



U.S. Department of Housing and Urban Development

Chicago Contracting Operations Branch
77 West Jackson Blvd., Room 2517
Chicago, Illinois 60604-3507

<http://www.hud.gov/offices/cpo/index.cfm>

Office of the Chief Procurement Officer

January 16, 2003

PROCUREMENT SET ASIDE FOR SMALL BUSINESS CONCERNS

Request for Proposals Number R-CHI-00677

Proposed 5 Contracts Under the Partnership for Advancing Technology in Housing (PATH) Program

Closing Date: Tuesday, March 11, 2003

Closing Time: 4:00PM Local Time

Dear Prospective Offeror:

The US Department of Housing and Urban Development (HUD), Chicago Contracting Operations Branch in support of the Office of Policy Development and Research (PD&R), Affordable Housing Research and Technology Division (AHRTD) has a requirement for five contracts to provide studies related to the HUD programs known as Partnership for Advancing Technology in Housing (PATH). This procurement is being issued on a negotiated basis.

The 5 contracts expected to be awarded as a result of this solicitation cover the following PATH projects:

PATH 09 - Creating "Whole House" System Solutions;
PATH 11 - Durability/Moisture: Applying System Solutions;
PATH 12 - Whole House Research: Disentangling Utilities;
PATH 13 - Panel's Research I: Wall Panels Benchmark and Performance Requirements;
PATH 14 - Tools for Streamlining the Code Enforcement Documentation and Communication Process.

The following is a brief description of each of the PATH projects subject to this solicitation:

PATH 9 - Creating Whole House System Solutions

While many research and intellectual groups have loosely defined the concept of the 'whole house,' most of these have only suggested broad changes in the ways that individual home building firms function and the home building industry is structured. The PATH roadmap, however, has suggested the current industry must go beyond individual changes and into advancing wholistic approaches to designing, constructing, and maintaining homes, or "systems thinking." This project will define both technically and contextually the technical and operations components of a "whole house." This involves reviewing past examples of whole house approaches, and assembling categories for the technological systems necessary to accomplish this concept.

PATH 11 - Durability/Moisture: Applying System Solutions

One of the goals of the Partnership for Advancing Technology in Housing (PATH) is to increase the durability of housing while maintaining affordability. The presence of moisture is perhaps the most significant durability issue to be addressed in the design of homes. Moisture needs to be looked at as an aspect of the whole house and its construction as well. To approach this, a comprehensive plan shall be created as to how to coordinate research and other activities leading to better moisture resistance in single family housing that looks at the whole house aspects of the problem.

PATH 12 - Whole House Research: Disentangling Utilities

New subsystems in housing—like indoor plumbing, electric wiring, central HVAC—have been simply “added to” the home rather than “integrated into” it. This problem has become critical, as more systems are panelized; installing utility systems in conventional stud construction is awkward and often ends up compromising structural or insulating integrity. This project focuses on how to integrate utilities into these building systems or disentangle them from these building systems to best achieve more affordable housing.

PATH 13 - Panel's Research I: Wall Panels Benchmark and Performance Requirements

The broad purpose of this project is to define what panelized wall systems are currently available and their technical specifications, how do they perform and in what applications are they most used, and what are the standard performance criteria that all panelized wall systems need to meet in order to integrate with existing methods of construction. This project involves reviewing all panelized wall systems currently on the market, assembling categories for the technical product specifications necessary to identify similarities and differences. After the literature review and analysis, a detailed study of the conflicting technical performance attributes (e.g., structural performance vs. weight limitations vs. material durability, etc.) must be performed. Suggested parameters for these attributes will also be developed.

PATH 14 – Tools for Streamlining the Code Enforcement Documentation and Communication Process

This project will examine the tools currently available to code enforcement offices, tools currently available in industries with similar requirements, and potential tools which could be developed for use by code enforcement offices to document their uses and potential.

Five (5) cost-reimbursement contracts are expected to be awarded as a result of this solicitation. Four (4) of the five (5) PATH projects shall be completed within 12 months; One (1) of the five (5) contracts shall be completed within 8 months.

This procurement is a total set aside for small business concerns. The North American Industry Classification System (NAICS) Code is 541710, Industrial Research and Development Laboratories or Services, and the size standard is 500 employees, average for the last three years.

Offeror can propose on all 5 of proposed contracts or for any particular PATH project or contract. However, each PATH proposal shall be clearly identified by the proposed PATH number and title.

Request for Proposal R-CHI-00677 is structured in accordance with the Uniform Contract Format required by the Federal Acquisition Regulation (FAR) .

Identified below are certain important items and their location in the RFP:

1. The 5 sections of statement of work are in Part I, Section C.
2. The factors for award are in Part IV, Section M.
3. The time and due date for offers are in Block 9 of the Standard Form 33 (SF-33). The address for receipt of proposals is in Block 7 of SF-33.
4. The contact person for additional information is in Block 10 of the SF-33.

5. The instructions and conditions concerning proposal preparation and submission are in Part IV, Section L.
6. Many provisions and clauses of this RFP are incorporated by reference using FAR and HUDAR citations. You are responsible for familiarizing yourself with all contract requirements, including those merely cited.

In accordance with Section L, please submit a proposal on the basis you consider realistic for the approach you propose. Please include the technical discussions you feel are necessary to explain the approach you plan to use in accomplishing the required tasks as specified in the statements of work. Please also include a detailed explanation of your total price. Since cost reimbursement type contracts are expected to be awarded a result of this solicitation, offeror should include labor categories, labor rates and number of hours to be devoted to the specific portions of the proposed contract, and overhead as well as profit. Your cost proposal should include:

1. Documentation to support all elements of your proposed costs, and
2. Identification of the person(s) authorized to negotiate on behalf of your organization.

Program officials will review your proposal and negotiations will be conducted to award the contracts.

You are requested to provide proposals in an original and five copies to the Chicago Contracting Operations Branch for each PATH project that you wish to propose to on or before Tuesday, March 11, 2003 at 4:00 PM local time. Please do not submit any facsimiled responses.

Questions regarding this request should be directed to Alfredo Valentin, Contract Specialist at (312) 886-2760, X 2509.

Offeror's alert! If you obtained this solicitation from a source other than HUD, or if you downloaded it from HUD's Internet Home Page at <http://www.hud.gov/offices/cpo/index.cfm> or from FedBizOpps at <http://www.eps.gov> , you will not automatically receive any amendments to it. If you received this solicitation as a result of a written request to the issuing office, you will receive all amendments. All amendments will be posted on HUD's home page and at FedBizOpps web page. You are advised to check these web pages periodically of any amendments to this solicitation.

Sincerely,

Wayne S. Bernacki
Contracting Officer

Enclosure

SOLICITATION, OFFER AND AWARD		1. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15CFR 350)	RATING	PAGE OF 1 OF 76 PAGES
2. CONTRACT NO.	3. SOLICITATION NO. R-CHI-00677	4. TYPE OF SOLICITATION <input type="checkbox"/> SEALED BID (IFB) <input checked="" type="checkbox"/> NEGOTIATED (RFP)	5. DATE ISSUED 01/16/2003	6. REQUISITION/PURCHASE NO. R-2002-R-00086
7. ISSUED BY US Department of HUD - Contracting Operations Branch 77 W. Jackson Blvd, Room 2517 Chicago, , IL 60604-3507		8. ADDRESS OFFER TO (If other than Item 7) Same Attention: Alfredo Valentin, Contract Specialist		

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and bidder".

SOLICITATION

9. Sealed offers in original and 5 copies for furnishing the supplies or services in the Schedule will be received at the place specified in Item 8, or if handcarried, in the depository located in Room 2517, 77 W. Jackson Blvd., Chicago, IL until 4:00PM local 03/11/03
60604-3507 (Hour) (Date)

CAUTION — LATE Submissions, Modifications, and Withdrawals: See Section L, Provision No. 52.214-7 or 52.215-10. All offers are subject to all terms and conditions contained in this solicitation.

10. FOR INFORMATION CALL:	A. NAME Alfredo Valentin, Contract Specialist	B. TELEPHONE NO. (Include area code) (NO COLLECT CALLS) (312)886-2760 Ext. 2509
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OFFER (Must be fully completed by offeror)

NOTE: Item 12 does not apply if the solicitation includes the provisions at 52.214-16, Minimum Bid Acceptance Period.

12. In compliance with the above, the undersigned agrees, if this offer is accepted within 120 calendar days (60 calendar days unless a different period is inserted by the offeror) from the date for receipt of offers specified above, to furnish any or all items upon which prices are offered at the price set opposite each item, delivered at the designated point (s), within the time specified in the schedule.

13. DISCOUNT FOR PROMPT PAYMENT (See Section I, Clause No. 52-232-8)	10 CALENDAR DAYS %	20 CALENDAR DAYS %	30 CALENDAR DAYS %	CALENDAR DAYS %
14. ACKNOWLEDGMENT OF AMENDMENTS (The offeror acknowledges receipt of amendments to the SOLICITATION for related documents numbered and dated:	AMENDMENT NO.	DATE	AMENDMENT NO.	DATE

15A. NAME AND ADDRESS OF OFFEROR	CODE	FACILITY	16. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER (Type or print)
Duns Number:		TIN Number:	

15B. TELEPHONE NO. (Include area code) () Ext.	15C. CHECK IF REMITTANCE ADDRESS IS DIFFERENT FROM ABOVE - ENTER SUCH ADDRESS IN SCHEDULE. <input type="checkbox"/>	17. SIGNATURE	18. OFFER DATE
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AWARD (To be completed by Government)

19. ACCEPTED AS TO ITEMS NUMBERED	20. AMOUNT	21. ACCOUNTING AND APPROPRIATION 862/30108 R2002R0086
22. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION: <input type="checkbox"/> 10 U.S.C. 2304 (c) () <input type="checkbox"/> 41 U.S.C. 253(c) ()		23. SUBMIT INVOICES TO ADDRESS SHOW IN (4 copies unless otherwise specified)

24. ADMINISTERED BY (If other than Item 7) Wayne S. Bernacki	CODE	25. PAYMENT WILL BE MADE BY US Department of HUD CFO Accounting Center, P. O. Box 901013, Ft. Worth, TX 76101	CODE
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26. NAME OF CONTRACTING OFFICER (Type or print) Wayne S. Bernacki	27. UNITED STATES OF AMERICA (Signature of Contracting Officer)	28. AWARD DATE
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IMPORTANT — Award will be made on this Form, or on Standard Form 26, or by other authorized official written notice.

PART I – THE SCHEDULE
SECTION B – SUPPLIES OR SERVICES AND PRICES/COSTS

B.1 Purpose

The contractor shall provide a work product regarding PATH 09 – Creating “Whole House” System Solutions, for the U. S. Department of Housing and Urban Development (HUD), Office of Policy Development and Research (PD&R).

B.2 Type of Contract

This is a cost-plus-fixed fee, completion-form-contract in accordance with Federal Acquisition Regulation (FAR) 16.306.

B.3 Estimated cost-plus-fixed fee for contract period

The estimated cost-plus-fixed fee is as specified below:

(TO BE COMPLETED AT CONTRACT AWARD)

(SEE COST FORMS AT SECTION J, ATTACHMENTS)

Estimated Cost: \$ _____

Fixed Fee: _____

Total Cost-plus-Fixed Fee: \$ _____

PART I – THE SCHEDULE
SECTION B – SUPPLIES OR SERVICES AND PRICES/COSTS

B.1 Purpose

The contractor shall provide a work product regarding PATH 11 – Durability/Moisture: Applying System Solutions, for the U. S. Department of Housing and Urban Development (HUD), Office of Policy Development and Research (PD&R).

B.2 Type of Contract

This is a cost-plus-fixed fee, completion-form-contract in accordance with Federal Acquisition Regulation (FAR) 16.306.

B.3 Estimated cost-plus-fixed fee for contract period

The estimated cost-plus-fixed fee is as specified below:

(TO BE COMPLETED AT CONTRACT AWARD)

(SEE COST FORMS AT SECTION J, ATTACHMENTS)

Estimated Cost: \$ _____

Fixed Fee: _____

Total Cost-plus-Fixed Fee: \$ _____

PART I – THE SCHEDULE
SECTION B – SUPPLIES OR SERVICES AND PRICES/COSTS

B.1 Purpose

The contractor shall provide a work product regarding PATH 12 – ‘‘Whole House’’ Research: Disentangling Utilities, for the U. S. Department of Housing and Urban Development (HUD), Office of Policy Development and Research (PD&R).

B.2 Type of Contract

This is a cost-plus-fixed fee, completion-form-contract in accordance with Federal Acquisition Regulation (FAR) 16.306.

B.3 Estimated cost-plus-fixed fee for contract period

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(SEE COST FORMS AT SECTION J, ATTACHMENTS)

Estimated Cost: \$ _____

Fixed Fee: _____

Total Cost-plus-Fixed Fee: \$ _____

PART I – THE SCHEDULE
SECTION B – SUPPLIES OR SERVICES AND PRICES/COSTS

B.1 Purpose

The contractor shall provide a work product regarding PATH 13 – Panel Research I: Wall Panels Benchmark and Performance Requirements, for the U. S. Department of Housing and Urban Development (HUD), Office of Policy Development and Research (PD&R).

B.2 Type of Contract

This is a cost-plus-fixed fee, completion-form-contract in accordance with Federal Acquisition Regulation (FAR) 16.306.

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Estimated Cost: \$ _____

Fixed Fee: _____

Total Cost-plus-Fixed Fee: \$ _____

PART I – THE SCHEDULE
SECTION B – SUPPLIES OR SERVICES AND PRICES/COSTS

B.1 Purpose

The contractor shall provide a work product regarding PATH 14 – Tools for Streamlining the Code Enforcement Documentation and Communication Process, for the U. S. Department of Housing and Urban Development (HUD), Office of Policy Development and Research (PD&R).

B.2 Type of Contract

This is a cost-plus-fixed fee, completion-form-contract in accordance with Federal Acquisition Regulation (FAR) 16.306.

B.3 Estimated cost-plus-fixed fee for contract period

The estimated cost-plus-fixed fee is as specified below:

(TO BE COMPLETED AT CONTRACT AWARD)

(SEE COST FORMS AT SECTION J, ATTACHMENTS)

Estimated Cost: \$ _____

Fixed Fee: _____

Total Cost-plus-Fixed Fee: \$ _____

PART I - THE SCHEDULE**SECTION C - DESCRIPTION / SPECIFICATIONS / WORK STATEMENT****Creating Whole House Systems Solutions****I. Introduction**

HUD’s technological research work significant contributes to housing in many ways, one of which is in the area of housing production and means—that is, *how* houses are built—in addition to housing materials. These activities are integral to HUD’s mission of providing affordable homes; by reconsidering the total methods, activities, and systems involved in creating and operating a contemporary home, HUD necessarily is taking steps towards better quality and improved affordability in all of America’s housing. Integration of these many sub-systems in logical forms will improve both the performance of the total system, or the ‘whole house.’

I.1 Background

While many research and intellectual groups have loosely defined the concept of the ‘whole house,’ most of these have only suggested broad changes both in the way individual home building firms function and the way the home building industry is structured. Indeed, if any specific recommendations are provided, they only serve to enhance one function or system in a house—i.e., sub-optimization. The PATH Roadmap, however, has suggested that specific changes in the current industry are not only needed but that the most practical method of advancing holistic approaches to designing, constructing, and maintaining homes, or ‘systems thinking.’

Of the many research projects set out in the Roadmap for Whole House Systems, PATH’s various committees selected changing the home building paradigm as one of the first. This is certainly not a light task, as both the methods and organization of work in the US home building have persisted for decades. Indeed, there are numerous characteristics in the industry that would require significant addressing if a ‘paradigm’ were to shift. These include: American popular conceptions of housing and housing environments; affordability constraints; fragmentation among different building systems and the different parties pertinent to each; site-specific managerial processes; and lack of significant technological innovation and adoption. Any attempt to refashion the ‘whole house’ must take these attributes into consideration.

A necessary component of understanding how the whole picture of housing production becomes visible is understanding how each component works, has worked historically, and could work in coordination with other housing components. Loosely defined as ‘systems engineering,’ this approach to technological analysis implicates both an integrative framework for optimizing individual subsystems (such as heating, structure, water, etc.), but also provides the unique opportunity to reconsider the composition of these systems when studies as parts of a whole. For example, how can water and heating subsystems be conjoined optimally rather than kept as separate subsystems that require separate manufacturing processes, separate labor trades, and eventually separate additive costs and schedules for home construction? Such questions abound in a systems-approach analysis.

I.2 Objective

In order to define the ‘whole house,’ then, we must first define its constituent parts and define how these parts can work in unison in both technological performance and industrial reality. As such, this project is the first step in sketching out these many definitions. This project will define both technically and contextually the technical and operations components of a “whole house.” This involves reviewing past examples of whole house approaches,

and assembling categories for the technological systems necessary to accomplish this concept. After the literature review and analysis, a detailed study of the conflicting technical performance attributes (e.g., energy use v. air quality, material expediting v. labor training, etc.) must be performed. Suggested parameters for these attributes will also be developed. Lastly, the researchers must study the existing building process and industry to compare current technical parameters as well as the social or industrial requirements that explain their difference.

So, the broad purpose of this procurement action is the defining of how subsystems currently perform and the exploration of how they might perform in coordinated and integrated ways. General activities for this project include:

1. Identifying the technical components needed to define a ‘whole house’ development;
2. Defining the performance measures for those components and for the ‘whole house’;
3. Exploring optimization parameters for the interaction of these components; and
4. Determining and implementing the evaluative, organizational, industrial tools that must be created or modified to pursue these interactions.

I.3 Need for Procurement Services.

The need for exploring and methodically investigating the various subsystems and their potential integration within residential construction is directly relevant to HUD’s technological mission. Further, their improvement is a fundamental goal of that work.

II. Scope of Work

II.1 Project Description

The Contractor shall undertake the following tasks in order to meet the stated objective—that is, to identify the technical components needed to define a “whole house” development; define the performance measures for each of those components; explore optimization parameters for the interaction of these components; and determine and implement the evaluative, organizational, industrial tools that must be created or modified to pursue these interactions.

These activities can be generally defined in the following manner and are further defined in the “specific requirements” section.

- *Identifying the technical components needed to define a “whole house” development;*
In order to improve the performance of the entire system of homes, the Contractor must first assess and document the status of current subsystems. This work will rely on extent academic work describing the different components in the home building process. The work should also review past attempts to identify all of these subsystems in construction engineering and management literature, and describes past attempts to coordinate ‘whole house’ systems analysis. Secondly, this will include case studies of sub-optimization, where planned increases in one system’s performance led to unexpected decreases in others. Thirdly, the Contractor will describe the core technical and organizational issues involved in these cases. This history will provide a rich record for justifying systems engineering as well as potential insight into a guidelines framework for a ‘whole house’ performance measuring tool.

- *Defining the technical performance measures for each of those subsystems, and the ‘human performance’ measures for the entire house system;*
Once these subsystems have been identified, each of their performance characteristics, indices, and brief histories of performance records must be defined. For example, the general performance of heating systems would be studied in terms of their energy use and technical temperature-control capacities, but they would also be studied in terms of broader human performance characteristics, like comfort, air quality, etc. Note that this project begins with looking at the subsystems’ performance and relates this to human performance factors afterwards intentionally. This is done rather than defining human performance needs and suggesting their implications for subsystems; past attempts at defining ‘goals’ for human performance characteristics have generally prohibited realistic solutions and actual changes in subsystems. Additionally, many studies on ‘human performance’ needs have already been performed and replication is not necessary. As such, the overlapping of these competing performance measures will not occur until the end of this activity.
- *Exploring optimization parameters for the interaction of these components;*
Once the performance of separate subsystems has been established and looked at in light of ‘human performance’ needs, the work is prepared to explore guidelines for optimizing the whole system. Specifically, the Contractors must lay out the subsystems performance characteristics and measures (e.g., air quality and thermodynamic formulas) against the ‘human performance’ needs. This will result in a framework—a ‘whole house’ calculator—that will determine the ‘whole house’ systems performance given specific subsystem and human performance need choices, as well as generic housing configurations. The calculator will demonstrate changes in all human performance attributes given generic choices in materials and construction methods. This work must be coordinated with other ‘whole house’ assessment tools, including the National Institute of Standards and Technology’s NEST program.
- *Implementing the evaluative tool and determining the organizational, industrial, and social processes that must be created or modified to pursue its use.*
The creation of this ‘whole house calculator’ must then be tested in a variety of different scenarios. If possible, two real case studies may be developed for this activity: the first will involve a product manufacturer with a product that integrates two or more subsystems, while the second will involve a home builder that is choosing between different materials and layouts. These cases will be documented and recorded both for technical record and on organizational management. This latter record will serve as a point of discussion and conclusion regarding the broader changes that must occur in the industry in order to more readily accept ‘whole house’ approaches in general, and the concept of a ‘whole house calculator’ in particular.

The ‘whole house calculator’ resulting from this project should not be considered or described as definitive or conclusive, given that consensus on both the performance measures on the one hand and the calculator’s specific attributes will not be possible. Rather, it serves as a point of intellectual and industrial exploration. This is why the additional economic, political, and industrial discussions are critical.

II.2 General Requirements

The Contractor shall maintain regular, frequent, and responsive contact with the Government Technical Representative (GTR) and/or the Government Technical Monitor (GTM). The approval of the GTR/GTM shall be obtained prior to commencing each of the specific Procurement action tasks.

The Contractor shall provide all professional, technical, and clerical personnel and services, materials, equipment, and facilities, and shall otherwise do all things necessary for, or incidental to, the performance of the tasks set forth in this Statement on Work. The work to be performed under this Procurement action includes, but is not limited to:

- Orientation and preparation of a management work plan;
- Regular written reports as to the work’s progress, particularly at regular intervals given the ongoing nature of this work, in addition to special requests for dissemination work progress;
- Preparation of preliminary drafts of the publications set out in this Statement of Work;
- Revision of the publication drafts pending the request of the GTR and/or GTM;
- Attendance at meetings or conversations requested by the GTR and/or GTM to discuss progress reports or publication drafts;
- Submission of final publication drafts in print and electronic formats as specified by the GTR.

II.3 Specific Requirements and Tasks

Several tasks have been identified based on the project’s description, and these tasks are broken down into four parts along with the general management of the project. In addition to the specific reports set out in the preceding section, these tasks include the following.

Activity: General Administration

- *Task 1. Kick-Off Meeting and Management Work Plan*

Within two weeks of the notice of award, the Contractor will confer with the GTR or GTM to schedule a kick-off meeting. The purpose of the meeting will be to clarify any remaining questions, finalize the project schedule based on the new start date, and begin project activity.

The Contractor will produce a Management Plan as the deliverable for this task, which will consist of a detailed allocation of contract resources (labor and money) and a time schedule for the accomplishment of the entire work. The Management Plan will also list the specific tasks and sub-tasks in this Procurement action, including the start date, completion date, and major milestones for each task and sub-task and a general narrative for each. If appropriate, the Management Plan will also include a discussion of the relationship between tasks. The Contractor may choose to prepare HUD 441.1 or 661.1 forms to accomplish this task, or the Contractor may submit a report in tabular or Gantt chart forms that clearly states task titles, descriptions, durations, deliverables, and budget information.

This management work will continue throughout the duration of the project in the form of monthly narrative progress reports and quarterly financial and management progress reports *in addition to* the specific deliverables and reports. These are explained under the Schedule of Activities and Deliverables.

Task Duration: ½ month (and ongoing)

Task Completion from Contract Start Date: 1 month (and ongoing).

- *Task 2. First Draft Report & ‘Calculator’ Preparation and Submission; Advisory Panel Review*

Based on the research tasks described below, the Contractor will develop a first draft of the

publication including text, illustrations, and graphic formatting. The publication will include all aspects of the research project, including construction operations systems literature and industrial review, linking to information and production research, and exploration of alternative integrated (information-production-operations) systems. The draft will be reviewed and approved by HUD and by the project’s advisory panel that is to be established with HUD’s input prior to this milestone. This panel should include participants in PATH’s original Whole House Roadmap sessions, and shall meet for one day to discuss the draft.

Task Duration: 1 month.

Task Completion from Contract Start Date: 8 months.

- *Task 3. Final Draft Report and ‘Calculator’ Preparation and Submission*

Upon approval and comments by HUD, the Contractor will develop a final draft and layout of the publication including all text and illustrations along with suggestions for typography and graphics from HUD. This draft and layout will be submitted to HUD for review and final publication. The submission must be a photo-ready copy, delivered in either include 1. a standard disk containing the document written in PDF or similarly approved publication software; and 2. one hard copy of the publication as agreed upon. The GTR will provide the Contractor with a foreword for the document prior to submission.

Task Duration: 1 month.

Task Completion from Contract Start Date: 11 ½ months

- *Task 4. Publication Production*

The Contractor will assist HUD and its printing contractor during production in the event of any concerns or revisions that arise relating solely to publication production issues.

Task Duration: ½ month.

Task Completion from Contract Start Date: 12 months.

- *Task 5. Final Project Report*

In addition to the technical work and final publication provided by the Contractor, the Contractor must submit a final project report. This concludes the regular progress reports, addresses any problems or opportunities encountered during the progress of the entire work, and poses possible strategies and suggestions for continued research or dissemination directions aside from those specified in the final publication, if applicable.

Task Duration: ½ month

Task Completion from Contract Start Date: 12 months.

Activity I: Identifying Subsystems and Defining the “Whole House”

- *Task 6. Identify Current Subsystems*

The Contractor must first assess and document the status of current subsystems. This work will rely on extent academic work describing the different components in the home building process and shall consider open-ended definitions for these systems. This will encompass the first portion of the final report. The Contractor will submit this to HUD prior to embarking on further work.

Task Duration: 1 month.

Task Completion from Contract Start Date: 1 ½ months

- *Task 7. Review Past ‘Whole House’ Initiatives and Calculations*

The Contractor will also review past attempts to identify all of these subsystems in construction engineering and management literature, and describes past attempts to coordinate ‘whole house’ systems analysis.

Task Duration: ½ month

Task Completion from Contract Start Date: 2 months.

- *Task 8. Review of Sub-Optimization Case Studies*

The Contractor will include case studies of sub-optimization, where planned increases in one system’s performance led to unexpected decreases in others. Also, the Contractor will describe the core technical and organizational issues involved in these cases. This history will provide a rich record for justifying systems engineering as well as potential insight into a guidelines framework for a ‘whole house’ performance measuring tool. This task’s output, combined with the those of the preceding tasks, will constitute the first chapter of the final report. A draft of the entire chapter must be submitted at the end of this task, and approved by HUD.

Task Duration: 1 month.

Task Completion from Contract Start Date: 3 months.

Activity II: Defining Technical Performance Measures for Subsystems & ‘Human Performance Needs’ for the House System

- *Task 9. Defining Subsystems Performance*

Once these subsystems have been identified, The Contractor will review each for their performance characteristics, indices, and brief histories of performance records must be defined. For example, the general performance of heating systems would be studied in terms of their energy use and technical temperature-control. This discussion is critical in order to establish the later calculation framework and may rely on previously established formulas.

Task Duration: 1 month.

Task Completion from Contract Start Date: 4 months.

- *Task 10. Defining ‘Human Performance’ Needs*

In addition to the subsystems technical performance, general requirements for housing performance (including attributes such comfort, energy use, etc.) must be determined. This can take the form of general parameters of common use and standard; many studies on ‘human performance’ needs have already been performed and replication is not necessary. This will also be used in the subsequent calculation framework. Note that this project begins with looking at the subsystems’ performance and relates this to human performance factors afterwards intentionally. This is done rather than defining human performance needs and suggesting their implications for subsystems; past attempts at defining ‘goals’ for human performance characteristics have generally prohibited realistic solutions and actual changes in subsystems. These and the previous definitions and calculations must be submitted to HUD for review.

Task Duration: 1 month.

Task Completion from Contract Start Date: 5 months.

Activity III: Exploring Optimization Parameters for the Whole House

- *Task 11. Creating of the ‘Whole House’ Calculator*

Once the performance of separate subsystems has been established and looked at in light of ‘human performance’ needs, the work is prepared to explore guidelines for optimizing the whole system. Specifically, the Contractors must lay out the subsystems performance characteristics and measures (e.g., air quality and thermodynamic formulas) against the ‘human performance’ needs. This will result in a framework—a ‘whole house’ calculator—that will determine the ‘whole house’ systems performance given specific subsystem and human performance need choices, as well as generic housing configurations. The calculator will demonstrate changes in all human performance attributes given generic choices in materials and construction methods.

Task Duration: 3 months.

Task Completion from Contract Start Date: 8 months.

- *Task 12. Coordination with Other Whole House Efforts*

This work must be coordinated with other ‘whole house’ assessment tools, including the National Institute of Standards and Technology’s NEST program. This serves to both assist in the development of the calculator as well as disseminate its existence. This work will also serve as an informal peer review and must be coordinated with HUD staff. The completion and submission of the calculator to HUD will demonstrate adequate consultation.

Task Duration: 3 months.

Task Completion from Contract Start Date: 8 months.

Activity IV: Implementing the Calculator and Exploring Non-Technical Needs

- *Task 13. Testing the Calculator - Scenarios*

The creation of this ‘whole house calculator’ must then be tested in a variety of different scenarios to serve as sample experimentation. This will be done in simulation, and may require additional computing capacity. Preliminary results from these simulations must be submitted and approved by HUD.

Task Duration: ½ month

Task Completion from Contract Start Date: 8 ½ months

- *Task 14. Testing the Calculator – Case Studies*

If possible, two real case studies may be developed for this activity: the first will involve a product manufacturer with a product that integrates two or more subsystems, while the second will involve a home builder that is choosing between different materials and layouts. These cases will be documented and recorded both for technical record and on organizational management. Preliminary results and discussions from these cases must be submitted and approved by HUD.

Task Duration: 2 months.

Task Completion from Contract Start Date: 10 ½ months

- *Task 15. Discussing the Non-Technical Needs and Opportunities for the Whole House*

The limited case study record provided in the previous task will serve as a point of discussion and conclusion regarding the broader changes that must occur in the industry in order to more readily accept ‘whole house’ approaches in general, and the concept of a ‘whole house calculator’ in particular. The Contractor will expand on this insight to discuss the implications of whole house calculating systems in particular, and systems engineering in general, for the home building industry as well as current opportunities and realistic approaches to additional development of the concept in praxis and theory. This discussion will be included in the submission of the final draft report.

Task Duration: ½ month

Task Completion from Contract Start Date: 11 months.

III. Schedule of Activities and Deliverables (Reports of Work)

1. General Deliverables

In addition to the below listed deliverables, the Contractors must submit: 1.) regular narrative progress reports in a monthly fashion; 2.) financial reports by quarter and quarterly management progress report in either form HUD-661.1 Progress Report form or otherwise as approved by the GTM or GTR. These narratives and status reports must follow the attached Reporting Requirements for Contract Management, and are included the schedule of deliverables below.

2. Specific Deliverables

This procurement action has a period of 12 months. During that time, specific deliverables for this project apart from the general management progress reports include: the Management Work Plan; drafts of specific chapters of the final report; the first draft of the full report and ‘calculator’; the final draft of the full report and ‘calculator’; and the final project report. These are described in the scope of work and are scheduled for delivery below.

3. Schedule of Deliverables

Task	Deliverable	Contractor’s Task: Due Date from Contract Start	HUD Review
Activity I: Identifying Subsystems and Defining the ‘Whole House’			
6	Identifying Current Subsystems	1 ½	2 weeks
7	None.	--	--
8	Review Past Attempts & Cases (chapter)	3 months	2 weeks
Activity II: Defining Subsystem Measures and Human Performance Needs			
9	None	--	--
10	Performance Calculations (both).	5 months	2 weeks
Activity III: Exploring Optimization Parameters			
11	Whole House Calculator	8 months	2 weeks
12	None.	--	--
Activity IV: Implementation and Discussion			
13	Testing in Scenarios Review	8 ½ months	--
14	Testing in Case Studies Review	10 ½ months	2 weeks
15	(Submitted with First Draft.)	--	--
Activity: General Administration			
1	Management Plan	1 month	2 weeks
	Monthly Narrative Progress Reports	Monthly: 10 days after month’s end*	2 weeks
2	First Draft & Advisory Panel Review	8 months	2 weeks
3	Final Draft Report Submission	11 ½ months	2 weeks
4	Publication Production	11 ½- 12 months	NA
6	Final Project Report	12 months	2 weeks

* First and last month’s progress reports are replaced by the Management Plan and Final Report, respectively. This schedule of deliverables and activities assumes that the kick-off meeting shall be held within two weeks after project initiation, and that HUD will review all draft deliverables in a timely manner. Week 1 begins when the Contractor receives authorization to begin work with an executed contract.

PART I - THE SCHEDULE**SECTION C - DESCRIPTION / SPECIFICATIONS / WORK STATEMENT****Durability- Moisture: Applying System Solutions****1. Background and Objectives**

The HUD Office of Policy Development and Research has been extensively involved in supporting research and development on building technology innovations, construction systems, products, standards, regulations, and code issues which affect the affordability, safety and livability of the nation's housing. As the interrelationships of these topics become more complex, the continued need to conduct research and demonstrations becomes even more critical.

In addition to the research and demonstration efforts administered directly by the Office of Policy Development and Research, HUD administers the Partnership for Advancing Technology in Housing (PATH) program. PATH provides private and public sectors for the U.S. housing industry an unprecedented opportunity to advance state of the art practices in the design and construction of affordable housing for the public by accelerating the process of developing and introducing new and innovative technologies and new materials through demonstrations and pilot projects throughout the nation.

2. Scope of Work**2a. General Project Description****BACKGROUND**

One of the goals of the Partnership for Advancing Technology in Housing (PATH) is to increase the durability of housing while maintaining affordability. The presence of moisture is perhaps the most significant durability issue that to be addressed in the design of homes. It continues to persist as a problem in spite of the best intentions.

Moisture can find its way into on homes in at least three principal ways: 1) through rain penetration of the exterior walls and roofs; 2) through rain or ground water entering foundation systems; and 3) through condensation being transmitted through the building envelope components and/or via mechanical systems.

Moisture needs to be looked at as an aspect of the whole house and its construction as well. Materials people, air quality people, designers, builders, legal/liability experts, insurance people, building code personnel, etc. should participate in the discussion about moisture intrusion into the house. Decisions need to be made as to proceed: should it just be assumed that past examples such as exterior insulated finishing systems (EIFS) to prepare the industry for EIFS like litigation shall be the norm; or should procedures be developed for looking at future examples (how can the industry be prepared for future technological changes that may impact moisture?); and/or create actual future solutions (e.g. - develop "moisture-proof" technologies?).

OBJECTIVE

A comprehensive plan shall be created as to how to coordinate research and other activities leading to better moisture resistance in single family housing. The plan would address what should be done in the short term and would also provide guidance as to how to maintain communication in the long term. The plan shall look at the whole house aspect such as a coordinated choice of materials that can serve multiple purposes or be compatible (i.e.

– structural, thermal insulation, moisture resistant, fire safe, HVAC, etc.). The plan shall be developed with input from all possible parties that may be involved in the process.

2b. General Requirements

The contractor shall maintain regular, frequent, and responsive contact with the Government Technical Representative/Monitor (GTR/GTM). The approval of the GTR/GTM shall be obtained prior to commencing each of the specific contract tasks.

The contractor shall provide all professional, technical, and clerical personnel and services, materials, equipment, and facilities, and shall otherwise do all things necessary for, or incidental to, the performance of the tasks set forth in this Statement of Work (SOW). The work to be performed under this contract includes, but is not limited to:

- Orientation and preparation of a management work plan;
- Regular written reports as to the work's progress, particularly at regular intervals given the ongoing nature of this work, in addition to special requests for dissemination work progress;
- Preparation of preliminary drafts of the report set out in this Statement of Work;
- Revision of the report drafts pending the request of the GTR and/or GTM;
- Attendance at meetings or conversations requested by the GTR and/or GTM to discuss progress reports or publication drafts;
- Submission of final report drafts in print and electronic formats as specified by the GTR.

Each of these activities will be concluded with a report or other document submitted as a deliverable. Unless otherwise indicated, the written, final deliverable for each task should be assumed to be for ultimate publication.

Publications specifically targeted to the general public should be concise and easily understood. In general, pamphlets (no more than 30 pages) appear to be an accepted format for such publications. If other formats are proposed, the contractor should provide rationale for those recommendations.

Publications that will be published should be reviewed by a trained editor to ensure they are free of grammar, spelling, or other typographical errors prior to submission to HUD.

The contractor may be required to attend (via telephone or in person) meetings at the HUD Headquarters for orientation and for the purpose of discussing HUD comments on the products of this contract.

2c. Specific Tasks

As a result of an assessment of the general project description, a number of tasks have been identified. Each of these tasks are described below. This Scope of Work also includes a schedule of deliverables and related activities. The duration of each of these tasks is shown in Table 1.

Task 1 Start Up Meeting and Management and Work Plan

Within one week of the notice of award, the contractor will confer with the Government Technical Representative (GTR) to schedule a start-up meeting. The purpose of the meeting will be to clarify any remaining questions, finalize the project schedule, and begin project activity. The contractor will produce a Management and Work Plan as the deliverable for this contract. That Management and Work Plan will consist of a detailed allocation of contract resources (both labor and money) and a time schedule for the accomplishment of the work. In

most cases, the Management and Work Plan will be based largely on the proposal submitted in response to this document.

The Management and Work Plan will include an expanded listing of the tasks and sub-tasks in this contract. This listing will include the start date, completion date, and major milestones for each task and activity. If appropriate, the Management and Work Plan will also include a discussion of the relationship between one task and another. The Management and Work Plan should include a general narrative addressing the activities that will be accomplished as part of each task or sub-task, how the effort will be accomplished, and how these activities relate to the overall allocation of budget and staff resources.

Because most written products developed under this contract will be available or distributed to the public, they should support the needs of the intended audience. The contractor should perform an assessment of the Statement of Work for the contract and other available information to determine the appropriate presentation methods. The discussion of this assessment should include the intended audience (including their information needs), the purpose of the materials (what will the audience do with the information), the focus of the effort (why is this material being presented), and the expected length of the publication(s).

It is not necessary to prepare HUD 441.1 or 661.1 forms as part of the Management Work Plan. Instead, the contractor should provide the task title, description, duration, deliverables and budget information in tabular form. Additional guidance on these reporting requirements is attached. The contractor should also provide the schedule information in Gantt chart form for ease of production and clarity.

For each task in the contract where a deliverable is indicated, the contractor should describe the work product or deliverable, the probable audience, the theme or style of presentation, and the appropriate method of distribution.

Task 2. White paper - the contractor shall put together a white paper outlining the scope of the moisture problem. The white paper would include a statement of the problem, a literature search, a listing of current research on the topic, descriptive efforts underway in the industry address the issue, a synopsis of building elements and systems that are involved in moisture problems plus the building science involved, a description of the design tools currently available, and recommendations on how to proceed. The white paper will also suggest actions for federal agencies and others whom are currently emphasizing energy conservation measures and use of other materials such as for structural or fire resistance that may be exasperating the moisture problem; also suggestions on ventilation effectiveness.

Task 3. Working group - the contractor shall convene a small working group of key players to review the white paper and to suggest how to assemble a larger focus group to take a comprehensive look at the moisture problem.

Task 4. Focus group - the contractor shall convene a focus group, containing representatives from interested parties, to brainstorm the extent of the moisture problem as regards housing. The group: 1). Shall offer solutions as to how to coordinate amongst the homebuilders, the researchers, the standards and code bodies, and other interested parties so that detrimental moisture effects on housing will be minimized; 2). Shall look at how moisture control can work on a whole house basis (i.e. – be compatible with other systems); 3). Shall decide as to whether the emphasis should be on improving current building practices with existing knowledge or offering new technological solutions; 4). Shall suggest projects and activities that can lead to better moisture control in housing; and 5). Shall provide a skeleton of a plan to maintain communication and coordination on moisture issues over the long term.

Task 5. Report – the contractor shall provide a report on the above activities including recommendations and the plan as to how to proceed. Included in the recommendations shall be suggested assignments for the federal government and private sector.

Task 6. Ongoing Activities - the contractor shall assist HUD in establishing a process by which broad based participation by industry, nonprofits, and government will develop programs of research, education and dissemination to improve the quality and durability of housing by minimizing the intrusion of moisture.

2d. Schedule for the Deliverables and Activities

1. General Deliverables

In addition to the below listed deliverables, the Contractors must submit: 1.) regular narrative progress reports in a monthly fashion; 2.) financial reports by quarter and quarterly management progress report in either form HUD-661.1 Progress Report form or otherwise as approved by the GTM or GTR. These narratives and status reports must follow the attached Reporting Requirements for Contract Management, and are included in the schedule of deliverables below.

2. Specific Deliverables

This contract has a period of 12 months. During that time, specific deliverables for this project apart from the general management progress reports include: the Management Work Plan; drafts of specific chapters of the final report; the first draft of the full report and ‘calculator’; the final draft of the full report and ‘calculator’; and the final project report. These are described in the scope of work and are scheduled for delivery below:

Task	Deliverable	Duration	Due Date from Contract Start	HUD Review
	<u>General Deliverables</u>			
	Narrative Progress Reports	Monthly		
	Financial and Management	Quarterly		
	Final Task Order Report		13 months	1 week
	Specific Deliverables			
1	Start Up Meeting		2 weeks	
1	Management and Work Plan		1 month	1 week
2	White Paper		4 months	2 weeks
3	Working Group Meeting		5 months	
4	Focus Group Meeting		7 months	
5	Focus Group Report		10 months	4 weeks
6	Ongoing Activity Plan		12 months	2 weeks

Please note that the schedule shows a 4 week period for final government review following submission of the final report. This period is shown to allow organizations external to the Office of Policy Development and Research to review the project.

Deliverables that are intended for publication should be submitted as camera ready or electronic. In addition, all final reports should be submitted as both hard copy and as PDF files or as otherwise specified by the GTR. All deliverables must be submitted as proofed, edited, high quality documents.

PART I - THE SCHEDULE**SECTION C - DESCRIPTION / SPECIFICATIONS / WORK STATEMENT****Whole House Research: Disentangling Utilities****1. Background and Objectives**

The HUD Office of Policy Development and Research has been extensively involved in supporting research and development on building technology innovations, construction systems, products, standards, regulations, and code issues which affect the affordability, safety and livability of the nation’s housing. As the interrelationships of these topics become more complex, the continued need to conduct research and demonstrations becomes even more critical.

In addition to the research and demonstration efforts administered directly by the Office of Policy Development and Research, HUD administers the Partnership for Advancing Technology in Housing (PATH) program. PATH provides private and public sectors for the U.S. housing industry an unprecedented opportunity to advance state of the art practices in the design and construction of affordable housing for the public by accelerating the process of developing and introducing new and innovative technologies and new materials through demonstrations and pilot projects throughout the nation. Also PATH program partners recognize the importance of planning research and setting priorities for technology development that will enable the home building industry to work toward the PATH mission. This priority setting is known as “Roadmapping.”

2. Scope of Work**2a. General Project Description****BACKGROUND**

One of the results of the PATH Roadmapping effort was to look at issues involving the whole house and to begin to develop strategies to better coordinate the systems that comprise a home. Builders, especially the small ones, lack control of the home building process. They rely on a multitude of subcontractors to do the work. Houses today are designed pretty much the way they were in the 19th century when balloon construction was introduced. As new subsystems came along—indoor plumbing, electric wiring, central HVAC—they were simply “added to” the home, not “integrated into” the home.

Panelization of building systems promise to significantly decrease on-site labor requirements and reduce the construction cycle time; however, the electrical and mechanical utilities may need be embedded within these building systems. Installing utility systems in conventional stud construction also is awkward and often ends up compromising structural or insulating integrity. A large percentage of the construction time and cost are associated with installing these utilities. This project focuses on how to integrate utilities into these building systems or disentangle them from these building systems to best achieve more affordable housing.

Disentangling of utility systems is an evolutionary, incremental step in reducing the cost and improving the performance of utility systems. Disentangling assumes that the systems—plumbing, HVAC, electrical, and communications—remain separate entities but are designed and installed in a non-interfering fashion. It would assure that systems are correctly sized, that they are designed to fit, that the installers install them where they were intended to be installed, and that the systems are installed in the most efficient sequence.

OBJECTIVE

- 1). Investigate and inventory current systems that provide plumbing, HVAC, electrical, and communications in a home. Identify and analyze various methods or systems that have been used for disentangling or simplifying installation.
- 2). Analyze and delineate the functions of a house and map the various components and subsystems in a house in terms of these functions. Identify past and current functional integrations -- instances where functions have been merged to provide improved performance or reduced complexity.
- 3). Suggest strategies, special components to accommodate utilities, new utility systems to be more compatible with structural assemblies or design methods that need to be developed to better accommodate utilities. This phase should also include feedback and brainstorming from builders, researchers, and manufacturers.
- 4). Document and disseminate the results to builders, researchers, and manufacturers.

2b. General Requirements

The contractor shall maintain regular, frequent, and responsive contact with the Government Technical Representative/Monitor (GTR/GTM). The approval of the GTR/GTM shall be obtained prior to commencing each of the specific Task Order tasks.

The contractor shall provide all professional, technical, and clerical personnel and services, materials, equipment, and facilities, and shall otherwise do all things necessary for, or incidental to, the performance of the tasks set forth in this Statement of Work (SOW). The work to be performed under this Task Order includes, but is not limited to:

- Orientation and preparation of a management work plan;
- Regular written reports as to the work’s progress, particularly at regular intervals given the ongoing nature of this work, in addition to special requests for dissemination work progress;
- Preparation of preliminary drafts of the report set out in this Statement of Work;
- Revision of the report drafts pending the request of the GTR and/or GTM;
- Attendance at meetings or conversations requested by the GTR and/or GTM to discuss progress reports or publication drafts;
- Submission of final report drafts in print and electronic formats as specified by the GTR.

Each of these activities will be concluded with a report or other document submitted as a deliverable. Unless otherwise indicated, the written, final deliverable for each task should be assumed to be for ultimate publication.

Publications specifically targeted to the general public should be concise and easily understood. In general, pamphlets (no more than 30 pages) appear to be an accepted format for such publications. If other formats are proposed, the contractor should provide rationale for those recommendations.

Publications that will be published should be reviewed by a trained editor to ensure they are free of grammar, spelling, or other typographical errors prior to submission to HUD.

The contractor may be required to attend (via telephone or in person) meetings at the HUD Headquarters for orientation and for the purpose of discussing HUD comments on the products of this contract.

2c. Specific Tasks

As a result of an assessment of the general project description, a number of tasks have been identified. Each of these tasks are described below. This Scope of Work also includes a schedule of deliverables and related activities. The duration of each of these tasks is shown in Table 1.

Task 1 Start Up Meeting and Management and Work Plan

Within one week of the notice of award, the contractor will confer with the Government Technical Representative (GTR) to schedule a start-up meeting. The purpose of the meeting will be to clarify any remaining questions, finalize the project schedule, and begin project activity. The contractor will produce a Management and Work Plan as the deliverable for this task. That Management and Work Plan will consist of a detailed allocation of contract resources (both labor and money) and a time schedule for the accomplishment of the work. In most cases, the Management and Work Plan will be based largely on the proposal submitted in response to this document.

The Management and Work Plan will include an expanded listing of the tasks and sub-tasks in this contract. This listing will include the start date, completion date, and major milestones for each task and activity. If appropriate, the Management and Work Plan will also include a discussion of the relationship between one task and another. The Management and Work Plan should include a general narrative addressing the activities that will be accomplished as part of each task or sub-task, how the effort will be accomplished, and how these activities relate to the overall allocation of budget and staff resources.

Because most written products developed under this contract will be available or distributed to the public, they should support the needs of the intended audience. The contractor should perform an assessment of the Statement of Work for the contract and other available information to determine the appropriate presentation methods. The discussion of this assessment should include the intended audience (including their information needs), the purpose of the materials (what will the audience do with the information), the focus of the effort (why is this material being presented), and the expected length of the publication(s).

It is not necessary to prepare HUD 441.1 or 661.1 forms as part of the Management Work Plan. Instead, the contractor should provide the task title, description, duration, deliverables and budget information in tabular form. Additional guidance on these reporting requirements is attached. The contractor should also provide the schedule information in Gantt chart form for ease of production and clarity.

For each task in the contract where a deliverable is indicated, the contractor should describe the work product or deliverable, the probable audience, the theme or style of presentation, and the appropriate method of distribution.

Task 2. Literature Search - Investigate and inventory current systems that provide plumbing, HVAC, electrical, and communications in a home. Identify and analyze various methods or systems that have been used for disentangling or simplifying installation.

Task 3. Functional Integration - Analyze and delineate the functions of a house and map the various components and subsystems in a house in terms of these functions. Identify past and current functional integrations -- instances where functions have been merged to provide improved performance or reduced complexity.

Task 4. Future Strategies - Suggest strategies, special components to accommodate utilities, new utility systems to be more compatible with structural assemblies or design methods that need to be developed to better accommodate utilities. This phase shall also include feedback and brainstorming from builders, researchers, and manufacturers.

Task 5. Report – the contractor shall provide a report on the above activities including recommendations and the plan as to how to proceed. Included in the recommendations shall be suggested assignments for the federal government and private sector.

2d. Schedule for the Deliverables and Activities

1. General Deliverables

In addition to the below listed deliverables, the Contractors must submit: 1.) regular narrative progress reports in a monthly fashion; 2.) financial reports by quarter and quarterly management progress report in either form HUD-661.1 Progress Report form or otherwise as approved by the GTM or GTR. These narratives and status reports must follow the attached Reporting Requirements for Contract Management, and are included in the schedule of deliverables below.

2. Specific Deliverables

This contract has a period of 12 months. During that time, specific deliverables for this project apart from the general management progress reports include: the Management Work Plan; literature search; functional integration interim report; future strategy interim report; the first draft of the full report and; the final draft of the full report; and the final project report. These are described in the scope of work and are scheduled for delivery below:

Task	Deliverable	Duration	Due Date from Contract Start	HUD Review
	<u>General Deliverables</u>			
	Narrative Progress Reports	Monthly		
	Financial and Management	Quarterly		
	Final Report		13 months	1 week
	Specific Deliverables			
1	Start Up Meeting		2 weeks	
1	Management and Work Plan		1 month	1 week
2	Literature Search		4 months	2 weeks
3	Functional Integration Interim Report		5 months	
4	Future Strategy Interim Report		8 months	
5	Final Report		10 months	4 weeks

Please note that the schedule shows a 4 week period for final government review following submission of the final report. This period is shown to allow organizations external to the Office of Policy Development and Research to review the project.

Deliverables that are intended for publication should be submitted as camera ready or electronic. In addition, all final reports should be submitted as both hard copy and as PDF files or as otherwise specified by the GTR. All deliverables must be submitted as proofed, edited, high quality documents.

PART I - THE SCHEDULE**SECTION C - DESCRIPTION / SPECIFICATIONS / WORK STATEMENT****PANELS RESEARCH I: WALL PANELS BENCHMARK AND REQUIREMENTS****BACKGROUND AND OBJECTIVES**

The HUD Office of Policy Development and Research has been extensively involved in supporting research and development on building technology innovations, construction systems, products, standards, regulations, and code issues which affect the affordability, safety and livability of the nation's housing. As the interrelationships of these topics become more complex, the continued need to conduct research and demonstrations becomes even more critical.

In addition to the research and demonstration efforts administered directly by the Office of Policy Development and Research, HUD administers the Partnership for Advancing Technology in Housing (PATH) program. PATH provides private and public sectors for the U.S. housing industry an unprecedented opportunity to advance state of the art practices in the design and construction of affordable housing for the public by accelerating the process of developing and introducing new and innovative technologies and new materials through demonstrations and pilot projects throughout the nation. Also PATH program partners recognize the importance of planning research and setting priorities for technology development that will enable the home building industry to work toward the PATH mission. This priority setting is known as "Roadmapping."

One of the results of the PATH Roadmapping effort was to look at issues involving the panelization of building components or systems and to begin to develop strategies to better coordinate the panels currently on the market. Better coordination will allow builders to choose when and where to use the panels in home construction in order to be most cost effective. The area most likely to yield the most benefits are panelized wall systems. While a few panelized wall systems exist in the residential market, the majority of these have not succeeded in gaining significant market acceptance/penetration into the residential market for a wide variety of reasons.

Of the many research projects set out in the Roadmap for Panelized Systems, PATH's committees selected drafting panelized wall system standard requirements/guidelines as one of the first. This is certainly not a light task, as both the materials, sizes, and connection methods vary greatly. In addition, utilities may need to be embedded within these wall systems.

OBJECTIVE

A necessary component of having homebuilders utilize panelized wall systems more frequently is to allow builders to use them when it makes the most economical sense - whether for the whole house or portions of the home. As such, panelized wall systems need to be a standard configuration and the connection methods standardized to allow homebuilders to "mix-and-match" panelized wall systems as needed.

This project involves reviewing all panelized wall systems currently on the market, assembling categories for the technical product specifications necessary to identify similarities and differences. After the literature review and analysis, a detailed study of the conflicting technical performance attributes (e.g., structural performance vs. weight limitations vs. material durability, etc.) must be performed. Suggested parameters for these attributes will also be developed.

The broad purpose of this project is to define what panelized wall systems are currently available and their technical specifications, how do they perform and in what applications are they most used, and what are the standard performance criteria that all panelized wall systems need to meet in order to integrate with existing

methods of construction. General activities for this project include the following. In each case, suggestions for improvement or performance standards should be based on feedback and brainstorming from builders, researchers, product developers, manufacturers, and homeowners.

1. Investigate and inventory current panelized wall systems; this work involves conducting literature and market research of existing and emerging panelized wall systems.
2. Defining the performance measures for panelized wall systems, such as structural, thermal, fire, and durability measures; and
3. Exploring optimization parameters for the interaction of these panelized wall systems. This involves suggesting strategies, devising standardized components to connect panels independent from the proprietary system, or developing better design methods that better utilize wall panels, while still meeting consumer and builder expectations.

STATEMENT OF WORK

TASK 1: Orientation Meeting – The contractor shall schedule a meeting with the GTR to review the statement of work within two weeks of the notice of award, establish firm schedules, and agree on the objectives and approach necessary to conduct the work. The orientation meeting participants shall include key staff and subcontractors, if applicable. The contractor shall maintain regular, frequent, and responsive contact with the Government Technical Representative/Monitor (GTR/GTM). The approval of the GTR/GTM shall be obtained prior to commencing each of the specific tasks.

The contractor may be required to attend (via telephone or in person) meetings at the HUD Headquarters for orientation and for the purpose of discussing HUD comments on the products of this contract.

The contractor shall provide all professional, technical, and clerical personnel and services, materials, equipment, and facilities, and shall otherwise do all things necessary for, or incidental to, the performance of the tasks set forth in this Statement of Work (SOW). The work to be performed under this contract includes, but is not limited to:

- Orientation and preparation of a management work plan;
- Regular written reports as to the work's progress, particularly at regular intervals given the ongoing nature of this work, in addition to special requests for dissemination work progress;
- Preparation of preliminary drafts of the report set out in this Statement of Work;
- Revision of the report drafts pending the request of the GTR and/or GTM;
- Attendance at meetings or conversations requested by the GTR and/or GTM to discuss progress reports or publication drafts;
- Submission of final report drafts in print and electronic formats as specified by the GTR.

Each of these activities will be concluded with a report or other document (i.e., performance standards) submitted as a deliverable. Unless otherwise indicated, the written, final deliverable for each task will be a publication that HUD will publish for public distribution. Publications specifically targeted to the general public should be concise and easily understood. In general, pamphlets (no more than 30 pages) appear to be an accepted format for such publications. If other formats are proposed, the contractor should provide rationale for those recommendations. Publications that will be published should be reviewed by a trained editor to ensure they are free of grammar, spelling, or other typographical errors prior to submission to HUD.

1a) The contractor will produce a Management and Work Plan as the deliverable for this task. That Management and Work Plan will consist of a detailed allocation of contract resources (both labor and money) and a time

schedule for the accomplishment of the work. In most cases, the Management and Work Plan will be based largely on the proposal submitted in response to this document.

The Management and Work Plan will include an expanded listing of the tasks and sub-tasks in this contract. This listing will include the start date, completion date, and major milestones for each task and activity. If appropriate, the Management and Work Plan will also include a discussion of the relationship between one task and another. The Management and Work Plan should include a general narrative addressing the activities that will be accomplished as part of each task or sub-task, how the effort will be accomplished, and how these activities relate to the overall allocation of budget and staff resources.

Because most written products developed under this contract will be available or distributed to the public, they should support the needs of the intended audience. The contractor should perform an assessment of the Statement of Work for the contract and other available information to determine the appropriate presentation methods. The discussion of this assessment should include the intended audience (including their information needs), the purpose of the materials (what will the audience do with the information), the focus of the effort (why is this material being presented), and the expected length of the publication(s).

It is not necessary to prepare HUD 441.1 or 661.1 forms as part of the Management Work Plan. Instead, the contractor should provide the task title, description, duration, deliverables and budget information in tabular form. Additional guidance on these reporting requirements is attached. The contractor should also provide the schedule information in Gantt chart form for ease of production and clarity.

For each task in the contract where a deliverable is indicated, the contractor should describe the work product or deliverable, the probable audience, the theme or style of presentation, and the appropriate method of distribution.

Task 2. Literature Search and Benchmarking: The contractor shall conduct a thorough investigation and inventory current systems that are panelized or composite wall systems for use in home construction and shall identify and analyze these panelized wall systems. This investigation and inventory shall include (a) documentation of prevailing and customary systems and methods by which wall panels are now provided in today's homes; (b) alternative systems and methods currently available on the marketplace and accepted by major codes but which have yet to obtain significant market share; and (c) new and innovative systems and approaches either not yet in the marketplace or which otherwise require further development or code acceptance.

Task 3. Defining Performance Measures and Functional Integration: The Contractor shall analyze and delineate the performance criteria including but not limited to, structural, thermal, fire, energy, connectivity, and material handling, for panelized wall systems. Identify past and current functional integrations -- instances where functions within a panel have been merged to provide improved performance or reduced complexity.

Task 4. Future Strategies: The Contractor shall suggest strategies, new technology and product development opportunities, needed special components to connect wall panels regardless of wall panel manufacturer or design methods that need to be developed to better accommodate wall panels. This phase shall also include both informal and structured feedback and "brainstorming" from builders, subcontractors (framers, insulation, utilities, etc.), researchers, and manufacturers.

Task 5. Report – The contractor shall provide a report on the above activities including a performance standard for the manufacture and installation of panelized wall systems. The performance standard shall be written in a code-compatible style that may be adopted by a model building code or standards organization such as ANSI. Included in the recommendations report shall be suggested assignments for the federal government and private sector.

SCHEDULE FOR THE DELIVERABLES AND ACTIVITIES**1. General Deliverables**

In addition to the below listed deliverables, the Contractors must submit: (1) regular narrative progress report in either form HUD-661.1 Progress Report form or otherwise as approved by the GTM or GTR. These narratives and status reports must follow the attached Reporting Requirements for Contract Management, and are included in the schedule of deliverables below.

2. Specific Deliverables

This contract has a period of 12 months. During that time, specific deliverables for this project apart from the general management progress reports include: the Orientation (includes Management Work Plan); literature search and benchmarking; defining performance measures and functional integration interim report; future strategies interim report; the first draft of the full report and; the final draft of the full report; and the final project report. These are described in the scope of work and are scheduled for delivery below:

Task	Deliverable	Duration	Due Date from Contract Start	HUD Review
	<u>General Deliverables</u>			
	Narrative Progress Reports	Monthly		
	Financial and Management	Quarterly		
	Final Report		11 months	1 month
	Specific Deliverables			
1	Start Up Meeting		2 weeks	
1	Management and Work Plan		2 weeks	2 weeks
2	Literature Search and Benchmarking		3 months	1 month
3	Performance Measures and Functional Integration Interim Report		5 months	1 month
4	Future Strategy Interim Report		9 months	1 month
5	Final Report		11 months	1 month

Please note that the schedule shows a one (1) month period for final government review following submission of the final report. This period is shown to allow organizations external to the Office of Policy Development and Research, but internal to HUD an opportunity to review the project.

PART I - THE SCHEDULE**SECTION C - DESCRIPTION / SPECIFICATIONS / WORK STATEMENT****TOOLS FOR STREAMLINING THE CODE ENFORCEMENT DOCUMENTATION AND
COMMUNICATION PROCESS****1. Background and Objectives**

The HUD Office of Policy Development and Research has been extensively involved in supporting research and development on building technology innovations, construction systems, products, standards, regulations, and code issues which affect the affordability, safety and livability of the nation's housing. As the interrelationships of these topics become more complex, the continued need to conduct research and demonstrations becomes even more critical.

In addition to the research and demonstration efforts administered directly by the Office of Policy Development and Research, HUD administers the Partnership for Advancing Technology in Housing (PATH) program. PATH provides private and public sectors for the U.S. housing industry an unprecedented opportunity to advance state of the art practices in the design and construction of affordable housing for the public by accelerating the process of developing and introducing new and innovative technologies and new materials through demonstrations and pilot projects throughout the nation.

Many communities face challenges in managing the information associated with the conduct of code inspections. This includes documenting the results of the inspections and communicating those results with the permit holder and others. Technology may present solutions to these challenges. This project will explore the potential uses of technology to address current and future (anticipated) requirements of the communities.

2. Scope of Work**2a. General Project Description**

Building code enforcement offices located in local government offices nationwide face similar challenges with developing requirements, identifying solutions which satisfy the needs of the community, the builders, and the other customers of the code enforcement operation.

Many code offices conduct inspections using processes developed several decades ago. As a result, electronic systems developed recently may not have been implemented by these organizations. This project will build on earlier work performed for the Office of Policy Development and Research, which examined electronic systems to manage the information regarding permits and inspections.

Please note that this project does not envision or require the development of software, hardware, or other automated systems that might be considered to be information technology. The goal of the project is to describe systems (products or processes) that could be used (directly or through adaptation) to conduct code (construction permit) inspections and document the results.

This effort will build on work recently completed, which focused on electronic software applications for permitting and code review. This task will address tools to assist building code officials in conducting and documenting building code inspections in residential construction.

SECTION C – PATH 14 – TOOLS FOR STREAMLINING THE CODE ENFORCEMENT DOCUMENTATION AND COMMUNICATION PROCESS

The contractor will describe a vision for information exchanges, and discuss how individual elements will support the implementation of a full-service information-based building regulatory process in the future. The estimated time for the implementation of the products or processes described is the present to 15 years. The vision should state how the contractor foresees technology contributing to the following areas:

- Inspection (electronic site inspection using visual monitoring equipment and transmissions)
- Communications between code officials and the homebuilder
- Documentation of the results of inspections
- Other potential regulatory processes that may be enhanced by improved information exchanges or that may enhance/enable other functions

Please note that this effort does not require the development or acquisition of software or hardware. This effort is focused on the identification of tools (and processes) that are available or could be adapted with modest effort by commercial vendors.

2b. General Requirements

The contractor shall maintain regular, frequent, and responsive contact with the Government Technical Representative/Monitor (GTR/GTM). The approval of the GTR/GTM shall be obtained prior to commencing each of the specific tasks.

The contractor shall provide all professional, technical, and clerical personnel and services, materials, equipment, and facilities, and shall otherwise do all things necessary for, or incidental to, the performance of the tasks set forth in this Statement of Work (SOW).

Each of the tasks described below has a report or other document submitted as a deliverable. Unless otherwise indicated, the written, final deliverable for each task should be assumed to be for ultimate publication.

Publications specifically targeted to the general public should be concise and easily understood. In general, pamphlets (no more than 30 pages) appear to be an accepted format for such publications. If other formats are proposed, the contractor should provide rationale for those recommendations.

Publications that will be published should be reviewed by a trained editor to ensure they are free of grammar, spelling, or other typographical errors prior to submission to HUD.

The contractor may be required to attend (via telephone or in person) meetings at the HUD Headquarters for orientation and for the purpose of discussing HUD comments on the products of this SOW.

2c. Specific Tasks

As a result of an assessment of the general project description, a number of tasks have been identified. Each of these tasks are described below. This Scope of Work also includes a schedule of deliverables and related activities.

Please note that each of the tasks described below should be considered to be comprehensive as described. The effort described in contractor proposals for these tasks should include the conduct of the work, periodic reporting, and the preparation of the deliverables and other publications as described in this statement of work.

The duration of each of these tasks is shown in Table 1. Please note that it is our intent that, for ongoing efforts, the services be provided for the entire duration stated in Table 1. The contractor should conduct their analysis and planning with this consideration.

Task 1 Start Up Meeting and Management and Work Plan

Within one week of the notice of award, the contractor will confer with the Government Technical Representative (GTR) to schedule a start-up meeting. The purpose of the meeting will be to clarify any remaining questions, finalize the project schedule, and begin project activity. The contractor will produce a Management and Work Plan as the deliverable for this task. That Management and Work Plan will consist of a detailed allocation of contract resources (both labor and money) and a time schedule for the accomplishment of the work. In most cases, the Management and Work Plan will be based largely on the proposal submitted in response to this document.

The Management and Work Plan will include an expanded listing of the tasks and sub-tasks in this SOW. This listing will include the start date, completion date, and major milestones for each task and activity. If appropriate, the Management and Work Plan will also include a discussion of the relationship between one task and another. The Management and Work Plan should include a general narrative addressing the activities that will be accomplished as part of each task or sub-task, how the effort will be accomplished, and how these activities relate to the overall allocation of budget and staff resources.

Because most written products developed under this contract will be available or distributed to the public, they should support the needs of the intended audience. The contractor should perform an assessment of the Statement of Work and other available information to determine the appropriate presentation methods. The discussion of this assessment should include the intended audience (including their information needs), the purpose of the materials (what will the audience do with the information), the focus of the effort (why is this material being presented), and the expected length of the publication(s).

It is not necessary to prepare HUD 441.1 or 661.1 forms as part of the Management Work Plan. Instead, the contractor should provide the task title, description, duration, deliverables and budget information in tabular form. Additional guidance on these reporting requirements is attached. The contractor should also provide the schedule information in Gantt chart form for ease of production and clarity.

For each task in the SOW where a deliverable is indicated, the contractor should describe the work product or deliverable, the probable audience, the theme or style of presentation, and the appropriate method of distribution.

Task 2 - Identify Available Tools to Facilitate Code Inspection and Documentation

The contractor will conduct an assessment of the available market for tools (including processes) that are available to speed the inspection process, document the results of the inspections, or rapidly provide the results of the inspection to the builder. These tools should address the essential communications and information requirements faced by homebuilders and code officials. As stated above, the contractor is not required to develop, procure, or manufacturer any hardware or software as part of this contract effort.

The assessment of processes could include strategies for streamlining the inspection process

The final deliverable for this task will be an assessment of the existing technologies or approaches, describing how they are being used, their cost, and the benefits, which accrue to the users. Because each of the tools identified under this task will be considered for publication in the PATH Technology Inventory, the assessments should be developed in the format used by the Technology Inventory (at www.pathnet.org). A copy of a PATH Technology Inventory for an individual technology is attached.

The contractor should describe in the Management and Work Plan reasonable dates for draft deliverables, which would be submitted prior to the completion of the final deliverable for this task.

Task 3 – Identify Tools from Other Industries to Facilitate Code Inspection and Documentation

The contractor will examine other industries to identify tools that could be adapted for use by the code inspection agencies. Such tools might be found in the medical, law enforcement, express delivery, or financial industries (or others).

This task will have two deliverables. The first will be an assessment of the industries that should be evaluated to identify new tools and the second will consist of the actual evaluations and recommendations for how those tools could be adapted to satisfy the needs of the code enforcement office and the homebuilders. The format for the second deliverable should be presented using the Technology Scanning format. A copy of a Technology Scanning document is attached for reference.

The general requirements for this effort would parallel that of Task 2, but the contractor will describe how the technology might be used in the facilitation of construction code inspection and documentation instead of describing how the tools are presently used.

The contractor should describe in the Management and Work Plan reasonable dates for draft deliverables, which would be submitted prior to the completion of the final deliverable for this task.

Task 4 – Describe New Tools and Scenarios for Their Use

In the performance of this task, the contractor will synthesize the visions articulated by experts in the construction industry as well as experts in industries that may be related. The deliverable for this task will be a description of how the code office of 2010 will use technology to inspect and document residential construction efforts. Product developers and other planners would use this description to identify business opportunities in the building code area.

The deliverable for this task will be a discussion (white paper) of the possible future of technology tools in code enforcement and documentation.

The contractor should describe in the Management and Work Plan reasonable dates for draft deliverables, which would be submitted prior to the completion of the final deliverable for this task.

Task 5 – Article for Publication

In addition to the deliverables described above, the contractor shall prepare a short article describing the results of this contract effort. This article should be suitable for submission to an appropriate construction or code enforcement trade publication.

Task 6 – Final Report

The contractor will prepare financial and status reports that will allow the GTR to complete the appropriate documents required to formally close a contract.

General Remarks

Please note that the tasks described above include all efforts directed at the conduct of the actual effort, preparation and submission of periodic status reports, and preparation and revision of any described interim and final deliverables.

SECTION C – PATH 14 – TOOLS FOR STREAMLINING THE CODE ENFORCEMENT DOCUMENTATION AND COMMUNICATION PROCESS

In addition to addressing the technical issues associated with the completion of the effort, the final report should address possible strategies for the dissemination of information on the project to interested parties in the industry (including the names and addresses of individuals or organizations who would be interested in the information). This requirement is only for possible strategies and does not require the contractor to actually perform any dissemination or outreach efforts unless explicitly stated elsewhere in this document.

The schedule for the conduct of these tasks (Tasks 2-4 above):

is left to the discretion of the contractor. The contractor is free to identify a schedule, which may lead to completion of the work in less time than is identified in this SOW.

is not left to the discretion of the contractor. Because this effort is in support of a larger activity, the contractor should describe a strategy (which include all resources) to deliver the necessary services for the full term of the contract effort.

In addition to the final task deliverable, the contractor should include appropriate photographs and other graphics (and electronic copies of the photographs). The final task deliverable should be accompanied by a strategy for the distribution of the information (a dissemination plan).

Please note the electronic format requirements discussed in the contract.

2d. Schedule for the Deliverables and Activities

This contract effort has a period of performance of eight months.

The following schedule of deliverables and activities assumes that the kickoff meeting shall be held within two weeks after project initiation, and that HUD will review all draft deliverables in a timely manner. Week 1 is assumed to start when the contractor first receives authorization to begin work (as an executed contract or other official means of notification). Where shown, interim deliverables or work products are shown. If the contractor feels that additional deliverables are required, they should be shown on the proposal submitted to the Government.

Table 1 - Schedule				
Task	Deliverable	Duration	Due Date	Government Review period
1	Start Up Meeting and Management and Work Plan	One month	One month after award	One week
2	Identify Available Tools to Facilitate Code Inspection and Documentation	Six months	Seven months after award	Two weeks
3	Identify Tools from Other Industries to Facilitate Code Inspection and Documentation	Six months	Seven months after award	Two weeks
4	Describe New Tools and Scenarios for Their Use	Six months	Seven months after award	Two weeks
5	Article for Publication	Six months	Seven months after award	Two weeks
6	Final Report	One month	Eight months after award	None

SECTION C – PATH 14 – TOOLS FOR STREAMLINING THE CODE
ENFORCEMENT DOCUMENTATION AND COMMUNICATION PROCESS

Deliverables that are intended for publication should be submitted as camera ready or electronic. In addition, all final reports should be submitted as both hard copy and as PDF files or as otherwise specified by the GTR. All deliverables must be submitted as proofed, edited, high quality documents.

To allow for both contractor and government progress assessment, the some tasks may require intermediate milestones. These milestones could be in the form of a deliverable or the accomplishment of a definable portion of the effort of the task. The contractor should, as part of their proposal and schedule, include these intermediate and identify any additional intermediate milestones (providing the action and milestone date). These will be refined and incorporated into the Management and Work Plan.

PART I – THE SCHEDULE
SECTION D - PACKAGING AND MARKING

D.1 AS 501 ENVIRONMENTALLY SAFE PACKAGING (NOV 1997)

The offeror or contractor shall package non-breakable deliverables (reports, proposals, studies, etc.) using environmentally safe packaging materials (i.e., recycled paper). The packaging methods shall be in accordance with the best commercial practices and provide adequate protection during shipping and handling.

D.2 PAYMENT OF POSTAGE AND SHIPPING COSTS

All postage and shipping costs related to the submission of the information (including reports and forms) required by this contract shall be paid for by the contractor.

D.3 MARKING

All information submitted to the Contracting Officer or Government Technical Representative/Government Technical Monitor (GTR/GTM) shall clearly indicate the contract number for which the information is being submitted.

PART I – THE SCHEDULE
SECTION E - INSPECTION AND ACCEPTANCE

E.1 NOTICE LISTING CONTRACT CLAUSES INCORPORATED BY REFERENCE

The following contract clauses pertinent to this section are hereby incorporated by reference (by Citation Number, Title, and Date) in accordance with the clause at FAR 52.252-2 CLAUSES INCORPORATED BY REFERENCE in Section I of this contract. The full text of a clause may be accessed electronically at this/these address (es):

FAR Clauses: <http://www.arnet.gov/far>

HUDAR Clauses: <http://www.hud.gov/offices/cpo/hudar.cfm>

E.2 FAR 52.246.05 INSPECTION OF SERVICES-COST REIMBURSEMENT APR 1984

E.3 HUDAR 2452.246-70 INSPECTION AND ACCEPTANCE APR 1984

Inspection and acceptance of all work required under this task order shall be performed by the Government Technical Representative (GTR) identified in Section G., paragraph 2 (a), or other individuals as designated by the Contracting Officer or GTR.

PART I – THE SCHEDULE
SECTION F - DELIVERIES OR PERFORMANCE

F.1 NOTICE LISTING CONTRACT CLAUSES INCORPORATED BY REFERENCE

The following contract clauses pertinent to this section are hereby incorporated by reference (by Citation Number, Title, and Date) in accordance with the clause at FAR 52.252-2 CLAUSES INCORPORATED BY REFERENCE in Section I of this contract. The full text of a clause may be accessed electronically at this/these address (es):

FAR Clauses: <http://www.arnet.gov/far>
 HUDAR Clauses: <http://www.hud.gov/offices/cpo/hudar.cfm>

FAR 52.242-15 STOP-WORK ORDER (AUG 1989)
 FAR 52.247-34 F.O.B. DESTINATION (NOV 1991)

F.2 CONTRACT PERIOD

Contract performance shall begin on contract award date of each contract and shall continue as follows:

Project	Description	Completion Period
PATH 09	- Creating “Whole House” System Solutions;	12 months
PATH 11	- Durability/Moisture: Applying System Solutions;	12 months
PATH 12	- Whole House Research -: Disentangling Utilities;	12 months
PATH 13	- Panel’s Research I: Wall Panels Benchmark and Performance Requirements;	12 months
PATH 14	- Tools for Streamlining the Code Enforcement Documentation and Communication Process	08 months

F.3 HUDAR 2452.237-77 OBSERVANCE OF LEGAL HOLIDAYS AND ADMINISTRATIVE LEAVE. (OCT 1999)

(a)(1) The Department of Housing and Urban Development observes the following days as holidays--

- New Year's Day
- Martin Luther King's Birthday
- Washington's Birthday
- Memorial Day
- Independence Day
- Labor Day
- Columbus Day
- Veterans Day
- Thanksgiving Day
- Christmas Day
- Any other day designated by Federal law, Executive Order, or Presidential Proclamation.

(2) When any holiday specified in (a)(1) falls on a Saturday, the preceding Friday shall be observed. When any such holiday falls on a Sunday, the following Monday shall be observed. Observances of such days by Government personnel shall not be cause for additional period of performance or entitlement to compensation except as set forth in the contract.

F.4 Products/Deliverables submitted to HUD. (See Statement of Work.)

PART I – THE SCHEDULE
SECTION G - CONTRACT ADMINISTRATION DATA

G.1 HUDAR 2452.232-71 Voucher Submission (Cost-Reimbursement).

VOUCHER SUBMISSION (COST-REIMBURSEMENT) (OCT 1999)

(a) The Contractor shall submit, on a monthly basis, an original and two (2) copies of each voucher. In addition to the items necessary per FAR 52.232-25, "Prompt Payment," the voucher shall show the elements of cost for the billing period and the cumulative costs to date. All vouchers shall be distributed as follows, except for the final voucher which shall be submitted in all copies to the Contracting Officer-- original to the payment office (e.g., in Block 12 on the SF-26 or Block 25 on the SF-33, or elsewhere in the contract) and one copy each to the Government Technical Representative and the Contracting Officer identified on the award document. To assist the Government in making timely payments, the Contractor is requested to include on each voucher the appropriation number shown on the award document (e.g., Block 14 of the SF-26 or Block 21 of the SF-33). The Contractor is also requested to clearly indicate on the mailing envelope that a payment voucher is enclosed.

(b) Contractor Remittance Information. The contractor shall provide the payment office with all information required by FAR clause 52.232-33, "Mandatory Information for Electronic Funds Transfer Payment" or 52.232.34, "Optional Information for Electronic Funds Transfer Payment," as applicable.

(End of clause)

G.2 HUDAR 2452.237-73 CONDUCT OF WORK AND TECHNICAL GUIDANCE (OCT 1999)

(a) The Government Technical Representatives (GTR) for liaison with the contractor as to the conduct of work is Carlos E. Martin, or a successor designated in writing by the Contracting Officer. The Contracting Officer will notify the contractor in writing of any change to the current GTR's status or the designation of a successor GTR

(b) The GTR will provide guidance to the contractor on the technical performance of the contract. Such guidance shall not be of a nature which:

- (1) Causes the Contractor to perform work outside the scope of the contract;
- (2) Constitutes a change as defined in FAR 52.243-1;
- (3) Causes an increase or decrease in the cost of the contract;
- (4) Alters the period of performance or delivery dates; or,
- (5) Changes any of the other express terms or conditions of the contract.

(c) The GTR will issue technical guidance in writing or, if issued orally, he/she will confirm such direction in writing within five (5) calendar days after oral issuance. The GTR may issue such guidance via telephone, facsimile or electronic mail.

SECTION H - SPECIAL CONTRACT REQUIREMENTS**H.1 HUDAR 2452.239-71 INFORMATION TECHNOLOGY VIRUS SECURITY CONTRACT (FEB 2000)**

(a) The contractor hereby agrees to make every reasonable effort to deliver information technology products to HUD free of known computer viruses. The contractor shall be responsible for examining all such products prior to their delivery to HUD using software tools and processes capable of detecting all known viruses.

(b) The contractor shall include the following statement on deliveries of hardware, software, and data products, including diskettes, made under this contract:

[product description, part/catalog number, other identifier, and serial number, if any]

This product has been scanned for known viruses using [name of virus-screening product, including version number, if any] and is certified to be free of known viruses at the time of delivery."

(c) The Contracting Officer may assess monetary damages against the contractor sufficient to compensate HUD for actual or estimated costs resulting from computer virus damage or malicious destruction of computer information arising from the contractor's failure to take adequate precautions to preclude delivery of virus-containing products in the delivery of hardware, software, or data on diskettes under this contract.

(d) This clause shall not subrogate the rights of the Government under any other clause of this contract.

PART II - CONTRACT CLAUSES
SECTION I - CONTRACT CLAUSES

I.1 52.252-1 SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (FEB 1998)

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its quotation or offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by paragraph identifier and provide the appropriate information with its quotation or offer. Also, the full text of a solicitation provision may be accessed electronically at this/ these address (es):

FAR Provisions: <http://www.arnet.gov/far>
 HUDAR Provisions: <http://www.hud.gov/offices/cpo/hudar.cfm>

FAR Provision	Description	Date
52.202-01	Definitions	DEC 2001
52.203-03	Gratuities	APR 1984
52.203-05	Covenant Against Contingent Fees	APR 1984
52.203-06	Restrictions on Subcontractor Sales to the Government	JUL 1995
52.203-07	Anti-Kickback Procedures	JUL 1995
52.203-08	Cancellation, Rescission, and Recovery of Funds for Illegal or Improper Activity	JAN 1997
52.203-10	Price or Fee Adjustment for Illegal or Improper Activity	JAN 1997
52.203-12	Limitation on Payments to Influence Certain Federal Transactions	JUN 1997
52.204-04	Printed or Copied Double-Sided on Recycled Paper	AUG 2000
52.209-06	Protecting the Government's Interest When Subcontracting With Contractors Debarred, Suspended, or Proposed for Debarment	JUL 1995
52.215-02	Audit and Records - Negotiation	JUN 1999
52.215-08	Order of Precedence-Uniform Contract Format	OCT 1997
52.215-21	Requirements for Cost or Pricing Data or Information Other Than Cost or Pricing Data – Modifications	OCT 1997
	Alternate I	OCT 1997
52.216-7	Allowable Cost and Payment	FEB 2002
52.216-8	Fixed Fee	MAR 1997
52.219-08	Utilization of Small Business Concerns	OCT 2000
52.219-14	Limitations on Subcontracting	DEC 1996
52.222-01	Notice to the Government of Labor Disputes	FEB 1997
52.222-03	Convict Labor	AUG 1996
52.222-21	Prohibition of Segregated Facilities	FEB 1999
52.222-26	Equal Opportunity	FEB 1999
52.222-35	Equal Opportunity for Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans	DEC 2001
52.222-36	Affirmative Action for Workers With Disabilities	JUN 1998
52.222-37	Employment Reports on Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans	DEC 2001
52.223-06	Drug-Free Workplace	MAY 2001
52.223-14	Toxic Chemical Release Reporting	OCT 2000
52.224-01	Privacy Act Notification	APR 1984
52.224-02	Privacy Act	APR 1984
52.225-13	Restriction on Certain Foreign Purchases	JUL 2000
52.229-03	Federal, State, and Local Taxes	JAN 1991
52.229-05	Taxes-Contracts Performed in U.S. Possessions or Puerto Rico	APR 1984
52.232-01	Payments	APR 1984
52.232-17	Interest	JUN 1996
52.232-18	Availability of Funds	APR 1984

52.232-23	Assignment of Claims	JAN 1986
52.232-25	Prompt Payment	FEB 2002
52.232-33	Payment by Electronic Funds Transfer-Central Contractor Registration	MAY 1999
52.233-01	Disputes Alternate I	JULY 2002 DEC 1991
52.233-03	Protest After Award	AUG 1996
52.242-13	Bankruptcy	JUL 1995
52.243-02	Changes-Cost Reimbursement	AUG 1987
52.248-01	Value Engineering	FEB 2000
52.249-06	Termination (Cost-Reimbursement)	SEP 1996

II. CLAUSES INCORPORATED IN FULL TEXT

A. FAR 52.217-8 OPTION TO EXTEND SERVICES (NOV 1999)

The Government may require continued performance of any services within the limits and at the rates specified in the contract. These rates may be adjusted only as a result of revisions to prevailing labor rates provided by the Secretary of Labor. The option provision may be exercised more than once, but the total extension of performance hereunder shall not exceed 6 months. The Contracting Officer may exercise the option by written notice to the Contractor within 10 days.

B. HUDAR 2452.203-70 PROHIBITION AGAINST THE USE OF FEDERAL EMPLOYEES (DEC 1992)

In accordance with Federal Acquisition Regulation 3.601, contracts are not to be awarded to Federal employees or a business concern or other organization owned or substantially owned or controlled by one or more Federal employees. For the purposes of this contract, this prohibition against the use of Federal employees includes any work performed by the contractor or any of its employees, subcontractors, or consultants.

C. HUDAR 2452.209-72 ORGANIZATIONAL CONFLICTS OF INTEREST (APR 1984)

(a) The contractor warrants that to the best of its knowledge and belief and except as otherwise disclosed, he or she does not have any organizational conflict of interest which is defined as a situation in which the nature of work under a Government contract and a contractor's organizational, financial, contractual or other interests are such that:

- (1) Award of the contract may result in an unfair competitive advantage; or
- (2) The contractor's objectivity in performing the contract work may be impaired.

(b) The contractor agrees that if after award he or she discovers an organizational conflict of interest with respect to this contract, he or she shall make an immediate and full disclosure in writing to the Contracting Officer, which shall include a description of the action, which the contractor has taken or intends to take to eliminate or neutralize the conflict.

The Government may, however, terminate the contract for the convenience of the Government if it would be in the best interest of the Government.

(c) In the event the contractor was aware of an organizational conflict of interest before the award of this contract and intentionally did not disclose the conflict to the Contracting Officer, the Government may terminate the contract for default.

(d) The provisions of this clause shall be included in all subcontracts and consulting agreements wherein the work to be performed is similar to the service provided by the prime contractor. The contractor shall include in such subcontracts and consulting agreements any necessary provisions to eliminate or neutralize conflicts of interest.

PART I II – LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACHMENTS
SECTION J – LISTS OF ATTACHMENTS

J.1 Sample Cost/Pricing forms to be completed by the offeror for EACH contract proposed.

PROJECT NAME:	PATH 9 - Creating Whole House System Solutions												
		Task 1 - General Administration (inc draft and final reports)		Task 2 - Identifying Subsystems and Defining the 'Whole House'		Task 3 - Defining Subsystem Measures and Human Performance Needs		Task 4 - Exploring Optimization Parameters		Task 5 - Implementation and Discussion		TOTAL ESTIMATED	
	Hourly Rate	Hours	Dollar s	Hours	Dollar s	Hours	Dollar s	Hours	Dollar s	Hours	Dollar s	Hours	Dollar s
Personnel (inc. Benefits and Overhead)													
Senior Principal Research Associate (or equiv.)													
Name of Individual													
Research Associate (or equiv.)													
Name(s) of Individuals													
Research Staff (or equiv.)													
Name(s) of Individual													
Administrative Staff (or equiv.)													
Name(s) of Individual													
Subtotal--Personnel													
CONSULTANTS													
Editing Services Personnel													
Name(s) of Individual													
Subtotal--consultants													
SUBCONTRACTORS (if applicable)													
Name(s) of Subcontractor													
Subtotal--subcontractors													
Subtotal													

	Unit Cost	Task 1 - General Administration (inc draft and final reports)		Task 2 - Identifying Subsystems and Defining the 'Whole House'		Task 3 – Defining Subsystem Measures and Human Performance Needs		Task 4 – Exploring Optimization Parameters		Task 5 – Implementation and Discussion		TOTAL ESTIMATED	
		Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars
Subtotal													
TRAVEL													
Round Trip Airfare													
Per Diem													
Lodging													
Lodging Tax @ ___%													
M & IE													
Local Transportation													
Subtotal—travel													
OTHER DIRECT COSTS													
Computer/Network Services													
Long Distance Telephone/FAX													
Reproduction @ \$.____ /page													
Postage/Delivery													
Books/Periodicals/Library Services													
Supplies													
Subtotal--other direct costs													
Subtotal													

	Unit Cost	Task 1 - General Administration (inc draft and final reports)		Task 2 - Identifying Subsystems and Defining the 'Whole House'		Task 3 – Defining Subsystem Measures and Human Performance Needs		Task 4 – Exploring Optimization Parameters		Task 5 – Implementation and Discussion		TOTAL ESTIMATED	
		Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars
Subtotal													
G & A													
*Attach documentation – Temporary or Permanent negotiated rates													
*Justify if G&A is charged to Travel													
Subtotal													
Fixed Fee ____%													
TOTAL ESTIMATED BUDGET													
*Detailed budget for subcontractors attached separately													

PROJECT NAME:		PATH 11 - Durability/Moisture: Applying System Solutions													
		Task 1 - Start Up Meeting and Management and Work Plan		Task 2 - White Paper		Task 3 – Working Group		Task 4 – Focus Group		Task 5 – Final Report		Task 6 - Ongoing Activities		TOTAL ESTIMATED	
	Hourly Rate	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours	Dollars
Personnel (inc. Benefits and Overhead)															
Senior Principal Research Associate (or equiv.)															
Name of Individual															
Research Associate (or equiv.)															
Name(s) of Individuals															
Research Staff (or equiv.)															
Name(s) of Individual															
Administrative Staff (or equiv.)															
Name(s) of Individual															
Subtotal--Personnel															
CONSULTANTS															
Editing Services Personnel															
Name(s) of Individual															
Subtotal--consultants															
SUBCONTRACTORS (if applicable)															
Name(s) of Subcontractor															
Subtotal--subcontractors															
Subtotal															

	Unit Cost	Task 1 - Start Up Meeting and Management and Work Plan		Task 2 - White Paper		Task 3 – Working Group		Task 4 – Focus Group		Task 5 – Final Report		Task 6 - Ongoing Activities		TOTAL ESTIMATED	
		Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars
Subtotal															
TRAVEL															
Round Trip Airfare															
Per Diem															
Lodging															
Lodging Tax @ ___%															
M & IE															
Local Transportation															
Subtotal—travel															
OTHER DIRECT COSTS															
Computer/Network Services															
Long Distance Telephone/FAX															
Reproduction @ \$.___/page															
Postage/Delivery															
Books/Periodicals/Library Services															
Supplies															
Subtotal--other direct costs															
Subtotal															

	Unit Cost	Task 1 - Start Up Meeting and Management and Work Plan		Task 2 - White Paper		Task 3 – Working Group		Task 4 – Focus Group		Task 5 – Final Report		Task 6 - Ongoing Activities		TOTAL ESTIMATED	
		Number	Dollars	Number	Dollars	Number	Dollars	Number	Number	Dollars	Number	Dollars	Number	Dollars	Number
Subtotal															
G & A															
*Attach documentation – Temporary or Permanent negotiated rates															
*Justify if G&A is charged to Travel															
Subtotal															
Fixed Fee __ %															
TOTAL Estimated Budget Amount															
*Detailed budget for subcontractors attached separately															
This is a suggested format.															

PROJECT NAME:		PATH 12 - Whole House Research: Disentangling Utilities												
		Task 1 - Start Up Meeting and Management and Work Plan		Task 2 - Literature Search		Task 3 – Functional Integration		Task 4 – Future Strategies		Task 5 – Final Report		TOTAL ESTIMATED		
		Hourly Rate	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours	Dollars
Personnel (inc. Benefits and Overhead)														
Senior Principal Research Associate (or equiv.)														
Name of Individual														
Research Associate (or equiv.)														
Name(s) of Individuals														
Research Staff (or equiv.)														
Name(s) of Individual														
Administrative Staff (or equiv.)														
Name(s) of Individual														
Subtotal--Personnel														
CONSULTANTS														
Editing Services Personnel														
Name(s) of Individual														
Subtotal--consultants														
SUBCONTRACTORS (if applicable)														
Name(s) of Subcontractor														
Subtotal--subcontractors														
Subtotal														

	Unit Cost	Task 1 - Start Up Meeting and Management and Work Plan		Task 2 - Literature Search		Task 3 – Functional Integration		Task 4 – Future Strategies		Task 5 – Final Report		TOTAL ESTIMATED	
		Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars
Subtotal													
TRAVEL													
Round Trip Airfare													
Per Diem													
Lodging													
Lodging Tax @ ___%													
M & IE													
Local Transportation													
Subtotal—travel													
OTHER DIRECT COSTS													
Computer/Network Services													
Long Distance Telephone/FAX													
Reproduction @ \$.___/page													
Postage/Delivery													
Books/Periodicals/Library Services													
Supplies													
Subtotal--other direct costs													
Subtotal													

	Unit Cost	Task 1 - Start Up Meeting and Management and Work Plan		Task 2 - Literature Search		Task 3 – Functional Integration		Task 4 – Future Strategies		Task 5 – Final Report		TOTAL ESTIMATED	
		Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars
Subtotal													
G & A													
*Attach documentation – Temporary or Permanent negotiated rates													
*Justify if G&A is charged to Travel													
Subtotal													
Fixed Fee ____%													
TOTAL ESTIMATED BUDGET AMOUNT													
*Detailed budget for subcontractors attached separately													
This is a suggested format.													

PROJECT NAME:		PATH 13 - Panel's Research I: Wall Panels Benchmark and Performance Requirements											
		Task 1 - Orientation Meeting		Task 2 - Literature Search and Benchmarking		Task 3 - Defining Performance Measures and Functional Integration		Task 4 - Future Strategies		Task 5 - Final Report		TOTAL ESTIMATED	
	Hourly Rate	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours	Dollars
Personnel (inc. Benefits and Overhead)													
Senior Principal Research Associate (or equiv.)													
Name of Individual													
Research Associate (or equiv.)													
Name(s) of Individuals													
Research Staff (or equiv.)													
Name(s) of Individual													
Administrative Staff (or equiv.)													
Name(s) of Individual													
Subtotal--Personnel													
CONSULTANTS													
Panel Production Experts													
Name(s) of Individual													
Subtotal--consultants													
SUBCONTRACTORS (if applicable)													
Name(s) of Subcontractor													
Subtotal--subcontractors													
Subtotal													

	Unit Cost	Task 1 - Orientation Meeting		Task 2 - Literature Search and Benchmarking		Task 3 – Defining Performance Measures and Functional Integration		Task 4 – Future Strategies		Task 5 – Final Report		TOTAL ESTIMATED	
		Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars
Subtotal													
TRAVEL													
Round Trip Airfare													
Per Diem													
Lodging													
Lodging Tax @ ___%													
M & IE													
Local Transportation													
Subtotal--travel													
OTHER DIRECT COSTS													
Computer/Network Services													
Long Distance Telephone/FAX													
Reproduction @ \$.___/page													
Postage/Delivery													
Books/Periodicals/Library Services													
Supplies (inc. Panel Meeting Req's.)													
Subtotal--other direct costs													
Subtotal													

	Unit Cost	Task 1 - Orientation Meeting		Task 2 - Literature Search and Benchmarking		Task 3 - Defining Performance Measures and Functional Integration		Task 4 - Future Strategies		Task 5 - Final Report		TOTAL ESTIMATED	
		Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars
Subtotal													
G & A													
*Attach documentation – Temporary or Permanent negotiated rates													
*Justify if G&A is charged to Travel													
Subtotal													
Fixed Fee ___%													
Total Estimated Budget Amount													
*Detailed budget for subcontractors attached separately													
This is a suggested format.													

PROJECT NAME:		PATH 14 - Tools for Streamlining the Code Enforcement Documentation and Communication Process													
		Task 1 - Start Up Meeting and Management and Work Plan		Task 2 - Identify Available Tools to Facilitate Code Inspection and Documentation		Task 3 – Identify Tools from Other Industries to Facilitate Code Inspection and Documentation		Task 4 – Describe New Tools and Scenarios for Their Use		Task 5 – Article for Publication		Task 6 - Final Report		TOTAL ESTIMATED	
	Hourly Rate	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours	Dollars
Personnel (inc. Benefits and Overhead)															
Senior Principal Research Associate (or equiv.)															
Name of Individual															
Research Associate (or equiv.)															
Name(s) of Individuals															
Technical Writer (or equiv.)															
Name(s) of Individual															
Administrative Staff (or equiv.)															
Name(s) of Individual															
Subtotal--Personnel															
CONSULTANTS															
Name(s) of Individual															
Subtotal--consultants															
SUBCONTRACTORS (if applicable)															
Name(s) of Subcontractor															
Subtotal--subcontractors															
Subtotal															

	Unit Cost	Task 1 - Start Up Meeting and Management and Work Plan		Task 2 - Identify Available Tools to Facilitate Code Inspection and Documentation		Task 3 – Identify Tools from Other Industries to Facilitate Code Inspection and Documentation		Task 4 – Describe New Tools and Scenarios for Their Use		Task 5 – Article for Publication		Task 6 - Final Report		TOTAL ESTIMATED	
		Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars
Subtotal															
TRAVEL															
Round Trip Airfare															
Per Diem															
Lodging															
Lodging Tax @ __%															
M & IE															
Local Transportation															
Subtotal--travel															
OTHER DIRECT COSTS															
Computer/Network Services															
Long Distance Telephone/FAX															
Reproduction @ \$.___ /page															
Postage/Delivery															
Books/Periodicals/Library Services															
Supplies															
Subtotal--other direct costs															
Subtotal															

	Unit Cost	Task 1 - Start Up Meeting and Management and Work Plan		Task 2 - Identify Available Tools to Facilitate Code Inspection and Documentation		Task 3 - Identify Tools from Other Industries to Facilitate Code Inspection and Documentation		Task 4 - Describe New Tools and Scenarios for Their Use		Task 5 - Article for Publication		Task 6 - Final Report		TOTAL ESTIMATED	
		Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars
Subtotal															
G & A															
*Attach documentation – Temporary or Permanent negotiated rates.															
*Justify if G&A is charged to travel.															
Subtotal															
Fixed Fee ____%															
TOTAL Estimated Budget Amount															
*Detailed budget for subcontractors attached separately															
This is a suggested format.															

PART IV - REPRESENTATIONS AND INSTRUCTIONS
SECTION K - REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF OFFERORS

I. NOTICE LISTING CONTRACT PROVISIONSS INCORPORATED BY REFERENCE

The following contract provisions pertinent to this section are hereby incorporated by reference (by Citation Number, Title, and Date) in accordance with the provision at FAR "52.252-1 PROVISIONS INCORPORATED BY REFERENCE" in Section I of this contract. The full text of a provision may be accessed electronically at this/these address (es):

FAR Provisions: <http://www.arnet.gov/far>
HUDAR Provisions: <http://www.hud.gov/offices/cpo/hudar.cfm>

FAR 52.203-11 CERTIFICATION AND DISCLOSURE REGARDING PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (APR 1991)

II. PROVISIONS INCORPORATED IN FULL TEXT

A. FAR 52.203-2 CERTIFICATE OF INDEPENDENT PRICE DETERMINATION (APR 1985)

(a) The offeror certifies that-

(1) The prices in this offer have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other offeror or competitor relating to-

- (i) those prices;
- (ii) the intention to submit an offer, or
- (iii) the methods or factors used to calculate the prices offered.

(2) The prices in this offer have not been and will not be knowingly disclosed by the offeror, directly or indirectly, to any other offeror or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a negotiated solicitation) unless otherwise required by law; and

(3) No attempt has been made or will be made by the offeror to induce any other concern to submit or not to submit an offer for the purpose of restricting competition.

(b) Each signature on the offer is considered to be a certification by the signatory that the signatory-

(1) Is the person in the offeror's organization responsible for determining the prices being offered in this bid or proposal, and that the signatory has not participated and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) of this provision; or

(2)(i) Has been authorized, in writing, to act as agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) of this provision; or

[Insert full name of person(s) in the offeror's organization responsible for determining the prices offered in the bid or proposal, and the title of his or her position in the offeror's organization];

(ii) As an authorized agent, does certify that the principals named in subdivision (b)(2)(i) above have not participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above; and

(iii) As an agent, has not personally participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above.

(c) If the offeror deletes or modifies subparagraph (a)(2) of this provision, the offeror must furnish with its offer a signed statement setting forth in detail the circumstances of the disclosure.

B. FAR 52.204-3 TAXPAYER IDENTIFICATION (OCT 1998)

(a) Definitions.

"Common parent," as used in this provision, means that corporate entity that owns or controls an affiliated group of corporations that files its Federal income tax returns on a consolidated basis, and of which the offeror is a member.

"Taxpayer Identification Number (TIN)," as used in this provision, means the number required by the Internal Revenue Service (IRS) to be used by the offeror in reporting income tax and other returns. The TIN may be either a Social Security Number or an Employer Identification Number.

(b) All offerors must submit the information required in paragraphs (d) through (f) of this solicitation provision in order to comply with debt collection requirements of 31 U.S.C. 7701(c) and 3325(d), requirements reporting requirements of 26 U.S.C. 6041, 6041A, and 6050M, and implementing regulations issued by the IRS. If the resulting contract is subject to the payment reporting requirements described in Federal Acquisition Regulation (FAR) 4.904, the failure or refusal by the offeror to furnish the information may result in a 31 percent reduction of payments otherwise due under the contract.

(c) The TIN may be used by the Government to collect and report on any delinquent amounts arising out of the offeror's relationship with the Government (31 U.S.C. 7701(c)(3)). If the resulting contract is subject to the payment reporting requirements described in FAR 4.904, the TIN provided hereunder may be matched with IRS records to verify the accuracy of the offeror's TIN.

(d) Taxpayer *Identification Number (TIN)*.

TIN: _____.

TIN has been applied for.

TIN is not required because:

Offeror is a nonresident alien, foreign corporation, or foreign partnership that does not have income effectively connected with the conduct of a trade or business in the United States and does not have an office or place of business or a fiscal paying agent in the United States;

Offeror is an agency or instrumentality of a foreign government;

Offeror is an agency or instrumentality of the Federal government.

(e) *Type of Organization*.

Sole proprietorship;

Partnership;

Corporate entity (not tax-exempt);

- Corporate entity (tax-exempt);
- Government entity (Federal, State, or local);
- Foreign government;
- International organization per 26 CFR 1.6049-4;
- Other _____

(f) *Common Parent.*

Offeror is not owned or controlled by a common parent as defined in paragraph (a) of this provision.

Name and TIN of common parent:

Name _____

TIN _____

C. FAR 52.209-5 CERTIFICATION REGARDING DEBARMENT, SUSPENSION, PROPOSED DEBARMENT, AND OTHER RESPONSIBILITY MATTERS (DEC 2001)

(a)(1) The Offeror certifies, to the best of its knowledge and belief, that—

(i) The Offeror and/or any of its Principals -

(A) Are___ are___ not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;

(B) Have___ , have not___ , within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion or receiving stolen property; and

(C) Are___ are ___ not presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses remunerated in subdivision (a)(1)(i)(B) of this provision.

(ii) The Offeror has___ has not , within a three-year period preceding this offer, had one or more contracts terminated for default by any Federal agency.

(2.) Principals," for the purposes of this certification, means officers; directors; owners; partners; and, persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions).

This Certification Concerns A Matter Within The Jurisdiction Of An Agency Of The United States And The Making Of A False, Fictitious, Or Fraudulent Certification May Render The Maker Subject To Prosecution Under Section 1001, Title 18, United States Code.

(b) The Offeror shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Offeror learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

(c) A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a

determination of the Offeror's responsibility. Failure of the Offeror to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Offeror nonresponsible.

(d) Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this provision. The knowledge and information of an Offeror is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

(e) The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Offeror knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

D. 52.219-1 Small Business Program Representations.

As prescribed in 19.307(a)(1), insert the following provision:

Small Business Program Representations (Apr 2002)

(a)(1) The North American Industry Classification System (NAICS) code for this acquisition is 541710 [insert NAICS code].

(2) The small business size standard is 500 employees.

(3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

(b) Representations.

(1) The offeror represents as part of its offer that it ___ is, ___ is not a small business concern.

(2) [Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.] The offeror represents, for general statistical purposes, that it ___ is, ___ is not, a small disadvantaged business concern as defined in 13 CFR 124.1002.

(3) [Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.] The offeror represents as part of its offer that it ___ is, ___ is not a women-owned small business concern.

(4) [Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.] The offeror represents as part of its offer that it ___ is, ___ is not a veteran-owned small business concern.

(5) [Complete only if the offeror represented itself as a veteran-owned small business concern in paragraph (b)(4) of this provision.] The offeror represents as part of its offer that it ___ is, ___ is not a service-disabled veteran-owned small business concern.

(6) [Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.] The offeror represents, as part of its offer, that-

(i) It ___ is, ___ is not a HUBZone small business concern listed, on the date of this representation, on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration, and no material change in ownership and control, principal office, or HUBZone employee percentage has occurred since it was certified by the Small Business Administration in accordance with 13 CFR part 126; and

(ii) It ___ is, ___ is not a joint venture that complies with the requirements of 13 CFR part 126, and the representation in paragraph (b)(6)(i) of this provision is accurate for the HUBZone small business concern or concerns that are participating in the joint venture. [The offeror shall enter the name or names of the HUBZone small business concern or concerns that are participating in the joint venture: _____.] Each HUBZone small business concern participating in the joint venture shall submit a separate signed copy of the HUBZone representation.

(c) Definitions. As used in this provision-

"Service-disabled veteran-owned small business concern"-

(1) Means a small business concern-

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and (ii) The management and daily business operations

of which are controlled by one or more service-disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

"Small business concern" means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR part 121 and the size standard in paragraph (a) of this provision.

"Veteran-owned small business concern" means a small business concern-

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

"Women-owned small business concern" means a small business concern-

(1) That is at least 51 percent owned by one or more women; or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and

(2) Whose management and daily business operations are controlled by one or more women.

(d) Notice.

(1) If this solicitation is for supplies and has been set aside, in whole or in part, for small business concerns, then the clause in this solicitation providing notice of the set-aside contains restrictions on the source of the end items to be furnished.

(2) Under 15 U.S.C. 645(d), any person who misrepresents a firm's status as a small, HUBZone small, small disadvantaged, or women-owned small business concern in order to obtain a contract to be awarded under the preference programs established pursuant to section 8(a), 8(d), 9, or 15 of the Small Business Act or any other provision of Federal law that specifically references section 8(d) for a definition of program eligibility, shall-

(i) Be punished by imposition of fine, imprisonment, or both;

(ii) Be subject to administrative remedies, including

suspension and debarment; and (iii) Be ineligible for participation in programs conducted under the authority of the Act.

(End of provision)

Alternate I (Apr 2002).

(7) [Complete if offeror represented itself as disadvantaged in paragraph (b)(2) of this provision.] The offeror shall check the category in which its ownership falls:

_____ Black American.

_____ Hispanic American.

_____ Native American (American Indians, Eskimos, Aleuts, or Native Hawaiians).

_____ Asian-Pacific American (persons with origins from Burma, Thailand, Malaysia, Indonesia, Singapore, Brunei, Japan, China, Taiwan, Laos, Cambodia (Kampuchea), Vietnam, Korea, The Philippines, U.S. Trust Territory of the Pacific Islands (Republic of Palau), Republic of the Marshall Islands, Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam, Samoa, Macao, Hong Kong, Fiji, Tonga, Kiribati, Tuvalu, or Nauru).

_____ Subcontinent Asian (Asian-Indian) American (persons with origins from India, Pakistan, Bangladesh, Sri Lanka, Bhutan, the Maldives Islands, or Nepal).

_____ Individual/concern, other than one of the preceding.

E. FAR 52.222-22 PREVIOUS CONTRACTS AND COMPLIANCE REPORTS (FEB 1999)

The offeror represents that-

(a) It has, has not participated in a previous contract or subcontract subject to the Equal Opportunity clause

of this solicitation;

(b) It has, has not filed all required compliance reports; and

(c) Representations indicating submission of required compliance reports, signed by proposed subcontractors, will be obtained before subcontract awards.

F. FAR 52.222-25 AFFIRMATIVE ACTION COMPLIANCE (APR 1984)

The offeror represents that-

(a) It has developed and has on file, has not developed and does not have on file, at each establishment, affirmative action programs required by the rules and regulations of the Secretary of Labor (41 CFR 60-1 and 60-2), or

(b) It has not previously had contracts subject to the written affirmative action programs requirement of the rules and regulations of the Secretary of Labor.

G. FAR 52.223-13 CERTIFICATION OF TOXIC CHEMICAL RELEASE REPORTING (OCT 2000)

(a) Submission of this certification is a prerequisite for making or entering into this contract imposed by Executive Order 12969, August 8, 1995.

(b) By signing this offer, the offeror certifies that--

(1) As the owner or operator of facilities that will be used in the performance of this contract that are subject to the filing and reporting requirements described in section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023) and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13106), the offeror will file and continue to file for such facilities for the life of the contract the Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and(g) of EPCRA and section 6607 of PPA; or

(2) None of its owned or operated facilities to be used in the performance of this contract is subject to the Form R filing and reporting requirements because each such facility is exempt for at least one of the following reasons: [Check each block that is applicable.]

(i) The facility does not manufacture, process, or otherwise use any toxic chemicals listed under section 313(c) of EPCRA, 42 U.S.C. 11023(c);

(ii) The facility does not have 10 or more full-time employees as specified in section 313(b)(1)(A) of EPCRA, 42 U.S.C. 11023(b)(1)(A);

(iii) The facility does not meet the reporting thresholds of toxic chemicals established under section 313(f) of EPCRA, 42 U.S.C. 11023(f)(including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);

(iv) The facility does not fall within Standard Industrial Classification Code (SIC) major groups 20 through 39 or their corresponding North American Industry Classification System (NAICS) sectors 31 through 33; or

(v) The facility is not located within any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Northern Mariana Islands, or any other territory or possession over which the United States has jurisdiction.

H. HUDAR 2452.209-71 LIMITATION ON FUTURE CONTRACTS (FEB 2000)

(a) The Contracting Officer has determined that this contract may give rise to potential organizational conflicts of interest as defined at FAR Subpart 9.5.

(b) The nature of the potential conflict of interest is if the contractor or contractor’s personnel work or have worked at lending institutions that originate loans.

(c) If the contractor, under the terms of this contract or through the performance of tasks pursuant to this contract, is required to develop specifications or statements of work that are to be incorporated into a solicitation, the contractor shall be ineligible to perform the work described in that solicitation as a prime or first-tier subcontractor under any ensuing HUD contract.

(d) Other restrictions—None

(e) The restrictions imposed by this clause shall remain in effect until contract expiration.

I. HUDAR 2452.226-70 CERTIFICATION OF STATUS AS A MINORITY BUSINESS ENTERPRISE (AUG 1995)

Bidder, Offeror or Supplier certifies that he or she is, is not, (check one), a minority business enterprise which is defined as a business which is at least 51 percent owned by one or more minority group members or, in the case of a publicly owned business, at least 51 percent of its voting stock is owned by one or more minority group members, and

whose management and daily operations are controlled by one or more such individuals. For the purpose of this definition, minority group members are: (Check the box applicable to you)

- | | |
|------------------------|-------------------------|
| Black Americans | Hispanic Americans |
| Native Americans | Asian Pacific Americans |
| Asian Indian Americans | |

J. AS 2112 SPECIAL INSTRUCTION REGARDING LOBBYING DISCLOSURES

If the bidder/offer is required to complete an SF-LLL, *Disclosure of Lobbying Activities* (see FAR 52.203-11), the offeror may obtain this form from HUD’s internet homepage at:

<http://www.hudclips.org/subscriber/html/forms.htm>

PART IV – REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF OFFERORS
SECTION L - INSTRUCTIONS, CONDITIONS, AND NOTICES TO OFFERORS

L. 1 52.252-1 SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (FEB 1998)

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its quotation or offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by paragraph identifier and provide the appropriate information with its quotation or offer. Also, the full text of a solicitation provision may be accessed electronically at this/ these address (es):

FAR Provisions: <http://www.arnet.gov/far>
 HUDAR Provisions: <http://www.hud.gov/offices/cpo/hudar.cfm>

FAR Provision	Description	Date
52.215-1	INSTRUCTIONS TO OFFERORS — COMPETITIVE ACQUISITION	MAY 2001

L. 2 52.204-6 DATA UNIVERSAL NUMBERING SYSTEM (DUNS) NUMBER (JUN 1999)

(a) The offeror shall enter, in the block with its name and address on the cover page of its offer, the annotation "DUNS" followed by the DUNS number that identifies the offeror's name and address exactly as stated in the offer. The DUNS number is a nine-digit number assigned by Dun and Bradstreet Information Services.

(b) If the offeror does not have a DUNS number, it should contact Dun and Bradstreet directly to obtain one. A DUNS number will be provided immediately by telephone at no charge to the offeror. For information on obtaining a DUNS number, the offeror, if located within the United States, should call Dun and Bradstreet at 1-800-333-0505. The offeror should be prepared to provide the following information:

- (1) Company name.
- (2) Company address.
- (3) Company telephone number.
- (4) Line of business.
- (5) Chief executive officer/ key manager.
- (6) Date the company was started.
- (7) Number of people employed by the company.
- (8) Company affiliation.

(c) Offerors located outside the United States may obtain the location and phone number of the local Dun and Bradstreet

Information Services office from the Internet home page at [http:// www. customerservice@dnb.com](http://www.customerservice@dnb.com). If an offeror is unable to locate a local service center, it may send an e-mail to Dun and Bradstreet at globalinfo@mail.dnb.com.

L. 3 ELIGIBLE OFFERORS

This solicitation is set aside for small businesses concerns. The North American Industry Classification System (NAICS) Code is 541710, Industrial Research and Development Laboratories or Services. The size standard is 500 employees, average, for the last 3 years.

Only small business concerns may submit offers. Offerors may submit an offer for more than one contract. Offerors are encouraged to consider teaming arrangements, just ventures, and/ or meaningful subcontracting relationships with small, small disadvantaged, and women owned small business concerns.

L. 4 52.215-20 REQUIREMENTS FOR COST OR PRICING DATA OR INFORMATION OTHER THAN COST OR PRICING DATA— ALTERNATE I (OCT 1997)

(a) Exceptions from cost or pricing data.

(1) In lieu of submitting cost or pricing data, offerors may submit a written request for exception by submitting the information described in the following paragraphs. The Contracting Officer may require additional supporting information, but only to the extent necessary to determine whether an exception should be granted, and whether the price is fair and reasonable.

(i) Identification of the law or regulation establishing the price offered. If the price is controlled under law by periodic rulings, reviews, or similar actions of a governmental body, attach a copy of the controlling document, unless it was previously submitted to the contracting office.

(ii) Commercial item exception. For a commercial item exception, the offeror shall submit, at a minimum, information on prices at which the same item or similar items have previously been sold in the commercial market that is adequate for evaluating the reasonableness of the price for this acquisition.

Such information may include-

(A) The offeror grants the Contracting Officer or an authorized representative the right to examine, at any time before award, books, records, documents, or other directly pertinent records to verify any request for an exception under this provision, (A) For catalog items, a copy of or identification of the catalog and its date, or the appropriate pages for the offered items, or a statement that the catalog is on file in the buying office to which the proposal is being submitted. Provide a copy or describe current discount policies and price lists (published or unpublished), e. g., wholesale, original equipment manufacturer, or reseller. Also explain the basis of each offered price and its relationship to the established catalog price, including how the proposed price relates to the price of recent sales in quantities similar to the proposed quantities;

(B) For market-priced items, the source and date or period of the market quotation or other basis for market price, the base amount, and applicable discounts. In addition, describe the nature of the market;

(C) For items included on an active Federal Supply Service Multiple Award Schedule contract, proof that an exception has been granted for the schedule item.

(2) The offeror grants the Contracting Officer or an authorized representative the right to examine, at any time before award, books, records, documents, or other directly pertinent records to verify any request for an exception under this provision, and the reasonableness of price. For items priced using catalog or market prices, or law or regulation, access does not extend to cost or profit information or other data relevant solely to the offeror's determination of the prices to be offered in the catalog or marketplace.

(b) Requirements for cost or pricing data. If the offeror is not granted an exception from the requirement to submit cost or pricing data, the following applies:

(1) The offeror shall prepare and submit cost or pricing data and supporting attachments in accordance with the format in Section J.

(2) As soon as practicable after agreement on price, but before contract award (except for unpriced actions such as letter contracts), the offeror shall submit a Certificate of Current Cost or Pricing Data, as prescribed by FAR 15.406-2.

L. 5 52.216-1 TYPE OF CONTRACT (APR 1984)

The Government contemplates awarding five (5) Cost Reimbursement-type Contracts (Cost-plus-Fixed Fee) resulting from this solicitation.

L. 6 52.233-2 SERVICE OF PROTEST (AUG 1996)

(a) Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the General Accounting Office (GAO), shall be served on the Contracting Officer by obtaining written and dated acknowledgment of receipt from:

Wayne S. Bernacki, Contracting Officer

Hand-Carried and Mailing Address:

U. S. Department of Housing and Urban Development
Contracting Operations Branch
77 W. Jackson Blvd., Room 2517
Chicago, Illinois 60604-3507

(b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

L. 7 HUDAR 2452.209-70 POTENTIAL ORGANIZATIONAL CONFLICTS OF INTEREST (FEB 2000)

(a) The Contracting Officer has determined that the proposed contract contains a potential organizational conflict of interest. Offerors are directed to FAR Subpart 9.5 for detailed information concerning organizational conflicts of interest.

(b) The nature of the potential conflict of interest is _____[or None]:

(c) Offerors shall provide a statement which describes concisely all relevant facts concerning any past, present or planned interest (financial, contractual, organizational, or otherwise) relating to the work to be performed under the proposed contract and bearing on whether the offeror has a possible organizational conflict of interest with respect to:

Being able to render impartial, technically sound, and objective assistance or advice, or being given an unfair competitive advantage. The offeror may also provide relevant facts that show how its organizational structure and/ or management systems limit its knowledge of possible organizational conflicts of interest relating to other divisions or sections of the organization and how that structure or system would avoid or mitigate such organizational conflict.

(d) No award shall be made until any potential conflict of interest has been neutralized or mitigated to the satisfaction of the Contracting Officer.

(e) Refusal to provide the requested information or the willful misrepresentation of any relevant information by an offeror shall disqualify the offeror from further consideration for award of a contract under this solicitation.

(f) If the Contracting Officer determines that a potential conflict can be avoided, effectively mitigated, or otherwise resolved through the inclusion of a special contract clause, the terms of the clause will be subject to negotiation.

L. 8 HUDAR 2452.215-70 PROPOSAL CONTENT (OCT 1999)

(a) Proposals shall be submitted as listed below in Part I and Part II. Each of the parts must be complete unto itself so that evaluation of each part may be conducted independently, and so the technical and management part may be evaluated strictly on its own merits. Proposals shall contain enough detail to allow for a thorough evaluation and sound determination of whether or not the offeror is able to perform in accordance with the solicitation's requirements. Offerors should be careful that proposals are neither too elaborate nor too general; proposals should address this particular solicitation with specific statements relevant to the Statements of Works of the 5 PATH proposed contracts.

(b) Proposals shall be submitted in original and 5 copies of Part I and Part II.

LIMITATION ON SIZE OF TECHNICAL PROPOSAL (NOV 1997) (AS 2102)

- 1) Offerors shall limit Part I, Technical Proposal, of their initial offer to 20 pages except for the information specifically exempted, in paragraph 3). Offerors are cautioned that if Part I of their offer exceeds this page limitation, the Government will evaluate up through the permitted number of pages only. Pages beyond the limit will not be evaluated.
- 2) A page is considered to be one side of a single sheet of 8 1/2" X 11" paper, single spaced, using not smaller than 12 point font, and having margins at the top, bottom and sides of no less than one inch in width.
- 3) Exempted from the 20 pages are: resumes, references and related information about past performance and cost related documents.

OTHER PROVISIONS:

- 1) Facsimile proposals or e-mail proposal will not be accepted under this solicitation.
- 2) Offerors may submit proposals for any or all contracts. Offerors must submit technical proposal/prices for at least one contract. But offerors must submit a separate Part I, Technical Proposal and Part II, Business Proposal with contracting pricing worksheet (See Section J) for each individual contract for which they are proposing.
- 3) Special Requirement for outside marking on packages:

Offerors must mark the outside of all packages submitted. Proposals shall be enclosed in sealed packaging and addressed to the office specified in the solicitation. The offeror's name and address, the solicitation number and the date and time specified in the solicitation for proposal submission must appear in writing on the outside of the package

"MAILROOM DO NOT OPEN, FORWARD THIS PACKAGE UNOPENED TO THE CONTRACTING BRANCH, ROOM 2517, 77 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604".

- (c) PART I - TECHNICAL AND MANAGEMENT – The proposal shall clearly and sufficiently address the factors stated in Section M. This proposal part shall be divided according to the stated evaluation factors.

To assist contractors in preparing their technical and budget proposals for this contract, guidance is provided as follows:

L.9.1 SPECIFIC INSTRUCTIONS

REFERENCE: SOW PATH 9 - Creating Whole House System Solutions

Factor 1: Management Capabilities and Capacity.

The offeror must demonstrate the firm's ability to manage staff and integrate subcontracts and/or consultants to provide high quality research and technical assistance on this specific project. The offeror must describe how the work will be organized, the proposed staffing and the responsibilities and existing commitments of proposed staff, which includes subcontractors and/or consultants. The offeror must demonstrate its organization's overall capacity and its ability to provide necessary staffing to meet the requirements. The offeror shall describe its capability through its staff employees, present and/or future relationships established through teaming, joint ventures, limited partnerships and subcontracting.

Factor 2: Technical Capabilities

The offeror must describe, in general, their technical approach, methodology, and a management strategy for accomplishing the requirements—i.e., to define: 1.) The technical components needed to define a “whole house” development; 2.) The performance measures for each of those components; 3.) The optimization parameters for the interaction of these components; and 4.) the evaluative, organizational, industrial tools that must be created or modified to pursue this work. The offeror must discuss the duties and responsibilities of proposed staff in accomplishing the requirement. The offeror shall also discuss the firm, subcontractors', and/or consultants' relevant experience in regards to the requirements. The discussion shall include the duties and responsibilities of the firm's staff, subcontractors, and/or consultants. The offeror must provide its approach to, but not limited to, providing quality service, solving problems, meeting schedule deadlines, remaining within budget, quality assurance and responding to client's requests in a timely manner. The offeror must discuss, in general, their approach in responding to tasks quickly, including the assembling and managing of teams to ensure demonstration site and technical assistance project completion.

Factor 3: Qualifications and Relevant Experience of Key Personnel.

The offeror shall discuss the firm's key staff employees, subcontractors, and/or consultants who will perform specific or critical aspects of the requirements. The offeror shall submit this information through resumes. Resumes must include general qualifications, such as education and experience. However, resumes must also include the individual's experience, skills and their ability to manage projects of similar complexity and scope. The offeror must provide an organizational chart or staffing plan, which outlines the staff assignments of the key personnel. Provide a brief summary of the role each key individual will play in the execution of the broad-based requirements. In the case where one person serves more than one function, he or she should be listed in both places. The Offeror shall show any vacancies in the chart and shall provide the position descriptions to be used in hiring personnel for said vacancies.

Factor 4: Past Performance.

An offeror's past performance must reflect those customers for whom the offeror performed work within the past five years for the same or significantly similar efforts. The offeror's discussion of the reference must discuss, but not be limited to, the offeror's performance in relation to quality of service, timeliness, cost control, and business relations. Offerors shall include references to its key personnel, subcontractors, and/or consultants. Past performance shall include any work performed under contracts, cooperative agreements, and grants (including Federal, state, and local government and private organizations). Also, offerors and their key personnel, subcontractors, and/or consultants are afforded the opportunity to provide information on problems encountered and their corrective actions on any work performed

L.9.2 SPECIFIC INSTRUCTIONS

REFERENCE: SOW PATH 11 - Durability/Moisture: Applying System Solutions

Factor 1: Management Capabilities and Capacity.

The offeror must demonstrate the firm's ability to manage staff and integrate subcontracts and/or consultants to provide high quality research and technical assistance on this specific project. The offeror must describe how the work will be organized, the proposed staffing and the responsibilities and existing commitments of proposed staff, which includes subcontractors and/or consultants. The offeror must demonstrate its organization's overall capacity and its ability to provide necessary staffing to meet the requirements. The offeror shall describe its capability through its staff employees, present and/or future relationships established through teaming, joint ventures, limited partnerships and subcontracting.

Factor 2: Technical Capabilities

The offeror must describe, in general, their technical approach, methodology, and a management strategy for accomplishing the requirements—i.e., to create a comprehensive plan as to how to coordinate research and other activities leading to better moisture resistance in single family housing. The offeror must discuss the duties and responsibilities of proposed staff in accomplishing the requirement. The offeror shall also discuss the firm, subcontractors', and/or consultants' relevant experience in regards to the requirements. The discussion shall include the duties and responsibilities of the firm's staff, subcontractors, and/or consultants. The offeror must provide its approach to, but not limited to, providing quality service, solving problems, meeting schedule deadlines, remaining within budget, quality assurance and responding to client's requests in a timely manner. The offeror must discuss, in general, their approach in responding to tasks quickly, including the assembling and managing of teams to ensure demonstration site and technical assistance project completion.

Factor 3: Qualifications and Relevant Experience of Key Personnel.

The offeror shall discuss the firm's key staff employees, subcontractors, and/or consultants who will perform specific or critical aspects of the requirements. The offeror shall submit this information through resumes. Resumes must include general qualifications, such as education and experience. However, resumes must also include the individual's experience, skills and their ability to manage projects of similar complexity and scope. The offeror must provide an organizational chart or staffing plan, which outlines the staff assignments of the key personnel. Provide a brief summary of the role each key individual will play in the execution of the broad-based requirements. In the case where one person serves more than one function, he or she should be listed in both places. The Offeror shall show any vacancies in the chart and shall provide the position descriptions to be used in hiring personnel for said vacancies.

Factor 4: Past Performance.

An offeror's past performance must reflect those customers for whom the offeror performed work within the past five years for the same or significantly similar efforts. The offeror's discussion of the reference must discuss, but not be limited to, the offeror's performance in relation to quality of service, timeliness, cost control, and business relations. Offerors shall include references to its key personnel, subcontractors, and/or consultants. Past performance shall include any work performed under contracts, cooperative agreements, and grants (including Federal, state, and local government and private organizations). Also, offerors and their key personnel, subcontractors, and/or consultants are afforded the opportunity to provide information on problems encountered and their corrective actions on any work performed.

L.9.3 SPECIFIC INSTRUCTIONS

REFERENCE: SOW PATH 12 - Whole House Research -: Disentangling Utilities

Factor 1: Management Capabilities and Capacity.

The offeror must demonstrate the firm's ability to manage staff and integrate subcontracts and/or consultants to provide high quality research and technical assistance on this specific project. The offeror must describe how the work will be organized, the proposed staffing and the responsibilities and existing commitments of proposed staff, which includes subcontractors and/or consultants. The offeror must demonstrate its organization's overall capacity and its ability to provide necessary staffing to meet the requirements. The offeror shall describe its capability through its staff employees, present and/or future relationships established through teaming, joint ventures, limited partnerships and subcontracting.

Factor 2: Technical Capabilities

The offeror must describe, in general, their technical approach, methodology, and a management strategy for accomplishing the requirements—i.e., to 1). Investigate and inventory current systems and methods for disentangling or simplifying installation; 2). Analyze and delineate the functions of a house and map the various components and subsystems in a house in terms of these functions; 3). Suggest strategies, special components to be more compatible with structural assemblies; and 4). Document and disseminate the results. The offeror must discuss the duties and responsibilities of proposed staff in accomplishing the requirement. The offeror shall also discuss the firm, subcontractors', and/or consultants' relevant experience in regards to the requirements. The discussion shall include the duties and responsibilities of the firm's staff, subcontractors, and/or consultants. The offeror must provide its approach to, but not limited to, providing quality service, solving problems, meeting schedule deadlines, remaining within budget, quality assurance and responding to client's requests in a timely manner. The offeror must discuss, in general, their approach in responding to tasks quickly, including the assembling and managing of teams to ensure demonstration site and technical assistance project completion.

Factor 3: Qualifications and Relevant Experience of Key Personnel.

The offeror shall discuss the firm's key staff employees, subcontractors, and/or consultants who will perform specific or critical aspects of the requirements. The offeror shall submit this information through resumes. Resumes must include general qualifications, such as education and experience. However, resumes must also include the individual's experience, skills and their ability to manage projects of similar complexity and scope. The offeror must provide an organizational chart or staffing plan, which outlines the staff assignments of the key personnel. Provide a brief summary of the role each key individual will play in the execution of the broad-based requirements. In the case where one person serves more than one function, he or she should be listed in both places. The Offeror shall show any vacancies in the chart and shall provide the position descriptions to be used in hiring personnel for said vacancies.

Factor 4: Past Performance.

An offeror's past performance must reflect those customers for whom the offeror performed work within the past five years for the same or significantly similar efforts. The offeror's discussion of the reference must discuss, but not be limited to, the offeror's performance in relation to quality of service, timeliness, cost control, and business relations. Offerors shall include references to its key personnel, subcontractors, and/or consultants. Past performance shall include any work performed under contracts, cooperative agreements, and grants (including Federal, state, and local government and private organizations). Also, offerors and their key personnel, subcontractors, and/or consultants are afforded the opportunity to provide information on problems encountered and their corrective actions on any work performed.

L.9.4 SPECIFIC INSTRUCTIONS

REFERENCE: SOW PATH 13 - Panel's Research I: Wall Panels Benchmark and Performance Requirements

Factor 1: Management Capabilities and Capacity.

The offeror must demonstrate the firm's ability to manage staff and integrate subcontracts and/or consultants to provide high quality research and technical assistance on this specific project. The offeror must describe how the work will be organized, the proposed staffing and the responsibilities and existing commitments of proposed staff, which includes subcontractors and/or consultants. The offeror must demonstrate its organization's overall capacity and its ability to provide necessary staffing to meet the requirements. The offeror shall describe its capability through its staff employees, present and/or future relationships established through teaming, joint ventures, limited partnerships and subcontracting.

Factor 2: Technical Capabilities

The offeror must describe, in general, their technical approach, methodology, and a management strategy for accomplishing the requirements—i.e., to define what panelized wall systems are currently available and their technical specifications, how do they perform and in what applications are they most used, and what are the standard performance criteria that all panelized wall systems need to meet in order to integrate with existing methods of construction. The offeror must discuss the duties and responsibilities of proposed staff in accomplishing the requirement. The offeror shall also discuss the firm, subcontractors', and/or consultants' relevant experience in regards to the requirements. The discussion shall include the duties and responsibilities of the firm's staff, subcontractors, and/or consultants. The offeror must provide its approach to, but not limited to, providing quality service, solving problems, meeting schedule deadlines, remaining within budget, quality assurance and responding to client's requests in a timely manner. The offeror must discuss, in general, their approach in responding to tasks quickly, including the assembling and managing of teams to ensure demonstration site and technical assistance project completion.

Factor 3: Qualifications and Relevant Experience of Key Personnel.

The offeror shall discuss the firm's key staff employees, subcontractors, and/or consultants who will perform specific or critical aspects of the requirements. The offeror shall submit this information through resumes. Resumes must include general qualifications, such as education and experience. However, resumes must also include the individual's experience, skills and their ability to manage projects of similar complexity and scope. The offeror must provide an organizational chart or staffing plan, which outlines the staff assignments of the key personnel. Provide a brief summary of the role each key individual will play in the execution of the broad-based requirements. In the case where one person serves more than one function, he or she should be listed in both places. The Offeror shall show any vacancies in the chart and shall provide the position descriptions to be used in hiring personnel for said vacancies.

Factor 4: Past Performance.

An offeror's past performance must reflect those customers for whom the offeror performed work within the past five years for the same or significantly similar efforts. The offeror's discussion of the reference must discuss, but not be limited to, the offeror's performance in relation to quality of service, timeliness, cost control, and business relations. Offerors shall include references to its key personnel, subcontractors, and/or consultants. Past performance shall include any work performed under contracts, cooperative agreements, and grants (including Federal, state, and local government and private organizations). Also, offerors and their key personnel, subcontractors, and/or consultants are afforded the opportunity to provide information on problems encountered and their corrective actions on any work performed.

L.9.5 SPECIFIC INSTRUCTIONS

REFERENCE: SOW PATH 14 – Tools for Streamlining the Code Enforcement Documentation & Communication Process

Factor 1: Management Capabilities and Capacity.

The offeror must demonstrate the firm's ability to manage staff and integrate subcontracts and/or consultants to provide high quality research and technical assistance on this specific project. The offeror must describe how the work will be organized, the proposed staffing and the responsibilities and existing commitments of proposed staff, which includes subcontractors and/or consultants. The offeror must demonstrate its organization's overall capacity and its ability to provide necessary staffing to meet the requirements. The offeror shall describe its capability through its staff employees, present and/or future relationships established through teaming, joint ventures, limited partnerships and subcontracting.

Factor 2: Technical Capabilities

The offeror must describe, in general, their technical approach, methodology, and a management strategy for accomplishing the requirements—i.e., to address tools to assist building code officials in conducting and documenting building code inspections in residential construction. The offeror must discuss the duties and responsibilities of proposed staff in accomplishing the requirement. The offeror shall also discuss the firm, subcontractors', and/or consultants' relevant experience in regards to the requirements. The discussion shall include the duties and responsibilities of the firm's staff, subcontractors, and/or consultants. The offeror must provide its approach to, but not limited to, providing quality service, solving problems, meeting schedule deadlines, remaining within budget, quality assurance and responding to client's requests in a timely manner. The offeror must discuss, in general, their approach in responding to tasks quickly, including the assembling and managing of teams to ensure demonstration site and technical assistance project completion.

Factor 3: Qualifications and Relevant Experience of Key Personnel.

The offeror shall discuss the firm's key staff employees, subcontractors, and/or consultants who will perform specific or critical aspects of the requirements. The offeror shall submit this information through resumes. Resumes must include general qualifications, such as education and experience. However, resumes must also include the individual's experience, skills and their ability to manage projects of similar complexity and scope. The offeror must provide an organizational chart or staffing plan, which outlines the staff assignments of the key personnel. Provide a brief summary of the role each key individual will play in the execution of the broad-based requirements. In the case where one person serves more than one function, he or she should be listed in both places. The Offeror shall show any vacancies in the chart and shall provide the position descriptions to be used in hiring personnel for said vacancies.

Factor 4: Past Performance.

An offeror's past performance must reflect those customers for whom the offeror performed work within the past five years for the same or significantly similar efforts. The offeror's discussion of the reference must discuss, but not be limited to, the offeror's performance in relation to quality of service, timeliness, cost control, and business relations. Offerors shall include references to its key personnel, subcontractors, and/or consultants. Past performance shall include any work performed under contracts, cooperative agreements, and grants (including Federal, state, and local government and private organizations). Also, offerors and their key personnel, subcontractors, and/or consultants are afforded the opportunity to provide information on problems encountered and their corrective actions on any work performed.

PART II - BUSINESS PROPOSAL

Offeror shall provide an offer for the service stated herein, enclosing the following:

- (i) Original SF-33, Solicitation, Offer and Award. The offeror shall fully complete Blocks 12 through 18 of the SF-33, place the DUNS number on the cover of the SF-33, and sign all applicable portions. In addition, include acknowledgment of any amendments issued, if any, in this section.
- (ii) Section B, Supplies or Services and Price/Costs, Price Schedule. Price Schedule will be inserted at time of award.
- (iii) Section I, Contract Clauses and HUDAR 2452.237-70, *Key Personnel*.
- (iv) Section K, Representations, Certifications, and Other Statements of Offerors. This section should be filled out completely;
- (v) Provide one (1) letter from a bank in which it has an account. The letter shall be on the bank's letterhead and address financial stability such as: how long the account has been opened; the account standing (i.e., good, fair or poor); approval for further telephone inquiries by HUD staff; and a point of contact and telephone number.

PART IV – REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF OFFERORS
SECTION M - EVALUATION FACTORS FOR AWARD

I. TECHNICAL EVALUATION FACTORS

The following evaluation criteria will be used to evaluate proposals submitted:

- Factor 1. Management Capabilities and Capacity

Demonstrated capability of the offeror to manage staff and integrate subcontracts/and or consultants to provide high quality research and technical assistance on this specific project.

Demonstrated organizational capacity of the offeror and its ability to provide necessary staffing to meet the requirements.

- Factor 2. Technical Capabilities

Demonstrated technical approach, methodology and management strategy, or plans to take to successfully accomplish the requirements to ensure successful completion of the necessary work.

- Factor 3. Qualifications and Relevant Experience of Key Personnel

Qualifications and relevant experience of the firm’s key staff employees, subcontractors, and/or consultants who will perform specific or critical aspects of the requirements.

- Factor 4. Past Performance

Offeror’s past performance in relation to quality of service, timeliness, cost control, and business relations.

II. RELATIVE IMPORTANCE OF TECHNICAL EVALUATION FACTORS TO COST OR PRICE
(AS 2301 - NOV 1997)

While the proposed cost or price has no assigned weight, it will be considered a significant criterion in the overall evaluation of proposals.

For the purposes of evaluation of offers and the selection of the contractors, under this solicitation, the combined relative merit of the offeror’s technical proposal as evaluated in accordance with the technical evaluation factors listed herein shall be considered significantly more important than the cost or price.