

ATTACHMENTS FORM

Instructions: On this form, you will attach the various files that make up your grant application. Please consult with the appropriate Agency Guidelines for more information about each needed file. Please remember that any files you attach must be in the document format and named as specified in the Guidelines.

Important: Please attach your files in the proper sequence. See the appropriate Agency Guidelines for details.

1) Please attach Attachment 1	CHHAP_08_APPENDIX_1_optional	Add Attachment	Delete Attachment	View Attachment
2) Please attach Attachment 2	CHHAP_08_Management_Plan.xls	Add Attachment	Delete Attachment	View Attachment
3) Please attach Attachment 3	Lead_EBL_2006_county.xls	Add Attachment	Delete Attachment	View Attachment
4) Please attach Attachment 4	major_cities_comparison_of_1	Add Attachment	Delete Attachment	View Attachment
5) Please attach Attachment 5	CHHAB_Recruitment_brochures.d	Add Attachment	Delete Attachment	View Attachment
6) Please attach Attachment 6	CHHAP_08_EHW_optional_append	Add Attachment	Delete Attachment	View Attachment
7) Please attach Attachment 7	CHHAP_08_Health_Event_Trackin	Add Attachment	Delete Attachment	View Attachment
8) Please attach Attachment 8	CHHAB_med_resident_Program_e	Add Attachment	Delete Attachment	View Attachment
9) Please attach Attachment 9		Add Attachment	Delete Attachment	View Attachment
10) Please attach Attachment 10		Add Attachment	Delete Attachment	View Attachment
11) Please attach Attachment 11		Add Attachment	Delete Attachment	View Attachment
12) Please attach Attachment 12		Add Attachment	Delete Attachment	View Attachment
13) Please attach Attachment 13		Add Attachment	Delete Attachment	View Attachment
14) Please attach Attachment 14		Add Attachment	Delete Attachment	View Attachment
15) Please attach Attachment 15		Add Attachment	Delete Attachment	View Attachment

Survey on Ensuring Equal Opportunity For Applicants

OMB No. 1890-0014 Exp. 2/28/2009

Purpose:

The Federal government is committed to ensuring that all qualified applicants, small or large, non-religious or faith-based, have an equal opportunity to compete for Federal funding. In order for us to better understand the population of applicants for Federal funds, we are asking nonprofit private organizations (not including private universities) to fill out this survey.

Upon receipt, the survey will be separated from the application. Information provided on the survey will not be considered in any way in making funding decisions and will not be included in the Federal grants database. While your help in this data collection process is greatly appreciated, completion of this survey is voluntary.

Instructions for Submitting the Survey

If you are applying using a hard copy application, please place the completed survey in an envelope labeled "Applicant Survey." Seal the envelope and include it along with your application package. If you are applying electronically, please submit this survey along with your application.

Applicant's (Organization) Name:	Case Western Reserve University
Applicant's DUNS Name:	[REDACTED]
Federal Program:	Healthy Homes Demonstration Program
CFDA Number:	14.901

- Has the applicant ever received a grant or contract from the Federal government?

Yes No
- Is the applicant a faith-based organization?

Yes No
- Is the applicant a secular organization?

Yes No
- Does the applicant have 501(c)(3) status?

Yes No
- Is the applicant a local affiliate of a national organization?

Yes No
- How many full-time equivalent employees does the applicant have? (Check only one box.)

3 or Fewer 15-50

4-5 51-100

6-14 over 100
- What is the size of the applicant's annual budget? (Check only one box.)

Less Than \$150,000

\$150,000 - \$299,999

\$300,000 - \$499,999

\$500,000 - \$999,999

\$1,000,000 - \$4,999,999

\$5,000,000 or more

Survey Instructions on Ensuring Equal Opportunity for Applicants

OMB No. 1890-0014 Exp. 2/28/2009

Provide the applicant's (organization) name and DUNS number and the grant name and CFDA number.

1. Self-explanatory.
2. Self-identify.
3. Self-identify.
4. 501(c)(3) status is a legal designation provided on application to the Internal Revenue Service by eligible organizations. Some grant programs may require nonprofit applicants to have 501(c)(3) status. Other grant programs do not.
5. Self-explanatory.
6. For example, two part-time employees who each work half-time equal one full-time equivalent employee. If the applicant is a local affiliate of a national organization, the responses to survey questions 2 and 3 should reflect the staff and budget size of the local affiliate.
7. Annual budget means the amount of money your organization spends each year on all of its activities.

Paperwork Burden Statement

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless such collection displays a valid OMB control number. The valid OMB control number for this

information collection is **1890-0014**. The time required

to complete this information collection is estimated to average five (5) minutes per response, including the time to review instructions, search existing data resources, gather the data needed, and complete and review the information collection.

If you have any comments concerning the accuracy of the time estimate(s) or suggestions for improving this form, please write to: The Agency Contact listed in this grant application package.

America's Affordable Communities
Initiative

U.S. Department of Housing
and Urban Development

OMB approval no. 2510-0013
(exp. 03/31/2010)

* Organization Name:

Case Western Reserve University

Questionnaire for HUD's Initiative on Removal of Regulatory Barriers

Part A. Local Jurisdictions. Counties Exercising Land Use and Building Regulatory Authority and Other Applicants Applying for Projects Located in such Jurisdictions or Counties [Collectively, Jurisdiction]

	1	2
1. Does your jurisdiction's comprehensive plan (or in the case of a tribe or TDHE, a local Indian Housing Plan) include a "housing element"? A local comprehensive plan means the adopted official statement of a legislative body of a local government that sets forth (in words, maps, illustrations, and/or tables) goals, policies, and guidelines intended to direct the present and future physical, social, and economic development that occurs within its planning jurisdiction and that includes a unified physical plan for the public development of land and water. If your jurisdiction does not have a local comprehensive plan with a "housing element," please enter no. If no, skip to question # 4.	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes
2. If your jurisdiction has a comprehensive plan with a housing element, does the plan provide estimates of current and anticipated housing needs, taking into account the anticipated growth of the region, for existing and future residents, including low, moderate and middle income families, for at least the next five years?	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes
3. Does your zoning ordinance and map, development and subdivision regulations or other land use controls conform to the jurisdiction's comprehensive plan regarding housing needs by providing: a) sufficient land use and density categories (multifamily housing, duplexes, small lot homes and other similar elements); and, b) sufficient land zoned or mapped "as of right" in these categories, that can permit the building of affordable housing addressing the needs identified in the plan? (For purposes of this notice, "as-of-right," as applied to zoning, means uses and development standards that are determined in advance and specifically authorized by the zoning ordinance. The ordinance is largely self-enforcing because little or no discretion occurs in its administration.). If the jurisdiction has chosen not to have either zoning, or other development controls that have varying standards based upon districts or zones, the applicant may also enter yes.	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes
4. Does your jurisdiction's zoning ordinance set minimum building size requirements that exceed the local housing or health code or is otherwise not based upon explicit health standards?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

5. If your jurisdiction has development impact fees, are the fees specified and calculated under local or state statutory criteria? If no, skip to question #7. Alternatively, if your jurisdiction does not have impact fees, you may enter yes.	<input type="checkbox"/> No	<input type="checkbox"/> Yes
6. If yes to question #5, does the statute provide criteria that sets standards for the allowable type of capital investments that have a direct relationship between the fee and the development (nexus), and a method for fee calculation?	<input type="checkbox"/> No	<input type="checkbox"/> Yes
7. If your jurisdiction has impact or other significant fees, does the jurisdiction provide waivers of these fees for affordable housing?	<input type="checkbox"/> No	<input type="checkbox"/> Yes
8. Has your jurisdiction adopted specific building code language regarding housing rehabilitation that encourages such rehabilitation through gradated regulatory requirements applicable as different levels of work are performed in existing buildings? Such code language increases regulatory requirements (the additional improvements required as a matter of regulatory policy) in proportion to the extent of rehabilitation that an owner/developer chooses to do on a voluntary basis. For further information see HUD publication: "Smart Codes in Your Community: A Guide to Building Rehabilitation Codes" (www.huduser.org/publications/detech/smartcodes.html)	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes
9. Does your jurisdiction use a recent version (i.e. published within the last 5 years or, if no recent version has been published, the last version published) of one of the nationally recognized model building codes (i.e. the International Code Council (ICC), the Building Officials and Code Administrators International (BOCA), the Southern Building Code Congress International (SBCI), the International Conference of Building Officials (ICBO), the National Fire Protection Association (NFPA)) without significant technical amendment or modification? In the case of a tribe or TDHE, has a recent version of one of the model building codes as described above been adopted or, alternatively, has the tribe or TDHE adopted a building code that is substantially equivalent to one or more of the recognized model building codes? Alternatively, if a significant technical amendment has been made to the above model codes, can the jurisdiction supply supporting data that the amendments do not negatively impact affordability?	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes
10. Does your jurisdiction's zoning ordinance or land use regulations permit manufactured (HUD-Code) housing "as of right" in all residential districts and zoning classifications in which similar site-built housing is permitted, subject to design, density, building size, foundation requirements, and other similar requirements applicable to other housing that will be deemed realty, irrespective of the method of production?	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes

<p>11. Within the past five years, has a jurisdiction official (i.e., chief executive, mayor, county chairman, city manager, administrator, or a tribally recognized official, etc.), the local legislative body, or planning commission, directly, or in partnership with major private or public stakeholders, convened or funded comprehensive studies, commissions, or hearings, or has the jurisdiction established a formal ongoing process, to review the rules, regulations, development standards, and processes of the jurisdiction to assess their impact on the supply of affordable housing?</p>	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes
<p>12. Within the past five years, has the jurisdiction initiated major regulatory reforms either as a result of the above study or as a result of information identified in the barrier component of the jurisdiction's "HUD Consolidated Plan?" If yes, attach a brief list of these major regulatory reforms.</p> <p><i>(If you have attachments that are electronic files please scroll to bottom of page 5 and attach. For information that is not in an electronic format use the eFax method. See the General Section Instructions for eFaxing.)</i></p>	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes
<p>13. Within the past five years has your jurisdiction modified infrastructure standards and/or authorized the use of new infrastructure technologies (e.g. water, sewer, street width) to significantly reduce the cost of housing?</p>	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes
<p>14. Does your jurisdiction give "as-of-right" density bonuses sufficient to offset the cost of building below market units as an incentive for any market rate residential development that includes a portion of affordable housing? (As applied to density bonuses, "as of right" means a density bonus granted for a fixed percentage or number of additional market rate dwelling units in exchange for the provision of a fixed number or percentage of affordable dwelling units and without the use of discretion in determining the number of additional market rate units.)</p>	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes
<p>15. Has your jurisdiction established a single, consolidated permit application process for housing development that includes building, zoning, engineering, environmental, and related permits? Alternatively, does your jurisdiction conduct concurrent, not sequential, reviews for all required permits and approvals?</p>	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes
<p>16. Does your jurisdiction provide for expedited or "fast track" permitting and approvals for all affordable housing projects in your community?</p>	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes
<p>17. Has your jurisdiction established time limits for government review and approval or disapproval of development permits in which failure to act, after the application is deemed complete, by the government within the designated time period, results in automatic approval?</p>	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes
<p>18. Does your jurisdiction allow "accessory apartments" either as: a) a special exception or conditional use in all single-family residential zones or, b) "as of right" in a majority of residential districts otherwise zoned for single-family housing?</p>	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes
<p>19. Does your jurisdiction have an explicit policy that adjusts or waives existing parking requirements for all affordable housing developments?</p>	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes
<p>20. Does your jurisdiction require affordable housing projects to undergo public review or special hearings when the project is otherwise in full compliance with the zoning ordinance and other development regulations?</p>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<p>Total Points:</p>		

**Part B. State Agencies and Departments or Other Applicants for Projects Located in
Unincorporated Areas or Areas Otherwise Not Covered in Part A**

	1	2
1. Does your state, either in its planning and zoning enabling legislation or in any other legislation, require localities regulating development have a comprehensive plan with a "housing element?" If no, skip to question # 4	<input type="checkbox"/> No	<input type="checkbox"/> Yes
2. Does your state require that a local jurisdiction's comprehensive plan estimate current and anticipated housing needs, taking into account the anticipated growth of the region, for existing and future residents, including low, moderate, and middle income families, for at least the next five years?	<input type="checkbox"/> No	<input type="checkbox"/> Yes
3. Does your state's zoning enabling legislation require that a local jurisdiction's zoning ordinance have a) sufficient land use and density categories (multifamily housing, duplexes, small lot homes and other similar elements); and, b) sufficient land zoned or mapped in these categories, that can permit the building of affordable housing that addresses the needs identified in the comprehensive plan?	<input type="checkbox"/> No	<input type="checkbox"/> Yes
4. Does your state have an agency or office that includes a specific mission to determine whether local governments have policies or procedures that are raising costs or otherwise discouraging affordable housing?	<input type="checkbox"/> No	<input type="checkbox"/> Yes
5. Does your state have a legal or administrative requirement that local governments undertake periodic self-evaluation of regulations and processes to assess their impact upon housing affordability address these barriers to affordability?	<input type="checkbox"/> No	<input type="checkbox"/> Yes
6. Does your state have a technical assistance or education program for local jurisdictions that includes assisting them in identifying regulatory barriers and in recommending strategies to local governments for their removal?	<input type="checkbox"/> No	<input type="checkbox"/> Yes
7. Does your state have specific enabling legislation for local impact fees? If no skip to question #9.	<input type="checkbox"/> No	<input type="checkbox"/> Yes
8. If yes to the question #7, does the state statute provide criteria that sets standards for the allowable type of capital investments that have a direct relationship between the fee and the development (nexus) and a method for fee calculation?	<input type="checkbox"/> No	<input type="checkbox"/> Yes
9. Does your state provide significant financial assistance to local governments for housing, community development and/or transportation that includes funding prioritization or linking funding on the basis of local regulatory barrier removal activities?	<input type="checkbox"/> No	<input type="checkbox"/> Yes

<p>10. Does your state have a mandatory state-wide building code that a) does not permit local technical amendments and b) uses a recent version (i.e. published within the last five years or, if no recent version has been published, the last version published) of one of the nationally recognized model building codes (i.e. the International Code Council (ICC), the Building Officials and Code Administrators International (BOCA), the Southern Building Code Congress International (SBCI), the International Conference of Building Officials (ICBO), the National Fire Protection Association (NFPA)) without significant technical amendment or modification?</p> <p>Alternatively, if the state has made significant technical amendment to the model code, can the state supply supporting data that the amendments do not negatively impact affordability?</p>	<input type="checkbox"/> No	<input type="checkbox"/> Yes
<p>11. Has your jurisdiction adopted specific building code language regarding housing rehabilitation that encourages such rehabilitation through graduated regulatory requirements applicable as different levels of work are performed in existing buildings? Such code language increases regulatory requirements (the additional improvements required as a matter of regulatory policy) in proportion to the extent of rehabilitation that an owner/developer chooses to do on a voluntary basis. For further information see HUD publication: "Smart Codes in Your Community: A Guide to Building Rehabilitation Codes" (www.huduser.org/publications/destech/smartcodes.html)</p>	<input type="checkbox"/> No	<input type="checkbox"/> Yes
<p>12. Within the past five years has your state made any changes to its own processes or requirements to streamline or consolidate the state's own approval processes involving permits for water or wastewater, environmental review, or other State-administered permits or programs involving housing development? If yes, briefly list these changes.</p> <p><i>(If you have attachments that are electronic files please scroll to bottom of this page and attach. For information that is not in an electronic format use the eFax method. See the General Section Instructions for eFaxing.)</i></p>	<input type="checkbox"/> No	<input type="checkbox"/> Yes
<p>13. Within the past five years, has your state (i.e., Governor, legislature, planning department) directly or in partnership with major private or public stakeholders, convened or funded comprehensive studies, commissions, or panels to review state or local rules, regulations, development standards, and processes to assess their impact on the supply of affordable housing?</p>	<input type="checkbox"/> No	<input type="checkbox"/> Yes
<p>14. Within the past five years, has the state initiated major regulatory reforms either as a result of the above study or as a result of information identified in the barrier component of the states' "Consolidated Plan submitted to HUD?" If yes, briefly list these major regulatory reforms.</p> <p><i>(If you have attachments that are electronic files please scroll to bottom of this page and attach. For information that is not in an electronic format use the eFax method. See the General Section Instructions for eFaxing.)</i></p>	<input type="checkbox"/> No	<input type="checkbox"/> Yes
<p>15. Has the state undertaken any other actions regarding local jurisdiction's regulation of housing development including permitting, land use, building or subdivision regulations, or other related administrative procedures? If yes, briefly list these actions.</p> <p><i>(If you have attachments that are electronic files please scroll to bottom of this page and attach. For information that is not in an electronic format use the eFax method. See the General Section Instructions for eFaxing.)</i></p>	<input type="checkbox"/> No	<input type="checkbox"/> Yes
<p>Total Points:</p>		

Additional Information:

Facsimile Transmittal

U. S. Department of Housing and Urban Development
Office of Department Grants Management and Oversight

OMB Approval No. 2525-0118
exp. Date (5/30/2008)

1216128917 - 5079

* Name of Document Transmitting: will be submitted via grants.gov - no faxes

1. Applicant Information:

* Legal Name: Case Western Reserve University
* Address:
* Street1: 10900 Euclid Avenue
Street2:
* City: Cleveland
County:
* State: OH: Ohio
* Zip Code: 44106 * Country: USA: UNITED STATES

2. Catalog of Federal Domestic Assistance Number:

* Organizational DUNS: [redacted] CFDA No.: 14.901
Title: Healthy Homes Demonstration Grants
Program Component:

3. Facsimile Contact Information:

Department: Environmental Health Sciences
Division: Swetland Ctr for Enviro Hlth

4. Name and telephone number of person to be contacted on matters involving this facsimile.

Prefix: * First Name: n/a
Middle Name:
* Last Name: n/a
Suffix:
* Phone Number: n/a
Fax Number:

* 5. Email: medres@case.edu

* 6. What is your Transmittal? (Check one box per fax)

a. Certification b. Document c. Match/Leverage Letter d. Other

* 7. How many pages (including cover) are being faxed? 1

DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C.1352

Approved by OMB

0348-0048

1. * Type of Federal Action: <input type="checkbox"/> a. contract <input checked="" type="checkbox"/> b. grant <input type="checkbox"/> c. cooperative agreement <input type="checkbox"/> d. loan <input type="checkbox"/> e. loan guarantee <input type="checkbox"/> f. loan insurance	2. * Status of Federal Action: <input type="checkbox"/> a. bid/offer/application <input checked="" type="checkbox"/> b. initial award <input type="checkbox"/> c. post-award	3. * Report Type: <input checked="" type="checkbox"/> a. initial filing <input type="checkbox"/> b. material change
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4. Name and Address of Reporting Entity:

Prime SubAwardee

* Name:

* Street 1: Street 2:

* City: State: Zip:

Congressional District, if known:

5. If Reporting Entity in No.4 is Subawardee, Enter Name and Address of Prime:

6. * Federal Department/Agency: <input type="text" value="Housing and Urban Development"/>	7. * Federal Program Name/Description: <input type="text" value="Healthy Homes Demonstration Grants"/> CFDA Number, if applicable: <input type="text" value="14.901"/>
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8. Federal Action Number, if known: <input type="text"/>	9. Award Amount, if known: \$ <input type="text" value="874,990.00"/>
--	---

10. a. Name and Address of Lobbying Registrant:

Prefix * First Name Middle Name

* Last Name Suffix

* Street 1: Street 2:

* City: State: Zip:

b. Individual Performing Services (including address if different from No. 10a)

Prefix * First Name Middle Name

* Last Name Suffix

* Street 1: Street 2:

* City: State: Zip:

11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when the transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

* Signature:

* Name: Prefix * First Name Middle Name

* Last Name Suffix

Title: Telephone No.: Date:

Authorized for Local Reproduction
Standard Form - LLL (Rev. 7-87)

COLLEGES AND UNIVERSITIES RATE AGREEMENT

HW #: 1341018992A1

DATE: August 15, 2007

INSTITUTION:
Case Western Reserve University
10900 Euclid Avenue
Cleveland

OH 44106-7003

FILING REF.: The preceding Agreement was dated March 27, 2007

The rates approved in this agreement are for use on grants, contracts and other agreements with the Federal Government, subject to the conditions in Section III.

SECTION I: FACILITIES AND ADMINISTRATIVE COST RATES*

RATE TYPES: FIXED FINAL PROV. (PROVISIONAL) PRED. (PREDETERMINED)

TYPE	EFFECTIVE PERIOD		RATE (%)	LOCATIONS	APPLICABLE TO:
	FROM	TO			
PRED.	07/01/05	06/30/08	54.5	On Campus	Organized Research
PRED.	07/01/05	06/30/08	26.0	Off Campus	All Programs
PRED.	07/01/08	06/30/12	57.0	On Campus	Organized Research
PRED.	07/01/08	06/30/12	26.0	Off Campus	All Programs
PROV.	07/01/12	UNTIL AMENDED	Use same rates and conditions as those cited for fiscal year ending June 30, 2012.		

*BASE: Modified total direct costs, consisting of all salaries and wages, fringe benefits, materials, supplies, services, travel and subgrants and subcontracts up to the first \$25,000 of each subgrant or subcontract (regardless of the period covered by the subgrant or subcontract). Modified total direct costs shall exclude equipment, capital expenditures, charges for patient care, tuition remission, rental costs of off-site facilities, scholarships, and fellowships as well as the portion of each subgrant and subcontract in excess of \$25,000.

Application for Federal Assistance SF-424		Version 02
<p>* 1. Type of Submission:</p> <input type="checkbox"/> Preapplication <input checked="" type="checkbox"/> Application <input type="checkbox"/> Changed/Corrected Application		
<p>* 2. Type of Application:</p> <input checked="" type="checkbox"/> New <input type="checkbox"/> Continuation <input type="checkbox"/> Revision		
<p>* If Revision, select appropriate letter(s):</p> <input type="text"/> <p>* Other (Specify)</p> <input type="text"/>		
<p>* 3. Date Received:</p> <input type="text" value="07/15/2008"/>		<p>4. Applicant Identifier:</p> <input type="text" value="CHHAP_2008"/>
<p>5a. Federal Entity Identifier:</p> <input type="text"/>		<p>* 5b. Federal Award Identifier:</p> <input type="text"/>
<p>State Use Only:</p>		
<p>6. Date Received by State:</p> <input type="text"/>		<p>7. State Application Identifier:</p> <input type="text"/>
<p>8. APPLICANT INFORMATION:</p>		
<p>* a. Legal Name: <input type="text" value="Case Western Reserve University"/></p>		
<p>* b. Employer/Taxpayer Identification Number (EIN/TIN):</p> <input type="text" value="341018992"/>		<p>* c. Organizational DUNS:</p> <input type="text" value="REDACTED"/>
<p>d. Address:</p>		
<p>* Street1: <input type="text" value="10900 Euclid Avenue"/></p>		
<p>Street2: <input type="text"/></p>		
<p>* City: <input type="text" value="Cleveland"/></p>		
<p>County: <input type="text"/></p>		
<p>* State: <input type="text" value="OH: Ohio"/></p>		
<p>Province: <input type="text"/></p>		
<p>* Country: <input type="text" value="USA: UNITED STATES"/></p>		
<p>* Zip / Postal Code: <input type="text" value="44106"/></p>		
<p>e. Organizational Unit:</p>		
<p>Department Name:</p> <input type="text" value="Environmental Health Sciences"/>		<p>Division Name:</p> <input type="text" value="Swetland Ctr for Enviro Hlth"/>
<p>f. Name and contact information of person to be contacted on matters involving this application:</p>		
<p>Prefix: <input type="text"/></p>		<p>* First Name: <input type="text" value="Cynthia"/></p>
<p>Middle Name: <input type="text" value="O"/></p>		
<p>* Last Name: <input type="text" value="Case"/></p>		
<p>Suffix: <input type="text"/></p>		
<p>Title: <input type="text" value="Director, Grants and Contracts"/></p>		
<p>Organizational Affiliation:</p> <input type="text" value="Case Western Reserve University"/>		
<p>* Telephone Number: <input type="text" value="216-368-4432"/></p>		<p>Fax Number: <input type="text" value="216-368-4805"/></p>
<p>* Email: <input type="text" value="medres@case.edu"/></p>		

Application for Federal Assistance SF-424

Version 02

9. Type of Applicant 1: Select Applicant Type:

O: Private Institution of Higher Education

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

*** Other (specify):**

*** 10. Name of Federal Agency:**

US Department of Housing and Urban Development

11. Catalog of Federal Domestic Assistance Number:

14.901

CFDA Title:

Healthy Homes Demonstration Grants

*** 12. Funding Opportunity Number:**

FR-5200-N-17

*** Title:**

Healthy Homes Demonstration Program

13. Competition Identification Number:

HHD-17

Title:

14. Areas Affected by Project (Cities, Counties, States, etc.):

Cleveland, East Cleveland, Cuyahoga County, Ohio

*** 15. Descriptive Title of Applicant's Project:**

Case Healthy Homes and Patients Program

Attach supporting documents as specified in agency instructions.

Add Attachments

Delete Attachments

View Attachments

Application for Federal Assistance SF-424

Version 02

16. Congressional Districts Of:

* a. Applicant

* b. Program/Project

Attach an additional list of Program/Project Congressional Districts if needed.

17. Proposed Project:

* a. Start Date:

* b. End Date:

18. Estimated Funding (\$):

* a. Federal	<input type="text" value="874,990.00"/>
* b. Applicant	<input type="text" value=""/>
* c. State	<input type="text" value="0.00"/>
* d. Local	<input type="text" value="0.00"/>
* e. Other	<input type="text" value="0.00"/>
* f. Program Income	<input type="text" value="0.00"/>
* g. TOTAL	<input type="text" value=""/>

* 19. Is Application Subject to Review By State Under Executive Order 12372 Process?

- a. This application was made available to the State under the Executive Order 12372 Process for review on
- b. Program is subject to E.O. 12372 but has not been selected by the State for review.
- c. Program is not covered by E.O. 12372.

* 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes", provide explanation.)

Yes No

21. *By signing this application, I certify (1) to the statements contained in the list of certifications** and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)

** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix: * First Name:
 Middle Name:
 * Last Name:
 Suffix:

* Title:

* Telephone Number: Fax Number:

* Email:

* Signature of Authorized Representative: * Date Signed:

Application for Federal Assistance SF-424

Version 02

*** Applicant Federal Debt Delinquency Explanation**

The following field should contain an explanation if the Applicant organization is delinquent on any Federal Debt. Maximum number of characters that can be entered is 4,000. Try and avoid extra spaces and carriage returns to maximize the availability of space.

[Close Form](#)

Project Narrative File(s)

* Mandatory Project Narrative File Filename:

[Add Mandatory Project Narrative File](#) [Delete Mandatory Project Narrative File](#) [View Mandatory Project Narrative File](#)

To add more Project Narrative File attachments, please use the attachment buttons below.

[Add Optional Project Narrative File](#) [Delete Optional Project Narrative File](#) [View Optional Project Narrative File](#)

**Applicant/Recipient
Disclosure/Update Report**

U.S. Department of Housing
and Urban Development

OMB Approval No. 2510-0011
(exp. 08/31/2009)

Applicant/Recipient Information

* Duns Number:

[REDACTED]

* Report Type:

INITIAL

1. Applicant/Recipient Name, Address, and Phone (include area code):

* Applicant Name:

Case Western Reserve University

* Street1:

10900 Euclid Avenue

Street2:

* City:

Cleveland

County:

* State:

OH: Ohio

* Zip Code:

44106

* Country:

USA: UNITED STATES

* Phone:

216-368-4432

2. Social Security Number or Employer ID Number:

341018992

*** 3. HUD Program Name:**

Healthy Homes Demonstration Grants

*** 4. Amount of HUD Assistance Requested/Received: \$**

874,990.00

5. State the name and location (street address, City and State) of the project or activity:

* Project Name:

Case Healthy Homes and Patients Project

* Street1:

10900 Euclid Avenue

Street2:

* City:

Cleveland

County:

Cuyahoga

* State:

OH: Ohio

* Zip Code:

44106

* Country:

USA: UNITED STATES

Part I Threshold Determinations

* 1. Are you applying for assistance for a specific project or activity? These terms do not include formula grants, such as public housing operating subsidy or CDBG block grants. (For further information see 24 CFR Sec. 4.3).

Yes

No

* 2. Have you received or do you expect to receive assistance within the jurisdiction of the Department (HUD), involving the project or activity in this application, in excess of \$200,000 during this fiscal year (Oct. 1-Sep. 30)? For further information, see 24 CFR Sec. 4.9

Yes

No

If you answered "No" to either question 1 or 2, Stop! You do not need to complete the remainder of this form.

However, you must sign the certification at the end of the report.

Form HUD-2880 (3/99)

Part II Other Government Assistance Provided or Requested / Expected Sources and Use of Funds.

Such assistance includes, but is not limited to, any grant, loan, subsidy, guarantee, insurance, payment, credit, or tax benefit.

Department/State/Local Agency Name:

* Government Agency Name:

Government Agency Address:

* Street1:

Street2:

* City:

County:

* State:

* Zip Code:

* Country:

* Type of Assistance:

* Amount Requested/Provided: \$

* Expected Uses of the Funds:

Department/State/Local Agency Name:

* Government Agency Name:

Government Agency Address:

* Street1:

Street2:

* City:

County:

* State:

* Zip Code:

* Country:

* Type of Assistance:

* Amount Requested/Provided: \$

* Expected Uses of the Funds:

(Note: Use Additional pages if necessary.)

Add Attachment

Delete Attachment

View Attachment

Part III Interested Parties. You must decide.

1. All developers, contractors, or consultants involved in the application for the assistance or in the planning, development, or implementation of the project or activity and

2. Any other person who has a financial interest in the project or activity for which the assistance is sought that exceeds \$50,000 or 10 percent of the assistance (whichever is lower).

* Alphabetical list of all persons with a reportable financial interest in the project or activity (For individuals, give the last name first)	* Social Security No. or Employee ID No.	* Type of Participation in Project/Activity	* Financial Interest in Project/Activity (\$ and %)
<input type="text"/>	<input type="text"/>	<input type="text"/>	\$ <input type="text"/> <input type="text"/> %
<input type="text"/>	<input type="text"/>	<input type="text"/>	\$ <input type="text"/> <input type="text"/> %
<input type="text"/>	<input type="text"/>	<input type="text"/>	\$ <input type="text"/> <input type="text"/> %
<input type="text"/>	<input type="text"/>	<input type="text"/>	\$ <input type="text"/> <input type="text"/> %
<input type="text"/>	<input type="text"/>	<input type="text"/>	\$ <input type="text"/> <input type="text"/> %

(Note: Use Additional pages if necessary.)

Add Attachment

Delete Attachment

View Attachment

Certification

Warning: If you knowingly make a false statement on this form, you may be subject to civil or criminal penalties under Section 1001 of Title 18 of the United States Code. In addition, any person who knowingly and materially violates any required disclosures of information, including intentional non-disclosure, is subject to civil money penalty not to exceed \$10,000 for each violation.

I certify that this information is true and complete.

* Signature:

Cynthia Case

* Date: (mm/dd/yyyy)

07/15/2008

Factor 1 Capacity Of The Applicant And Relevant Organizational Experience
Public reporting burden for this collection of information is estimated to average 17 hours. This includes the time for collecting, reviewing, and reporting the data. This information collection is collected during the application process and is used to select grantees under a competitive selection process. Section 1011 of Title X of the Housing and Community Development Act of 1992 authorizes this collection. Response to this request for information is required in order to receive the benefits to be derived. This agency may not collect this information, and you are not required to complete this form unless it displays a currently valid OMB control number.

A. Key Personnel			
Name and Position Title (please include the organization position titles in addition to those shown). Resumes or position descriptions are to be included in appendix.	Percent of Time Proposed for this Grant (HUD Funded or In-Kind)	Percent of Time to be spent on other LHC HUD grants	Percent of Time to be spent on other Activities
Note: These three columns should total 100%			
A.1 Overall Project Director			
Name: [redacted] Ph.D. MD	20%	10%	70%
Organization Position Title: Prof and Chairman			
Phone Number: [redacted] Fax Number: [redacted]			
Email: [redacted]			
A.2 Day-to-Day Program Manager <input type="checkbox"/> To be hired <input checked="" type="checkbox"/> On staff			
Name: [redacted] RN	50%	30%	20%
Organization Position Title: Nurse Coordinator			
Phone Number: [redacted] Fax Number: [redacted]			
Email: [redacted]			
A.3 Other Field Manager <input type="checkbox"/> To be hired <input checked="" type="checkbox"/> On staff			
Name: [redacted]	30%	33%	37%
Organization Position Title: Director, Environ Hlth Watch			
Phone Number: [redacted] Fax Number: [redacted]			
Email: [redacted]			

B. Partners			
Name of the organization or entity that partners or will partner with applicant and if partner will be subgrantee/subrecipient	Description of Commitment and Status	Proposed Activities To Be Conducted by Partner	Amount of HUD Grant Funds (If Subgrant)
B.1 Name: Environmental Health Watch	Sub-grantee, partner, letter	home assessment, work specification, low level remediation, education	480,330
Type of Organization: community-based, environmental			
Subgrantee/Subrecipient: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
<input checked="" type="checkbox"/> Current Partner <input type="checkbox"/> Partnership to be developed			
B.2 Name: Cleveland Department of Public Health	Sub-grantee, referral partner, letter	coordinate referrals to lead hazard control and other programs	15,000
Type of Organization: Childhood Lead Poisoning Prevention			
Subgrantee/Subrecipient: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
<input checked="" type="checkbox"/> Current Partner <input type="checkbox"/> Partnership to be developed			
B.3 Name: Cuyahoga County Board of Health	Referral partner, letter	coordinate referrals to lead hazard control and other programs	--
Type of Organization: Childhood Lead Poisoning Prevention			
Subgrantee/Subrecipient: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
<input checked="" type="checkbox"/> Current Partner <input type="checkbox"/> Partnership to be developed			
B.4 Name: Community Housing Solutions	Referral partner, letter	manage higher level building interventions	--
Type of Organization: non-profit housing			
Subgrantee/Subrecipient: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
<input checked="" type="checkbox"/> Current Partner <input type="checkbox"/> Partnership to be developed			
B.5 Name: Neighborhood Leadership Institute	Sub-grantee, partner, letter	manage community interface with focus group	5,250
Type of Organization: grassroots, community-based			
Subgrantee/Subrecipient: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
<input checked="" type="checkbox"/> Current Partner <input type="checkbox"/> Partnership to be developed			
B.6 Name:			
Type of Organization:			
Subgrantee/Subrecipient: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
<input type="checkbox"/> Current Partner <input type="checkbox"/> Partnership to be developed			
B.7 Name:			
Type of Organization:			
Subgrantee/Subrecipient: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
<input type="checkbox"/> Current Partner <input type="checkbox"/> Partnership to be developed			

Definitions:
Partner Name: Name of organization or entity that will partner with applicant in conducting program activities.
Type of Organization or Program: Health, Housing, Environmental, Community Development Department, Planning Department, Grassroots Faith-Based or Community-Based Organization, Childhood Lead Poisoning Prevention Program, Financial Institution, Job Training and Economic Opportunity Organization, etc.
Description of Commitment: Memorandum of Understanding/Agreement, Contract, Subgrantees, Letter, etc.
Proposed Activities to be Conducted by Partner: The type of activities that will be conducted by the grant partner in support of program efforts (i.e. rehabilitation, testing, training, education and outreach, specification writing, relocation, etc.)
Amount of HUD Grant Funds if Subgrantee/Subrecipient: The dollar amount subgrantee/subrecipient will be receiving for the services they will provide.



CASE WESTERN RESERVE
UNIVERSITY

SCHOOL OF MEDICINE

Mary Ann Swetland Center for Environmental Health

10900 Euclid Avenue
Cleveland, Ohio 44106-4940

Visitors and Deliveries
Wood Building, WG-19

Phone 216.368.5967
Fax 216.368.3194

June 30, 2008

Jonathan Gant, Director
HUD Office of Healthy Homes and Lead Hazard Control
451 7th Street SW, Room P3206
Washington, D.C. 20410

Re: Case Healthy Homes and Patients (CHHAP) Program

Dear Mr. Gant:

The Mary Ann Swetland Center for Environmental Health at Case Western Reserve University is submitting the enclosed grant application to the HUD Healthy Homes Demonstration program.

The CHHAP Program will support Healthy Homes inspections and interventions in 159 inner city homes of young infants and the elderly over a three year grant period; continuing our current successful similar program. Participants are identified for this project through clinics of University Hospitals Case Medical Center (UHCMC) as patients of first year physicians-in-training (medical residents). These medical residents accompany Healthy Homes inspectors to their patients' homes to conduct a standardized home inspection for health and safety hazards. Working together, the inspector, medical resident, and home occupant create an action plan to achieve a healthy home which includes necessary structural remediation and educational interventions. Home inspections and interventions will be performed in early infancy, giving the program a significant prevention aspect. With the elderly patients, the prevention goal is to prolong their ability to live independently. We had hoped to expand this elderly program but with the limited funding available have had to begin investigating additional funding sources.

CHHAP Program activities will be conducted in conjunction with Environmental Health Watch, Cuyahoga County Board of Health, the Cleveland Department of Public Health, the Community Housing Solutions. Where possible, appropriate city, county, or CHS housing resources will be utilized as leveraged support, with a great deal of coordination into other Healthy Homes and Lead Hazard Control grants in the area.

The Mary Ann Swetland Center is requesting federal funding in the amount of \$874,990. Matching and leveraged support extends this by an additional \$ [REDACTED] for a total program budget of \$ [REDACTED]

If you wish to discuss this application during the evaluation process, please contact the Project Director, Dr. Dearborn at (216) 368-5967.

Sincerely,

[REDACTED]

Dorr G. Dearborn, PhD, MD
Mary Ann Swetland Professor and Chair
Department of Environmental Health Sciences
Director, Mary Ann Swetland Center
for Environmental Health

[REDACTED]

Richard J. Sohn
Assoc Dean for Research Administration

2008 HUD Healthy Homes Demonstration Grant Application
CASE HEALTHY HOMES & PATIENTS PROGRAM

Abstract:

Overview: Homes in low-income urban areas are too often hazardous for the health and safety of their occupants, especially for infants and the elderly. Making physicians aware of these conditions is a key component in improving the medical care of these two populations and enlisting physicians' support for healthy housing efforts. The Family Medicine and the Pediatric residency training programs and the Center for Geriatric Medicine at University Hospitals Case Medical Center will participate in a home inspection and environmental intervention program for the patients of their physicians in training. Each resident physician accompanies an Environmental Health Watch home environment specialist on an inspection of one of their infant/elderly patient's homes and participates in devising an action plan including interventions by the family and by EHW, whereupon the physician continues to monitor recommended behavior changes (e.g. smoking outside) at subsequent clinic visits. This proposal expands on our well received Family Medicine Clinic program to include Pediatric residents at Rainbow Babies & Children's Hospital (ranked in the top 5 US children's hospitals by U.S. News & World Report) and expands the geriatric population that will be served. The Case Healthy Homes & Patients program seeks three years of funding (\$874,990) from the HUD Healthy Homes Initiative for assessment and remediation of 159 homes of low-income infant and elderly patients--53 homes a year for three years.

Goals: The primary goals are: 1) to provide healthy homes assessments and housing interventions to the families of young infants and elderly in high-risk housing in the inner city of Cleveland and immediate suburbs; 2) to provide physicians-in-training with the opportunity to learn about housing-related health hazards through participation in assessments at their patients' homes; and 3) to develop a sustainable model of home interventions that can be adopted by existing infant and elderly home visit programs in Cleveland and Cuyahoga County. The purpose of targeting young infant and elderly homes is in an attempt to provide primary prevention against the housing hazards (e.g. inhalant allergens) and to extend the independent living time of the elderly. The inspection and intervention program takes a holistic approach to the home environment addressing a breadth of hazards (see below).

Partners: The **Swetland Center for Environmental Health**, Case Western Reserve University School of Medicine, is the applicant organization and is responsible for general oversight of the project, administration, recruitment, monitoring of health outcomes, and evaluation of results. The **Departments of Pediatrics and Family Medicine** and the **Center for Geriatric Medicine** at the University Hospitals Case Medical Center are integral components of the program with their residents receiving hands-on home environmental health experience. **Environmental Health Watch**, a grassroots community-based non-profit organization, will conduct home assessments, provide parent education, carry-out limited housing interventions, and make referrals for lead hazard control and more extensive repair/modification/remediation work. **Community Housing Solutions**, will accept referrals for the more extensive interventions, including moisture problem correction, heating system repairs, and weatherization, through their funding resources. Additional housing referral partners include the Lead Programs of the **Cleveland Department of Public Health** and the **Cuyahoga County Board of Health**. **Neighborhood Leadership Institute** will organize and manage a Community Advisory Board to bring community concerns and suggestions to the program. **Design:** Each first year resident (30 Pediatric, 8 Family Medicine) will annually enroll an infant patient and participate in the inspection of this infant's home, subsequently monitoring the infant's environmental health at all medical encounters. The House Call program of the Center for Geriatric Medicine will annually enroll 15 of their home bound elderly patients to participate with

Family Medicine and Medicine residents accompanying the home inspector and subsequently monitoring the health outcomes. At the one year anniversary of the home visit, the medical resident will complete a questionnaire regarding their own perceptions of the importance of the home environment in patient care and the frequency and extent of environmental history taking at clinic visits.

Strategy: Our strategy is early, multi-faceted, integrated housing and behavioral interventions in the homes of young infants and the elderly to address multiple housing-related health hazards and injury risks to prevent environmentally related illness and accidental injury. We address the following health and injury hazards in the home: **lead hazards**– dust, soil, deteriorated paint; **asthma trigger sources**– tobacco smoke, mold, roaches, rodents, dust mites, pets; **pesticides**– spray pesticides; **carbon monoxide and other combustion by-products** - furnace, water heater, stove, space heater; **accidental injury**– fires, falls, burns, electric shock, poisoning; **sleep-related infant deaths** - child's sleeping environment; **excess moisture** – related to multiple hazards – mold, pests, paint failure; **fall hazards for the elderly** - poor lighting, clutter, trip hazards, missing/broken handrails repair. We utilize evidence-based remediation methods and treatments, many of which were developed and tested in our and others' Healthy House projects.

Increasing Affordability: Recent substantial increases in utility costs (gas, electricity, water and sewer) are imperiling housing affordability for the low-income participants in this program, making it more difficult for them to pay the rent or mortgage. This housing cost squeeze on home-owners, tenants, and landlords results in deferred home repairs which can increase home health hazards. The project's housing specialists will assist occupants to understand and implement site-appropriate no cost/low-cost measures to reduce utility costs, including passive solar techniques to reduce the need for air conditioning and the use of spot electric heating units for lower net heating costs.

Strengths and Improvements:

- CHHAP is the extension of a successful, ongoing HUD HHD program by extensively experienced partners; the current program is exceeding all benchmarks.
- CHHAP now also targets improving the home environments of the elderly in order to prolong their ability to live independently.
- CHHAP expands the young infant component to include Pediatric physicians-in-training in addition to Family Medicine physicians-in-training.
- We project excellent recruitment and retention based on our current experience. The recruitment population is captive since all are patients at UHCMC; the pool of patients is several fold greater than the recruitment target; physicians assist in recruiting their own patients. .
- The health outcomes data is readily available from the medical records of the participants and parallel clinic patients making for strong evaluation of housing-related outcomes; an experienced epidemiologist/biostatistician, [REDACTED] has been added to the team to oversee these activities.
- The community involvement has been deepened by establishing a Community Advisory Board with the assistance of Neighborhood Leadership Institute, a grassroots community-based organization.

Rating Factor 1: Capacity of the Applicant and Relevant Organizational Experience [See Rating Factor 1 Worksheet– Appendix 1.]

(1) Capacity and Qualifications of Key and Supporting Personnel

The Case Healthy Homes & Patients (CHHAP) partners have the organizational capacity, record of accomplishment, and the trained and experienced staff to complete the proposed project successfully and on time. All of the project partners and their staffs have considerable experience in projects with similar activities and scope.

The Swetland Center for Environmental Health, School of Medicine, Case Western Reserve University, is the applicant organization and will be responsible for general oversight of the project, administration, recruitment, monitoring of health outcomes and evaluation. Three **University Hospitals Case Medical Center** (UHCMC) clinics – Family Medicine, Pediatrics, and House Call - are the sources for recruitment and provide the medical residents who participate in CHHAP. **Environmental Health Watch** (EHW), a grassroots community-based non-profit organization, will conduct home assessments, provide parent education, carry-out limited housing interventions, and make referrals to other organizations for more extensive repair work.

The Swetland Center and EHW are currently carrying-out the Case Healthy Homes and Babies Program, a HUD Healthy House Demonstration Project, which will be completed in December 2008, exceeding all benchmarks. Case Healthy Homes and Patients (CHHAP), the proposed project, is built upon our current Healthy House Demonstration, expanding and intensifying the design. The Swetland Center and EHW, in addition, have extensive experience with other home intervention projects, both individually and as partners working together on previous and current projects funded through HUD, EPA, and CDC. These include six HUD Healthy House projects (see Table below), and numerous lead hazard control projects.

Our three **Referral Partners** are similarly experienced in healthy house programs. Referrals for the more extensive housing interventions than can be done within the proposed project will be made to **Community Housing Solutions** (CHS), a nonprofit affordable housing organization. CHS can conduct higher level building interventions, including moisture problem correction, heating system repairs, and weatherization, through variously funded programs. For lead hazard control work, referrals will be made to the programs operated by the **Cleveland Department of Public Health** and the **Cuyahoga County Board of Health**. The health departments will also work with CHHAP to evaluate the feasibility of adopting successful elements of the Case Healthy Homes & Patients Program in their pregnant women/new mother and elderly home visit programs.

Our **Supporting Partners** provide a number of key services. The **Neighborhood Leadership Institute**, a community-based non-profit organization, will organize and staff a Community Advisory Board and assist with outreach. The **IDEAS Institute** will provide architectural and design consulting regarding home modifications for the elderly.

Case Healthy Homes and Patients (CHHAP)

Partner Organizations and Key Personnel

Primary Partners:

Applicant - Swetland Center for Environmental Health, Case School of Medicine

Project Director - [REDACTED], PhD, MD, Director – 20%

Program Manager - [REDACTED], RN, Research Coordinator – 50%

University Hospitals Case Medical Center

Clinic Coordinators:

Pediatric Clinic - [REDACTED], M.D. – 5%

Family Medicine Clinic - [REDACTED], M.D. – 5%

House Call Program - [REDACTED], M.D. – 5%

Epidemiology/Biostatistics - Leila Jackson, Ph.D. – 5%

Environmental Health Watch

Field Manager - [REDACTED], Executive Director – 30%

Intervention Consultant - [REDACTED]

Referral Partners:

Community Housing Solutions - [REDACTED], Executive Director

Cleveland Department of Public Health - [REDACTED], Lead Hazard Control Manager

Cuyahoga County Board of Health - [REDACTED], Lead Hazard Control Manager

Supporting Partners:

Neighborhood Leadership Institute - [REDACTED], Executive Director

IDEAS Institute - [REDACTED], Ph.D., Executive Director

[See Organizational Chart and Resumes of Key Individuals– Appendix 1.]

Experience with Eligible Program Activities

- **Evaluation of housing:** Over the past thirteen years, in projects funded by HUD, EPA and others, in partnership with local health departments, the public housing authority, and others, Environmental Health Watch has conducted hundreds of home health hazards assessments. EHW helped develop inspection protocols for lead, mold, cockroaches, combustion products, accidental injury risks, and other home hazards, including visual assessment, field-testing, environmental sampling and resident interviews, based on accepted assessment procedures. [REDACTED] developed protocols for the evaluation of mold hazards for the Pulmonary Hemosiderosis Prevention Program and for the Cuyahoga County Urban Mold & Moisture Program. He has coordinated and supervised mold inspections in hundreds of homes of infants and young children in Cleveland.
- **Housing rehabilitation:** Community Housing Solutions has 35 years of experience managing housing rehabilitation and home repair programs.
- **Housing interventions:** Environmental Health Watch is currently conducting the housing interventions for the Case Healthy Homes & Babies Program and has intervention experience in numerous HUD- and

EPA-funded home hazard remediation projects. Community Housing Solutions has many years of experience conducting home repair and hazard remediation in low-income housing.

- **Temporary relocation:** CHS and EHW have experience in previous lead hazard control and healthy house programs in implementing temporary relocation when necessary to protect the health of the residents. The Swetland Center has parallel experience protecting infants in the Pediatric Pulmonary Hemosiderosis Prevention Program.
- **Training on healthy homes practices:** EHW has trained hundreds of community people on healthy homes practices through group education sessions and home visits.
- **Community education programs:** Environmental Health Watch conducts general and targeted community education through group presentations, printed material, and their website.
- **Data collection, analysis and evaluation:** The partners have experience from four previous healthy house projects, lead hazard control and other projects that entailed extensive data collection and analysis.

Staff Knowledge and Experience [See Resumes and Organizational Chart – Appendix 1.]

Project Director: [REDACTED], PhD, MD, [REDACTED] Professor and Chairman, Department of Environmental Health Sciences and Director, Swetland Center for Environmental Health, will be responsible for general oversight and management of the Case Healthy Homes & Patients Program and will be responsible for reviewing health outcomes. He will dedicate at least 20% of his time to CHHAP. [REDACTED] is also Professor of Pediatrics in the Pediatric Pulmonary Division, Department of Pediatrics, Rainbow Babies and Children's Hospital. His training, clinical practice, and research interests combine biochemistry with pediatric pulmonary medicine, especially as impacted by environmental fungal exposure. [REDACTED] initially identified the cluster of infants with unexplained pulmonary hemorrhage beginning in 1994 and involved the Centers for Disease Control and Prevention (CDC) and local health agencies in the investigation of the outbreak. The public health response recommended by the CDC was the Pulmonary Hemosiderosis Prevention Program. [REDACTED] has served as its Director from its inception in June, 1996. He continues to work together with public agencies to understand the cause of pulmonary hemorrhage and to decrease its incidence.

[REDACTED] initiated the successfully completed Urban Mold & Moisture Project, a HUD Round 1 Healthy House Technical Studies Project. He directed the health effects and fungal investigation components of the project. [REDACTED] research has been funded by grants from NIH, USEPA and HUD. He has been a consultant for the HUD Healthy Home Initiative. He is an executive board member of the Greater Cleveland Lead Advisory Council and is Co-chair of the Greater Cleveland Asthma Coalition.

Program Manager: [REDACTED], RN, Swetland Center, will serve as a resource for medical resident programs, maintain the health outcomes database, work with project staff, and communicate with patients. [REDACTED] will be dedicating 50% of her time to CHHAP. Since 1997 she has been the Nurse Coordinator of both the Pulmonary Hemosiderosis Prevention Program and the Urban Mold & Moisture Program. She established the current infant/family recruitment procedures, designed study forms, and coordinated the clinic visits and data collection. She also gives community in-service lectures on infant pulmonary hemorrhage. She has been trained as an Asthma Educator.

[REDACTED], Ph.D., Asst Prof of Epidemiology & Biostatistics, Assistant Professor, Department of Epidemiology and Biostatistics. [REDACTED] whose training and research focuses on the impact of environmental factors on human health, leads an evaluation project of a primary lead prevention project in collaboration with the Cleveland Department of Public Health and Cuyahoga County Board of Health. After minor home repairs and lead education to prevent lead exposure, families with newborn infants are

followed prospectively for 12 months to determine the effectiveness of the program in preventing lead poisoning in infants. [REDACTED] has extensive experience in the design, implementation, and analysis of epidemiologic studies.

[REDACTED] Environmental Health Watch Executive Director and Field Manager for the Case Healthy Homes & Babies Program will be responsible for the home assessment and interventions. He will conduct some home visits, supervise the inspections, specification-writing, remediation, and follow-up. He will dedicate 30% of his time to CHHAP.

[REDACTED] has more than 20 years experience working on housing-related health hazards. Mr. [REDACTED] was the Co-Director of the Cleveland Lead Hazard Abatement Center, a joint program with the Cleveland Health Department that trained welfare clients as lead abatement contractors and conducted lead hazard control from 1993-95. He was project director for the evaluation of Cleveland's Round 1 HUD Lead Hazard Control Grant and Co-Director of the Lead + Asthma Project, conducted in partnership with the Cleveland Health Department. [REDACTED] was project director of the Cockroach Allergen Reduction, a HUD Healthy Homes Technical Studies project. [REDACTED] serves on the Steering Committees of the Greater Cleveland Asthma Coalition and the Greater Cleveland Lead Advisory Council and is a former board member of the National Center for Healthy Housing. He is a licensed Lead Risk Assessor and Lead Abatement Contractor.

Consultants:

[REDACTED] who will help devise interventions, conduct quality control field visits, and train project staff and contractors, is a nationally recognized expert on home hazards assessment and remediation. [REDACTED] has been a consultant to the HUD Healthy House Initiative, the National Center for Healthy Housing, the American Lung Association Healthy House Project, and the Healthy House Training Center and Network.

[REDACTED] Ph.D., is the Director of IDEAS Institute, Kirtland, Ohio, an organization with over 20 years experience in teaching architects and builders how to design, build, and renovate housing for the elderly that is handicapped friendly and safe. Our elderly home inspection and interventions derive from her long checklist of items to be concerned about for the aged population. For many years, IDEAS Institute has received multiple large grants from NIH, National Institute on Aging, to support their activities.

Sufficient Personnel

All personnel needed for CHHAP currently work for their respective organizations. **No new staff** need to be hired to implement the project.

(2) Qualifications of Applicant & Partner Organizations

Applicant Organization: the Swetland Center for Environmental Health is an environmental clinical center of the University Hospitals Case Medical Center of the CWRU School of Medicine, within the Department of Environmental Health Sciences. The focus of the Center is on environmental health problems of the Cleveland community, especially as they relate to toxic exposures of children and their families. The Swetland Center has four major components relating to clinical care, research, public health, and medical education. The Center conducts clinical-based environmental research, fostered by strong relationships with the local public health agencies, which address important local environmental problems including the built environment and indoor air quality. Medical education is a major component of the Swetland Center where it is developing environmental health as a theme throughout the education of medical students, residents, fellows, and community physicians. This environmental curriculum at CWRU includes yearly medical student community projects for the entire first year class on environmental health

concerns. While the Center is relatively new, its Director, [REDACTED] has had housing-related public health and research collaborations with both local health agencies for the past 14 years.

Key components of Case Healthy Homes and Patients (CHHAP) are the two **University Hospitals Case Medical Center** (UHCMC) outpatient clinics that are the source for recruitment of participants into the project and of the medical residents who receive field training in the project. The medical resident training programs of the **Pediatric and Family Medicine Clinics** will include CHHAP as part of the training program of their first year residents. These physicians-in-training will be part of the home assessment for their participating patients and follow them for the remainder of their three year residency training, thereby providing extended continuity in the outcome measures. The **House Call Program**, which provides physician visits to homebound geriatric patients, will also be a source for participant recruitment and physicians-in-training. Each of the three clinical programs will have a faculty member supported by CHHAP to coordinate, monitor, and troubleshoot the interaction of their training programs with CHHAP. Data management support for CHHAP is provided by the Clinical Research Unit of UHCMC.

Environmental Health Watch [501(c)(3) #34-1443935]

EHW is a not-for-profit, community-based, grassroots organization with over 25 years of experience in the Cleveland area working on the assessment and control of building-related health hazards for children and the elderly living in substandard housing. In partnership with government, community, and neighborhood organizations, EHW has been involved in numerous projects to prevent and remediate children's exposure to lead, asthma triggers, mold, pesticides, and other hazards in homes and child care facilities. EHW helped pioneer the healthy house concept, holding the Blueprint for a Healthy House Conferences (1985-1990), publishing the national Healthy House Directory (1990), and conducting the Lead + Asthma Project in 1998.

Community Housing Solutions [501(c)(3) #23-7299143]

Community Housing Solutions (formerly known as Lutheran Housing), is a non-profit organization formed in 1973 to assist low and moderate-income families in Cuyahoga County obtain and maintain decent, affordable housing. Through a variety of programs, CHS has provided services to thousands of Greater Cleveland residents, home owners and renters alike, in such areas as housing counseling, home repair, weatherization, tool loan, housing rehabilitation, and new construction.

Neighborhood Leadership Institute [501(c)(3) #01-0621494]

The Neighborhood Leadership Institute exists to develop grassroots leadership that will contribute to rebuilding the bonds of community and improving the quality of life for neighborhood residents throughout the Greater Cleveland area. Its programs include leadership training, technical assistance to neighborhood organizations, and community education.

(3) Past Performance of Applicant & Partners

The Swetland Center, Environmental Health Watch, and Community Housing Solutions are partners in the current Case Healthy Homes and Babies Project (#OHLHH0141-05), which will be completed in December 2008, exceeding all of its benchmarks. The Swetland Center and EHW were partners in the successfully completed Urban Mold & Moisture Project (# OHLHH0065-99) and the Cleveland-Cuyahoga County Healthy Homes Initiative (# OHLHH0112-03). They are both part of the current Cleveland-Cuyahoga County Healthy Homes Initiative (# OHLHH0148-06).

EHW successfully completed Cockroach Allergen Reduction Project, (# OHLHH0069-99) a Healthy House Technical Study. EHW has been a partner with the Cleveland and Cuyahoga County Health Departments on several HUD Lead Hazard Control Grants, starting with conducting the evaluation for Round 1, and

including Rounds 3, 5, 8, and 9. EHW has also conducted the field work for three HUD Lead Technical Studies with the University of Cincinnati.

Performance on Healthy House and Related Projects

The table below lists all the HUD Healthy House projects that the Swetland Center and EHW have worked on including three projects that pre-date the HUD Healthy Homes Initiative.

Project Type	Funding Agency/ Grantee	Dates	Partners, Title, Nature of Project	Outcome/ Status
	EPA, CDC, CDBG/ Cleveland Health	1993-95	EHW: Cleveland Lead Hazard Abatement Center - trained welfare clients as lead hazard control specialists and remediated 40 homes of lead-poisoned, low-income children.	Successfully completed
	USEPA, Foundations, Ohio Dept Health/PHPP	1996-	SC: Pulmonary Hemosiderosis Prevention Program - inspected over 3000 homes of infants for mold.	On-going
	HUD, EPA/CDPH	1997-99	EHW: Lead + Asthma Project - one of the first projects to piggy-back asthma trigger control interventions onto a lead hazard control program.	Successfully completed
HH tech	HUD/EHW	2000-03	EHW: Cockroach Allergen Reduction - tested IPM methods of roach control and use of lead final clean method for roach allergen cleanup.	Successfully completed
HH tech	HUD, EPA/CCBH	2000-04	SC, EHW: Cuyahoga County Urban Mold & Moisture Program - improvement of childhood asthma/ respiratory health by remediation of home moisture and mold	Successfully completed
HH demo	HUD/CCBH	2005-07	SC, EHW: City County Health Homes Initiative - asthma trigger reduction combined with weatherization in homes and day care	Successfully completed
HH tech	HUD/NCHH	2006-07	Healthy House Evaluation Study , eight city consortium to perform overview evaluation of asthma housing assessment; PI, [REDACTED]	Successfully completed
HH demo	HUD/SC	2006-08	SC, EHW: Case Healthy Homes & Babies - improving infant/elderly home health and safety while training young physicians	At 30 months, exceeding benchmarks
HH tech	HUD, EPA/SC	2007-09	SC, EHW: Urban Mold & Moisture Program: Continuation Project - reassess previously remediated homes and analyze stored dust and clinical samples	In progress

CDBG = Community Development Block Grant, CDPH = Cleveland Dept. of Public Health, CCBH = County Board of Health; EHW = Environmental Health Watch; PHPP = Pulmonary Hemosiderosis Prevention Project, SC = Swetland Center, NCHH = National Center for Healthy Housing.

Below are brief descriptions of the HUD Healthy House projects in which the Swetland Center and EHW have had a leading role.

Cuyahoga County Urban Mold & Moisture Program (# OHLHH0065-99, Round 1 Healthy Homes Grant, Cuyahoga County Department of Development grantee, \$3.15 million)

Although the Swetland Center was not the grantee for this project, [REDACTED] Director of the Swetland Center, was the initiator and functioned as principal investigator. The Mold & Moisture Program was a multi-disciplinary research and demonstration project that investigated the relationship between moisture in the home environment and respiratory health of children. Environmental Health Watch developed visual assessment and building treatment protocols, conducted quality control of environmental sampling, and provided group and in-home parent education for the project. Cleveland Housing Network managed the building interventions.

A total of 104 homes received environmental interventions focused on the reduction of water infiltration, removal of water damaged building materials, HVAC alterations, lead hazard control, and environmental cleaning. Simultaneous clinical /environmental assessments and sampling occurred over a twelve month period. Clinical samples (blood, urine and nasal washing) were collected from children and the primary caregiver living in the home. These samples were analyzed for a variety of allergens. Dust samples were analyzed for dust mite, cockroach, rodent urinary protein, endotoxin and fungi.

Moderately severe asthmatic children had a significant decrease in symptom score ($p < 0.006$) and symptom days ($p < 0.003$) following remediation, while these parameters in control children in homes not receiving the interventions did not significantly change. During the post-remediation period, asthmatics who received home interventions had a lower rate of exacerbations compared to control asthmatics (1/29 vs. 11/33, respectively, $p = .003$). Other children, not specifically enrolled because of asthma, had a significant decrease in nine out of 14 upper and lower respiratory symptoms following the home interventions.

Information on the project's moisture reduction interventions is at http://www.ehw.org/Healthy_House/HH_UMMPSummary.htm.

Publications:

Vesper, SJ, McKinstry, C, Yang, C, Haugland, RA, Kercksmar, CM, Yike, I, Schluchter, MD, Kirchner, HL, Sobolewski, J, Allan, TM, Dearborn, DG. Specific molds associated with asthma in water-damaged homes. *J Occup Environ Med* 2006, 48:852-858.

Kercksmar, CM, Dearborn, DG, Schluchter, M, Xue, L, Kirchner, HL, Sobolewski, J, Greenberg, S, Vesper, SJ, Allan, TM, Reduction in Asthma Morbidity in Children as a Result of Home Remediation Aimed at Moisture Sources, *Environ Hlth Perspect*, 2006, 114:1574-1580.

WHO case study collection on interventions against damp and mould; UMMP selected to be one of 15 studies globally to be described in WHO publication (in preparation)

Urban Moisture and Mold Program- Continuation Project (#OHLHH0161-07, Swetland Center grantee, HUD Healthy Homes Technical grant, \$359,197, 11/15/07 to 5/14/09)

This follow-up project extends the previous studies performed in the Cuyahoga County Urban Moisture and Mold Program (UMMP) by obtaining longitudinal data on both the participants and on the homes that were remediated as part of the original UMMP in order to ascertain the sustainability of both the health and housing improvements. In addition, we will analyze archived serum and house dust samples for mold biomarker and analyze these data in the context of the clinical symptom profiles previously gathered.

Healthy Homes Evaluation Study- HUD Healthy Homes grant - \$518,096 (\$25,000 to [REDACTED]), National Center for Healthy Housing grantee, PI: [REDACTED], Johns Hopkins Univ)

A consortium led by the NCHH made up of investigators from Columbia Univ, Case Western Reserve Univ, Johns Hopkins Univ, Seattle-King County, Cincinnati Children's Hosp, Boston Medical Center, and Harvard School of Public Health with the purpose of combining previous data bases toward standardizing the approach to residential asthma triggers.

Publication:

Wilson, J, et al., Housing Characteristics and Allergens Associated with Childhood Asthma Morbidity: A Pooled Analysis of Nine Studies, *Indoor Air* (in press).

Cockroach Allergen Reduction Using Precision-Targeted IPM and the Lead Dust Cleaning Protocol (# OHLHH0069-99, Round 1 Healthy Homes Grant – \$240,000; Environmental Health Watch grantee)

This project explored improved methods of cockroach control and allergen cleanup. The cockroach control intervention was a modification of the standard cockroach IPM strategy. Roaches were flushed from harborages with a hot air gun and captured with a HEPA vacuum; gel baits and borate powders were placed in harborages identified by the flushing; occupants were educated to reduce food debris and clutter. The intervention to cleanup cockroach allergen was based on the HUD protocol for cleanup of lead dust (HEPA vacuuming-mopping and rinsing-HEPA vacuuming).

The cockroach control objective was achieved in all but one case and required 1 to 4 flush/vacuum/bait visits. All three cleaning interventions significantly reduced roach allergen concentrations from pre- to post-cleaning and from pre-cleaning to follow-up. Reductions for the standard HUD lead cleaning protocol were significantly greater compared to two less intense modifications of the protocol ($p=0.01$).

Overall, the combination of cockroach infestation reduction through precision-targeted IPM (including hot air flushing and HEPA vacuuming), a one-time professional cleaning based on the HUD lead dust cleaning protocol, occupant education and occupant on-going cleaning effort was able to reduce cockroach allergen levels to below the clinically significant threshold.

The project reports, slide presentations, recommendations, model IPM specifications and EPA case study are at http://ehw.org/Asthma/ASTH_HUDRoach_Sum.htm.

Case Healthy Homes and Babies Program (#OHLHH0141-05, HUD Healthy Homes Demonstration grant, Swetland Center grantee, 1/1/06 to 12/31/08)

This 2008 proposal for Case Healthy Homes and Patients builds upon our current Case Healthy Homes and Babies program which is being transitioned to include Pediatric residents and more elderly patients. The primary goals of the current program are 1) to provide home health and injury hazard assessments and housing interventions to address hazards in 150 homes of pregnant, infant, and geriatric patients of the University Hospitals Case Medical Center Family Medicine Clinics living in high-risk housing in low-income neighborhoods of Cleveland and its first ring suburbs; and 2) to provide physicians-in-training with the opportunity to learn about housing-related health hazards through participation in assessments at their patients' homes. Environmental Health Watch conducts home assessments, provides occupant education, carries-out limited housing interventions, and makes referrals for more extensive repair work to Community Housing Solutions and to the City and County Health Departments. In the third year of the project, Pediatric residents and MPH students are also participating in the home visits.

The **strategy** is multi-faceted, integrated housing and behavioral interventions in the homes of pregnant women/infants and the elderly to address multiple housing-related illnesses and accidental injuries. We address the following child and geriatric health and injury hazards in the home: lead hazards, asthma trigger sources, pesticide exposure, carbon monoxide poisoning, accidental injury risks, sleep-related infant deaths, and infant toxigenic mold exposure. **Methods:** An EHW Environmental Specialist and the physician visit their patient's home together, conducting a visual assessment with the participation of family members, during which hazards and potential hazards are identified, the health/injury concerns are discussed, and control options are suggested. There are four kinds of control interventions: 1) health and safety items; 2) low-level repairs/improvements; 3) higher level repairs/improvements referred to other programs; and 4) behavioral changes agreed to by the family and reinforced by the medical resident in future clinic visits.

At the 2.5 year mark of this 3 year program: 142 of 150 home assessments completed (100% of benchmark); 131 of 150 home interventions completed (103% of benchmark). (We expect a total of 160 completed interventions.) We have provided hands-on training to 103 physicians and MPH graduate students while improving the home environments of 31 geriatric patients, 111 infant patients, and the other

members of their households. Classroom training was provided to 290 medical students and 72 health and housing professionals. Based on this experience, we project our new Case Health Homes and Patients program will continue this success in large part because the patients and medical residents are a 'captive' recruitment pool. Major changes in the transition to CHHAP are to add the Pediatric training program, have more emphasis on the elderly, and to strengthen the evaluation procedures.

Rating Factor 2: Need/Extent of the Problem

(1) Target Area for Proposed Activities

The target area is the catchment area of the Family Medicine and Pediatric Clinics of University Hospitals Case Medical Center. This is the eastside of Cleveland and its first-ring suburbs, primarily East Cleveland, within Cuyahoga County. Based on our current project, we estimate that 90% of enrollees will be from the eastside of Cleveland, 8% East Cleveland, and 2% from other first-ring suburbs. Where available, we provide data from the eastside of Cleveland, but for many measures only city or county data is available. If not otherwise indicated, data is from the 2000 US Census.

(a) Economic and Demographic Data

Poverty (2006 data): Last in median household income among major cities, Cleveland holds the unfortunate distinction as one of the poorest large cities in the US, both for overall poverty rate and child poverty rate. East Cleveland is the poorest city in Ohio. For Cleveland: • 32.4 percent of all residents and 47% of children live in poverty. • 14% of households have income below 50% of poverty, 33% have income below 125% of poverty, and 40% have incomes below 150% of poverty. • 62% of household are below 50% AMI and 77% are below 80% AMI.

Unemployment: Rate for Cleveland in 2006 was 16%, second-highest among large U.S. cities.

Comparison of City of Cleveland with Eastside Target Area: The target area has a higher percentage of African-Americans, higher rates of poverty, and more unemployment compared to all of Cleveland.

2000 US Census:	City of Cleveland	Target Area - Eastside Cleveland
Percent Black Population	52%	78%
Poverty Rate (% under federal poverty level)	26%	31%
Poverty Rate – Families with Children	32%	37%
Unemployment Rate	11%	15%

(b) Age & Condition of Housing

The housing stock in Cleveland is old and in poor condition, made worse by the foreclosure crisis: • 81% of Cleveland housing was built prior to 1960 (2000 Census). • One-third of the housing stock is estimated to be sub-standard (Cleveland 2005-2010 Consolidated Plan). • In 2006, 5,348 notices of building code violations were issued; Housing Court processed over 4,200 criminal cases for housing code violations. • In 2007, 950 con-demned structures were razed and almost 5,000 boarded-up. The result is blighted neighborhoods, further dis-investment, and deferred maintenance for the remaining homes, worsening housing conditions related to health.

Homes of the Elderly: While specific statistics are not available, our experience, based on numerous home visits, is that the low-income elderly in Cleveland typically live in homes characterized by decades of deferred maintenance (e.g., roof leaks, gutters in disrepair), unsafe jury-rigged electrical repairs, pest infestation, extreme clutter (that impedes movement and effective pest control), insufficient lighting, and fall

hazards from worn carpeting, snaking extension cords, missing hand rails, and broken stairs. In Cuyahoga County over 52,000 people have lived in their house for over 40 years.

(2) Link to Housing-related Health & Safety Hazards

Childhood Lead Poisoning: Rates in Cleveland and East Cleveland are strikingly above national levels and Cleveland always ranks among the top half-dozen cities with the highest rates. Last year the Cleveland and Cuyahoga Health Departments established a "lead awareness level" of 5-10 µg/dl, based the evidence of lead's damage (e.g., IQ, reading scores, ADHD) below 10 µg/dl. **The eastside Cleveland target area accounts for 74.4% of all Cleveland children tested at ≥ 10 µg/dl and 70.8% at ≥ 5 µg/dl.**

Confirmed EBLs 2006*	City of Cleveland	Target Area - Eastside Cleveland	East Cleveland
≥ 10 µg/dl: EBL/ total tested / %EBL	1,056 / 13,809 / 7.6%	786 / 9,207 / 8.5%	76 / 683 / 11.1%
> 5 µg/dl: EBL/ total tested / %EBL	3,532 / 13,809 / 25.6%	2,502 / 9,207 / 27.2%	215 / 683 / 31.6%

*Cuyahoga County Board of Health (draft 5/21/08)

Childhood Asthma: Nationally, asthma prevalence in children doubled from 1980-1995, leveling-off at historically high rates. Although asthma is not a reportable disease (therefore good prevalence data for the target area is not available), there is data to suggest that asthma is the leading chronic illness among children in the target area: • At University Hospitals asthma is the most common admitting and emergency room diagnosis for children. • The Greater Cleveland Asthma Coalition reports that in two Cleveland elementary schools studied (in the target area), more than 25% of the children had doctor-diagnosed asthma and an additional 10% had symptoms and clinical findings consistent with undiagnosed asthma. • For the year ended May 31, 2007, the Cleveland EMS reported 1,222 calls for asthma/wheezing symptoms; 85% required medication and monitoring, 9% intubation or ventilation.

Pulmonary Hemorrhage in Infants: Over the past 15 years, pulmonary hemorrhage has occurred in 62 infants in the greater Cleveland area, resulting in 16 deaths. The cases have occurred overwhelmingly in the target area. The Swetland Center, in partnership with the City and County Health Departments, leads a continuing investigation of this disorder and its relationship to toxigenic mold exposure in the infant's home.

Accidental Poisonings & Injuries to Children: Injuries are the leading cause of death for children in the United States after the first year of life; 55% occur in the home environment. For Cuyahoga County 2001-2004: • Average of 5,097 home-related poisonings of children (Greater Cleveland Poison Control Center); allocating these cases proportionately, we attribute 2,141 and 113 home-related poisonings in Cleveland and East Cleveland respectively). • Average of 1,413 emergency room visits for home-related injuries of children (University Hospitals – Community Safety & Resource Center); allocating these proportionately, we attribute 596 and 31 home-related injuries in Cleveland and East Cleveland respectively.

Sleep-Related Infant Deaths: From the Cuyahoga County Child Death Report for 2004: 20 sleep-related deaths of infants less than one year of age; 12 in Cleveland; 1 in East Cleveland.

Home Health and Injury Risks for the Elderly: The home environment is fraught with potential health and injury hazards for the elderly. Many older persons suffer from chronic illnesses which make them more sensitive to environmental exposures and more susceptible to accidental injury. With increasing age, there comes a diminished capacity to detoxify and eliminate chemical toxicants. Exposures to respiratory allergens and irritants can exacerbate asthma and other breathing problems, such as bronchitis and emphysema, which are common among older adults.

Fall hazards in the home, in particular, are a significant risk for the elderly and can result in death or disabling and costly injuries. Cuyahoga County is in the 90th percentile among counties with the highest number of deaths resulting from unintentional falls. Nationally: • Falls are the leading cause of non-fatal

injuries and injury-related death in older adults. • One third of all adults over age 65 fall each year. • 60% of falls occur within the home. Non-fatal falls triggered 500,000 hospitalizations and almost 2 million emergency room visits. • Falls cause 90% of the 300,000 hip fractures that occur each year in the U S.

Rating Factor 3: Soundness of Approach

(1) Approach for Implementation of the Project

(a) Project Plan

Overview: Homes in low-income urban areas are too often hazardous for the health and safety of their occupants, especially for infants and the elderly. Making physicians aware of these conditions is a key component in improving the medical care of these two populations. We have instituted a home inspection and environmental intervention program within the residency training of Family Medicine residents at University Hospitals Case Medical Center (UHCMC). Each resident physician accompanies an Environmental Health Watch home environment specialist on an inspection of one of their infant/elderly patient's homes and participates in devising an action plan including interventions by the family and by EHW, whereupon the physician continues to monitor recommended behavior changes (e.g. smoking outside) at subsequent clinic visits. We now seek with this application to extend this well received program into the first year of training of the Pediatric residents at Rainbow Babies and Children's Hospital and further into the geriatric training programs, both also at UHCMC.

Goals: The primary goals are: 1) to provide healthy homes assessments and housing interventions to the families of young infants and elderly in high-risk housing in the inner city of Cleveland and immediate suburbs; 2) to provide physicians-in-training with the opportunity to learn about housing-related health hazards through participation in assessments at their patients' homes; and 3) to develop a sustainable model of home interventions that can be adopted by existing infant and elderly home visit programs in Cleveland and Cuyahoga County. The purpose of targeting young infant and elderly homes is in an attempt to provide primary prevention against the housing hazards (e.g. inhalant allergens) and to extend the independent living time of the elderly. The inspection and intervention program takes a holistic approach to the home environment addressing a breadth of hazards (see below).

Design: Each first year resident (30 Pediatric, 8 Family Medicine) will annually enroll an infant patient and participate in the inspection of this infant's home, subsequently monitoring the infant's environmental health at all medical encounters. The House Call program will annually enroll 15 of their home bound elderly patients to participate with Family Medicine and Medicine residents accompanying the home inspector and subsequently monitoring the health outcomes. At the one year anniversary of the home visit, the medical resident will complete a questionnaire regarding their own perceptions of the importance of the home environment in patient care and the frequency and extent of environmental history taking at clinic visits.

Substantial increases in utility (gas, electricity, water and sewer) costs in the Cleveland area are imperiling housing affordability for the low-income participants in this program, making it more difficult for them to pay the rent or mortgage. This housing cost squeeze on home-owners, tenants, and landlords results in deferred home repairs which can lead to increased home health hazards. EHW's Affordable Green Housing Center has developed a set of no cost/low-cost recommendations for electricity, gas, and water use reductions that can be applied in low-income housing (e.g., passive solar techniques to reduce the need for air conditioning and the use of spot heating units to allow lower furnace thermostat settings). The project's housing specialists are trained in these methods and will assist occupants to understand and implement the site-appropriate measures. Whenever the homes qualify under the various weatherization programs

available through Community Housing Solutions, units in the project will be referred for home weatherization.

Identifying Hazards

Assessment of the housing units will be made by a home environmental specialist from Environmental Health Watch and the physician assigned to the patient. They will do a home inspection, accompanied by the mother/informal caregiver, during which hazards and potential hazards are identified and explained, and corrective actions are discussed. The environmental specialist focuses on building-related hazards and the medical resident focuses on the behavior-related environmental hazards (e.g., smoking, infant sleep environment).

The inspections include: occupant interview; visual paint condition assessment; collection of dust and soil samples for lead analysis; visual evidence of smoking, mold, roaches, rodents, dust mites, pets, and pesticides, space heaters, faulty combustion appliances and smoke and CO detectors; tap water and refrigerator temperature measurements; observations of child/elderly fall and injury risks and infant's sleep environment. As appropriate, environmental sampling for lead and targeted asthma allergen triggers will be performed.

The EHW inspector uses a computerized visual assessment tool on a personal data assistant (PDA). The computerized assessment guides the inspection through each area of the house, lists building and behavioral conditions, explains the related hazard, provides drop-down alternatives to enter observations, and lists corrective actions that can be selected and who will take action (e.g., EHW, family, physician, owner). In this way the inspection process and assessment tool are an education opportunity for the medical resident and the family member.

The format and items in our home assessment tool are similar to the Pediatric Environmental Home Assessment (PEHA) of the National Center for Healthy Homes. In order to help move toward standardization of healthy home assessment, we will work with the National Center to harmonize our approach with the PEHA where they overlap, but retain items and format elements that we have found useful as we have developed and refined the home hazard assessments process in our previous healthy homes projects. Similarly, we will use standard elderly fall hazard assessment items, as well as the items we have developed based on our program experience. We will also look at the recently-released CDC-HUD Healthy House Inspection Manual for opportunities to incorporate their inspection items into our assessments. In this way we can help move the field toward standardized hazard assessment.

Controlling Hazards

When the inspection is completed, the EHW inspector reviews with the physician and the occupant the hazards identified and the corrective actions discussed. There is then confirmation of next steps and of who will undertake each corrective action proposed – family member, physician and EHW. There are several kinds of interventions that are utilized to control the identified health and safety hazards:

- **Education and Behavioral Change:** The home inspection affords a number of opportunities to educate family members about their role in remediating home hazards and to influence positive behavior change. During the inspection, family behavior changes that could reduce hazards are pointed out to the family member participating in the inspection and they are given. At the end of the inspection, when action corrective/preventive actions are discussed, family members are encouraged to agree to take action. Printed educational material focused on the specific hazards noted is provided to the family.

Family actions might include no longer smoking in the house, taking off shoes when coming in from outdoors, and using a bathroom exhaust fan. The medical residents are able to endorse the recommendations, relate them to specific health concerns, and reinforce them at the clinic visits.

- **Health and Safety Items:** A standard set of health and safety items is provided to the families, differing somewhat for the infants and elderly. The standard set includes allergen vacuum, fire extinguisher, smoke and CO detectors, digital thermometer (mercury thermometers are taken for proper disposal to eliminate breakage risk), door mats, and cleaning supplies. In addition, site specific items are provided, depending on the hazards found. The items are demonstrated and installed as required. A list is provided as an appendix.
- **Low Level Building Interventions:** Based on the inspection and the lead and allergen sampling results, the EHW home environmental specialists will conduct low-level building repairs and modifications and hazard remediation. These are limited interventions that can be done by Environmental Health Watch staff, in the case of rental property do not require the owner's permission, do not require disturbance of lead-paint or mold, and do not require temporary relocation. This includes installation of safety items, environmental cleaning to reduce lead dust and other contaminants, moisture reduction measures, and cockroach and rodent IPM.
- **Referral for Building Interventions:** Based on the paint condition visual assessment and the lead dust sampling results, lead hazard remediation referrals are made to the Cleveland and Cuyahoga County Lead Hazard Control Programs. For other repairs and home modifications, referrals are made to Community Housing Solutions. These interventions are carried out by referral to Community Housing Solutions for their weatherization and home repair programs, which fund the work.

The EHW environmental specialist writes the referrals and works closely with CHS and the Lead Hazard Control Programs to facilitate the work. The EHW staffer works with the families and the landlords establish eligibility and complete application forms.

We address the following health and injury hazards in the home: **lead hazards**– dust, soil, deteriorated paint; **asthma trigger sources**– tobacco smoke, mold, roaches, rodents, dust mites, pets; **pesticides**– spray pesticides; **carbon monoxide and other combustion by-products** - furnace, water heater, stove, space heater; **accidental injury**– fires, falls, burns, electric shock, poisoning; **sleep-related infant deaths** - child's sleeping environment; **excess moisture** – related to multiple hazards – mold, pests, paint failure; **fall hazards for the elderly** - poor lighting, clutter, trip hazards, missing/broken handrails repair.

We utilize evidence-based remediation methods and treatments, many of which were developed and tested in our and others' healthy house projects, as listed in Appendix C. (Our moisture materials are listed in Appendix C and our IPM materials are referenced in the NOFA.)

The asthma trigger control methods we employ are based on recommendations of the NIH Third Expert Panel Report on *Guidelines for the Diagnosis and Management of Asthma*. Overall our interventions incorporate the key components identified in the *Asthma Health Outcome Project (AHOP)* as associated with the most effective programs:

- **Community centered:** Two community-based organizations, Environmental Health Watch and Neighborhood Leadership Institute, provide grounding and community connectedness.
- **Collaborative:** The project's multiple partners include health care, academic, environmental, community, affordable housing and public health organizations.
- **Clinically connected:** The participants' own doctors have a central role in the project.
- **Responsive to need:** Interventions are house-specific, based on site-specific assessment and medical input.

Interventions for the elderly (see attachments) are based on consultation with the IDEAS Institute, a nationally prominent architectural research firm specializing in designing home modifications for the elderly, located in the Cleveland area.

This multi-hazard assessment and intervention strategy grew out of the extensive experience of the partners in previous healthy house projects. The strategy integrates multiple building interventions with behavioral and educational interventions, with in-home education, reinforcement at clinic visits.

Summary Estimates – Recruit, Enroll, Assess, Remediate, Outreach, Train

Activities	Year 1	Year 2	Year 3	Total
Recruit	68	68	68	204
Enroll	62	62	62	186
Inspect	53	53	53	159
Remediate	53	53	53	159
Outreach & Educate	150	150	150	450
Train	350	350	350	1050

Documentation of Environmental Outputs

Documentation of environmental outputs will be based on standardized methods and instruments, including:

Lead hazards – pre and post settled dust sample analysis

- Inhalant allergens – pre and post settled dust sample analysis
- Cockroach infestation – pre and post sticky trap counts
- Safety hazards – pre and post checklist
- Education – pre and post knowledge test and behavior reports

Documentation of Health Outcomes

Because of the central involvement of the treating physicians, this project is particularly well-suited to document health outcomes. The Pediatric and Family Medicine residents will initially participate in the first year of their three year residency programs, thereby following these patients for an additional two years. The medical residents will use Clinic visits to track all the patients' health events (illness/injury) and review these events with [REDACTED] (Peds), [REDACTED] (FamMed), and [REDACTED] (Ger) and as appropriate with [REDACTED] to ascertain whether the home environment was a source of the problem.

(b) Community Involvement

Environmental Health Watch and Neighborhood Leadership Institute, both community-based organizations (as defined in the NOFA), have experience working together on community involvement and environmental justice projects. NLI will organize a Community Advisory Board made up of their Neighborhood Leadership Training graduates from the geographic areas served by the project. The CAB will receive initial training by EHW staff on the healthy house concept and approach, the specific health and housing issues addressed in the project, and ethical concerns related to home intervention projects (utilizing the Institute of Medicine report, *Ethical Considerations for Research on Housing-Related Health Hazards Involving Children*). In addition to the training sessions, the CAB will meet at least six times during the course of the project, three times in the first year, twice in the second year, and once in the third year, to provide feedback on project procedures, give advice on community issues that emerge in the course of the project, make recommendations for project improvement, and review educational material. The NLI staff will also assist with community education and outreach activities.

A new means to disseminate Healthy Housing information to the community is being established as the **Center for Environmental Health and Human Ecology** at the Cleveland Museum of Natural History, a joint venture with the Department of Environmental Health Sciences; [REDACTED] and [REDACTED] are both on the Executive Board.

(c) Institutional Review Board and HIPPA

An IRB protocol has been approved for the project for the fourth annual renewal. After consultation with the University Hospitals of Cleveland IRB, it was determined that a written informed consent is not necessary since this is a medical care and public health program, rather than a research study. HIPPA consent is required for tracking of medical information gathered in the process of usual medical care.

Participants in the project sign an "Agreement to Participate" form that in plain language describes the project, what will happen at each stage, and what is expected of them. Occupants will be asked to agree to: a) take corrective actions within their capacity as specified in the plan, b) make on-going behavior changes specified in the plan, and c) cooperate with the other remediation work. The agreement is read to the participant who then has an opportunity to ask questions. Interpreters are available through the University Hospital system. See Case Healthy Homes & Patients Program head of household Agreement-Appendix 2.

HIPAA regulations will be explained to all patients and a HIPAA form regarding confidentiality of patient data will be signed by participants. We do not anticipate any negative impact of HIPAA on recruitment; none has been seen in the current project.

(d) Staff and Partner Training and Capacity Building

Medical residents, medical students, and MPH students:

The major capacity building aspect of CHHAP is the training that physicians, medical students, and MPH and environmental health graduate students receive. The hands-on home inspection experience early in the physicians training has great potential to impact their medical practice for the remainder of their careers. The didactic teaching of healthy homes principles to medical, MPH, and graduate students provides them insights into the housing component of health that will impact their subsequent practice and public health positions.

Medical residents participating in the project will receive training on the relationship between the residential environment and family health, home hazards assessment, and remediation strategies. This is accomplished through classroom instruction by [REDACTED] and through their participation in the home visit process. The medical residents will take away not only an awareness of home environmental issues, but will also have practical information they can use throughout their medical careers.

Both [REDACTED] and [REDACTED] give lectures to the first year medical students on how the home environment influences health, most specifically asthma and other chronic respiratory disorders. Home environmental concerns are included in the Swetland Center sponsored Environmental Health Community Projects performed each year by the 18 first year medical student preceptor groups. The home indoor environment is also a topic [REDACTED] and [REDACTED] cover in a graduate course, "Introduction of Environmental Health", a required course in the MPH program. Students in this course also participate in the home inspection portion of CHHAP (28 of 30 students this past spring went out on home environment inspection visits).

EHW staff –

Currently EHW staff include Lead Risk Assessor, Lead Abatement Contractors, Certified Asthma Educator, Licensed Pesticide Applicator and years of experience in health education, home hazards assessment and

hazard remediation; two staff have taken the Healthy Home Practitioner course of the National Center for Healthy Housing and will be taking the certification exam; another staff person will take the examination for Certified Asthma Educator; staff will also take an elderly fall prevention class from the County Board of Health. The EHW building science consultant, [REDACTED], who has broad experience in the field and is part of the National Healthy House Training Center & Network, will provide additional training, including field observations and feedback sessions.

Neighborhood Leadership Institute (NLI) and Community Advisory Board (CAB)-

EHW will provide training for the NLI staff and CAB members on assessment and control of housing-related health hazards.

Community Housing Solutions (CHS) Staff and Contractors-

EHW staff and consultant [REDACTED] will provide training on healthy house interventions for CHS staff and their contractors.

(e) Economic Opportunity

While no contract awarded under this grant will reach the \$100,000 lower limit for Section 3 hiring requirements, it is expected that training and employment opportunities will be created or retained for low- and very low-income persons. Historically, both weatherization and lead remediation work are done by small, locally owned, businesses employing laborers at entry-level. Turnover in the labor market is expected to result in at least 5-10 new hires by the weatherization and lead remediation contractors carrying out leveraged work during the 3-year grant period. Free lead remediation worker training is available through the Cleveland Department of Public Health.

(f) Recruitment and Enrollment

- CHHAP will enroll both infant (<6 mo old) and elderly (>65 yr old) patients from the Family Medicine and Pediatric Clinics and from the Geriatric House Call program of the University Hospitals Case Medical Center (see table below for estimated distribution of patients). A great strength of this proposal is the access to the "captive" recruiting groups of the University Hospitals Case Medical Centers Pediatric, Family Medicine and House Calls clinics. This is evidenced by the ease of enrollment of participants for our current healthy house project (at 30 months, enrollment is at 100% of the benchmark; the enrollment rate is 96% with 90% retention). Our target participants all come to one of two clinic waiting rooms for their regular clinic visits, which with the assistance of their primary care doctors in recruitment, greatly facilitates enrollment.

(i) Reaching High Risk Groups

Virtually all of the Clinic patients in the recruitment pool are low-income or very low-income African-American patients on Medicaid living in the inner-city neighborhoods of Cleveland's east side and of East Cleveland. Recruitment materials and the Head of Household Agreement will be translated into Spanish; UHCCMC has an extensive interpreter service covering many languages.

(ii) Monitoring and (iii) Sustaining Recruitment and Enrollment

We anticipate a high level of enrollment success (>90%) and a high level of retention (>85%). We base these estimates on our current healthy house project experience, on the special recruitment setting of the UHCCMC Clinics, and on the incentives provided to participants.

- The infant recruitment pool consists of the over 150 new infant patients seen at the UHCCMC Family Medicine and Pediatric Clinics each year. Because the infants receive their primary and well-child

care in these Clinics, the likelihood for recruitment and retention in the CHHAP program is quite high. The elderly recruitment pool is approximately 180 patients in the House Call Program who receive their medical care through this in home program. The Virtually all Clinic patients meet the enrollment criteria. There is an established relationship between the patients and the Clinic staff and medical residents. At the Clinic visit there is an opportunity to fully present the benefits (as well as risks and limitations) of participation in the program.

- The incentives for participation and retention are substantial. Participants receive several health and safety items (e.g., allergen vacuum, fire extinguisher, CO detector, digital thermometer); they get a health and safety inspection of their home; they get remediation work done in their home.
- Enrollments will be monitored monthly and, if for some reason recruitment targets are not met and corrective actions are not successful, there are a number of other clinics and outpatient programs that would be utilized.

Our three year goal is 159 homes overall to be assessed and to have Low Level remediation. Anticipating an 85% retention rate, we will enroll 186; anticipating 90% enrollment success, we will contact 204. We anticipate that 60% of the homes will require and will qualify for Referral Level of remediation. If there are drop-outs after assessment and prior to Low Level remediation, we will increase enrollment to compensate.

	Year 1	Year 2	Year 3	Total
Clients Contacted	Peds 39 Family Med 11 House Call 18	68	68	204
Clients Enrolled	Peds 35 Family Med 10 House Call 17	62	62	186
Homes Assessed	Peds 30 Family Med 8 House Call 15	53	53	159
Low Level Remediation	53	53	53	159
Referral Remediation	32	32	32	96

(g) Unit Assessments and Medical Referral

(i) Unit Identification, Prioritization and Enrollment

Housing units occupied by the clinic patients recruited for the program, whether owned or rented, are enrolled in the program and assessed during the first home visit that includes the medical resident. For the most part, prioritization is simply by the order in which patients are enrolled and home visits can be scheduled.

(ii) Unit Assessment

The EHW environmental specialist, with the medical resident, conduct a standardized home inspection for multiple health and safety hazards, as described above.

Occupant Interview: At the beginning of the home assessment, the occupants (pregnant women/mother or elderly patient, and possibly other members of the household) are interviewed about the number and ages of occupants, length of residence, home environment (e.g., pests, pest control, excess moisture, problems with heat, use of space heaters) and health history regarding lead poisoning, asthma, allergies, falls and other accidents. The interview both gathers data and is part of the education process. The interview also includes an explanation of the assessment process and its limitations.

Visual Assessment: A detailed home health and safety visual assessment form is used to go through the housing unit (exterior, basement, kitchen, bath, bedrooms, play/family/TV room) to look for hazards and potential hazards. The visual assessment covers multiple health and safety hazards, including lead,

roaches, rodents, pesticides, excess moisture, scalding, combustion byproducts, poisoning, falls and fire. The EHW environmental specialist, accompanied by the physician and members of the household, conducts the assessment. It is used as an opportunity to educate the physician and the occupants about home hazards. The environmental specialist goes through the unit, area by area, pointing out hazards and recording their observations on a portable computer that has a computerized version of the visual assessment. The medical student and the occupants are provided with paper copies of the form. The environmental specialist also completes a paint condition visual assessment form provided by the Cleveland Department of Public Health.

Environmental Sampling and Measurements: The home environment specialist, a Licensed Lead Risk Assessor, will take samples of dust and soil for lead analysis depending on the home. The sampling protocol, including use of blanks and spikes, and the chain-of-custody procedures are from the Cleveland Department of Public Health. The laboratory to which dust samples are sent for lead analysis is certified by the Ohio Department of Health to conduct lead analysis on environmental samples. Measurements are made of the tap water temperature, refrigerator temperature, and the width of the crib slats.

(iii) Dust Sampling for Allergen Analysis

Where there is a child or elderly person in the home with asthma or other reactive airway disease, samples of settled dust may be taken for allergen analysis. Whether to take dust samples and what allergen(s) to analyze for will be based on an assessment of the patient's sensitivity and potential for exposure. Sensitivity will be assessed by history of allergic reactions and by skin test results, if available in the medical record. Exposure will be evaluated by visual inspection for inhaled allergen sources. When there is patient sensitivity and environmental exposure, dust samples will be taken for analysis of those allergens in order to evaluate the effectiveness of the interventions. Sampling for pets will not be performed.

(iv) Medical Case Management [See Health Event Tracking Form – Appendix 2.]

Medical case management is integral to and built into the design of the project. The medical residents, who are part of the home assessment team, follow the families for over two years and coordinate all their medical care through their Clinic.

(h) Remediation

(i) Work Specifications

The scope of work derives from the visual assessment and the discussion among the EHW environmental specialist and the physician and family member participating in the inspection. Hazards are prioritized and an action plan is devised, with action steps for each of the parties. EHW staff will do some repair/remediation/modification work (Low Level) at subsequent visits and will write a work order to refer work to Community Housing Solutions or the lead hazard control programs.

Work specifications are based on a standard list of treatment specifications developed for the project. The computerized visual inspection tool generates a list of possible treatments to select from, based on the hazards identified. Selection of the treatments is based on the scope of work from the hazard control plan and sampling results (when they become available). The work is carried-out by EHW staff who are experienced home remodeling contractors and Licensed lead Abatement Contractors.

EHW also writes the preliminary work orders for referrals to Community Housing Solutions. These are finalized after a joint home visit. Similarly, referrals are made to the lead hazard control programs, providing the paint condition assessment and lead sampling results.

The treatments selected are reviewed by the EHW project manager to determine if they are cost-effective, within budget, and are consistent with other project requirements. EHW's QC inspector does a site inspection for a sample of units to review the scope and work specifications

(ii) Cost-Effective Methods

The CHHAP project design is based on low-cost building interventions conducted by EHW staff directly. The standard treatment list is based on the experience of the Swetland Center, Environmental Health Watch, and Community Housing Solutions in previous healthy house and related projects described above. This wealth of experience in implementing housing interventions to reduce and prevent home hazards provides a solid basis for selecting interventions that are cost-effective. For example, for the UMMP, EHW staff conducted one-year follow-up assessments of treatments effectiveness and this data was used to select treatments for this project.

Based on the inspection and the lead and allergen sampling results, the EHW home environmental specialists will conduct low-level building repairs and modifications and hazard remediation. These are limited interventions that can be done by EHW staff, in the case of rental property do not require the owner's permission, do not require disturbance of lead-paint or mold, and do not require temporary relocation. This includes installation of safety items, environmental cleaning to reduce lead dust and other contaminants, moisture reduction measures, and cockroach and rodent IPM. The list of standard Level 1 treatment is provided as an appendix.

Central to our healthy house intervention strategy is the cost-effectiveness of addressing multiple hazards by treatment of underlying building conditions that give rise to these hazards. Treatments to reduce excess moisture can impact paint failure, cockroaches, dust mites, mold, rodents and VOC out-gassing. Costs for health and safety items, Low Level materials, and EHW labor are tracked by housing unit on a computerized database. For each visit, items provided to the family, materials used for treatments, and direct labor time are recorded and then entered into a database. The EHW project manager will assess rolling averages to stay within the budgetary constraints.

Effectiveness of the repairs/modifications/remediation is based on pre- and post-intervention environmental output measurements (as described above and in Rating Factor 5). These will include:

- Lead hazards – pre and post settled dust sample analysis
- Inhalant allergens – pre and post settled dust sample analysis
- Cockroach infestation – pre and post sticky trap counts
- Safety hazards – pre and post checklist

Another aspect of cost-effectiveness is leveraging resources through referral to other funded programs for participants who meet program requirements. Referrals to Community Housing Solutions provide access to weatherization, elderly fall prevention, and other home repair programs. Similarly, referrals to the City and County Health Departments access lead hazard control funds.

(iii & iv) Contractors

As indicated above, all building intervention work is conducted directly by EHW staff, so no outside contracting is involved. For referral work, contractor selection and monitoring is done by Community Housing Solutions and the City and County Health Departments lead hazard control programs, which are responsible for contractor qualification and legal compliance. Having worked with these organizations on numerous projects, we are assured that their contracting processes meet the requirements of HUD and the various other funding agencies.

(v & vi) Relocation and Return: The project interventions will not result in displacement of tenants or owner-occupants for overnight, so relocation and right of return are not an issues.

(i) Community Education, Outreach, Capacity Building/Training

(j) Methods and Targets

The primary educational activity within the project is education of the enrolled families about the identification and control of home health and safety risks. This is done during the home visits, through discussion about the inspection and the remediation plan, through interaction with EHW staff during follow-up visits, and is reinforced by their physician during Clinic visits.

As a part of this educational process, printed material is provided to the families. In order to improve the cultural sensitivity, low-literacy accessibility and overall effectiveness of our educational material, the Swetland Center and Environmental Health Watch are members of a local health literacy consortium. Through the consortium's activities and with funding from a local foundation, we are reviewing, critiquing and revising our educational material.

The major capacity building aspect of CHHAP is the training that physicians, medical and MPH students receive. The hands-on home inspection experience early in the physicians training has great potential to impact their medical practice for the remainder of their careers. The didactic teaching of healthy homes principles to medical and MPH students provides them insights into the housing component of health that will impact their subsequent practice and public health positions.

Training for the medical residents participating in the project is accomplished through classroom instruction by [REDACTED] and through their participation in the home visit process. The medical residents will take away not only an awareness of home environmental issues, but will also have practical information they can use throughout their medical careers.

Both [REDACTED] and [REDACTED] give lectures to the first year medical students on how the home environment influences health, most specifically asthma and other chronic respiratory disorders. Home environmental concerns are included in the Swetland Center sponsored Environmental Health Community Projects performed each year by the 18 first year medical student preceptor groups. The home indoor environment is also a topic [REDACTED] and [REDACTED] cover in a graduate course, "Introduction of Environmental Health", a required course in the MPH program. Students in this course also participate in the home inspection portion of CHHAP (28 of 30 students this past spring went out on home environment inspection visits).

(ii) Non-sub-grantee Organizations

Environmental Health Watch, as part of its on-going programs, regularly conducts community awareness and education activities, including group presentations (e.g., school classes, neighborhood groups), health and environmental fairs, and special events. EHW regularly conducts training for community groups on housing-related health hazards. EHW will include material developed for this project in these various education, training and outreach activities.

The EHW website is a much visited source of information on environmental health issues. EHW web pages with material from previous healthy house projects rank high in Google searches.

The Swetland Center will write reports on the program experience for medical education publications and make presentations at national medical association meetings to extend the program to other medical schools across the country.

Face-to-face educational outreach activities are projected to reach 450 people during the project period. Printed material and website downloads reach many thousands. In our present healthy house project, we have exceeded our outreach and education benchmarks (445,127% at 30 months with more planned).

(2) Approach for Managing the Project

(a) Objectives, Tasks, Goals, Process and Roles

The Project Management Plan (Appendix 1) includes all the required elements – goals, objectives, tasks, benchmarks and milestones. It identifies the responsible entities and a schedule for each activity. The project management team will use the Management Plan as an active tool to monitor weekly progress towards the benchmark objectives. Monthly project accountability meetings will be held with all partners to insure that progress is in line with the plan. If it is determined that the project is not on pace to achieve the benchmark objectives, there are contingency plans to bring the project back in to compliance within the established timeline.

(b) Schedule of Milestones and Deliverables

(see the Project Management Plan, Table in Appendix 2)

(c) Coordination

There will be monthly staff meetings to review performance, problem-solve and make adjustments as needed. Telephone, e-mail and face-to-face contacts will be frequent between meetings. A computerized database to track enrollment, house assessment, interventions and other activities, accessible to all partners, will facilitate communication and coordination. Three times per year we will have a meeting with the two consultants, [REDACTED] and [REDACTED] to troubleshoot and improve the assessments and interventions provided to our elderly patients.

(3) Quality Assurance (QA) Activities

The Swetland Center and EHW will implement a Quality Assurance Plan for environmental evaluations, data collection, specification writing, and contractor performance, all while closely monitoring benchmark performance. The purpose of the plan is: 1) to ensure the accuracy and comparability of assessments; 2) to maximize the quality and comparability of the data collected for environmental inspections and project evaluation; 3) to ensure adherence to standard procedures for inspections, specification writing, data collection, and remediation; 4) to ensure that specifications conform to project intervention strategies, funding requirements, and budget constraints; 5) to keep performance in line with specifications, professional standards, and safety guidelines; and, 6) to ensure compliance with applicable laws and HUD contract requirements.

Our general QA approach is based on: 1) using standard methods; 2) providing written procedures; 3) employing trained, experienced, credentialed, and licensed staff; 4) providing additional training for staff regarding project strategy, protocols, procedures, forms, occupant protection, and work specifications; 5) conducting periodic QA field observations and audits; and, 6) monitoring benchmark performance at monthly meetings.

Following standard procedures, dust sampling for lead and allergen analysis will include the use of field blanks and blind QC spike samples (those for allergens provided by HUD). As discussed above, we will be

working with the National Center for Healthy Housing on harmonizing our home hazards visual assessment with their Pediatric Environmental Home Assessment.

(4) Budget Justification: A detailed budget justification is provided with the budget.

Average Cost of Remediation: Based on intervention costs for our current project, we estimate that the Low-level Intervention will average **\$1,077 per unit** (health & safety items -\$300; materials -\$200; direct labor -\$475; transportation -\$52; insurance -\$50). **Total Project Costs Per Unit:** \$5,503 (159 units; \$874,990 total project cost).

(5) HUD's Departmental Policy Priorities

The Case Healthy Homes & Patients Program addresses these HUD policy Priorities:

(#1) Improving our nation's distressed communities: The project is designed to improve housing conditions by remediating housing-related health hazards and to reduce the associated health problems.

(#2) Providing access to community-based organizations for HUD program implementation: Environmental Health Watch and Neighborhood Leadership Institute are project partners that are grassroots community-based non-profit organization (as defined in the NOFA General Section). Other similar organizations will participate in the project through the outreach and education activities.

(#4) Removal of regulatory barriers to affordable housing: Form HUD-27300 was provided by the Planning Commission of the City of Cleveland and is attached.

(#5) Reducing energy costs: EHW's Affordable Green Housing Center has developed a set of no cost/low-cost recommendations for electricity, gas and water use reductions that can be applied in low-income housing (e.g., passive solar techniques to reduce the need for air conditioning and the use of spot heating units to allow lower furnace thermostat settings). The project's housing specialists are trained in these methods and will assist occupants to understand and implement the site-appropriate measures. Whenever the homes qualify under the various weatherization programs available through Community Housing Solutions, units in the project will be referred for home weatherization.

Rating Factor 4: Leveraging Resources [See Rating Factor 4 Worksheet, Appendix 1.]

1) Partnerships and (2) Contributed Resources

The Swetland Center has established partnerships with a number of organizations for leveraged funding of various project activities (see Letters of Commitment Appendix 1).

Referrals are made to Community Housing Solutions for repair/modification/remediation work beyond the scope of the interventions conducted by EHW. CHS funds this work through its weatherization and home repair programs as well as special funding from utility companies. EHW facilitates the referral by assisting the family and owner with the eligibility procedures and by providing a preliminary scope of work and treatment specifications to CHS. Referrals are also made to the lead hazard control programs of the Cleveland and Cuyahoga County Departments of Health. This work is funded by HUD grant programs. EHW facilitates the referral helping the family with eligibility requirements and by providing a paint condition assessment and lead dust sampling results.

CHHAP 08, Swetland Center, Cleveland

Organization	Number of units referred	Average cost/unit	Leverage amount
Community Housing Solutions:			
-repair/modification/remediation	60	\$1,500	
-weatherization	36	\$3,000	
Cleveland Dept of Public Health	60	\$7,500	
Cuyahoga County Board of Health	15	\$9,500	
TOTAL	171		

The Wm. T. Dahms Clinical Research Unit of UHMC provides assistance with database development and management services

Although no matched dollars are required, CWRU has provided matching funds in the form of decreased indirect costs. The negotiated federal rate of 57% has been decreased to 28.5% for this application, amounting to [REDACTED]. In addition, half of [REDACTED] effort and all of the scheduler's effort are cost shared ([REDACTED]) and the Dahms Clinical Research Unit is contributing effort by their Systems Analyst for database renovation and maintenance ([REDACTED]) for total matching funds of [REDACTED] from the University. (see leverage commitment letters).

Total leveraged and in-kind contributions amount to [REDACTED]

(3) Other Information

a) Coordination with Other Housing-related Organizations

Collaborating with the Community Housing Solutions for the more extensive remediation work provides the opportunity for integration of the health and safety interventions with other housing interventions, including weatherization, water and electricity conservation, and potentially other repairs and improvements through its various programs.

The Swetland Center and Environmental Health Watch are active members in all of the collaborations in the Cleveland area that address healthy housing issues. [REDACTED] and [REDACTED] are both leaders in the Greater Cleveland Asthma Coalition, the Greater Cleveland Lead Advisory Council, and the Cleveland Clean Air Century Campaign, among others.

(b) Public Subsidies and Other Resources

Through the landlord assistance program (Division of Neighborhood Services) of the Cleveland Department of Public Health, landlords who agree to have all units in their building assessed for lead and other hazards would qualify for remediation subsidies, low-interest and deferred loans, and receive lead-safe maintenance training. This will apply to units referred by this project amounting to [REDACTED] in leveraged support (see Director [REDACTED] commitment letter).

(c) Potential for Sustainability

A goal of this project is to develop a sustainable model of early healthy home interventions for adoption by existing pregnant women/infant home and aging visitation programs in Cleveland and Cuyahoga County, e.g. Moms First, Invest in Children, and Help Me Grow. All project partners are currently working on a lead poisoning primary prevention project implemented through Moms First and Help Me Grow. During the course of the Case Healthy Homes & Patients Program, we will be working together to determine what elements of the project can be integrated into the Moms First, Invest in Children and Help Me Grow programs, including hazards assessment, health & safety items, parent education and building interventions.

Private foundations in the Cleveland area continue to support the healthy house activities of the Swetland Center and Environmental Health Watch and healthy house activities in general. The St. Luke's