage of a data set expressed by latitude and longitude values.	
<i>*West Bounding Coordinate</i>				
<i>*East Bounding Coordinate</i>				
<i>*North Bounding Coordinate</i>				
<i>*South Bounding Coordinate</i>				
1.6 Keywords			Words or phrases summarizing an aspect of the data set.	
<i>1.6.1 Theme Keyword Thesaurus</i>		Keyword Thesaurus	Reference to a formally registered thesaurus or a similar authoritative source of theme keywords.	"HSIP - USGS"
<i>1.6.1.1 Theme Keyword</i>		Keyword	Common-use word or phrase used to describe the subject of the data set.	Values from HSIP Category Table
<i>1.6.2 Place</i>			Geographic locations characterized by the data set.	
<i>1.6.3 Stratum</i>			Layered, vertical locations characterized by the data set.	
<i>1.6.4 Temporal</i>			Time period(s) characterized by the data set.	
1.7 Access Constraints		Access	Restrictions and legal prerequisites for accessing the data set.	"None", "Limited", "Restricted"
<i>1.7.1 Public Access Allowed</i>	Y	Public Access		"No"; "Web Only", "Limited"; "Full"

FGDC Field	Chicago Custom?	BIS Name	Definition	Valid Values, Defaults
1.7.2 Sharing Policy	Y	Share Policy		"Full"; "None"; "Govt Only"; "Limited"
1.7.3 Sales Policy	Y	Sales Policy		"Not Sold"; "Free Distrib"; "Purchaseable"
1.8 Use Constraints		Use Constraints	Restrictions and legal prerequisites for using the data set after access is granted.	
1.9 Point of Contact			Contact information for an individual or organization that is knowledgeable about the data set.	City of Chicago, Department of Business and Information Services GISTEAM@cityofchicago.org
1.12 Security Information			<i>Handling restrictions imposed on the data set because of national security, privacy, or other concerns</i>	
1.12.2 Security Classification		Security Class	Name of the handling restrictions on the data set	"Top Secret"; "Secret"; "Confidential"; "Restricted"; "Unclassified"; "Sensitive"
1.13 Native Data Set Environment		Native Data Set	A description of the data set in the producer's processing environment, including items such as the name of the software (incl. Version), the computer operating system, file name, and the data set size.	"ESRI GeoDatabase"; "Coverage"; "Other"
2 – Data Quality Information				
2.1 Attribute Accuracy			An assessment of the accuracy of the identification of entities and assignment of attribute values in the data set.	
2.1.1 Attribute Accuracy Report		Accuracy - Attrib	An explanation of the accuracy of the identification of the entities and assignments of values in the data set and a description of the tests used.	"free text"
2.2 Logical Consistency Report			An explanation of the fidelity of relationships in the data set and tests used.	"free text"
2.3 Completeness Report		Completeness	Information about omissions, selection criteria, generalization, definitions used, and other rules used to derived the data set.	"free text"

FGDC Field	Chicago Custom?	BIS Name	Definition	Valid Values, Defaults
2.4 Positional Accuracy		Accuracy - Spatial	An assessment of the accuracy of the positions of spatial objects.	
2.5 Lineage			Information about the events, parameters, and source data which constructed the data set, and information about the responsible parties.	
2.5.1 Source Information		Sources	List of sources and a short discussion of the information contributed by each.	
3 – Spatial Data Organization				
3.1 Indirect Spatial Reference Method		Conflates to	Name of types of geographic features, addressing schemes, or other means through which locations are referenced in the data set.	"free text"
3.2 *Direct Spatial Reference Method		Feature Type	The system of objects used to represent space in the data set.	"Point", "Vector", "Raster"
5 – Entity & Attribute Information				
5.1 Detailed Description		Description	Description of the entities, attributes, attribute values, and related characteristics encoded in the data set.	
5.1.1 Entity Type		Category	The definition and description of a set into which similar entity instances are classified.	
5.1.1.1 *Entity Type Label			The name of the entity type	"free text"
5.1.2 Attribute			A defined characteristic of an entity.	"free text"
5.1.2.1 *Attribute Label			The name of the attribute.	"free text"
5.1.2.2 *Attribute Definition			The description of the attribute.	"free text"
5.1.2.3 *Attribute Definition Source			The authority of the definition.	"free text"
5.1.2.4 Attribute Domain Values			The valid values that can be assigned for an attribute.	
5.1.2.4.3.2 *Unrepresentable Domain			Description of the values and reasons by they cannot be represented.	
5.2 Overview Description			Summary of, and citation to detailed description of, the information content of the data set.	
5.2.1 Entity and Attribute Overview			Detailed summary of the information contained in a data set.	"free text"
5.2.2 Entity and Attribute Detail Citation			Reference to the complete description of the entity types, attributes, and attribute values for the data set.	"free text"

FGDC Field	Chicago Custom?	BIS Name	Definition	Valid Values, Defaults
7 – Meta Data References				
7.1 Metadata Date			The date that the metadata were created or last updated.	
7.4 Metadata Contact				
<i>7.4.1 Contact Organization Primary</i>				
<i>Contact Organization</i>			REQUIRED: The organization responsible for the metadata information.	"City of Chicago" defaulted
7.5 *Metadata Standard Name			The name of the metadata standard used to document the data set.	"FDGC"
7.6 *Metadata Standard Version			Identification of the version of the metadata standard used to document the data set	

3. Address Data

In general, the City of Chicago follows the naming conventions established by the United States Postal Service. Refer to <http://pe.usps.gov/cpim/ftp/pubs/Pub28/pub28.pdf>

The components of address fields are as follows:

Field	Size	Type	
From Number	6	long int	Used for range addresses
To Number	6	long int	Used for range addresses
Number	6	long int	Street Number – no halves or units
Pre-Direction	2	text	N, S, E, W
Street Name	50	Text	Chicago can provide a list of valid street names & associated types
Street-Type	5	text	Ave, Blvd, St, etc...

Street Type/Suffix Valid Values (use post office standard)

AVE	PKWY
BLVD	PL
CIR	PLZ
CRES	RD
CT	ROW
DR	SQ
EXPY	ST
HWY	TER
LN	WAY

The City of Chicago also uses some non-USPS types for special cases.

- **ER, XR** - Entry and Exit ramps off of expressways.
- **XPRSS, LOCAL** - express/local lanes on the Dan Ryan
- **RL** - Reversible lane for the Kennedy
- **SD** - Generally it's used for the streets on the sides of boulevards, though it's also used for the drives in Sherman Park.

- **TOLL** - toll road by O'Hare
- **SR** - Generally used for the streets which get you from one major street to another -- eg from the Dan Ryan Local to Express lanes, from the Kennedy regular lanes to the reversible ones. There are also some on the surface street.

4. GIS Data Exchange Formats

The City of Chicago will accept GIS information in the following formats, in order of preference. The tabular data format will provide the fastest and most accurate representation of your information.

4.1 Tabular Data

Please provide your information in a delimited file with the following fields. An XML format is also acceptable. Either the From/To address number or the From/To cross streets are required. Direction, Street Name, and Street Type are required. If you would like a list of all standard Chicago street names, this can be provided.

Field	Type	Size	
Identifier Key	Char		<i>Identifier Key</i>
Pre-Direction	Text	2	<i>Street Direction - N, S, E, or W</i>
STREET_NAME	Text	50	<i>"ON" street location</i>
STREET_TYPE	Text	5	<i>Suffix - Ave, St, etc. Please conform to US Post Office standards</i>
From_Address	Long Integer	6	<i>Street Number Starting Address</i>
To_Address	Long Integer	6	<i>Street Number Ending Address</i>
From_Cross_Street	Text	50	<i>Name of "From" intersecting street</i>
To_Cross_Street	Text	50	<i>Name of "To" intersecting street</i>
Other Relevant Data			<i>Other characteristics to be tracked with this segment</i>
From_X-Coord			<i>Provide the x,y coordinates for the starting node</i>
From Y-Coord			<i>Provide the x,y coordinates for the starting node</i>
To X-Coord			<i>Provide the x,y coordinates for the ending node</i>
To Y-Coord			<i>Provide the x,y coordinates for the ending node</i>

4.2 GIS Geodatabase

The City of Chicago stores its GIS data in an geodatabase using ESRI's ArcSDE 8.x product and Oracle 8.1.7. If your data is stored in the same platform, an Oracle .dmp file format.

Alternatively, a personal geodatabase file (MS Access) generated from the ESRI platform is acceptable.

4.3 GIS Open Formats

Any GIS format readable by ESRI software is acceptable including:

- ESRI Personal Geodatabase
- E00: ESRI export file format

- Coverage: ESRI Format
- Shapefile: Popular ESRI geographic file format

4.4 CAD Formats

- DGN: Intergraph graphics file format
- DXF: Drawing eXchange Format, popular with most CAD software
- DWG: Native AutoCAD file format

4.5 Graphical / Raster Formats

These formats are not preferred and may be limited in our ability to use.

- TIFF
- GIF
- JPG

Department of Procurement Services

August 29, 2003

Addendum Number 1

**To
REQUEST FOR PROPOSALS (“RFP”)
For
GLOBAL BUILDING MONITORING SYSTEMS**

Specification No. 704

Consisting of Notice of Additional Time in Which to Respond; Clarifications; Changes to Section I.F.2.k., Required Information, “Respondent’s Professional Qualifications and Specialized Experience”; Changes to Section II.B., Global Building Monitoring and Control System Functional Requirements, “Scope”; Addition to Section II.I., Operator Report Generation; Addition to Section II.L.2., Changes to Section I.G., Evaluation Criteria; Change to Section I.H., Respondent Selection Process; Answers to 64 questions submitted prior to and during the RFP Pre-submittal Conference on Thursday, July 17, 2003; Exhibit C, GBMS Summary; Exhibit E, Request for Services (Cost Proposal Template); Exhibit G, Approved GIS Vendor List, Updated March, 2002; Exhibit H, City of Chicago Business Information System Architecture Handbook; and Exhibit I, GIS Data Standards.

ACKNOWLEDGMENT

I hereby acknowledge receipt of Addendum Number 1 to the RFP named above, and further state that I am authorized to execute this Acknowledgment on behalf of the company listed below.

Signature of Authorized Individual Title

Name of Authorized Individual (type or print)

Company Name

Business Telephone Number