

S. S. R. B.

DATE 08/04/09

JUSTIFICATION FOR NON-COMPETITIVE PROCUREMENT

APPROVED
CONDITIONALLY APPROVED 3-0

RETURN TO DEPT.

DISAPPROVED

COMPLETE THIS SECTION IF NEW CONTRACT

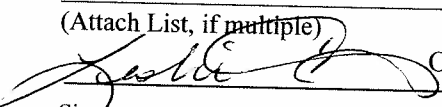
For contract(s) in this request, answer applicable questions in each of the 4 major subject areas below in accordance with the Instructions for Preparation of Non-Competitive Procurement Form on the reverse side.

Request that negotiations be conducted only with Office of Emergency Management and Communications for the product and/or services described herein.

This is a request for _____ (Name of Person or Firm) (One-Time Contractor Requisition # _____, copy attached) or X Term Agreement or _____ Delegate Agency (Check one). If Delegate Agency, this request is for "blanket approval" for all contracts within the _____ (Attach List) Pre-Assigned Specification No. _____ (Program Name) Pre-Assigned Contract No. _____

COMPLETE THIS SECTION IF AMENDMENT OR MODIFICATION TO CONTRACT

Describe in detail the change in terms of dollars, time period, scope of services, etc., its relationship to the original contract and the specific reasons for the change. Indicate both the original and the adjusted contract amount and/or expiration date with this change, as applicable. Attach copy of all supporting documents. Request approval for a contract amendment or modification to the following:

Contract #: _____	Company or Agency Name: _____			
Specification # _____				
Modification #: _____	Contract or Program Description: _____			
	(Attach List, if multiple)			
Leslie Cain	6-9421		OEMC	6/19/2009
Originator Name	Telephone	Signature	Department	Date

Indicate SEE ATTACHED in each box below if additional space needed:

<input type="checkbox"/> PROCUREMENT HISTORY
The OEMC initiated a contracting process with Argonne National Laboratories in 2008 this contract was never executed due to lengthy scope development. The OEMC has never contracted with the OEMC.
<input type="checkbox"/> ESTIMATED COST
\$1,3M
<input type="checkbox"/> SCHEDULE REQUIREMENTS
Project duration is estimated to be 1.5 years from contract award to acceptance testing.
<input type="checkbox"/> EXCLUSIVE OR UNIQUE CAPABILITY
Design and implementation of 3-D visualization technology and software systems combined with the development and design of emergency response systems and supercomputing capabilities.
<input type="checkbox"/> OTHER
Leader in atmospheric sciences that are directly in line with the OEMC scope of work.

APPROVED BY: Raymond Orozco
 DEPARTMENT HEAD OR DESIGNEE
 Raymond Orozco, Executive Director, OEMC

6/30/09
 DATE

Z. S. L.
 BOARD CHAIRPERSON

08/04/09
 DATE

Jeanne Miller
 Chief Procurement Officer

11/19/09
 Date

DPS PROJECT CHECKLIST

For DPS Use Only	
Date Received	_____
Date Returned	_____
Date Accepted	_____
CA/CN's Name	_____

IMPORTANT: PLEASE READ AND FOLLOW THE INSTRUCTIONS FOR COMPLETING THE PROJECT CHECKLIST AND CONTACT THE APPROPRIATE UNIT MANAGER IF YOU HAVE ANY FURTHER QUESTIONS. ALL INFORMATION SHOULD BE COMPLETED, ATTACH ALL REQUIRED MATERIALS AND SUBMIT FOR HANDLING TO THE DEPARTMENT OF PROCUREMENT SERVICES, ROOM 403, CITY HALL, 121 N. LASALLE STREET, CHICAGO, ILLINOIS 60602.

GENERAL INFORMATION:

Date: 6/24/09
REQ No.: 43780
Contact Person: Leslie Cain
Tel: 6-9421 **Fax:** _____
E-mail: lrcairn@cityofchicago.org
Project Manager: Yilmaz Halac
Tel: 6-6367 **Fax:** _____
E-mail: yhalac@cityofchicago.org
PO No.: (if known): _____
Modification No.: (if known): _____
Previous PO No.: (if known): _____
Project Description: Evacuation Planning and Consulting Services with Argonne National Laboratory

FUNDING:

City: Corporate Bond Enterprise Grant* Other
 State: IDOT/Transit IDOT/Highway Grant* Other
 Federal: FHWA FTA FAA Grant* Other

LINE	FY	FUND	DEPT	ORGN	APPR	ACTV	OBJT	PROJECT	RPTG	\$ DOLLAR AMOUNT
	07	0M02	058	2705	0140	220140			07ES38	1300000

Estimated Value \$1,300,000

*IF GRANT FUNDED, A COPY OF THE APPROVED GRANT AND APPLICATION ARE REQUIRED and any other Terms and Conditions that may apply.

SCOPE STATEMENT:

Attached is a Detailed Scope of Services and/or Specification

IMPORTANT: THIS IS A CRITICAL PORTION OF YOUR SUBMITTAL. IN ORDER FOR DPS TO ACCEPT YOUR SUBMITTAL YOU MUST COMPLETE THE SPECIFIC SCOPE REQUIREMENTS AS SET FORTH IN THE SUPPLEMENTAL CHECKLIST FOR THAT UNIT.

The following is a general description of what should be included in a Scope of Services or Specification:
 A clear description of all anticipated services and products, including: time frame for completion, special qualifications of prospective vendors, special requirements or needs of the project, locations, anticipated participating user departments, citation of any applicable City ordinance or state/federal regulation or statute.

TYPE OF PROCUREMENT REQUESTED (check all that apply):

NEW REQUEST

- Blanket Agreement
- Standard Agreement
- Small Orders

MOD/AMENDMENT

- Time Extension
- Vendor Limit Increase
- Scope Change/Price Increase/Additional Line Item(s)
- Other (specify): _____

FORMS: Requisition Special Approvals Non-Competitive Review Board (NCRB)

CONTRACT TERM: 4 years **Requested Term (number of months):** 48

DPS PROJECT CHECKLIST

PRE BID/SUBMITTAL REQUIREMENTS:

Requesting Pre Bid/Submittal Conference? Yes No Requesting Site Visit? Yes No

ARCHITECTURAL/ENGINEERING SUPPLEMENTAL CHECKLIST

Required Attachments: Scope of Services, including location, description of project, services required, deliverables, and other information as required

Risk Management

Will services be performed within 50 feet of CTA train or other railroad property? Yes No
Will services be performed on or near a waterway? Yes No

If applicable, Pre-Qualification Category No. Category Description:

For Pre-Qualification Program, attach list of suggested firms to be solicited

Other Agency Concurrence Required: None State Federal Other (fill in)

AVIATION CONSTRUCTION SUPPLEMENTAL CHECKLIST

DOA sign-off for final design documents: Yes No

Required Attachments:

Copy of Draft Contract Documents and Detailed Specifications.

Risk Management:

Current Insurance Requirements prepared/approved by Risk Management: Yes No

Will work be performed within 50 feet of CTA or ATS structure or property? Yes No

Will work be performed airside? Yes No

***NOTE:** Any non-construction Aviation request, complete the applicable section.

COMMODITIES SUPPLEMENTAL CHECKLIST

Required Attachments: Detailed Specifications (Scope of Services) including detailed description of the product, delivery location, user department contact, price escalation considerations, Bidder's qualification, contract term and extension options, Contractor's qualifications, citation of any applicable City/State/Federal statutes or regulations, citation of any applicable technical standards and Price Lists/Catalogs, technical drawings and other exhibits and attachments as appropriate.

If Modification request, please verify and provide the following:

Contractor's Name:

Contractor's Address:

Contractor's e-mail Address:

Contractor's Phone Number:

Contractor's Contact Person:

CONSTRUCTION SUPPLEMENTAL CHECKLIST

Required attachments:

Copy of Draft (80% Completion), Contract Documents and Detailed Specifications

Risk Management

Will services be performed within 50 feet of CTA train or other railroad property? Yes No

Will services be performed on or near a waterway? Yes No

DPS PROJECT CHECKLIST

VEHICLES/HEAVY EQUIPMENT SUPPLEMENTAL CHECKLIST

Required Attachments:

- Detailed Specifications including detailed description of the vehicle(s) or equipment, mounted equipment, if any, and options/accessories.
- Special Provisions (Delivery, Warranty, Manuals, Training, Additional Unit Purchase Options, Bid Submittal Information, etc.)
- Delivery Location(s)
- Technical Literature
- Drawings, if any
- Part Number List (Manufacturer; or Dealer; or Other Source:)
- Current Price List(s)/Catalog(s)
- Special Approval Form
- Exhibits and Attachments

If Modification request, please verify and provide the following:

Contractor's Name:

Contractor's Address:

Contractor's e-mail Address:

Contractor's Phone Number:

Contractor's Contact Person:

PROFESSIONAL SERVICES SUPPLEMENTAL CHECKLIST

- Detailed description of project listing obligations of each party.
- The Schedule of Compensation
- Deliverables
- Request for individual contract services (if applicable)
- The appropriate EPS form
- ITSC (approved by BIS)
- OBM (approved by Budget form/memo)
- Grant document attached

Attach any documentation indicating any previous purchase activity to assist in the procurement process

TELECOMMUNICATIONS AND UTILITIES SUPPLEMENTAL CHECKLIST

Required Attachments: Detailed Scope of Services/Specification which sets forth all of the anticipated services and products the user department wants provided, including time frame for completion, special qualifications of prospective vendors, special requirements or needs of the project, locations, anticipated participating user departments, citation of any applicable City ordinance or state/federal regulation or statute.

Has the project been reviewed by DGS? Yes No

Attach copy of DGS Recommendation; Reservation(s); or participate under current contract.

Does the project include software? Yes No

If yes, is signed ITSC form attached? Yes No

Does the location involve:

A public way? Yes No

Any concession in the City's facilities? Yes No

Is it anticipated City Council approval of the project or contract will be required? Yes No

DPS PROJECT CHECKLIST

WORK SERVICES/FACILITY MAINTENANCE SUPPLEMENTAL CHECKLIST

Required Attachments: Detailed Specifications (Scope of Services) including detailed description of the work, locations (with supporting detail), user department contacts, work hours/days, laborer/supervisor mix, compensation and price escalation considerations, Bidder's qualification, contract term and extension options, Contractor's qualifications, citation of any applicable City/State/Federal statutes or regulations, citation of any applicable technical standards and Price Lists/Catalogs, technical drawings and other exhibits and attachments as appropriate.

Risk Management:

Will services be performed within 50 feet (50') of CTA train or other railroad property? Yes No

Will services be performed on or near a waterway? Yes No

Will services require the handling of hazardous/bio-waste material? Yes No

Will services require the blocking of streets or sidewalks which may affect public safety? Yes No

If Modification or Amendment request, please verify and provide the following:

Contractor's Name:

Contractor's Address:

Contractor's e-mail Address:

Contractor's Phone Number:

Contractor's Contact Person:

**CITY OF CHICAGO
 PURCHASE REQUISITION**

Copy (Department)

DELIVER TO: 058- OEC1411 1411 W. MADISON Chicago, IL 60607	REQUISITION: 43780 PAGE: 1 DEPARTMENT: 58 - OFFICE OF EMERGENCY COMMUNICA PREPARER: Leslie R Cain NEEDED: APPROVED: 6/16/2009
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REQUISITION DESCRIPTION

SOLE SOURCE ARGONNE NATIONAL LABORATORIES SOFTWARE APPLICATION DESIGN IMPLEMENTATION CONSULTING SERVICES
 SPECIFICATION NUMBER: 75198

COMMODITY INFORMATION

LINE	ITEM	QUANTITY	UOM	UNIT COST	TOTAL COST						
1	99029	#####	USD	1.00	1,300,000.00						
DISASTER PLANNING PREPAREDNESS EMERGENCY CONSULTING SERVICES: DESIGN EMVIS APPLICATION AND IMPLEMENTATION											
SUGGESTED VENDOR:			REQUESTED BY: Leslie R Cain								
DIST	BFY	FUND	COST CTR	APPR	ACCNT	ACTV	PROJECT	RPT CAT	GENRL	FUTR	Dist. Amt.
1	007	0M04	0582705	0140	220140	0000	00000000	07ES38	00000	0000	1,300,000.00
LINE TOTAL:											1,300,000.00

REQUISITION TOTAL: 1,300,000.00



City of Chicago
Richard M. Daley, Mayor

Office of Emergency Management
and Communications

Raymond Orozco
Executive Director

1411 West Madison Street
Chicago, Illinois 60607-1809
(312) 746-9111
(312) 746-9120 (FAX)

<http://www.cityofchicago.org>

MEMORANDUM

COPY

To: Montel M. Gayles, Chief Procurement Officer
Department of Procurement Services

Terrence Glavin, General Council & Chair
Sole Source Board

From: Raymond Orozco
Raymond Orozco, Executive Director
Office of Emergency Management & Communications

Date: June 19, 2009

Re: Sole Source with Argonne National Laboratory

SUBJECT: Sole Source Request
CONTRACT TYPE: Pro-Serv
VENDOR: Argonne National Laboratory
PROJECT: Evacuation Planning and Modeling application
development
EST CONTRACT COST: \$1,300,000

The OEMC is submitting a request to the Non-Competitive Review Board allowing the Office of Emergency Management and Communication to enter into a contract with Argonne National Laboratory. Argonne has unique capabilities and qualifications for providing our office with highly sophisticated emergency modeling and visualization software. Project Manager Yilmaz Halac and I will be in attendance.

Argonne National Laboratory is a unique entity, in that they are a U.S. Department of Energy Laboratory and managed by the University of Chicago. They do not actively compete with companies in the private sector and provide a unique set of services.

In support of this request, attached please find:

- 1) Project checklist
- 2) Requisition # 43780
- 3) Grant Agreement
- 4) EDS
- 5) Justification for Non-competitive procurement
- 6) Executive Summary, Scope with budget
- 7) Information Technology Review Board presentation
- 8) Copy of the No Stated Goals Request

If you have any questions, please contact me directly at 312-746-9421.

Cc: Yilmaz Halac, OEMC
Frank Lindbloom, OEMC
John O'Brien, DPS



Office of Emergency Management and Communication
Sole Source Justification
Argonne National Laboratory

PROCUREMENT HISTORY

The Office of Emergency Management and Communication (OEMC) has state-of-the-art emergency and crisis management systems; however, the OEMC lacks key capability in determining the spatial and temporal extent of a hazardous material incident or a terrorist attack involving the release of a chemical, biological or radiological (CBR) agent ("dirty-bomb"). Knowing the location of areas affected by an incident is essential to rapid response and developing the mitigation required when protecting public safety.

To address this knowledge gap, OEMC has determined two additional priority capabilities are needed: (1) advanced air dispersion modeling and (2) 3-D visualization of the air dispersion model output to assist first responders (fire and police units). This priority evolved from a gap analysis of the OEMC's current capabilities. It will be necessary to incorporate these new technologies so that they are fully integrated with the existing technologies at the 911 Center.

Argonne National Laboratory (Argonne), operated by UChicago LLC for Department of Energy, is one of the largest research facilities in the United States and conducts work on a not-for-profit basis for federal, state, and local agencies. Argonne has a national and international reputation for providing unbiased science in support of the public good. As a national laboratory, Argonne is not in competition with other private sector companies and provides unique services not offered by others in the market place. Over the last 35 years Argonne has developed extensive and world-class expertise in atmospheric sciences and advanced computing. For this specific project, Argonne has a set of unique computing and modeling technologies that have been applied to air dispersion issues in Washington D.C., Las Vegas, and chemical weapons depots

maintained by the US Army. By combining Argonne expertise in air dispersion modeling, advanced computing using massively parallel high performance computers, and with the visualization capabilities found at the University of Illinois-Chicago (UIC) Electronic Visualization Laboratory, the proposal team brings together a set of capabilities unmatched by others in the market-place.

There have been numerous meetings at the OEMC and at Argonne during the past year to discuss homeland security science and technology developments including state of the art atmospheric modeling and visualization tools that are now ready for technology transfer. The meetings also covered emergency transportation evacuation planning and development of a transportation simulator specific to City of Chicago. The simulator is being developed by Argonne under a separate agreement with the Illinois Terrorism Task Force. This emergency evacuation tool being developed by Argonne for the State of Illinois will be integrated with the modeling and visualization tools to be developed in this proposal. These tools and the expertise offered by Argonne and University of Illinois-Chicago scientists and engineers can provide the OEMC with capabilities that will the City of Chicago understand and respond to a WMD attack along with other crisis management situations involving accidental spills of hazardous materials.

ESTIMATED COST

The estimated cost to meet our requirement is \$1,300,000. (See attached task and cost proposal).

SCHEDULE REQUIREMENTS

The proposed tasks are to be completed in approximately a year and a half from the contract award date (See attached task and cost proposal).

EXCLUSIVE OR UNIQUE CAPABILITIES

Argonne has proven and recognized scientific expertise in atmospheric dispersion modeling, advanced computing technologies, and homeland security planning and analysis. UIC has proven and transferable advanced technologies in 3-D visualization. As a combined team, these research institutions bring local capability to the City of Chicago to develop and implement the state-of-the-art tools required by the OEMC. The two organizations have developed unique technologies and applications for other major cities that are not available for purchase from any other competitors. Argonne is unique and unquestionably predominant in the area of highly technical plume modeling, visualizations and evacuation simulations. Argonne's past experience and highly specialized expertise is vital to the success of proposed program.

Specific examples of Argonne's and UIC exclusive or unique capabilities for doing the job include experience in: 1) the design and implementation of advanced 3-D stereo scientific visualization technology and software systems, 2) development, design and application of CBR emergency response tools ranging from simple rapid urban dispersion/hazard exposure models to high-fidelity coupled urban canopy/street canyon meteorological and computational fluid dynamics codes, 3) unique supercomputing facilities to carryout computationally intense urban simulations and 3-D visualizations, including the "Jazz" and "BlueGene" Clusters and TerraGrid hub connections with major national research laboratories and universities, including the University of Illinois, and 4) staff with unique skills and experience in computer and atmospheric sciences and development, evaluation and application hazard cloud urban dispersion models.



Illinois Emergency Management Agency

Rod R. Blagojevich, Governor
Andrew Velasquez III, Director

March 28, 2008

Dear Grantee:

Enclosed with this letter is your fully executed grant agreement. Please retain the enclosed copy for your files.

If you have any questions or need additional information, please feel free to contact me at 217-557-4757.

Sincerely,

A handwritten signature in black ink, appearing to read "Tom Zimmerman", is written over a faint circular stamp.

Tom Zimmerman
Illinois Terrorism Task Force

Attachment



NOTICE OF GRANT AGREEMENT

PART I - Notice of Grant Award to the City of Chicago

This Grant Agreement is made and entered by and between the Illinois Emergency Management Agency (Grantor), 2200 South Dirksen Parkway, Springfield, Illinois 62703-4554, and the **City of Chicago** (Grantee), **1411 West Madison Street, Chicago, Illinois 60607**.

WHEREAS this Grant is to utilize funds from the Department of Homeland Security (DHS), Fiscal Year 2007 Homeland Security Grant Program, Urban Area Security Initiative (UASI), **CFDA #97.008**.

THEREFORE, the Grantor is hereby making available to the Grantee the amount not exceeding **\$ 30,732,000.00** for the period from August 9, 2007 to December 31, 2009. The Grantee hereby agrees to use the funds provided under the agreement for the purposes set forth herein and agrees to comply with all terms and conditions of this agreement. This period of award may be amended if there is a delay in the release of these funds from the Federal Government.

It is agreed between the parties, that the agreement, as written, is the full and complete agreement between the parties and that there are no oral agreements or understanding between the parties other than what has been reduced to writing herein.

This Grant Agreement and attachments constitutes the entire agreement between the parties.

PART II - Term

The term of this Grant Agreement shall be from the August 9, 2007 to December 31, 2009.

PART III - Scope of Work

This grant continues work to sustain and enhance the Homeland Security programs of the Chicago urban area in support of the Urban Area Security Initiative for projects and investments developed by the Urban Area Work Group (UAWG)

The Budget Detail Worksheet, provided in Attachment A, outlines the entire Scope of Work (Part III) for this project and expenditures the Grantee will seek reimbursement. The Grantor will only reimburse those expenditures that are specifically listed in the Budget Detail Worksheet. Each Budget Detail Worksheet submitted by the Grantee and approved by the Grantor shall be considered an authorized budget and an attachment of this Grant Agreement.

The Discipline Allocation Worksheet and Project Metric Worksheet, provided in Attachment B, outline the discipline specific expenditure allocation classification and expenditure allocation performance metric for activities listed in the Scope of Work (Part III). The Grantee must submit to the Grantor the update the Discipline Allocation Worksheet and Project Metric Worksheet as outlined in Part V – Reports.

PART IV - Compensation Amount

The total compensation and reimbursement payable by the Grantor to the Grantee shall not exceed the sum of \$ **30,732,000.00**.

PART V - Terms and Conditions

FISCAL FUNDING: The Grantor's obligations hereunder shall cease immediately, without penalty or further payment being required, in any year for which the General Assembly of the State of Illinois fails to make an appropriation sufficient to pay such obligation or the U.S. Department of Homeland Security, Federal Emergency Management Agency, National Preparedness Directorate (DHS FEMA NPD) fails to provide the funds. The Grantor shall give Grantee's notice of such termination for funding as soon as practicable after Grantor becomes aware of the failure of funding. Grantee's obligation to perform shall cease upon notice by Agency of lack of appropriated funds.

EQUIPMENT: Grantor reserves the right to reclaim, or otherwise invoke the Illinois Grant Funds Recovery Act on any and all equipment purchased by grantee with grant funds if said equipment has fallen into neglect or misuse according to the standards of the Grantor. Additionally, Grantee may not substitute, exchange or sell any equipment purchased with grant funds unless Grantee has the express written consent of the Grantor.

METHOD OF COMPENSATION: The method of compensation shall be reimbursement in accordance with the invoice voucher procedures of the Office of the State of Illinois Comptroller. The Grantee agrees to maintain appropriate records of actual costs incurred and to submit expenditure information to the Grantor. No costs eligible under this agreement shall be incurred after December 31, 2009. The Grantee must submit final reimbursement documentation and final budget detail worksheet to the Grantor within 30 days after the expiration of the Grant Agreement.

ACCOUNTING REQUIREMENTS: The Grantee shall maintain effective control and accountability over all funds, equipment, property, and other assets under the Grant Agreement as required by the Grantor. The Grantee shall keep records sufficient to permit the tracing of funds to ensure that expenditures are made in accordance with this Grant Agreement.

The Grantee will comply with the Uniform Administrative Requirements for Grants to States (28 CFR 66); Office of Management and Budget (OMB) Circular A-87, addressing cost principles for grants to state and local governments; Common Rule for Administrative Requirements for Grants to non-profits (28 CFR 70); OMB Circulars A-122 and A-21, addressing cost principles for grants to non-profit entities; the requirements included in the Office of Justice Programs OC Financial Guide; and applicable state and federal regulations.

Funds received by the Grantee must be placed in an interest-bearing account and are subject to the rules outlined in the Uniform Rule 6 CFR Part 9, New Restrictions on Lobbying, and the Uniform Rule 28 CFR Part 70, Uniform Administrative Requirements for Grants and Agreements (Including Subawards) with Institutions of Higher Education, Hospitals and other Non-profit Organizations.

REPORTS: The Grantee shall submit to the Grantor, upon the request, throughout the stated performance period documentation to support the submission of the Bi-Annual Strategy Implementation Report (BSIR). The documentation must include, at a minimum, the amount of funding received, obligated and expended for activities outlined in the Scope of Work, Discipline Allocation Worksheet, and Project Metric Worksheet.

AUDITS AND INSPECTIONS: The Grantee will, as often as deemed necessary by the Grantor, FEMA NPD or any of their duly authorized representatives, permit the Grantor, DHS FEMA NPD or any of their duly authorized representatives to have full access to and the right to examine any pertinent books, documents, papers and records of the Grantee involving transactions related to this grant agreement for three years from the date of submission of the final budget detail worksheet or until related audit findings have been resolved, whichever is later. The Grantee certifies that all audits submitted under the provisions of Office of Management and Budget Circulars A-128 or A-133 have been approved by the Grantor. The Grantee acknowledges that these are federal pass-through funds that must be accounted for in the jurisdiction's Single Audit under the Single Audit Act of 1996, if required.

MODIFICATION AND AMENDMENT OF THE GRANT: This grant agreement is subject to revision as follows:

- A. Modifications may be required because of changes in State or Federal laws or regulations as determined by the Grantor. Any such required modification shall be incorporated into and will be part of this Agreement. The Grantor shall notify the Grantee of any pending implementation of or proposed amendment to such regulations before a modification is made to the Agreement.
- B. Modifications may be made upon written agreement of both Grantor and Grantee.

TERMINATION FOR CONVENIENCE: This agreement may be terminated in whole or in part by the Grantor for its convenience, provided that, prior to termination, the Grantee is given: 1) not less than ten (10) calendar days written notice by certified mail, return receipt requested, of the Grantor's intent to terminate, and 2) an opportunity for consultation with the Grantor prior to termination. In the event of partial or complete termination of this agreement pursuant to this paragraph, an equitable adjustment of costs shall be paid to the Grantee for expenses incurred under this agreement prior to termination.

TERMINATION FOR BREACH OR OTHER CAUSE: The Grantor may terminate this agreement without penalty to the Grantor or further payment required in the event of:

- A. Any breach of this agreement which, if it is susceptible of being cured, is not cured within 15 calendar days after receipt of the Grantor's notice of breach to the Grantee.
- B. Material misrepresentation or falsification of any information provided by the Grantee in the course of any dealing between the parties or between the Grantee and any State Agency.

Grantee's failure to comply with any one of the terms of this Grant Agreement shall be cause for the Grantor to seek recovery of all or part of the grant proceeds.

RETENTION OF PROPERTY RECORDS: Grantee agrees to maintain records for equipment, non-expendable personal property, and real property. If any litigation, claim, or audit is started before the expiration of the three-year period, the records shall be retained until all litigation, claims, or audit findings involving the records have been resolved.

NON-DISCRIMINATION: In carrying out the program, the Grantee shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin, ancestry, age, physical or mental handicap unrelated to ability, marital status, or unfavorable discharge from military service. The Grantee shall take affirmative action to ensure that applicants for employment are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, national origin, ancestry, age, physical or mental handicap unrelated to ability, marital status, or unfavorable discharge from military service. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training; including apprenticeship. The Grantee shall post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Government setting forth the provisions of this non-discrimination clause.

SEVERABILITY CLAUSE: If any provision under the Grant Agreement or its application to any person or circumstance is held invalid by any court of competent jurisdiction, this invalidity does not affect any other provision or its application of the Grant Agreement which can be given effect without the invalid provision or application.

DEBARMENT: The Grantee certifies neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in the agreement by any Federal Agency or department.

WORKER'S COMPENSATION INSURANCE, SOCIAL SECURITY, RETIREMENT AND HEALTH INSURANCE BENEFITS, AND TAXES: The Grantee shall provide worker's compensation insurance where the same is required, and shall accept full responsibility for the payment of unemployment insurance, premiums for worker's compensation, social security and retirement and health insurance benefits, as well as all income tax deductions and any other taxes or payroll deductions required by law for employees of the Grantee who are performing services specified by the grant agreement.

WAIVERS: No waiver of any condition of this grant agreement may be effective unless in writing from the Director of the Grantor.

BOYCOTT: The Grantee certifies that neither it nor any substantially-owned affiliated company is participating or shall participate in an international boycott in violation of the provisions of the U.S. Export Administration Act of 1979 or the regulations of the U.S. Department of Commerce promulgated under that Act.

WORK PRODUCT: All intellectual property and all documents, including reports and all other work products, produced by the Grantee under this grant agreement shall become and remain the exclusive property of the Grantor, and shall not be copyrighted, patented, or trademark registered by the Grantee except as authorized by the Grantor in a separate agreement. The Grantee acknowledges DHS FEMA NPD, and State of Illinois reserve a royalty-free, non exclusive, and irrevocable license to reproduce, publish, or otherwise use, and authorize for use, for any purpose the Grantor deems relevant: (1) the copyright in any work developed under an award or sub-award; and (2) any rights of copyright to which a recipient or sub-recipient purchases ownership with Federal support. The Grantee shall include in all publications created through this grant agreement shall prominently contain the following statement: *"This document was prepared under a grant from the U.S. Department of Homeland Security, Federal Emergency Management Agency, National Preparedness Directorate and State of Illinois. Points of view or opinions expressed in this document are those of the authors and do not necessarily represent the official position or policies of U.S. Department of Homeland Security, Federal Emergency Management Agency, National Preparedness Directorate or State of Illinois."*

MAINTENANCE AND REVIEW OF EQUIPMENT: The Grantor reserves the right to reallocate or repossess all equipment procured by the Grantee under this grant agreement if the property is not properly maintained by the Grantee according to the manufacture's guidelines and Grantor's requirements. All equipment procured by the Grantee through this grant agreement shall be made available for review by the Grantor upon request.

Title to equipment acquired by a non-Federal entity with Federal awards vests with the Grantee. Equipment means tangible nonexpendable property, including exempt property, charged directly to the award having a useful life of more than one year and an acquisition cost of \$5,000 or more per unit. However, consistent with a non-Federal entity's policy, lower limits may be established. A State shall use, manage, and dispose of equipment acquired under a Federal grant in accordance with State laws and procedures.

LIABILITY: The Grantor assumes no liability for actions of the Grantee under this agreement, including, but not limited to, the negligent acts and omissions of Grantee's agents, employees, and subcontractors in their performance of the Grantee's duties as described under this agreement. In addition, the Grantor makes no representations, or warranties, expressed or implied, as to fitness for use, condition of, or suitability of said equipment purchased pursuant to this agreement, except as those representations are made by the manufacture of said equipment. As to nature and condition of said equipment, in the use of said equipment, the Grantee agrees to hold the Grantor harmless for any defects or misapplications. To the extent allowed by law, the Grantee agrees to hold harmless the Grantor against any and all liability, loss, damage, cost or expenses, including attorney's fees, arising from the intentional torts, negligence, or breach of the agreement by the Grantee, with the exception of acts of performed in conformance with an explicit, written directive of the Grantor.

PART VI - Assurances

The Grantee assures that no official or employee of the Grantee who is authorized in the Grantee's official capacity to negotiate, make, accept, or approve, or to take part in such decisions regarding a contract for acquisition/development of property in connection with this agreement, shall have any financial or other personal interest in any such contract for the acquisition/development.

The Grantee will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.

The Grantee will comply, as applicable, with provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with federal funds.

The Grantee will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."

The Grantee will comply with all applicable requirements of all other State and Federal laws, executive orders, regulations, and policies governing this program.

The Grantee shall conduct a minimum of quarterly meetings of the Urban Area Working Group (UAWG), as originally outlined in the FFY 2004 Office of Domestic Programs, Homeland Security Grant Program (HSGP), Program Guidance and Application Kit. The membership, mission, and purpose shall be consistent with the current and prior year's HSGP, Program

Guidance and Applications Kit. The Grantee shall provide the Grantor rosters and minutes from the group no later than 30 days after each UAWG meeting. An overview of the UAWG structure and a list of members and their associated jurisdictions must be provided by the Grantee to the Grantor within 30 days after the final execution of this Grant Agreement.

The Grantee shall appoint a designee to attend monthly meetings of the ITTF and shall actively participate in the Urban Area Committee to promote collaboration and information sharing between ITTF and the UAWG and consistency with the State Homeland Security Strategy.

PART VII – Certification *(See attached)

The Grantee certifies that it has fully implemented all current National Incident Management System compliance activities in accordance with Homeland Security Presidential Directive 5 (HSPD-5), *Management of Domestic Incidents* and related compliance documentation provided by the Secretary of Homeland Security and State of Illinois. The Grantee further certifies that all required compliance documentation is on file with the Illinois Emergency Management Agency.

The Grantee certifies that it has not been convicted of bribery or attempting to bribe an officer or employee of the State of Illinois, nor has any official, agent, or employee of the Grantee committed bribery or attempted bribery on behalf of the Grantee and pursuant to the direction or authorization of a responsible official of the Grantee.

The Grantee hereby certifies that it has not been barred from bidding on, or receiving State or local government contracts as a result of illegal bid rigging or bid rotating as defined in the Criminal Code of 1961 (720 ILCS 5/33E-3 and 33E-4).

The Grantee certifies that it will comply with all applicable State and Federal laws and regulations.

The Grantee certifies that it will return to the State all State or Federal grant funds that are not expended or are accidentally over-advanced. The State may recapture those funds not expended or accidentally over-advanced in accordance with State and Federal laws and regulations. The Grantee further certifies that its failure to comply with any one of the terms of this Grant Agreement shall be cause for the Grantor to seek recovery of all or part of the grant proceeds.

The Grantee certifies that it will establish safeguards to prohibit employees, contractors, and subcontractors from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.

Under penalties of perjury, I certify that **36-6005820** is my correct Federal Taxpayer Identification Number and that IRS Instructions have been provided for proper completion of this certification. I am doing business as a (please check one):

- | | |
|--|---|
| <input type="checkbox"/> Individual | <input type="checkbox"/> Real Estate Agent |
| <input type="checkbox"/> Sole Proprietorship | <input checked="" type="checkbox"/> Governmental Entity |
| <input type="checkbox"/> Partnership | <input type="checkbox"/> Tax Exempt Organization |
| <input type="checkbox"/> Corporation | (IRC 501(a) only) |
| <input type="checkbox"/> Not-for-profit Corporation | <input type="checkbox"/> Trust or Estate |
| <input type="checkbox"/> Medical and Health Care | |
| <input type="checkbox"/> Services Provider Corporation | |

Part VIII - Drug Free Certification

This certification is required by the Drug Free Workplace Act (30 ILCS 580). The Drug Free Workplace Act, effective January 1, 1992, requires that no Grantor or contractor shall receive a grant or be considered for the purposes of being awarded a contract for the procurement of any property or services from the State unless that Grantor or contractor has certified to the State that the Grantor or contractor will provide a drug free workplace. False certification or violation of the certification may result in sanctions including, but not limited to, suspension of contract or grant payments, termination of the contractor or grant and debarment of contracting or grant opportunities with the State for at least one (1) year but not more than five (5) years.

For the purpose of this certification, "Grantor" or "contractor" means a corporation, partnership, or other entity with twenty-five (25) or more employees at the time of issuing the grant, or a department, division, or other unit thereof, directly responsible for the specific performance under a contract or grant of \$5,000 or more from the State.

The contractor/Grantor certifies and agrees that it will provide a drug free workplace by:

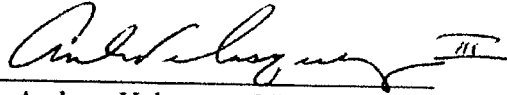
- (a) Publishing a statement:
 - (1) Notifying employees that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance, including cannabis, is prohibited in the Grantor's or contractor's workplace.
 - (2) Specifying the actions that will be taken against employees for violations of such prohibition.
 - (3) Notifying the employee that, as a condition of employment on such contract or grant, the employee will:
 - (A) Abide by the terms of the statement; and

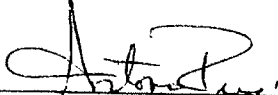
- (B) Notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five (5) days after such conviction.
- (b) Establishing a drug free awareness program to inform employees about:
 - (1) the dangers of drug abuse in the workplace;
 - (2) the Grantor's or contractor's policy of maintaining a drug free workplace;
 - (3) any available drug counseling, rehabilitation, and employee assistance programs; and
 - (4) the penalties that may be imposed upon an employee for drug violations
- (c) Providing a copy of the statement required by subparagraph (a) to each employee engaged in the contract or grant and to post the statement in a prominent place in the workplace.
- (d) Notifying the contracting or granting Agency within ten (10) days after receiving notice under part (B) of paragraph (3) of subsection (a) above from an employee or otherwise receiving actual notice of such conviction.
- (e) Imposing a sanction on, or requiring the satisfactory participation in a drug abuse assistance or rehabilitation program by, any employee who is so convicted, as required by section 5 of the Drug Free Workplace Act.
- (f) Assisting employees in selecting a course of action in the event drug counseling, treatment, and rehabilitation is required and indicating that a trained referral team is in place.
- (g) Making a good faith effort to continue to maintain a drug free workplace through implementation of the Drug Free Workplace Act.

IN WITNESS WHEREOF, the parties hereto have caused this contract to be executed by their duly authorized representatives.

Grantor: **IL Emergency Management Agency**

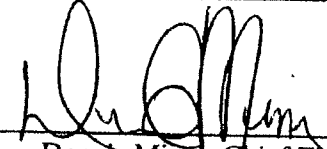
Grantee: **City of Chicago**

By: 
Andrew Velasquez III, Director

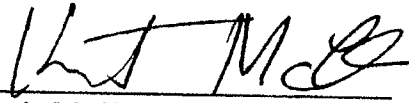
By: 
Antonio Ruiz, Executive Director
Office of Emergency Management and
Communication (OEMC)

DATE: 3-26-08

DATE: 2/8/08

By: 
Dennis Minet, Chief Finance Bureau

DATE: 3/24/08

By: 
Kevin McClain, Chief Legal Counsel

DATE: 3/5/08

07UASICHIC

Draft

SUPPLEMENT TO THE AGREEMENT

between the

State of Illinois Emergency Management Agency and the City of Chicago,
acting by and through its Office of Emergency Management & Communications,
regarding provisions contained in the
FY2007 Urban Areas Security Initiative Grant Agreement (the "Agreement")
August 9, 2007 – December 31, 2009

The State of Illinois, Emergency Management Agency, hereinafter called the "Grantor," and the City of Chicago, by and through its Office of Emergency Management & Communications, hereinafter called the "Grantee" agree that the Agreement shall include the provisions below and incorporate them in the Agreement as if fully set forth therein. Any certifications made by the Grantee herein are made only on behalf of the Office of Emergency Management & Communications.

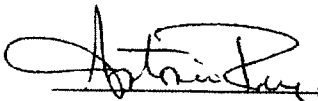
Part VII – Certification, Page 6 of 9

Bribery

The Parties agree that the second paragraph of this section may not apply to the Grantee because the City is a political subdivision of the State and the Agreement is a grant from the State and not a procurement contract with the State. 30 ILCS 500/1-10.

Bid Rigging

The Parties agree that the third paragraph of this certification may not apply to the Grantee because the City is a unit of State or local government and is not a "person" as defined under 720 ILCS 5/33E-2.


_____, Executive Director
Office of Emergency Management &
Communications

**CITY OF CHICAGO
ECONOMIC DISCLOSURE STATEMENT
AND AFFIDAVIT**

SECTION I -- GENERAL INFORMATION

A. Legal name of Disclosing Party submitting this EDS. Include d/b/a/ if applicable:

UCHICAGO ARGONNE, LLC

Check ONE of the following three boxes:

Indicate whether Disclosing Party submitting this EDS is:

1. the Applicant
OR

2. a legal entity holding a direct or indirect interest in the Applicant. State the legal name of the Applicant in which Disclosing Party holds an interest: _____
OR

3. a specified legal entity with a right of control (see Section II.B.1.b.) State the legal name of the entity in which Disclosing Party holds a right of control: _____

B. Business address of Disclosing Party:

UCHICAGO ARGONNE, LLC

9700 S. CASS AVENUE

LEMONT, IL 60439

C. Telephone: 630-252-7030 Fax: 630-252-4517 Email: wwwalsh@sd1.gov

D. Name of contact person: William M. Walsh

E. Federal Employer Identification No. (if you have one): 68-0628477

F. Brief description of contract, transaction or other undertaking (referred to below as the "Matter") to which this EDS pertains. (Include project number and location of property, if applicable):

EMERGENCY MODELING AND VISUALIZATION SYSTEMS (EMVIS)

G. Which City agency or department is requesting this EDS? OFFICE OF EMERGENCY MANAGEMENT AND COMMUNICATIONS

If the Matter is a contract being handled by the City's Department of Procurement Services, please complete the following:

Specification # 75198 and Contract # _____

SECTION II -- DISCLOSURE OF OWNERSHIP INTERESTS

A. NATURE OF DISCLOSING PARTY

1. Indicate the nature of the Disclosing Party:

- | | |
|---|---|
| <input type="checkbox"/> Person | <input checked="" type="checkbox"/> Limited liability company* |
| <input type="checkbox"/> Publicly registered business corporation | <input type="checkbox"/> Limited liability partnership* |
| <input type="checkbox"/> Privately held business corporation | <input type="checkbox"/> Joint venture* |
| <input type="checkbox"/> Sole proprietorship | <input checked="" type="checkbox"/> Not-for-profit corporation |
| <input type="checkbox"/> General partnership* | (Is the not-for-profit corporation also a 501(c)(3))? |
| <input type="checkbox"/> Limited partnership* | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| <input type="checkbox"/> Trust | <input type="checkbox"/> Other (please specify) |

* Note B.1.b below.

2. For legal entities, the state (or foreign country) of incorporation or organization, if applicable:

STATE OF ILLINOIS

3. For legal entities not organized in the State of Illinois: Has the organization registered to do business in the State of Illinois as a foreign entity?

- Yes No N/A

B. IF THE DISCLOSING PARTY IS A LEGAL ENTITY:

1.a. List below the full names and titles of all executive officers and all directors of the entity. For not-for-profit corporations, also list below all members, if any, which are legal entities. If there are no such members, write "no members." For trusts, estates or other similar entities, list below the legal titleholder(s).

Name

Title

SOLE MEMBER IS THE UNIVERSITY OF CHICAGO

1.b. If you checked "General partnership," "Limited partnership," "Limited liability company," "Limited liability partnership" or "Joint venture" in response to Item A.1. above (Nature of Disclosing Party), list below the name and title of each general partner, managing member, manager or

any other person or entity that controls the day-to-day management of the Disclosing Party. **NOTE:** Each legal entity listed below must submit an EDS on its own behalf.

Name	Title
_____	_____
_____	_____
_____	_____

2. Please provide the following information concerning each person or entity having a direct or indirect beneficial interest (including ownership) in excess of 7.5% of the Disclosing Party. Examples of such an interest include shares in a corporation, partnership interest in a partnership or joint venture, interest of a member or manager in a limited liability company, or interest of a beneficiary of a trust, estate or other similar entity. If none, state "None." **NOTE:** Pursuant to Section 2-154-030 of the Municipal Code of Chicago ("Municipal Code"), the City may require any such additional information from any applicant which is reasonably intended to achieve full disclosure.

Name	Business Address	Percentage Interest in the Disclosing Party
NONE		
_____	_____	_____
_____	_____	_____
_____	_____	_____

SECTION III -- BUSINESS RELATIONSHIPS WITH CITY ELECTED OFFICIALS

Has the Disclosing Party had a "business relationship," as defined in Chapter 2-156 of the Municipal Code, with any City elected official in the 12 months before the date this EDS is signed?

Yes No

If yes, please identify below the name(s) of such City elected official(s) and describe such relationship(s):

SECTION IV -- DISCLOSURE OF SUBCONTRACTORS AND OTHER RETAINED PARTIES

The Disclosing Party must disclose the name and business address of each subcontractor, attorney, lobbyist, accountant, consultant and any other person or entity whom the Disclosing Party has retained or expects to retain in connection with the Matter, as well as the nature of the relationship, and the total

amount of the fees paid or estimated to be paid. The Disclosing Party is not required to disclose employees who are paid solely through the Disclosing Party's regular payroll.

"Lobbyist" means any person or entity who undertakes to influence any legislative or administrative action on behalf of any person or entity other than: (1) a not-for-profit entity, on an unpaid basis, or (2) himself. "Lobbyist" also means any person or entity any part of whose duties as an employee of another includes undertaking to influence any legislative or administrative action.

If the Disclosing Party is uncertain whether a disclosure is required under this Section, the Disclosing Party must either ask the City whether disclosure is required or make the disclosure.

Name (indicate whether retained or anticipated to be retained)	Business Address	Relationship to Disclosing Party (subcontractor, attorney, lobbyist, etc.)	Fees (indicate whether paid or estimated)

(Add sheets if necessary)

Check here if the Disclosing party has not retained, nor expects to retain, any such persons or entities.

SECTION V -- CERTIFICATIONS

A. COURT-ORDERED CHILD SUPPORT COMPLIANCE

Under Municipal Code Section 2-92-415, substantial owners of business entities that contract with the City must remain in compliance with their child support obligations throughout the term of the contract.

Has any person who directly or indirectly owns 10% or more of the Disclosing Party been declared in arrearage on any child support obligations by any Illinois court of competent jurisdiction?

Yes No No person owns 10% or more of the Disclosing Party.

If "Yes," has the person entered into a court-approved agreement for payment of all support owed and is the person in compliance with that agreement?

Yes No

B. FURTHER CERTIFICATIONS

1. The Disclosing Party and, if the Disclosing Party is a legal entity, all of those persons or entities identified in Section II.B.1. of this EDS:

- a. are not presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from any transactions by any federal, state or local unit of government;
- b. have not, within a five-year period preceding the date of this EDS, been convicted of a criminal offense, adjudged guilty, or had a civil judgment rendered against them in connection with: obtaining, attempting to obtain, or performing a public (federal, state or local) transaction or contract under a public transaction; a violation of federal or state antitrust statutes; fraud; embezzlement; theft; forgery; bribery; falsification or destruction of records; making false statements; or receiving stolen property;
- c. are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (federal, state or local) with commission of any of the offenses enumerated in clause B.1.b. of this Section V;
- d. have not, within a five-year period preceding the date of this EDS, had one or more public transactions (federal, state or local) terminated for cause or default; and
- e. have not, within a five-year period preceding the date of this EDS, been convicted, adjudged guilty, or found liable in a civil proceeding, or in any criminal or civil action, including actions concerning environmental violations, instituted by the City or by the federal government, any state, or any other unit of local government.

2. The certifications in subparts 2, 3 and 4 concern:

- the Disclosing Party;
- any "Applicable Party" (meaning any party participating in the performance of the Matter, including but not limited to any persons or legal entities disclosed under Section IV, "Disclosure of Subcontractors and Other Retained Parties");
- any "Affiliated Entity" (meaning a person or entity that, directly or indirectly: controls the Disclosing Party, is controlled by the Disclosing Party, or is, with the Disclosing Party, under common control of another person or entity. Indicia of control include, without limitation: interlocking management or ownership; identity of interests among family members, shared facilities and equipment; common use of employees; or organization of a business entity following the ineligibility of a business entity to do business with federal or state or local government, including the City, using substantially the same management, ownership, or principals as the ineligible entity); with respect to Applicable Parties, the term Affiliated Entity means a person or entity that directly or indirectly controls the Applicable Party, is controlled by it, or, with the Applicable Party, is under common control of another person or entity;

- any responsible official of the Disclosing Party, any Applicable Party or any Affiliated Entity or any other official, agent or employee of the Disclosing Party, any Applicable Party or any Affiliated Entity, acting pursuant to the direction or authorization of a responsible official of the Disclosing Party, any Applicable Party or any Affiliated Entity (collectively "Agents").

Neither the Disclosing Party, nor any Applicable Party, nor any Affiliated Entity of either the Disclosing Party or any Applicable Party nor any Agents have, during the five years before the date this EDS is signed, or, with respect to an Applicable Party, an Affiliated Entity, or an Affiliated Entity of an Applicable Party during the five years before the date of such Applicable Party's or Affiliated Entity's contract or engagement in connection with the Matter:

- a. bribed or attempted to bribe, or been convicted or adjudged guilty of bribery or attempting to bribe, a public officer or employee of the City, the State of Illinois, or any agency of the federal government or of any state or local government in the United States of America, in that officer's or employee's official capacity;
- b. agreed or colluded with other bidders or prospective bidders, or been a party to any such agreement, or been convicted or adjudged guilty of agreement or collusion among bidders or prospective bidders, in restraint of freedom of competition by agreement to bid a fixed price or otherwise; or
- c. made an admission of such conduct described in a. or b. above that is a matter of record, but have not been prosecuted for such conduct; or
- d. violated the provisions of Municipal Code Section 2-92-610 (Living Wage Ordinance).

3. Neither the Disclosing Party, Affiliated Entity or Applicable Party, or any of their employees, officials, agents or partners, is barred from contracting with any unit of state or local government as a result of engaging in or being convicted of (1) bid-rigging in violation of 720 ILCS 5/33E-3; (2) bid-rotating in violation of 720 ILCS 5/33E-4; or (3) any similar offense of any state or of the United States of America that contains the same elements as the offense of bid-rigging or bid-rotating.

4. Neither the Disclosing Party nor any Affiliated Entity is listed on any of the following lists maintained by the Office of Foreign Assets Control of the U.S. Department of the Treasury or the Bureau of Industry and Security of the U.S. Department of Commerce or their successors: the Specially Designated Nationals List, the Denied Persons List, the Unverified List, the Entity List and the Debarred List.

5. The Disclosing Party understands and shall comply with (1) the applicable requirements of the Governmental Ethics Ordinance of the City, Title 2, Chapter 2-156 of the Municipal Code; and (2) all the applicable provisions of Chapter 2-56 of the Municipal Code (Office of the Inspector General).

6. If the Disclosing Party is unable to certify to any of the above statements in this Part B (Further Certifications), the Disclosing Party must explain below:

If the letters "NA," the word "None," or no response appears on the lines above, it will be conclusively presumed that the Disclosing Party certified to the above statements.

C. CERTIFICATION OF STATUS AS FINANCIAL INSTITUTION

For purposes of this Part C, under Municipal Code Section 2-32-455(b), the term "financial institution" means a bank, savings and loan association, thrift, credit union, mortgage banker, mortgage broker, trust company, savings bank, investment bank, securities broker, municipal securities broker, securities dealer, municipal securities dealer, securities underwriter, municipal securities underwriter, investment trust, venture capital company, bank holding company, financial services holding company, or any licensee under the Consumer Installment Loan Act, the Sales Finance Agency Act, or the Residential Mortgage Licensing Act. However, "financial institution" specifically shall not include any entity whose predominant business is the providing of tax deferred, defined contribution, pension plans to public employees in accordance with Sections 403(b) and 457 of the Internal Revenue Code. (Additional definitions may be found in Municipal Code Section 2-32-455(b).)

1. CERTIFICATION

The Disclosing Party certifies that the Disclosing Party (check one)

is is not

a "financial institution" as defined in Section 2-32-455(b) of the Municipal Code.

2. If the Disclosing Party IS a financial institution, then the Disclosing Party pledges:

"We are not and will not become a predatory lender as defined in Chapter 2-32 of the Municipal Code. We further pledge that none of our affiliates is, and none of them will become, a predatory lender as defined in Chapter 2-32 of the Municipal Code. We understand that becoming a predatory lender or becoming an affiliate of a predatory lender may result in the loss of the privilege of doing business with the City."

If the Disclosing Party is unable to make this pledge because it or any of its affiliates (as defined in Section 2-32-455(b) of the Municipal Code) is a predatory lender within the meaning of Chapter

2-32 of the Municipal Code, explain here (attach additional pages if necessary):

If the letters "NA," the word "None," or no response appears on the lines above, it will be conclusively presumed that the Disclosing Party certified to the above statements.

D. CERTIFICATION REGARDING INTEREST IN CITY BUSINESS

Any words or terms that are defined in Chapter 2-156 of the Municipal Code have the same meanings when used in this Part D.

1. In accordance with Section 2-156-110 of the Municipal Code: Does any official or employee of the City have a financial interest in his or her own name or in the name of any other person or entity in the Matter?

Yes No

NOTE: If you checked "Yes" to Item D.1., proceed to Items D.2. and D.3. If you checked "No" to Item D.1., proceed to Part E.

2. Unless sold pursuant to a process of competitive bidding, or otherwise permitted, no City elected official or employee shall have a financial interest in his or her own name or in the name of any other person or entity in the purchase of any property that (i) belongs to the City, or (ii) is sold for taxes or assessments, or (iii) is sold by virtue of legal process at the suit of the City (collectively, "City Property Sale"). Compensation for property taken pursuant to the City's eminent domain power does not constitute a financial interest within the meaning of this Part D.

Does the Matter involve a City Property Sale?

Yes No

3. If you checked "Yes" to Item D.1., provide the names and business addresses of the City officials or employees having such interest and identify the nature of such interest:

Name	Business Address	Nature of Interest

4. The Disclosing Party further certifies that no prohibited financial interest in the Matter will be acquired by any City official or employee.

E. CERTIFICATION REGARDING SLAVERY ERA BUSINESS

The Disclosing Party has searched any and all records of the Disclosing Party and any and all predecessor entities for records of investments or profits from slavery, the slave industry, or slaveholder insurance policies from the slavery era (including insurance policies issued to slaveholders that provided coverage for damage to or injury or death of their slaves) and has disclosed in this EDS any and all such records to the City. In addition, the Disclosing Party must disclose the names of any and all slaves or slaveholders described in those records. Failure to comply with these disclosure requirements may make the Matter to which this EDS pertains voidable by the City.

Please check either 1. or 2. below. If the Disclosing Party checks 2., the Disclosing Party must disclose below or in an attachment to this EDS all requisite information as set forth in that paragraph 2.

1. The Disclosing Party verifies that (a) the Disclosing Party has searched any and all records of the Disclosing Party and any and all predecessor entities for records of investments or profits from slavery, the slave industry, or slaveholder insurance policies, and (b) the Disclosing Party has found no records of investments or profits from slavery, the slave industry, or slaveholder insurance policies and no records of names of any slaves or slaveholders.

2. The Disclosing Party verifies that, as a result of conducting the search in step 1(a) above, the Disclosing Party has found records relating to investments or profits from slavery, the slave industry, or slaveholder insurance policies and/or the names of any slaves or slaveholders. The Disclosing Party verifies that the following constitutes full disclosure of all such records:

SECTION VI -- CERTIFICATIONS FOR FEDERALLY-FUNDED MATTERS

NOTE: If the Matter is federally funded, complete this Section VI. If the Matter is not federally funded, proceed to Section VII.

A. CERTIFICATION REGARDING LOBBYING

1. List below the names of all persons or entities registered under the federal Lobbying Disclosure Act of 1995 who have made lobbying contacts on behalf of the Disclosing Party with respect to the Matter: (Begin list here, add sheets as necessary):

(If no explanation appears or begins on the lines above, or if the letters "NA" or if the word "None" appear, it will be conclusively presumed that the Disclosing Party means that NO persons or entities registered under the Lobbying Disclosure Act of 1995 have made lobbying contacts on behalf of the Disclosing Party with respect to the Matter.)

2. The Disclosing Party has not spent and will not expend any federally appropriated funds to pay any person or entity listed in Paragraph A.1. above for his or her lobbying activities or to pay any person or entity to influence or attempt to influence an officer or employee of any agency, as defined by applicable federal law, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress, in connection with the award of any federally funded contract, making any federally funded grant or loan, entering into any cooperative agreement, or to extend, continue, renew, amend, or modify any federally funded contract, grant, loan, or cooperative agreement.

3. The Disclosing Party will submit an updated certification at the end of each calendar quarter in which there occurs any event that materially affects the accuracy of the statements and information set forth in paragraphs A.1. and A.2. above.

If the Matter is federally funded and any funds other than federally appropriated funds have been or will be paid to any person or entity for influencing or attempting to influence an officer or employee of any agency (as defined by applicable federal law), a member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with the Matter, the Disclosing Party must complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions. The form may be obtained online from the federal Office of Management and Budget (OMB) web site at <http://www.whitehouse.gov/omb/grants/sflllin.pdf>, linked on the page http://www.whitehouse.gov/omb/grants/grants_forms.html.

4. The Disclosing Party certifies that either: (i) it is not an organization described in section 501(c)(4) of the Internal Revenue Code of 1986; or (ii) it is an organization described in section 501(c)(4) of the Internal Revenue Code of 1986 but has not engaged and will not engage in "Lobbying Activities".

5. If the Disclosing Party is the Applicant, the Disclosing Party must obtain certifications equal in form and substance to paragraphs A.1. through A.4. above from all subcontractors before it awards any subcontract and the Disclosing Party must maintain all such subcontractors' certifications for the duration of the Matter and must make such certifications promptly available to the City upon request.

B. CERTIFICATION REGARDING EQUAL EMPLOYMENT OPPORTUNITY

If the Matter is federally funded, federal regulations require the Applicant and all proposed subcontractors to submit the following information with their bids or in writing at the outset of negotiations.

Is the Disclosing Party the Applicant?

Yes No

If "Yes," answer the three questions below:

1. Have you developed and do you have on file affirmative action programs pursuant to applicable federal regulations? (See 41 CFR Part 60-2.)

Yes No

2. Have you filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance Programs, or the Equal Employment Opportunity Commission all reports due under the applicable filing requirements?

Yes No

3. Have you participated in any previous contracts or subcontracts subject to the equal opportunity clause?

Yes No

If you checked "No" to question 1. or 2. above, please provide an explanation:

**SECTION VII -- ACKNOWLEDGMENTS, CONTRACT INCORPORATION,
COMPLIANCE, PENALTIES, DISCLOSURE**

The Disclosing Party understands and agrees that:

A. By completing and filing this EDS, the Disclosing Party acknowledges and agrees, on behalf of itself and the persons or entities named in this EDS, that the City may investigate the creditworthiness of some or all of the persons or entities named in this EDS.

B. The certifications, disclosures, and acknowledgments contained in this EDS will become part of any contract or other agreement between the Applicant and the City in connection with the Matter, whether procurement, City assistance, or other City action, and are material inducements to the City's execution of any contract or taking other action with respect to the Matter. The Disclosing Party understands that it must comply with all statutes, ordinances, and regulations on which this EDS is based.

C. The City's Governmental Ethics and Campaign Financing Ordinances, Chapters 2-156 and 2-164 of the Municipal Code, impose certain duties and obligations on persons or entities seeking City contracts, work, business, or transactions. The full text of these ordinances and a training program is available on line at www.cityofchicago.org/Ethics, and may also be obtained from the City's Board of Ethics, 740 N. Sedgwick St., Suite 500, Chicago, IL 60610, (312) 744-9660. The Disclosing Party must comply fully with the applicable ordinances.

D. If the City determines that any information provided in this EDS is false, incomplete or inaccurate, any contract or other agreement in connection with which it is submitted may be rescinded or be void or voidable, and the City may pursue any remedies under the contract or agreement (if not rescinded, void or voidable), at law, or in equity, including terminating the Disclosing Party's participation in the Matter and/or declining to allow the Disclosing Party to participate in other transactions with the City. Remedies at law for a false statement of material fact may include incarceration and an award to the City of treble damages.

E. It is the City's policy to make this document available to the public on its Internet site and/or upon request. Some or all of the information provided on this EDS and any attachments to this EDS may be made available to the public on the Internet, in response to a Freedom of Information Act request, or otherwise. By completing and signing this EDS, the Disclosing Party waives and releases any possible rights or claims which it may have against the City in connection with the public release of information contained in this EDS and also authorizes the City to verify the accuracy of any information submitted in this EDS.

F. The information provided in this EDS must be kept current. In the event of changes, the Disclosing Party must supplement this EDS up to the time the City takes action on the Matter. If the Matter is a contract being handled by the City's Department of Procurement Services, the Disclosing Party must update this EDS as the contract requires.

The Disclosing Party represents and warrants that:

G. The Disclosing Party has not withheld or reserved any disclosures as to economic interests in the Disclosing Party, or as to the Matter, or any information, data or plan as to the intended use or purpose for which the Applicant seeks City Council or other City agency action.

For purposes of the certifications in H.1. and H.2. below, the term "affiliate" means any person or entity that, directly or indirectly: controls the Disclosing Party, is controlled by the Disclosing Party, or is, with the Disclosing Party, under common control of another person or entity. Indicia of control include, without limitation: interlocking management or ownership; identity of interests among family members; shared facilities and equipment; common use of employees; or organization of a business entity following the ineligibility of a business entity to do business with the federal government or a state or local government, including the City, using substantially the same management, ownership, or principals as the ineligible entity.

H.1. The Disclosing Party is not delinquent in the payment of any tax administered by the Illinois Department of Revenue, nor are the Disclosing Party or its affiliates delinquent in paying any fine, fee, tax or other charge owed to the City. This includes, but is not limited to, all water charges, sewer charges, license fees, parking tickets, property taxes or sales taxes.

H.2. If the Disclosing Party is the Applicant, the Disclosing Party and its affiliates will not use, nor permit their subcontractors to use, any facility on the U.S. EPA's List of Violating Facilities in connection with the Matter for the duration of time that such facility remains on the list.

H.3 If the Disclosing Party is the Applicant, the Disclosing Party will obtain from any contractors/subcontractors hired or to be hired in connection with the Matter certifications equal in form and substance to those in H.1. and H.2. above and will not, without the prior written consent of the City, use any such contractor/subcontractor that does not provide such certifications or that the Disclosing Party has reason to believe has not provided or cannot provide truthful certifications.

NOTE: If the Disclosing Party cannot certify as to any of the items in H.1., H.2. or H.3. above, an explanatory statement must be attached to this EDS.

CERTIFICATION

Under penalty of perjury, the person signing below: (1) warrants that he/she is authorized to execute this EDS on behalf of the Disclosing Party, and (2) warrants that all certifications and statements contained in this EDS are true, accurate and complete as of the date furnished to the City.

CHICAGO ARGONNE, LLC
(Print or type name of Disclosing Party)

Date: 6/17/09

By [Signature]
(sign here)

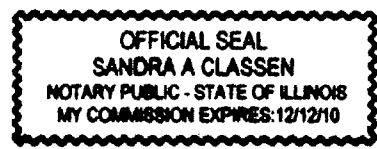
RICHARD E. COMBS
(Print or type name of person signing)

MANAGER, SPONSORED RESEARCH OFFICE
(Print or type title of person signing)

Signed and sworn to before me on (date) 6/17/09, by RICHARD COMBS,
at DUPAGE County, IL (state).

Sandra A. Classen Notary Public.

Commission expires: 12/12/10.



**CITY OF CHICAGO
ECONOMIC DISCLOSURE STATEMENT
AND AFFIDAVIT**

SECTION I -- GENERAL INFORMATION

A. Legal name of Disclosing Party submitting this EDS. Include d/b/a/ if applicable:

The Univeristy of Chicago

Check ONE of the following three boxes:

Indicate whether Disclosing Party submitting this EDS is:

1. the Applicant

OR

2. a legal entity holding a direct or indirect interest in the Applicant. State the legal name of the Applicant in which Disclosing Party holds an interest: UChicago Argonne, LLC

OR

3. a specified legal entity with a right of control (see Section II.B.1.b.) State the legal name of the entity in which Disclosing Party holds a right of control: _____

B. Business address of Disclosing Party: 5801 South Ellis Avenue

Chicago, IL 60637

C. Telephone: 773-702-5799 Fax: 773-702-0934 Email: gmckeown@uchicago.edu

D. Name of contact person: Glenn McKeown

E. Federal Employer Identification No. (if you have one): 36-2177139

F. Brief description of contract, transaction or other undertaking (referred to below as the "Matter") to which this EDS pertains. (Include project number and location of property, if applicable):
Emergency Modeling and Visualization System (EMViS).

G. Which City agency or department is requesting this EDS? Office of Emergency Management and Communications.

If the Matter is a contract being handled by the City's Department of Procurement Services, please complete the following:

Specification # 75198 and Contract # _____

SECTION II -- DISCLOSURE OF OWNERSHIP INTERESTS

A. NATURE OF DISCLOSING PARTY

1. Indicate the nature of the Disclosing Party:

- | | |
|---|---|
| <input type="checkbox"/> Person | <input type="checkbox"/> Limited liability company* |
| <input type="checkbox"/> Publicly registered business corporation | <input type="checkbox"/> Limited liability partnership* |
| <input type="checkbox"/> Privately held business corporation | <input type="checkbox"/> Joint venture* |
| <input type="checkbox"/> Sole proprietorship | <input checked="" type="checkbox"/> Not-for-profit corporation |
| <input type="checkbox"/> General partnership* | (Is the not-for-profit corporation also a 501(c)(3))? |
| <input type="checkbox"/> Limited partnership* | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| <input type="checkbox"/> Trust | <input type="checkbox"/> Other (please specify) |

* Note B.1.b. below.

2. For legal entities, the state (or foreign country) of incorporation or organization, if applicable:

State of Illinois

3. For legal entities not organized in the State of Illinois: Has the organization registered to do business in the State of Illinois as a foreign entity?

- Yes No N/A

B. IF THE DISCLOSING PARTY IS A LEGAL ENTITY:

1.a. List below the full names and titles of all executive officers and all directors of the entity. For not-for-profit corporations, also list below all members, if any, which are legal entities. If there are no such members, write "no members." For trusts, estates or other similar entities, list below the legal titleholder(s).

Name

Title

[Please see Attachment A]

1.b. If you checked "General partnership," "Limited partnership," "Limited liability company," "Limited liability partnership" or "Joint venture" in response to Item A.1. above (Nature of Disclosing Party), list below the name and title of each general partner, managing member, manager or any other person or entity that controls the day-to-day management of the Disclosing Party. NOTE: Each legal entity listed below must submit an EDS on its own behalf.

Name

Title

2. Please provide the following information concerning each person or entity having a direct or indirect beneficial interest (including ownership) in excess of 7.5% of the Disclosing Party. Examples of such an interest include shares in a corporation, partnership interest in a partnership or joint venture, interest of a member or manager in a limited liability company, or interest of a beneficiary of a trust, estate or other similar entity. If none, state "None." **NOTE:** Pursuant to Section 2-154-030 of the Municipal Code of Chicago ("Municipal Code"), the City may require any such additional information from any applicant which is reasonably intended to achieve full disclosure.

Name

Business Address

Percentage Interest in the Disclosing Party

None

SECTION III -- BUSINESS RELATIONSHIPS WITH CITY ELECTED OFFICIALS

Has the Disclosing Party had a "business relationship," as defined in Chapter 2-156 of the Municipal Code, with any City elected official in the 12 months before the date this EDS is signed?

Yes

No

If yes, please identify below the name(s) of such City elected official(s) and describe such relationship(s):

SECTION IV -- DISCLOSURE OF SUBCONTRACTORS AND OTHER RETAINED PARTIES

The Disclosing Party must disclose the name and business address of each subcontractor, attorney, lobbyist, accountant, consultant and any other person or entity whom the Disclosing Party has retained or expects to retain in connection with the Matter, as well as the nature of the relationship, and the total amount of the fees paid or estimated to

be paid. The Disclosing Party is not required to disclose employees who are paid solely through the Disclosing Party's regular payroll.

"Lobbyist" means any person or entity who undertakes to influence any legislative or administrative action on behalf of any person or entity other than: (1) a not-for-profit entity, on an unpaid basis, or (2) himself. "Lobbyist" also means any person or entity any part of whose duties as an employee of another includes undertaking to influence any legislative or administrative action.

If the Disclosing Party is uncertain whether a disclosure is required under this Section, the Disclosing Party must either ask the City whether disclosure is required or make the disclosure.

Name (indicate whether retained or anticipated to be retained)	Business Address	Relationship to Disclosing Party (subcontractor, attorney, lobbyist, etc.)	Fees (indicate whether paid or estimated)
None			

(Add sheets if necessary)

Check here if the Disclosing party has not retained, nor expects to retain, any such persons or entities.

SECTION V -- CERTIFICATIONS

A. COURT-ORDERED CHILD SUPPORT COMPLIANCE

Under Municipal Code Section 2-92-415, substantial owners of business entities that contract with the City must remain in compliance with their child support obligations throughout the term of the contract.

Has any person who directly or indirectly owns 10% or more of the Disclosing Party been declared in arrearage on any child support obligations by any Illinois court of competent jurisdiction?

Yes No No person owns 10% or more of the Disclosing Party.

If "Yes," has the person entered into a court-approved agreement for payment of all support owed and is the person in compliance with that agreement?

Yes No

B. FURTHER CERTIFICATIONS

1. The Disclosing Party and, if the Disclosing Party is a legal entity, all of those persons or entities identified in Section II.B.1. of this EDS:
 - a. are not presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from any transactions by any federal, state or local unit of government;
 - b. have not, within a five-year period preceding the date of this EDS, been convicted of a criminal offense, adjudged guilty, or had a civil judgment rendered against them in connection with: obtaining, attempting to obtain, or performing a public (federal, state or local) transaction or contract under a public transaction; a violation of federal or state antitrust statutes; fraud; embezzlement; theft; forgery; bribery; falsification or destruction of records; making false statements; or receiving stolen property;
 - c. are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (federal, state or local) with commission of any of the offenses enumerated in clause B.1.b. of this Section V;
 - d. have not, within a five-year period preceding the date of this EDS, had one or more public transactions (federal, state or local) terminated for cause or default; and
 - e. have not, within a five-year period preceding the date of this EDS, been convicted, adjudged guilty, or found liable in a civil proceeding, or in any criminal or civil action, including actions concerning environmental violations, instituted by the City or by the federal government, any state, or any other unit of local government.

2. The certifications in subparts 2, 3 and 4 concern:
 - the Disclosing Party;

 - any "Applicable Party" (meaning any party participating in the performance of the Matter, including but not limited to any persons or legal entities disclosed under Section IV, "Disclosure of Subcontractors and Other Retained Parties");

 - any "Affiliated Entity" (meaning a person or entity that, directly or indirectly: controls the Disclosing Party, is controlled by the Disclosing Party, or is, with the Disclosing Party, under common control of another person or entity. Indicia of control include, without limitation: interlocking management or ownership; identity of interests among family members, shared facilities and equipment; common use of employees; or organization of a business entity following the ineligibility of a business entity to do business with federal or state or local government, including the City, using substantially the same management, ownership, or principals as the ineligible entity); with respect to Applicable Parties, the term Affiliated Entity means a person or entity that directly or indirectly controls the Applicable Party, is controlled by it, or, with the

Applicable Party, is under common control of another person or entity;

- any responsible official of the Disclosing Party, any Applicable Party or any Affiliated Entity or any other official, agent or employee of the Disclosing Party, any Applicable Party or any Affiliated Entity, acting pursuant to the direction or authorization of a responsible official of the Disclosing Party, any Applicable Party or any Affiliated Entity (collectively "Agents").

Neither the Disclosing Party, nor any Applicable Party, nor any Affiliated Entity of either the Disclosing Party or any Applicable Party nor any Agents have, during the five years before the date this EDS is signed, or, with respect to an Applicable Party, an Affiliated Entity, or an Affiliated Entity of an Applicable Party during the five years before the date of such Applicable Party's or Affiliated Entity's contract or engagement in connection with the Matter:

- a. bribed or attempted to bribe, or been convicted or adjudged guilty of bribery or attempting to bribe, a public officer or employee of the City, the State of Illinois, or any agency of the federal government or of any state or local government in the United States of America, in that officer's or employee's official capacity;
 - b. agreed or colluded with other bidders or prospective bidders, or been a party to any such agreement, or been convicted or adjudged guilty of agreement or collusion among bidders or prospective bidders, in restraint of freedom of competition by agreement to bid a fixed price or otherwise; or
 - c. made an admission of such conduct described in a. or b. above that is a matter of record, but have not been prosecuted for such conduct; or
 - d. violated the provisions of Municipal Code Section 2-92-610 (Living Wage Ordinance).
3. Neither the Disclosing Party, Affiliated Entity or Applicable Party, or any of their employees, officials, agents or partners, is barred from contracting with any unit of state or local government as a result of engaging in or being convicted of (1) bid-rigging in violation of 720 ILCS 5/33E-3; (2) bid-rotating in violation of 720 ILCS 5/33E-4; or (3) any similar offense of any state or of the United States of America that contains the same elements as the offense of bid-rigging or bid-rotating.
 4. Neither the Disclosing Party nor any Affiliated Entity is listed on any of the following lists maintained by the Office of Foreign Assets Control of the U.S. Department of the Treasury or the Bureau of Industry and Security of the U.S. Department of Commerce or their successors: the Specially Designated Nationals List, the Denied Persons List, the Unverified List, the Entity List and the Debarred List.
 5. The Disclosing Party understands and shall comply with (1) the applicable requirements of the Governmental Ethics Ordinance of the City, Title 2, Chapter 2-156 of the Municipal Code; and (2) all the applicable provisions of Chapter 2-56 of the Municipal Code (Office of the Inspector General).

6. If the Disclosing Party is unable to certify to any of the above statements in this Part B (Further Certifications), the Disclosing Party must explain below:

If the letters "NA," the word "None," or no response appears on the lines above, it will be conclusively presumed that the Disclosing Party certified to the above statements.

C. CERTIFICATION OF STATUS AS FINANCIAL INSTITUTION

For purposes of this Part C, under Municipal Code Section 2-32-455(b), the term "financial institution" means a bank, savings and loan association, thrift, credit union, mortgage banker, mortgage broker, trust company, savings bank, investment bank, securities broker, municipal securities broker, securities dealer, municipal securities dealer, securities underwriter, municipal securities underwriter, investment trust, venture capital company, bank holding company, financial services holding company, or any licensee under the Consumer Installment Loan Act, the Sales Finance Agency Act, or the Residential Mortgage Licensing Act. However, "financial institution" specifically shall not include any entity whose predominant business is the providing of tax deferred, defined contribution, pension plans to public employees in accordance with Sections 403(b) and 457 of the Internal Revenue Code. (Additional definitions may be found in Municipal Code Section 2-32-455(b).)

1. CERTIFICATION

The Disclosing Party certifies that the Disclosing Party (check one)

is is not

a "financial institution" as defined in Section 2-32-455(b) of the Municipal Code.

2. If the Disclosing Party IS a financial institution, then the Disclosing Party pledges:

"We are not and will not become a predatory lender as defined in Chapter 2-32 of the Municipal Code. We further pledge that none of our affiliates is, and none of them will become, a predatory lender as defined in Chapter 2-32 of the Municipal Code. We understand that becoming a predatory lender or becoming an affiliate of a predatory lender may result in the loss of the privilege of doing business with the City."

If the Disclosing Party is unable to make this pledge because it or any of its affiliates (as defined in Section 2-32-455(b) of the Municipal Code) is a predatory lender within the meaning of Chapter 2-32 of the Municipal Code, explain here (attach additional pages if necessary):

If the letters "NA," the word "None," or no response appears on the lines above, it will be conclusively presumed that the Disclosing Party certified to the above statements.

D. CERTIFICATION REGARDING INTEREST IN CITY BUSINESS

Any words or terms that are defined in Chapter 2-156 of the Municipal Code have the same meanings when used in this Part D.

1. In accordance with Section 2-156-110 of the Municipal Code: Does any official or employee of the City have a financial interest in his or her own name or in the name of any other person or entity in the Matter?

Yes No

NOTE: If you checked "Yes" to Item D.1., proceed to Items D.2. and D.3. If you checked "No" to Item D.1., proceed to Part E.

2. Unless sold pursuant to a process of competitive bidding, or otherwise permitted, no City elected official or employee shall have a financial interest in his or her own name or in the name of any other person or entity in the purchase of any property that (i) belongs to the City, or (ii) is sold for taxes or assessments, or (iii) is sold by virtue of legal process at the suit of the City (collectively, "City Property Sale"). Compensation for property taken pursuant to the City's eminent domain power does not constitute a financial interest within the meaning of this Part D.

Does the Matter involve a City Property Sale?

Yes No

3. If you checked "Yes" to Item D.1., provide the names and business addresses of the City officials or employees having such interest and identify the nature of such interest:

Name	Business Address	Nature of Interest
------	------------------	--------------------

4. The Disclosing Party further certifies that no prohibited financial interest in the Matter will be acquired by any City official or employee.

E. CERTIFICATION REGARDING SLAVERY ERA BUSINESS

The Disclosing Party has searched any and all records of the Disclosing Party and any and all predecessor entities for records of investments or profits from slavery, the slave industry, or slaveholder insurance policies from the slavery era (including insurance policies issued to slaveholders that provided coverage for damage to or injury or death of their slaves) and has disclosed in this EDS any and all such records to the City. In addition, the Disclosing Party must disclose the names of any and all slaves or slaveholders described in those records. Failure to comply with these disclosure requirements may make the Matter to which this EDS pertains voidable by the City.

Please check either 1. or 2. below. If the Disclosing Party checks 2., the Disclosing Party must disclose below or in an attachment to this EDS all requisite information as set forth in that paragraph 2.

 X 1. The Disclosing Party verifies that (a) the Disclosing Party has searched any and all records of the Disclosing Party and any and all predecessor entities for records of investments or profits from slavery, the slave industry, or slaveholder insurance policies, and (b) the Disclosing Party has found no records of investments or profits from slavery, the slave industry, or slaveholder insurance policies and no records of names of any slaves or slaveholders.

 2. The Disclosing Party verifies that, as a result of conducting the search in step 1(a) above, the Disclosing Party has found records relating to investments or profits from slavery, the slave industry, or slaveholder insurance policies and/or the names of any slaves or slaveholders. The Disclosing Party verifies that the following constitutes full disclosure of all such records:

SECTION VI -- CERTIFICATIONS FOR FEDERALLY-FUNDED MATTERS

NOTE: If the Matter is federally funded, complete this Section VI. If the Matter is not federally funded, proceed to Section VII.

A. CERTIFICATION REGARDING LOBBYING

1. List below the names of all persons or entities registered under the federal Lobbying Disclosure Act of 1995 who have made lobbying contacts on behalf of the Disclosing Party with respect to the Matter: (Begin list here, add sheets as necessary):

(If no explanation appears or begins on the lines above, or if the letters "NA" or if the word "None" appear, it will be conclusively presumed that the Disclosing Party means that NO persons or entities registered under the Lobbying Disclosure Act of 1995 have made lobbying contacts on behalf of the Disclosing Party with respect to the Matter.)

2. The Disclosing Party has not spent and will not expend any federally appropriated funds to pay any person or entity listed in Paragraph A.1. above for his or her lobbying activities or to pay any person or entity to influence or attempt to influence an officer or employee of any agency, as defined by applicable federal law, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress, in connection with the award of any federally funded contract, making any federally funded grant or loan, entering into any cooperative agreement, or to extend, continue, renew, amend, or modify any federally funded contract, grant, loan, or cooperative agreement.
3. The Disclosing Party will submit an updated certification at the end of each calendar quarter in which there occurs any event that materially affects the accuracy of the statements and information set forth in paragraphs A.1. and A.2. above.

If the Matter is federally funded and any funds other than federally appropriated funds have been or will be paid to any person or entity for influencing or attempting to influence an officer or employee of any agency (as defined by applicable federal law), a member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with the Matter, the Disclosing Party must complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions. The form may be obtained online from the federal Office of Management and Budget (OMB) web site at <http://www.whitehouse.gov/omb/grants/sfillin.pdf>, linked on the page http://www.whitehouse.gov/omb/grants/grants_forms.html.

4. The Disclosing Party certifies that either: (i) it is not an organization described in section 501(c)(4) of the Internal Revenue Code of 1986; or (ii) it is an organization described in section 501(c)(4) of the Internal Revenue Code of 1986 but has not engaged and will not engage in "Lobbying Activities".
5. If the Disclosing Party is the Applicant, the Disclosing Party must obtain certifications equal in form and substance to paragraphs A.1. through A.4. above from all subcontractors before it awards any subcontract and the Disclosing Party must maintain all such subcontractors' certifications for the duration of the Matter and must make such certifications promptly available to the City upon request.

B. CERTIFICATION REGARDING EQUAL EMPLOYMENT OPPORTUNITY

If the Matter is federally funded, federal regulations require the Applicant and all proposed subcontractors to submit the following information with their bids or in writing at the outset of negotiations.

Is the Disclosing Party the Applicant?

Yes

No

If "Yes," answer the three questions below:

1. Have you developed and do you have on file affirmative action programs pursuant to applicable federal regulations? (See 41 CFR Part 60-2.)

Yes No

2. Have you filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance Programs, or the Equal Employment Opportunity Commission all reports due under the applicable filing requirements?

Yes No

3. Have you participated in any previous contracts or subcontracts subject to the equal opportunity clause?

Yes No

If you checked "No" to question 1. or 2. above, please provide an explanation:

SECTION VII -- ACKNOWLEDGMENTS, CONTRACT INCORPORATION, COMPLIANCE, PENALTIES, DISCLOSURE

The Disclosing Party understands and agrees that:

- A. By completing and filing this EDS, the Disclosing Party acknowledges and agrees, on behalf of itself and the persons or entities named in this EDS, that the City may investigate the creditworthiness of some or all of the persons or entities named in this EDS.
- B. The certifications, disclosures, and acknowledgments contained in this EDS will become part of any contract or other agreement between the Applicant and the City in connection with the Matter, whether procurement, City assistance, or other City action, and are material inducements to the City's execution of any contract or taking other action with respect to the Matter. The Disclosing Party understands that it must comply with all statutes, ordinances, and regulations on which this EDS is based.
- C. The City's Governmental Ethics and Campaign Financing Ordinances, Chapters 2-156 and 2-164 of the Municipal Code, impose certain duties and obligations on persons or entities seeking City contracts, work, business, or transactions. The full text of these ordinances and a training program is available on line at www.cityofchicago.org/Ethics, and may also be obtained from the City's Board of Ethics, 740 N. Sedgwick St., Suite 500, Chicago, IL 60610, (312) 744-9660. The Disclosing Party must comply fully with the applicable ordinances.

- D. If the City determines that any information provided in this EDS is false, incomplete or inaccurate, any contract or other agreement in connection with which it is submitted may be rescinded or be void or voidable, and the City may pursue any remedies under the contract or agreement (if not rescinded, void or voidable), at law, or in equity, including terminating the Disclosing Party's participation in the Matter and/or declining to allow the Disclosing Party to participate in other transactions with the City. Remedies at law for a false statement of material fact may include incarceration and an award to the City of treble damages.
- E. It is the City's policy to make this document available to the public on its Internet site and/or upon request. Some or all of the information provided on this EDS and any attachments to this EDS may be made available to the public on the Internet, in response to a Freedom of Information Act request, or otherwise. By completing and signing this EDS, the Disclosing Party waives and releases any possible rights or claims which it may have against the City in connection with the public release of information contained in this EDS and also authorizes the City to verify the accuracy of any information submitted in this EDS.
- F. The information provided in this EDS must be kept current. In the event of changes, the Disclosing Party must supplement this EDS up to the time the City takes action on the Matter. If the Matter is a contract being handled by the City's Department of Procurement Services, the Disclosing Party must update this EDS as the contract requires.

The Disclosing Party represents and warrants that:

- G. The Disclosing Party has not withheld or reserved any disclosures as to economic interests in the Disclosing Party, or as to the Matter, or any information, data or plan as to the intended use or purpose for which the Applicant seeks City Council or other City agency action.

For purposes of the certifications in H.1. and H.2. below, the term "affiliate" means any person or entity that, directly or indirectly: controls the Disclosing Party, is controlled by the Disclosing Party, or is, with the Disclosing Party, under common control of another person or entity. Indicia of control include, without limitation: interlocking management or ownership; identity of interests among family members; shared facilities and equipment; common use of employees; or organization of a business entity following the ineligibility of a business entity to do business with the federal government or a state or local government, including the City, using substantially the same management, ownership, or principals as the ineligible entity.

- H.1. Other than in the ordinary course of business for an entity of the size and with the scope of activities as the Disclosing Party, the Disclosing Party is not delinquent in the payment of any tax administered by the Illinois Department of Revenue, nor are the Disclosing Party or its affiliates delinquent in paying any fine, fee, tax or other charge owed to the City. This includes, but is not limited to, water charges, sewer charges, license fees, parking tickets, property taxes or sales taxes.
- H.2. If the Disclosing Party is the Applicant, the Disclosing Party and its affiliates will not use, nor permit their subcontractors to use, any facility on the U.S. EPA's List of Violating Facilities in connection with the Matter for the duration of time that such facility remains on the list.
- H.3. If the Disclosing Party is the Applicant, the Disclosing Party will obtain from any contractors/subcontractors hired or to be hired in connection with the Matter certifications equal in form and substance to those in H.1. and H.2. above and will not, without the prior written consent of the City, use any such contractor/subcontractor that does not provide such certifications or that the Disclosing Party has reason to believe has not provided or cannot provide

truthful certifications.

NOTE: If the Disclosing Party cannot certify as to any of the items in H.1., H.2. or H.3. above, an explanatory statement must be attached to this EDS.

CERTIFICATION

Under penalty of perjury, the person signing below: (1) warrants that he/she is authorized to execute this EDS on behalf of the Disclosing Party, and (2) warrants that all certifications and statements contained in this EDS are to the best of his/her knowledge true, accurate and complete as of the date furnished to the City.

The University of Chicago
(Print or type name of Disclosing Party)

Date: 6/22/09

By: *Glenn McKeown*
(sign here)

Glenn McKeown
(Print or type name of person signing)

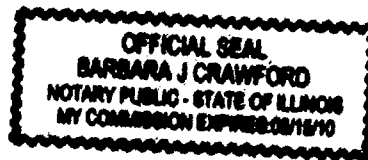
Associate General Counsel
(Print or type title of person signing)

Signed and sworn to before me on (date) 6/22/09, by Glenn McKeown, at The University of Chicago

Cook County, Illinois (state).

Barbara J Crawford Notary Public.

Commission expires: 5/15/10



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Emergency Modeling and Visualization System (EMViS)

Executive Summary

Argonne National Laboratory

Background

The objectives of the tasks under this proposal are to generate, implement, and test (as needed) computer-based modeling and visualization tools to assist in preparing for and responding to a purposeful CBRNE attack or a HAZMAT accident within or affecting the City of Chicago. The focus of this plan is to provide advanced chemical-biological-radiological (CBR) emergency modeling and visualization capabilities for the City of Chicago's 911 Center. The computer models for plume dispersion, ranging from quick-assessment models to complex models that require the kind of extensive computation facilities available at Argonne, will be adapted and implemented on currently available computing capabilities at the 911 Center and at Argonne, including the Laboratory's Transportation Research and Analysis Computing Center (TRACC). Argonne will identify appropriate computer models, visualization software, and hardware systems (if needed) and will provide appropriate scientific, engineering, and training support for their implementation at the 911 Center.

This project will result in the installation of an integrated system for emergency modeling and visualization within the 911 Center's existing technology and response infrastructures. When fully integrated, the modeling-visualization system will add scientific and technological tools that augment and broaden Chicago's capabilities in implementing rapid and effective CBRNE and HAZMAT emergency management actions. When coupled with TRANSIMS (Transportation Analysis and Simulation System) for advanced transportation and evacuation modeling (developed independently through funding from the State of Illinois Department of Transportation [IDOT] and the U.S. Department of Transportation), the Emergency Modeling and Visualization System (EMViS) proposed here will provide the City of Chicago Office of Emergency Management and Communication (OEMC) with capabilities in planning, visualizing, and executing large-scale evacuations.

Tasks

Task 1: Tier I Models — Rapid Response Capability ("Real Time" or "Near Real Time")

Establishing a minimum Tier I modeling capability for the 911 Center will be the first priority. The focus will be on identifying proven and practical PC-based computer codes that are easy to run and whose output results are easily understood by staff in the Joint Operations Center (JOC) and by first-responder personnel. Chicago first responders will review, test, and evaluate the identified candidate models in appropriate exercises.

Key Deliverables for Task 1

1. Review, installation, evaluation, and adaptation of Tier I models at Argonne through use of computers and software capabilities similar to those available at the 911 Center, with results and recommendations provided to the OEMC (JOC).
2. Installation and testing of recommended codes on the designated 911 Center server(s) and/or designated PCs.
3. Complete coupling of codes, including outputs from Tier I dispersion models with TRANSIMS (not funded by this project and deliverable subject to completion of TRANSIMS work for IDOT).
4. Assistance to OEMC in training 911 Center personnel in the application of hazard cloud dispersion models and interpretation of model results.

Task 2: Tier II Models — Neighborhood-Resolution 3D Plume Dispersion Models

The purpose of the Tier II task is to produce, test, and install at the 911 Center an advanced, computationally efficient modeling system coupled with a city/neighborhood-scale weather model and observational data (e.g., ground surface and satellite weather measurements) to predict time-dependent 3D hazard cloud movement in the Chicago urban environment at the resolution level of street canyons. We will implement a neighborhood-level-resolution 3D weather model for Chicago that will resolve the city at a spatial resolution of 100 m and less and will be based on existing meteorological models — the Weather Research and Forecasting (WRF) Model and an urban canopy model (UCM) — designed to work in conjunction as the WRF-UCM model.

Key Deliverables for Task 2

1. Initial testing and screening of model system components for the neighborhood-resolution model.
2. Adaptation and improvement of the parameterization scheme for urban canopies in a meteorological model (WRF-UCM or CNRM) suitable to Chicago's morphology and site-specific influences (e.g., Lake Michigan).
3. Development of a database of land use and urban canopy parameterizations for the Chicago urban area, for use with the WRF-UCM and subsequent testing of the neighborhood-resolution weather and dispersion model to develop and implement the CNRM.

4. Investigation of the air dispersion results with TRANSIMS.
5. Testing and evaluation of the CNRM model with appropriate measurements available from monitoring sites set up by the U.S. Environmental Protection Agency and meteorological data available from the National Weather Service, in addition to the monitoring sites. Any additional meteorological data available from the city will also be used for analysis and operation of the model.

Task 3: Tier III Models — Building- and Urban-Canyon-Resolution 3D Plume Dispersion Models

The Tier III models are designed to achieve further resolution in the flow and dispersion by developing a high-fidelity, high-resolution spatial model that resolves movement of air and contaminants within an urban canyon and around specific buildings. This step will generate highly detailed flow patterns around structures and will help to identify the regions within an urban canyon and around buildings where hazardous airborne materials might accumulate to high concentrations. Together, the Tier III models and the visualization tools described under Task 4 will provide the details of contaminant dispersion as it is influenced by the shapes and sizes of the buildings and the flow patterns they engender.

Key Deliverables for Task 3

1. Development of an additional enhanced data set for the city's urban core that includes data on specific building shapes, sizes, and orientations and streets that would be of interest to the city for use in a computationally intensive fluid flow code (a CFD model) that resolves features at the meter scale and less. Such a database can be used with the CSRDM to add detail to hypothetical response scenarios. City of Chicago personnel will be primarily responsible for identifying the scenarios and the structures of high value for use in the CFD code to generate the CSRDM.
2. Testing and evaluation of the CFD-based CSRDM model through use of laboratory data for idealized situations. Field data collected previously (circa 1980s) by Argonne in the Chicago urban canyon may also be used for model validation.
3. Use of a commercial CFD code — Fluent (Version 3.24) — or possibly an open-source CFD research code to obtain model resolution with the CSRDM on the order of meters and thus resolve flow around buildings and other structures and in street canyons. The Argonne

project team is well versed in using these models and will identify the suitable code.

4. Use of CSRDM to generate a library of high-resolution simulations for selected structures and street canyons jointly identified by Argonne and the City of Chicago. Argonne anticipates that simulations will be performed for no more than five specific locations with this model. Each instance or location will be simulated under various conditions to generate a suite of consequences for events occurring during various weather conditions. The library for each instance will have approximately 25-30 individual simulations.

Task 4: Visualization — Integration of Advanced Visualization Next-Generation Emergency Response Wall (AViGER-Wall)

The purpose of Task 4 is to incorporate the latest advances in 3D visualization and animation technology into the 911 Center's capabilities. This technology, Advanced Visualization Next-Generation Emergency Response Wall (AViGER-Wall), will be integrated with the communications and video surveillance technologies that are already in place and with the advanced hazard emergency preparedness modeling technology proposed for the 911 Center under Tasks 1, 2, and 3.

Key Deliverables for Task 4

1. Initial meeting(s) at the 911 Center to determine the system design specifications and logistics for installation of the AViGER-Wall.
2. Purchase of system components by OEMC and joint EVL-OEMC-Argonne scheduling for system installation and testing, including visualization software installation.
3. EVL-OEMC-Argonne collaboration to identify and establish best practices in the use of 3D visualization and to develop 3D interfaces, where necessary, to facilitate interactive manipulation of 3D data.
4. Establishment and testing of interface connectivity (e.g., air dispersion modeling output from PCs and a high-performance cluster) identified during the initial meeting(s).

Scope of Work
for
Proposal P-07021

May 20, 2009

Emergency Modeling and Visualization System (EMViS)

Prepared for
City of Chicago
Office of Emergency Management and Communication

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GLOSSARY

AViGER-Wall (Advanced Visualization Next-Generation Emergency Response Wall) — a stereoscopic 3D display to show movement of a toxic vapor cloud through the Chicago Loop, to provide the 911 Center, Chicago Fire Department, Chicago Police Department, and City Hall with the state-of-the-art technology in crisis visualization and management, to be developed in Task 4 of the proposed work

building morphology — dimensional characteristics of a building or groups of buildings (e.g., width, height, length, spacing) important to urban air flow

computer aided dispatch — a system (based on geographic information system technology) in place at the City of Chicago 911 Center, used to track the locations of emergency vehicles (e.g., police, fire, medical)

candidate models — models identified for review and consideration for use by the OEMC at the 911 Center or remotely from Argonne's computer network

CBR — chemical, biological, or radiological

CBRNE — chemical, biological, radiological, nuclear, or explosive

CFD (computational fluid dynamics) code — a high-fidelity model that runs on a "supercomputer," capable of predicting 3D time-varying dispersion patterns of a released contaminant at building-level scales in an urban environment, to be used for generating the Tier III model CSRDM

CNRM — Chicago Neighborhood Resolution Model, the Chicago-specific neighborhood-resolution WRF-UCM modeling suite to be developed as the proposed Tier II model

codes or models — mathematical computer software used to simulate real situations, such as the release and downwind movement of a chemical or biological agent

coupled — the relationship of science and technology systems or computer models linked with each other and/or with system hardware such as 3D video displays

CSRDM — Chicago Structure Resolution Dispersion Model, a modeling system that will resolve flow around selected structures in the city by using CFD models and will be primarily based on previously executed CFD simulations organized into a searchable database and linked to prevailing weather conditions for display and analysis; the proposed Tier III model

2D — two dimensional

3D — three dimensional

3D interface — software and interconnecting cables required to translate computer model output (e.g., nerve gas concentrations, street-level winds) into 3D motion-picture-like images that facilitate understanding of a situation and assist in making time-sensitive, critical response decisions

DLP — Digital Light Processing (trademark of Texas Instruments)

EMViS — Emergency Modeling and Visualization System, being developed in the proposed work

EVL — Electronic Visualization Laboratory at UIC

hazard zone — area where dangerously high concentrations of a CBR agent are expected

hazard-zone evolution and mapping — time histories of mapped locations presenting a risk for fatalities or incapacitating injury in a hazard zone

HAZMAT — hazardous materials

high fidelity — precise predictive capabilities of a computer model at fine resolutions; that is, the ability to track the movement, minute by minute, of a chemical or radiological agent — around, behind, and into buildings

high-fidelity urban-canyon models — CFD model coupled with an urban weather model (a Tier III model in the proposed work)

IDOT — Illinois Department of Transportation

JOC — Joint Operations Center

meteorological model — weather model (such as WRF) capable of 3D forecasting of weather variables such as wind speed, wind direction, temperature, humidity, and pressure over a wide urban area

models or codes — mathematical computer software used to simulate real situations, such as the release and downwind movement of a chemical or biological agent

OEMC — City of Chicago Office of Emergency Management and Communication

parameterization schemes — mathematical formulations incorporated into models and using real-world data (e.g., measurements, dimensions such as building height)

PC — personal computer

population dose — amount of a toxic substance (e.g., from radiation or chemical exposure) taken into the body via inhalation, ingestion, or absorption through the skin over a given period of time, multiplied by the number of people exposed

stereoscopic displays — immersive, lifelike, 3D animations of simulated crisis scenarios that facilitate situational understanding of populations at risk and available life-saving response options that minimize risk to first responders

Tier I models (simple rapid-response tools) — simple rapid-running (“real time”), emergency-response-capable, PC-based urban dispersion models applicable to city- or urban-scale resolution, with accounting for some building presence and influence

Tier II models — more robust, faster-running (“near real time” to several minutes’ delay) PC-based urban dispersion models applicable to neighborhood-scale resolution, with more realistic (compared to Tier I) accounting for influences from buildings; used for response scenarios and preparedness applications

Tier III models — high-fidelity, relatively slow-running (several hundreds of hours), supercomputer-ported codes simulated for selected buildings and a variety of flow situations, assembled for quick visualization and analysis into a database coupled to urban-scale weather models and weather conditions; applicable to resolution at the building scale, with very realistic accounting for building influences on dispersion

TRACC — Argonne National Laboratory’s Transportation Research and Analysis Computing Center

TRANSIMS — Transportation Analysis and Simulation System

UCM — urban canopy model

UHC — urban hazard cloud

UIC — University of Illinois at Chicago

urban hazard cloud (UHC) models — dispersion models used to estimate the concentration and location of HAZMAT release (e.g., nerve agent, “dirty bomb,” toxic industrial chemicals such as chlorine) in urban areas such as Chicago

Weather Research and Forecasting (WRF) Model — current state-of-the-art tool used for detailed forecasting of near-term weather conditions (hours or several days in the future)

OBJECTIVES AND GOALS

The threat of chemical, biological, radiological, nuclear, or explosive (CBRNE) attack or a hazardous materials (HAZMAT) accident in major urban centers is widely recognized. Several experimental studies have been recently conducted by the U.S. Department of Homeland Security, the U.S. Department of Energy, and the National Oceanic and Atmospheric Administration in major urban centers like Manhattan; smaller urban settings such as Oklahoma City, Oklahoma; and cities like Salt Lake City, Utah, that are influenced by complex terrain. Modeling and data analysis activities from these extensive collaborative studies can now be used to design and implement computer-based modeling tools to represent the extent and severity of the atmospheric plumes emanating and being dispersed from CBRNE emergencies or HAZMAT accidents. The objectives of the tasks proposed here — to be carried out by Argonne National Laboratory under this work plan — are to generate, implement, and test (as needed) computer-based modeling and visualization tools to assist in preparing for and responding to a purposeful CBRNE attack or a HAZMAT accident within or affecting the City of Chicago.

The focus of this plan is to provide advanced chemical-biological-radiological (CBR) emergency modeling and visualization capabilities for the City of Chicago's 911 Center. The computer models for plume dispersion, ranging from quick-assessment models to complex models that require the kind of extensive computation facilities available at Argonne, will be adapted and implemented on currently available computing capabilities at the 911 Center and at Argonne, including the Laboratory's Transportation Research and Analysis Computing Center (TRACC). Argonne will identify appropriate computer models, visualization software, and hardware systems (if needed) and will provide appropriate scientific, engineering, and training support for their implementation at the 911 Center. Modeling and visualization benchmark test cases germane to emergency situations will be established in consultation with the City of Chicago and the 911 Center. The benchmark tests will be used for evaluating the system and for training the 911 Center staff. The tests will be transferred to the 911 Center for similar use in the future. Argonne staff involved in the project will be available to the city as needed after the transfer to help navigate or resolve any problems, including limited support for the modeling system provided to the City of Chicago.

This project will result in the installation of an integrated system for emergency modeling and visualization within the 911 Center's existing technology and response infrastructures. When fully integrated, the modeling-visualization system will add scientific and technological tools that augment and broaden Chicago's capabilities in implementing rapid and effective CBRNE and HAZMAT emergency management actions. When coupled with TRANSIMS (Transportation Analysis and Simulation System) for advanced transportation and evacuation modeling (developed independently through funding from the State of Illinois Department of Transportation [IDOT] and the U.S. Department of Transportation), the Emergency Modeling and Visualization System (EMViS) proposed here will provide the City of Chicago Office of Emergency Management and Communication (OEMC) with capabilities in planning, visualizing, and executing large-scale evacuations. (The coupling of the dispersion modeling software

developed here to TRANSIMS is one of the deliverables of the TRANSIMS IDOT project and is outside the scope of this proposal.)

This software developed under the EMViS project will be integrated with real-time weather forecasting and dispersion models, providing the ability to map time histories of the spread of toxic substances. Such time-dependent mapping will aid in selection of safe evacuation routes and shelter locations. The ultimate goal of the EMViS project is to provide for the OEMC implementable science- and technology-based capabilities that will help save lives and maintain Chicago's reputation as the center of excellence for urban emergency management.

SCOPE OVERVIEW

This project will provide the OEMC with a combination of proven, previously applied computer models for predicting atmospheric dispersion, adapted to the specific circumstances and conditions extant in Chicago, along with the tools needed to visualize the results from the models. The project's overall design is represented in Figure 1.

This project will give emergency communications and management staff new capabilities in planning for realistic, rapid response in actual emergencies by providing real-time forecasts of plume spread and projections of the future path of the plume. The focus will be on (1) numerical computer models that apply plume dispersion analytics to forecast dispersion and (2) visualization tools to rapidly convey the model forecasts to the incident commander in a format that can be understood by staff with minimal training. The tools will provide a practical understanding of the extent, evolution, and severity level of an incident involving CBRNE agents or an accidental HAZMAT release, thus providing necessary information for deployment of first responders, locations of relevant evacuation centers, and locations of areas and populations that may require decontamination.

The EMViS prototype proposed for development in the first year of the project comprises two components consisting of computer-based modeling of plume dispersion at levels of sophistication appropriate to the needs and visualization of the model results. The third component, TRANSIMS, is currently being developed at TRACC and is expected to provide links to the tools proposed here. TRANSIMS development is not within the scope of the EMViS project. The system components that are developed will be designed to be integrated with available hardware and communication resources at the 911 Center to the greatest extent possible.

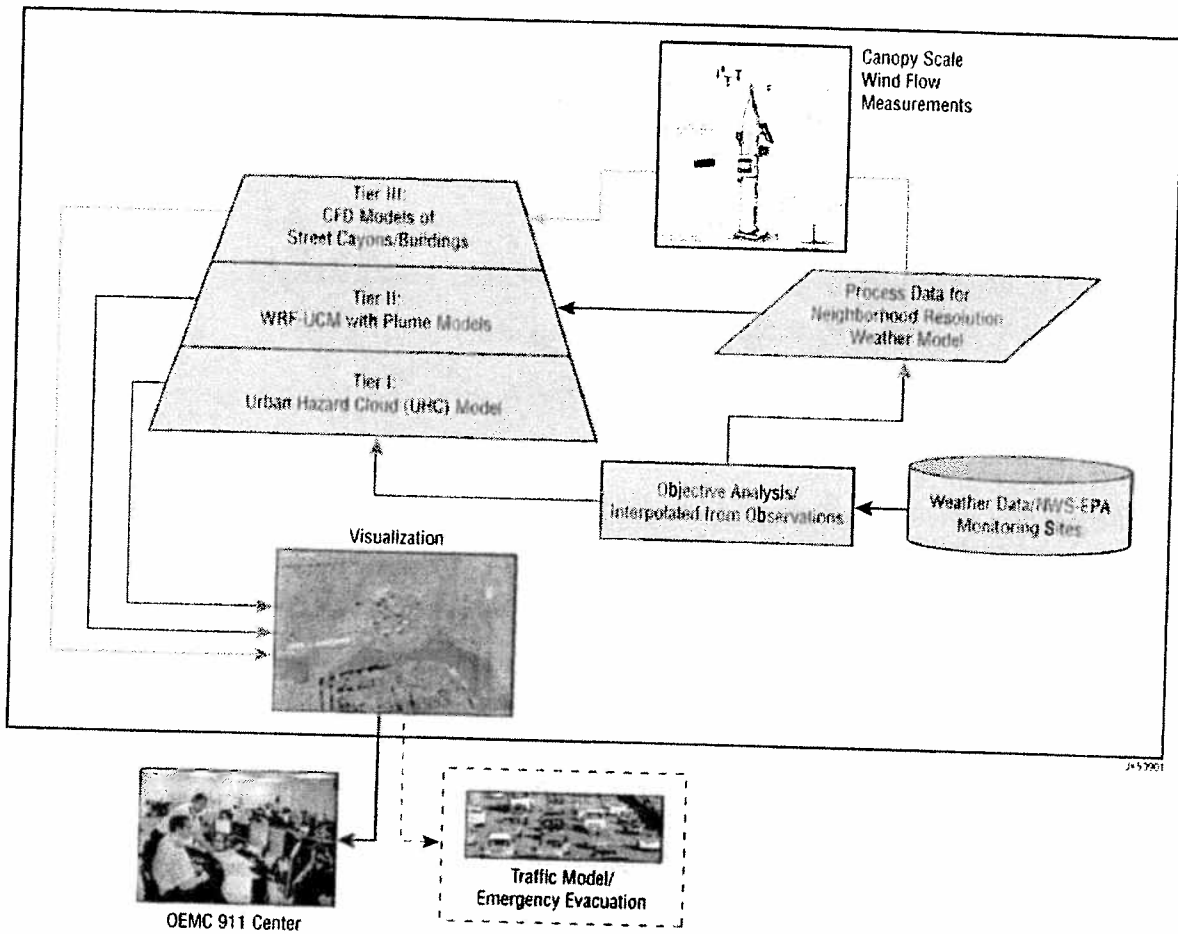


Figure 1 Flow Diagram for the City of Chicago EMViS Project

The proposed project is divided into four main development groups. In Tier I, Tier II, and Tier III model development, Argonne will develop a prototype of a new three-tier dispersion emergency modeling system (with three levels of sophistication and areas of application) and will implement the system at the OEMC. In addition, Argonne will implement visualization tools by using either the 911 Center computer and visualization capabilities or systems complementary to the existing hardware in the 911 Center, in order to support the modeling tools and capabilities developed by the Tier I, Tier II, and Tier III modeling effort. The Argonne-developed prototype will create, for the OEMC, a suite of models and software systems that simulates the movement patterns of airborne contaminants in the Chicago urban environment, for various wind patterns and release scenarios. Argonne and researchers at the University of Illinois at Chicago (UIC) will develop an advanced visualization capability designed to display the results of high-fidelity modeling tools provided under Tier I, Tier II, and Tier III, in addition to further supporting existing visualization needs (e.g., the computer-aided dispatch system) at the 911 Center. The three-tiered modeling system, ranging from simple rapid-response tools to high-fidelity street

canyon dispersion models, will provide hazard-zone evolution and mapping capabilities for the 911 Center. The visualization technologies will include details of the Chicago urban landscape with overlaid animated images of hazard cloud movements through neighborhoods and the wind patterns driving dispersion of an agent through the urban area (see Task 4).

Task 1: Tier I Models — Rapid Response Capability (“Real Time” or “Near Real Time”)

Although numerous air dispersion models are routinely applied in support of atmospheric science research and regulatory assessments, only a small subset of these rely on codes that are suitable for application in urban landscapes. In this task, Argonne will identify, evaluate, and modify existing simple PC-based, fast-running, Chicago-adapted urban hazard cloud (UHC) models for application in emergency response preparedness and in support of emergency operations in actual CBRNE agent emergencies.

Establishing a minimum Tier I modeling capability for the 911 Center will be the first priority. The focus will be on identifying proven and practical PC-based computer codes that are easy to run and whose output results are easily understood by staff in the Joint Operations Center (JOC) and by first-responder personnel. Chicago first responders will review, test, and evaluate the identified candidate models in appropriate exercises. Criteria for evaluation may include ease of use of specific model capabilities (e.g., amount of toxicant deposited on building surfaces, population dose, and other health exposure measures), model limitations, and overall model performance levels. In the event that one model does not meet all of the desired attributes and necessary capabilities, two or more codes may be recommended. The codes selected by the 911 Center will be installed on designated PCs and tested at the JOC. Release scenario benchmarks will be prepared, and hands-on software training will be conducted. The training will be held as a two-day workshop at Argonne, with the first day devoted to providing an overview of the basic science and technology behind the codes and the second day devoted to using and understanding the benchmark scenario and generating and testing a new scenario with workshop participants.

Key Deliverables for Task 1

1. Review, installation, evaluation, and adaptation of Tier I models at Argonne through use of computers and software capabilities similar to those available at the 911 Center, with results and recommendations provided to the OEMC (JOC).
2. Installation and testing of recommended codes on the designated 911 Center server(s) and/or designated PCs.
3. Complete coupling of codes, including outputs from Tier I dispersion models with TRANSIMS (not funded by this project and deliverable subject to completion of TRANSIMS work for IDOT).

4. Assistance to OEMC in training 911 Center personnel in the application of hazard cloud dispersion models and interpretation of model results.

Task 2: Tier II Models — Neighborhood-Resolution 3D Plume Dispersion Models

The purpose of the Tier II task is to produce, test, and install at the 911 Center an advanced, computationally efficient modeling system coupled with a city/neighborhood-scale weather model and observational data (e.g., ground surface and satellite weather measurements) to predict time-dependent 3D hazard cloud movement in the Chicago urban environment at the resolution level of street canyons. We will implement a neighborhood-level-resolution 3D weather model for Chicago that will resolve the city at a spatial resolution of 100 m and less and will be based on existing meteorological models — the Weather Research and Forecasting (WRF) Model and an urban canopy model (UCM) — designed to work in conjunction as the WRF-UCM model. A detailed map of the structure of the Chicago urban canopy at a resolution of 100 m will be developed for the model. The UCM will be tested for the Chicago data set, and dispersion models suitable for these scales will be implemented.

When coupled with the deliverable from the visualization effort described under Task 4, the Tier II modeling suite will provide analysts with the visual enhancement needed to identify neighborhood-level (100-m scale) detail of regions where higher concentrations of contaminants could accumulate. Once complete, the Chicago-specific neighborhood-resolution WRF-UCM modeling suite will be designated the *Chicago Neighborhood Resolution Model (CNRM)*. The CNRM will include sub-models that calculate the dispersion of gases and particles from prescribed source regions.

The CNRM most likely could be used in real time or near real time with sufficient computing resources. One of the tasks of the project will be to identify suitable computational resources that can be engaged when needed to run the CNRM model in real time. During the first year, Argonne will be developing and testing the WRF-UCM (i.e., CNRM) model for Chicago dispersion and wind flow. This model most likely will require high-speed computing resources available at Argonne and the TRACC. Model results at the Tier II stage will be suitable for initiation of integration with the TRANSIMS City-wide modeling effort.

Key Deliverables for Task 2

1. Initial testing and screening of model system components for the neighborhood-resolution model.
2. Adaptation and improvement of the parameterization scheme for urban canopies in a meteorological model (WRF-UCM or CNRM) suitable to Chicago's morphology and site-specific influences (e.g., Lake Michigan).

3. Development of a database of land use and urban canopy parameterizations for the Chicago urban area, for use with the WRF-UCM and subsequent testing of the neighborhood-resolution weather and dispersion model to develop and implement the CNRM.
4. Investigation of the air dispersion results with TRANSIMS.
5. Testing and evaluation of the CNRM model with appropriate measurements available from monitoring sites set up by the U.S. Environmental Protection Agency and meteorological data available from the National Weather Service, in addition to the monitoring sites. Any additional meteorological data available from the city will also be used for analysis and operation of the model.

Task 3: Tier III Models — Building- and Urban-Canyon-Resolution 3D Plume Dispersion Models

The Tier III models are designed to achieve further resolution in the flow and dispersion by developing a high-fidelity, high-resolution spatial model that resolves movement of air and contaminants within an urban canyon and around specific buildings. This step will generate highly detailed flow patterns around structures and will help to identify the regions within an urban canyon and around buildings where hazardous airborne materials might accumulate to high concentrations. Together, the Tier III models and the visualization tools described under Task 4 will provide the details of contaminant dispersion as it is influenced by the shapes and sizes of the buildings and the flow patterns they engender. The Tier III model suite with building-level resolution will be designated the *Chicago Structure Resolution Dispersion Model (CSRDM)*.

The flow around specified structures and within urban canyons needs a very high spatial resolution of the order of meter or less. The codes designed for this purpose, known as computational fluid dynamics (CFD), are computationally demanding and expensive to operate. Typical simulations around a building can take several hundred hours on a modern high-performance computing cluster. Therefore, the CSRDM model will be built primarily by developing a library or a database of modeling results for hypothetical emergency scenarios selected by 911 Center personnel to focus attention on specific structures of particular iconic value and areas of interest to the city. Calculations will be performed for releases during hypothetical scenarios under different weather conditions (clear sky, cloudy sky, changing flow direction, etc.) and a database of model results will be generated. Software that relates the runs to specific weather conditions will be developed and implemented to enable accessing of the runs and their visualization for training or during emergencies. The complete suite of tools from the database, overlying software, and visualization will allow archived simulations to be quickly called up to help shape the response during actual emergencies in comparable scenarios.

Key Deliverables for Task 3

1. Development of an additional enhanced data set for the city's urban core that includes data on specific building shapes, sizes, and orientations and streets that would be of interest to the city for use in a computationally intensive fluid flow code (a CFD model) that resolves features at the meter scale and less. Such a database can be used with the CSRDM to add detail to hypothetical response scenarios. City of Chicago personnel will be primarily responsible for identifying the scenarios and the structures of high value for use in the CFD code to generate the CSRDM.
2. Testing and evaluation of the CFD-based CSRDM model through use of laboratory data for idealized situations. Field data collected previously (circa 1980s) by Argonne in the Chicago urban canyon may also be used for model validation.
3. Use of a commercial CFD code — Fluent (Version 3.24) — or possibly an open-source CFD research code to obtain model resolution with the CSRDM on the order of meters and thus resolve flow around buildings and other structures and in street canyons. The Argonne project team is well versed in using these models and will identify the suitable code.
4. Use of CSRDM to generate a library of high-resolution simulations for selected structures and street canyons jointly identified by Argonne and the City of Chicago. Argonne anticipates that simulations will be performed for no more than five specific locations with this model. Each instance or location will be simulated under various conditions to generate a suite of consequences for events occurring during various weather conditions. The library for each instance will have approximately 25-30 individual simulations.

Task 4: Visualization — Integration of Advanced Visualization Next-Generation Emergency Response Wall (AViGER-Wall)

The purpose of Task 4 is to incorporate the latest advances in 3D visualization and animation technology into the 911 Center's capabilities. This technology, Advanced Visualization Next-Generation Emergency Response Wall (AViGER-Wall), will be integrated with the communications and video surveillance technologies that are already in place and with the advanced hazard emergency preparedness modeling technology proposed for the 911 Center under Tasks 1, 2, and 3.

The AViGER-Wall will be based on one of three possible technologies discussed below. The choice of technology will depend on the physical space constraints of OEMC. Staff of the

Electronic Visualization Laboratory (EVL) at UIC will meet with OEMC staff to determine these constraints and then recommend an appropriate display solution.

The GeoWall is a robust technology invented by the EVL. This technology provides a 3D immersive, stereoscopic computer graphics display through use of a single high-performance PC equipped with dual video graphics cards driving two projectors fitted with passive polarized filters. Although there is no maximum size limit for GeoWall displays, a display of approximately 100 in. (diagonal measurement) would be a reasonable size for standard boardrooms or situation rooms. With the GeoWall, the user sees a 3D image by wearing comfortable, lightweight polarized glasses similar to those found at 3D-IMAX theaters. Since 2001, more than 800 GeoWalls have been deployed in the United States at national centers (e.g., Argonne TRACC facility at DuPage Technology Park, the U.S. Geological Survey's EROS Data Center, and Argonne's main campus), universities, and museums (e.g., Adler Planetarium; SciTech Museum in Aurora, Illinois). An international consortium has been operating for the past eight years to support GeoWall users (www.geowall.org).

The JVC GD-463D1 display is a technology based on liquid crystal display that produces immersive 3D by using the same principle as the GeoWall. The chief advantage of the JVC technology is that it is virtually flat and therefore can be conveniently placed in a room without concern for distance from the projector. The maximum size of the display at this time is 46 in. (diagonal measurement).

The Mitsubishi WD-82837 display is a projection system based on Digital Light Processing (DLP; a trademark Texas Instruments) that produces immersive 3D by projecting alternating left-eye and right-eye images. The display monitor is relatively thin, like the JVC display. The current maximum size of this display is 82 in. (diagonal measurement). However, the user needs to don *active* stereoscopic glasses in order to see the 3D visualization rather than the low-cost passive stereoscopic glasses.

All three candidate technologies work equally well for conveying information related to hazard emergency preparedness, because the applications that have been identified in this proposal (hazard cloud and wind flow modeling) all involve data that are inherently 3D and are composed of abstract shapes that are difficult to interpret or discern on standard 2D computer screens but become immediately apparent when displayed in 3D. These displays enable viewers to understand far more complex visualizations than could normally be understood if they were displayed on standard 2D screens. The greater understanding is achieved by taking advantage of the human adaptation of two eyes for 3D vision, rather than one eye for 2D vision.

Key Deliverables for Task 4

1. Initial meeting(s) at the 911 Center to determine the system design specifications and logistics for installation of the AViGER-Wall.

2. Purchase of system components by OEMC and joint EVL-OEMC-Argonne scheduling for system installation and testing, including visualization software installation.
3. EVL-OEMC-Argonne collaboration to identify and establish best practices in the use of 3D visualization and to develop 3D interfaces, where necessary, to facilitate interactive manipulation of 3D data.
4. Establishment and testing of interface connectivity (e.g., air dispersion modeling output from PCs and a high-performance cluster) identified during the initial meeting(s).

TRAINING

We will be conducting a total of three different training sessions during the course of the project. Each training session will include an introduction to the basic principles behind the models being considered, hands-on experience in running the models for a few example scenarios, and documentation. The personnel to be trained will be selected by the OEMC on the basis of minimum qualifications identified by Argonne investigators. The first training session will be a two-day event to introduce the selected OEMC staff to the models developed under Task 1 (Rapid Response Capability) and familiarize the participants with the models. The second training session will be two-day event to introduce the OEMC staff to the models developed under Task 2 (Neighborhood-Resolution 3D Plume Dispersion Models) and familiarize the participants with those models. The final session will be a four-day event to introduce concepts, familiarize participants with the model library and user interface developed for models listed under Task 3 (Building- and Urban-Canyon-Resolution 3D Plume Dispersion Models), and instruct the participants in the proper use of the model library and the user interface. Use of the visualization capabilities developed under Task 4 will be integrated with the above training sessions as appropriate.

PROJECT COMMUNICATIONS

The Argonne project manager will send monthly progress reports to the designated City of Chicago project/contract manager. The progress reports will be delivered approximately two weeks after the end of the reporting month. The monthly reports will highlight work products and tasks conducted and/or completed during the reporting month, expected work to be completed during the next month, open issues that need resolution between the City of Chicago and Argonne, and costs incurred during the month. The detail provided in the cost breakdowns will be developed on the basis of discussions with the City of Chicago contract/project manager.

In addition to the monthly progress reports, Argonne will provide the City of Chicago contract/project manager with a weekly list of issue items that highlight areas that may need the

joint attention of Argonne and the City of Chicago. The issue items will be used to track key areas that require ongoing collaboration between Argonne and the City of Chicago.

PROGRAM MANAGEMENT

The Environmental Science Division at Argonne will be responsible for completion of the tasks described in this proposal. This proposal represents part of a comprehensive program for determining risk and evacuation response to risk. Dr. Harvey Drucker is responsible for the total program. Drs. Rao Kotamarthi and Young-Soo Chang are responsible for technical decisions related to the modeling described in this proposal, for developing and refining input databases, and for conducting the dispersion analyses specified. Dr. Jason Leigh at UIC is responsible for developing the 3D visualization capabilities described in this proposal.

Separately from this proposal, Mr. David Weber is responsible for development of the TRANSIMS transportation evacuation model under a separately funded program. Dr. Drucker serves as the liaison for all work performed under this proposal and the complementary work performed under a separate project funded by the State of Illinois. Argonne personnel will meet periodically with OEMC managers to address questions and issues encountered in the performance of the project and to report on work progress. Written progress reports will be provided monthly or on an alternate, mutually agreeable schedule.

QUALITY ASSURANCE

The purpose of the Argonne quality assurance program is to establish procedures for performing high-quality work on projects and to ensure that the planned procedures are followed during the course of the work. Quality assurance procedures cover project planning, field activities, laboratory analysis, data analysis, review of reports, documentation, and records retention. All deliverables are subjected to a thorough review by qualified technical staff members not otherwise involved in the project.

SCHEDULE, BUDGET, COMMITMENTS, AND PERSONNEL

Support for this proposal is anticipated to extend over a period of 1.5 years. Table 1 provides the overall proposal budget, Table 2 indicates the commitments being made for the proposed work, and Table 3 defines roles and responsibilities of the personnel involved. Figure 2 lays out the project schedule

TABLE 1 Cost and Effort Estimates^a

Component	FY2009		FY2010		FY2011		Totals	
	Person- Months	Cost (\$1,000)	Person- Months	Cost (\$1,000)	Person- Months	Cost (\$1,000)	Person- Months	Cost (\$1,000)
Direct Effort								
Scientific Direct	9.8	145.7	19.3	296.2	10.0	160.6	39.1	602.6
Secretarial/Clerical Direct	1.0	9.9	1.8	19.9	1.0	11.5	3.8	41.3
Total Effort	10.8	155.7	21.1	316.1	11.0	172.1	42.9	643.9
Other Direct Costs								
Materials & Supplies		30.0		52.0		10.0		92.0
Editorial		0.0		1.8		0.0		1.8
Subcontracts		57.5		115.0		57.0		229.5
STA		0.0		0.0		0.0		0.0
Total Other Direct Costs		87.5		168.8		67.0		323.3
Total Direct Cost		243.2		484.9		239.1		967.2
General and Administrative		81.8		165.1		85.9		332.8
LDRD Indirect ^b		13.2		26.8		0.0		40.0
Total ANL Cost		325.0		650.0		325.0		1300.0

^a Costs may be rounded.

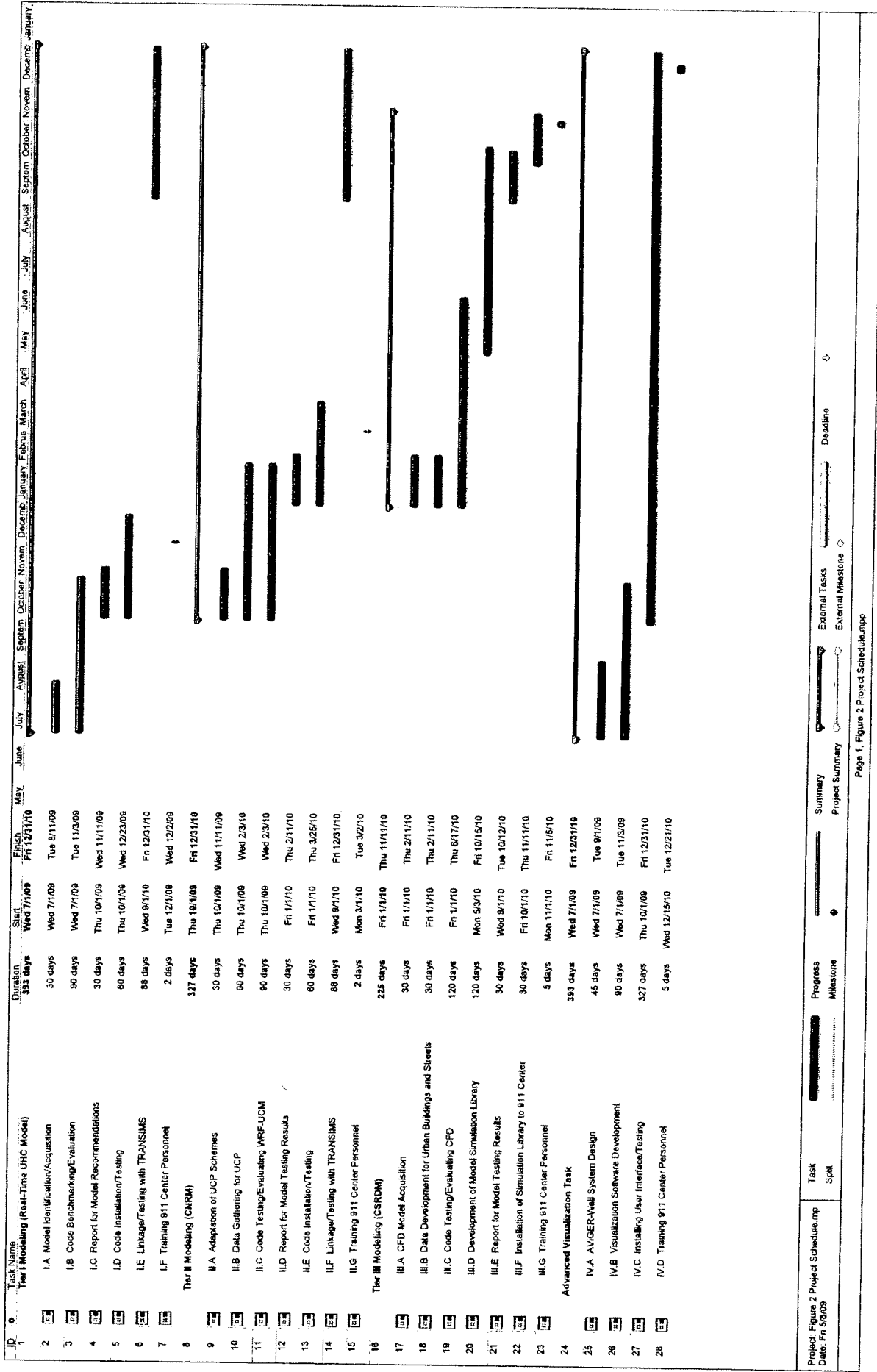
^b The "LDRD Indirect" line item above does not reflect any additional costs from previously submitted proposals, rather just a specific itemization of that cost.

TABLE 2 Commitments, Individual Responsibilities, and Target Beginning and Ending Dates

Commitment	Responsible	Target Begin Date	Target End Date
Tier I: Urban Hazard Cloud Models			
Model identification, acquisition	Chang, Kotamarthi	7/1/09	8/11/09
Code benchmarking, evaluation	Chang, Kotamarthi	7/1/09	11/3/09
Report for model recommendations	Chang	10/1/09	11/11/09
Code installation and testing	Chang, Kotamarthi	10/1/09	12/23/09
Linkage, testing with TRANSIMS	Kotamarthi, Chang	9/1/10	12/31/10
Training of 911 personnel	Chang, Kotamarthi	12/1/09	12/2/09
Tier II: Chicago Neighborhood Resolution Model			
Adaptation of urban canopy model schemes	Kotamarthi, Chang	10/1/09	11/11/09
Data gathering for urban canopy model	Kotamarthi, Chang	10/1/09	2/3/10
Code testing, evaluation WRF-UCM	Kotamarthi, Chang	10/1/09	2/3/10
Report for model testing and results	Kotamarthi	1/1/10	2/11/10
Linkage testing with TRANSIMS	Kotamarthi, Chang	9/1/10	12/31/10
Training of 911 personnel	Kotamarthi, Chang	3/1/10	3/2/10
Tier III: Chicago Structure Resolution Dispersion Model			
Computational fluid dynamics model acquisition	Kotamarthi	1/1/10	2/11/10
Data Development for urban buildings and streets	Kotamarthi, Chang, Krummel	1/1/10	2/11/10
Code testing, evaluation	Kotamarthi, Chang	1/1/10	6/17/10
Development of model solution library	Kotamarthi, Chang	5/3/10	10/15/10
Report of model testing, results	Kotamarthi, Chang	9/1/10	10/12/10
Installation of simulation library in 911 center	Kotamarthi, Chang	10/1/10	11/1/10
Training of 911 personnel	Kotamarthi, Chang	11/1/10	11/5/10
Visualization Task			
AVIGER-Wall system design	Leigh, Krummel	7/1/09	9/1/09
Visualization software development	Leigh, Kotamarthi	7/1/09	11/3/09
Installation of user interface, testing	Leigh, Kotamarthi, Krummel	10/1/09	12/31/10
Training of 911 personnel	Leigh, Kotamarthi	12/15/10	12/21/10

TABLE 3 Roles and Responsibilities of Personnel

Role	Name	Organization	Responsibilities	Time to the Project
Principal Investigator	Rao Kotamarthi, PhD	Argonne	Tier II and Tier III models	2 months
Principal Investigator	Youngsoo Chang, PhD	Argonne	Tier I models	3 months
Principal Investigator	Jason Leigh, PhD	UIC	Visualization task	1 month
Project Manager	John Krummel, PhD	Argonne	Overall management	3 weeks
Project Member	Kuo-Jen Liao, PhD	Argonne	Model acquisition, testing, installation	9 months
Project Member	Jenni Prell	Argonne	Model acquisition, testing, installation	18 months
Project Member	Haky Im, PhD	Argonne	Data inputs, model output libraries, interface development	12 months
Project Member	Jim Kuiper	Argonne	Spatial databases, GIS interface, visualization	9 months
Project Member	Post-doc/STA	Argonne	CFD model simulations (CSRDM)	12 months
Project Member	Beth Drewniak	Argonne	Model acquisition, testing, installation	9 months
Project Member	Luc Renambot, PhD	UIC	Visualization system design and training	18 months
Project Member	Lance Long	UIC	Visualization system administrator	2 months
Project Member	Graduate student to be named	UIC	Software driver development for visualization system	18 months
Project Member	Karen Haugen	Argonne	Technical editing	3 weeks





William M. Walsh
Contract Specialist Senior

**Office of the Chief Financial Officer
Procurement Department**
Argonne National Laboratory
9700 South Cass Avenue, Bldg. 201
Argonne, IL 60439

1-630-252-7030 phone
1-630-252-4517 fax
wmwalsh@anl.gov

June 23, 2009

Ms. Leslie Cain
Grants Research Specialist
Office of Emergency Management and Communications
City of Chicago
1411 W. Madison Avenue
Chicago, IL 60607

Dear Ms Cain:

**Subject: Budget and breakdown by Tier and Task for Argonne's Proposal P-07021 entitled
"Emergency Modeling and Visualization System (EMViS)"**

The Laboratory is hereby submitting an "**Approved**" Budget that was reviewed and approved by the Laboratory's Chief Financial Office this afternoon (see Attachment 1). The rates as identified in the Proposal are the same as we would charge the U.S. Department of Energy itself and are the most favorable that we can offer any organization. As you know the Laboratory is a not for profit organization and we perform all work on cost reimbursable basis. The Laboratory's fiscal year runs October 1 through September 30 which is why the budget reflects three different fiscal years. In addition we have provided a cost breakdown by the three Tier's and the Visualization Task for the four (4) major components of the overall project (see Attachment 2).

Should you have any questions, please feel free to contact the undersigned at your convenience at 630-252-7030.

Sincerely,

A handwritten signature in black ink that reads "William M. Walsh". The signature is written in a cursive, flowing style.

William M. Walsh

Attachments

cc: Y. Halac
J. Krummel

Proposal Cost Estimate Detail

ATTACHMENT 1

Proposal ID: 9022.1 Work For: CASH ALD: S Security Interest: No ARRA Funds: No
 Priced: 05/06/2009 Lead Cost Center: 167 Start Date: 10/01/2008 WFO Proposal No: 07021
 Received: 06/23/2009 Sponsor: City of Chicago End Date: 09/30/2011 Status: APPROVED
 Description: Emergency Modeling City of Chicago

Cost Ctr	Task:	Op/Eq	B&R
167		OP	6003

	FY2009	FY2010	FY2011	2012	2013	2014	2015	2016	Total	
	FTEM Dollars	FTEM Dollars	FTEM Dollars	FTEM Dollars	FTEM Dollars	FTEM Dollars	FTEM Dollars	FTEM Dollars	FTEM Dollars	
Exempt Reg	9.8	145,722	19.3	296,242	10.0	160,642			39.2	602,606
Exempt Temp	0.0	0	0.0	0	0.0	0			0.0	0
Scientific	9.8	145,722	19.3	296,242	10.0	160,642			39.2	602,606
Non-Exempt Union Reg	0.0	0	0.0	0	0.0	0			0.0	0
Non-Exempt Regular	1.0	9,936	1.8	19,884	1.0	11,472			3.8	41,292
Non-Exempt Union Temp	0.0	0	0.0	0	0.0	0			0.0	0
Non-Exempt Temp	0.0	0	0.0	0	0.0	0			0.0	0
Other Direct	1.0	9,936	1.8	19,884	1.0	11,472			3.8	41,292
Technical Services	0.0	0	0.0	0	0.0	0			0.0	0
Total Effort	10.8	155,658	21.1	316,126	11.1	172,114			43.0	643,898
Purchased Material										92,016
Subcontracts										229,500
Service Center										1,800
Other Direct Costs										0
Other Costs Subtotal										0
ALD Administration		87,509		169,801		67,006				323,316
IGPP/IGPE Indirect Expense		9,240		18,427		9,086				36,753
LDRD Indirect Expense		4,452		9,081		4,893				18,426
MS Burden		13,192		26,764		14,496				54,452
Service Ctr Indirect Expense		6,213		11,857		4,757				22,827
CS Indirect Expense		0		333		0				333
GA Indirect Expense		39,576		80,292		43,488				163,356
Safeguards & Security		9,160		18,319		9,160				36,639
Burden Subtotal		72,593		146,646		76,794				296,033
Total Lab Cost		325,000		650,000		325,000				1,300,000
Adjustment Amount		0		0		0				0
Adjusted Cost		325,000		650,000		325,000				1,300,000
DOE Admin Charge		0		0		0				0
Total DOE Cost		325,000		650,000		325,000				1,300,000

Note: The following indicates the values at the summary level of this proposal.
 LDRD Burden = (Total Effort + Other Direct Costs + ALD Admin) x 8.0%
 Percent of Total: 4.19

ATTACHMENT 2

Commitment	Responsible	Target Begin Date	Target End Date	Budget (\$1000)
Tier I: Urban Hazard Cloud Models				
Model identification, acquisition	Chang, Kotamarthi	7/1/09	8/11/09	252.60
Code benchmarking, evaluation	Chang, Kotamarthi	7/1/09	11/3/09	
Report for model recommendations	Chang	10/1/09	11/11/09	
Code installation and testing	Chang, Kotamarthi	10/1/09	12/23/09	
Linkage testing with TRANSIMS	Kotamarthi, Chang	9/1/10	12/31/10	
Training of 911 personnel	Chang, Kotamarthi	12/1/09	12/2/09	
Tier II: Chicago Neighborhood Resolution Model				
Adaptation of urban canopy model schemes	Kotamarthi, Chang	10/1/09	11/11/09	353.70
Data gathering for urban canopy model	Kotamarthi, Chang	10/1/09	2/3/10	
Code testing, evaluation WRF-Urban	Kotamarthi, Chang	10/1/09	2/3/10	
Report for model testing and results	Kotamarthi	1/1/10	2/11/10	
Linkage testing with TRANSIMS	Kotamarthi, Chang	9/1/10	12/31/10	
Training of 911 personnel	Kotamarthi, Chang	3/1/10	3/2/10	
Tier III: Chicago Structure Resolution Dispersion Model				
Computational fluid dynamics model acquisition	Kotamarthi	1/1/10	2/11/10	404.20
Data Development for urban buildings and streets	Kotamarthi, Chang, Krummel	1/1/10	2/11/10	
Code testing, evaluation	Kotamarthi, Chang	1/1/10	6/17/10	
Development of model solution library	Kotamarthi, Chang	5/3/10	10/15/10	
Report of model testing, results	Kotamarthi, Chang	9/1/10	10/12/10	
Installation of simulation library in 911 center	Kotamarthi, Chang	10/1/10	11/11/10	
Training of 911 personnel	Kotamarthi, Chang	11/1/10	11/5/10	
Visualization Task				
AVIGER-Wall system design	Leigh, Krummel	7/1/09	9/1/09	289.50
Visualization software development	Leigh, Kotamarthi	7/1/09	11/3/09	
Installation of user interface, testing	Leigh, Kotamarthi, Krummel	10/1/09	12/31/10	
Training of 911 personnel	Leigh, Kotamarthi	12/15/10	12/21/10	



City of Chicago
Richard M. Daley, Mayor

Office of Emergency Management
and Communications


Raymond Orozco
Executive Director

1411 West Madison Street
Chicago, Illinois 60607-1809
(312) 746-9111
(312) 746-9120 (FAX)

<http://www.cityofchicago.org>

MEMORANDUM

To: Montel M. Gayles, Chief Procurement Officer
Department of Procurement Services

From: 
Raymond Orozco, Executive Director
Office of Emergency Management & Communications

Date: June 19, 2009

Re: Evacuation Planning and Modeling with Argonne National
Laboratory

The Office of Emergency Management & Communications your concurrence with the No Stated Goals request from Argonne National Laboratory evacuation planning and modeling project. We are requesting to initiate a sole source contract to support this important software that will be used to safely evacuate residents in the case of an emergency.

Argonne National Laboratory has current contracts with the Department of Health and with the Department of Environment, both of which have No State Goals in regards to the MBE/WBE status. We hope the same status for this contract will apply.

Thank you for your assistance with this matter. If you have any questions or need additional information, please contact Leslie Cain at 312-746-9421.

Cc: Frank Lindbloom, OEMC
Yiel Halac, OEMC
John O'Brien, DPS



Chicago



**Information Technology Governance
Board (ITGB)
2009
Project Review**

**Office of Emergency Management and
Communications (OEMC)**

**Emergency Modeling and Visualization System
(EMVIS)**

Chicago

CHICAGO



Project Description

The purpose of this project is to provide advanced Chemical-Biological-Radiological (CBR) Emergency Modeling and Visualization System (EMViS) capabilities for the OEMC that can be integrated with existing technologies already in place such as plume modeling and OVS Camera network).

- **Summary of Major Project**
 - The OVS Camera Network
 - TRANSIMS (Transportation Analysis and Simulation System for advanced transportation and evacuation modeling)
 - Planning, Visualizing, and Executing large-scale evacuations
- **Major Risk of not Funding project**
 - The First Responders will be utilizing on old tools for Major Events
 - No visual planning
 - No reliable data
 - Miss use of available resource
 - Negative outcome

The word "Chicago" is written in a large, white, serif font against a dark, textured background.The words "Project History" are written in a white, serif font, positioned vertically on the right side of the page.

Project hasn't been started. The CoC- OEMC has been reviewing the SoW from the Vendor.

- Start Date – The OEMC & Argonne relationship has started in 2006
- Funding - Grant funding – UASIS2007 \$ 1.3 M.
- Previous Funding - Full grant funding is still available for the project
- Current Status – The SOW has been approved by the OEMC currently requesting an approved from ITGB for a sole source.





Project Timeline

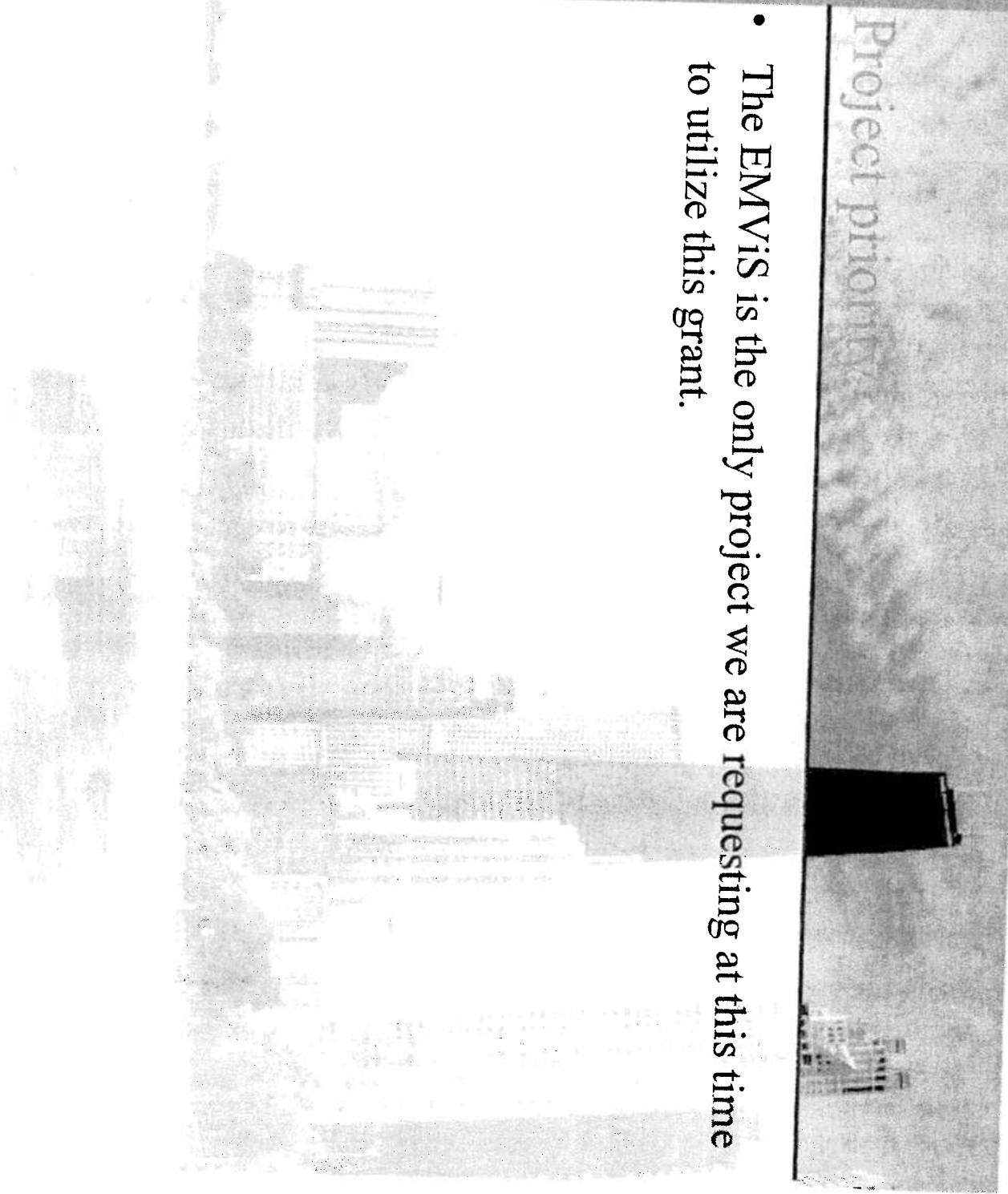
- Start Date - Project will start in July 2009/as approved
- Duration - Project will take approximately 18 months to complete
- Dependencies - Currently there are not technical dependencies identified
- Issues for Future Research- Project does not require any further research other than what has been introduced in the SoW



Chicago

Project priorities

- The EMViS is the only project we are requesting at this time to utilize this grant.



Chicago



2009 Grant Utilization

Total Cost for 2009 : \$325,000

- Direct Effort in 2009 (\$1,000)
 - Total Effort \$ 155.7
 - Total Other Direct Costs \$ 87.5
 - Total General & Admin. \$ 81.8

Chicago



Future Grant Utilization

Total Cost for 2010 : \$650,000

- Direct Effort in 2010 (\$1,000)
 - Total Effort \$ 316.1
 - Total Other Direct Costs \$ 168.8
 - Total General & Admin. \$ 165.1

Chicago

CHICAGO



Future Grant Optimization

Total Cost for 2011 : \$325,000

- Direct Effort in 2011 (\$1,000)
 - Total Effort \$ 172.1
 - Total Other Direct Costs \$ 67.0
 - Total General & Admin. \$ 85.9

Chicago

Future Grant Deliverables

Total Project Cost 2009 – 2011: \$1,300,000

- Total Direct Effort 2009 - 2011 (\$1,000)
 - 2010 Total Cost \$ 325.0
 - 2010 Total Cost \$ 650.0
 - 2011 Total Cost \$ 325.0



CHICAGO



Chicago

Operating Costs

- Staff – OEMC will define application users/trainers to use the application
- Hardware – Hardware will be supported by the Argonne (standard Vendor warranty)
- Software – Since it is a custom developed application, no licenses will be required. 3rd party application will be covered with Argonne master contract with their vendors.
- Hosting – Application will be hosted at OEMC
- Trainings – The Argonne team will conduct 3 training session with instructors (train the trainer) Training is included in the Project cost



Chicago



Annual Savings (Payroll Deductions)

arts

- This application has not been developed and used by any other agency. Since this is a custom application, no data available to compare for Annual savings.

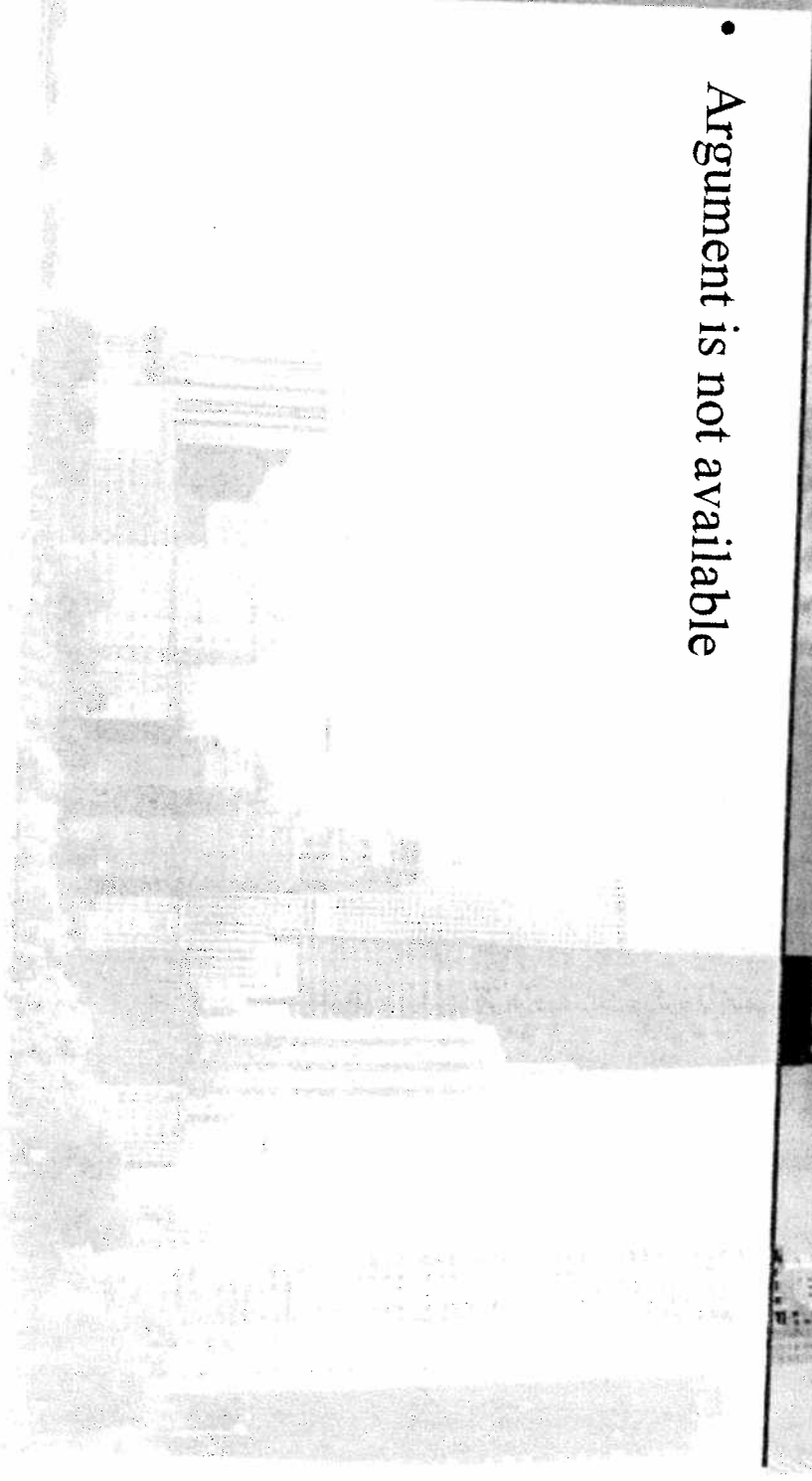


Chicago

Why we might not want to live in Chicago

mis?

- Argument is not available



Chicago

Benefits

- Advanced Chemical-biological-radiological, nuclear, or explosive (CBRNE) emergency modeling and Visualization capabilities.
- Better Utilization of available CoC resources
- Multi-agency training benefit.
- Enhancing existing tools capabilities (plum modeling, and Transportation Analysis and Simulation System - TRANSIM)
- Defining Rapid and Effective CBRNE and HAZMAT emergency Management
- Allowing public responders to work with 3D modeling



Chicago

Technology

- A ViGER-Wall (Advanced Visualization Next-Generation Emergency Response Wall)
- Plume modeling
- Weather Data Monitoring System
- Canopy Scale wind Flow Measurements
- Super computer



CHICAGO

Capabilities in Dispersion Modeling

The following items constitute Argonne's unique capabilities relevant to dispersion modeling for the City of Chicago's business district (EMViS). They are not in order of importance because they are of equivalent importance.

- Argonne developed the first widely used parallel computer version of a popular meteorological model (MM5) that can model urban areas at high-spatial resolution.
- Argonne was involved in data collection and providing meteorological support for dispersion studies conducted in Manhattan, Salt Lake City, UT and Oklahoma City, OK under collaborative studies between NOAA and DOE.
- The movement and dispersion of pollutants in complex terrains under various DOE field programs had Argonne participation for over 30 years.
- The laboratory has state-of-the-art supercomputers dedicated to issues in emergency management and transportation.
- The laboratory maintains and further develops software relevant to evacuation and dispersion.
- The state-of-the-art visualization tools that will be deployed for this project bring together unique expertise in geographical information systems, display technologies, software integration and dispersion modeling that has been generated over multiple years at Argonne and UIC.
- The laboratory has technical staff competent in evacuation and dispersion modeling. In example, ANL staff did dispersion analyses for potential incidents involving nuclear reactor. ANL staff examined chemical dispersion that might be associated with closure of chemical weapon storage facilities and/or chemical weapon decommissioning. Laboratory staff is deployed in national programs to instruct transportation managers in advanced computer systems for transportation and thus evacuation modeling and management.
- The laboratory had and deploys cyber security systems appropriate to issues posed in deployment of evacuation and dispersion models
- Argonne scientists have recently modeled dispersion and chemistry in the Las Vegas Urban area at a very high spatial resolution using state-of-the-art models, geospatial data sets and ground measurements.
- The laboratory has conducted some of the first experiments to study the movement of air and pollution in the urban canyons of downtown Chicago in the late 70's and early 80's using small balloons.
- We have recently published a study on the movement and dispersion of particles and gases in the Chicago region and influenced by lake breeze. The effect of lake breeze on the dispersion was modeled using a very high spatial resolution meteorological model.



William M. Walsh
Contract Specialist Senior

Office of the Chief Financial Officer
Procurement Department
Argonne National Laboratory
9700 South Cass Avenue, Bldg. 201
Argonne, IL 60439

November 30, 2009

1-630-252-7030 phone
1-630-252-4517 fax
wmwalsh@anl.gov

Ms. Jamie L. Rhee, Chief Procurement Officer
City of Chicago
Department of Procurement Services
City Hall, Room 403
121 North LaSalle Street
Chicago, IL 60602

Dear Ms. Rhee:

Subject: Argonne's Socio-Economic Goals
Reference: E-mail request of Leslie Cain dated November 20, 2009

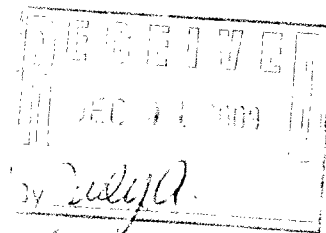
The Laboratory is hereby providing a copy of its 2009 Small Business Subcontracting Plan that was reviewed and approved by the United States Department of Energy. This plan was incorporated into our Prime Contract No. DE-AC02-6CH11357 with the Department of Energy. The Prime Contract is available on the web at <http://www.anl.gov/contract/>. The overall performance rating of the Laboratory, as determined by the Department of Energy; is based on part by us meeting and or exceeding the established goals as outlined in the FY 2009 Small Business Subcontracting Plan (see Attachment A). The Laboratory's Fiscal Year 2009 ended September 30, 2009 and I am pleased to state that we exceeded all of the Socio-Economic Goals with regards to all of the following categories:

- Small Business
- Small Disadvantaged Business
- Women-owned Small Business
- HubZone Small Business
- Service-Disabled Veteran-Owned Small Business

To substantiate the above information please see Attachment B which reflects the actual results for both FY-08 and FY-09 as compared to the Goals for each respective year. Should you have any questions or require further assistance, please contact the undersigned at (630) 252-7030, via fax at (630) 252-4517, or e-mail at wmwalsh@anl.gov.

Sincerely,

William M. Walsh
Senior Contract Specialist



cc R. Orozco
L. Cain