



**KEEPING KIDS AND COMMUNITIES SAFE:
ADVANCING A HEALTHY HOMES AGENDA**

**Prepared For
The Kresge Foundation
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Philanthropic Community Edition

EXECUTIVE SUMMARY

I. INTRODUCTION

“The connection between health and dwelling is one of the most important that exists.”

Florence Nightingale

Early in 2008, the Kresge Foundation Health Team adopted a new framework for health programming; a “place based” community approach targeted at improving health. A major goal of the approach was to reduce health disparities through fostering healthy places and lifestyles for vulnerable populations. Its specific focus was on promoting health and preventing disease and injury among residents of low-income communities or other vulnerable populations by improving the natural, built, and social environments in which they live¹.

As a starting point, the Kresge Foundation established a new grant making program, the “Getting the Lead Out: Keeping Kids and Communities Safe” Initiative. Through the program, the Kresge Foundation awarded seven grants to support community efforts to address childhood lead poisoning in three cities: Detroit, Michigan; Newark, New Jersey; and Oakland/Alameda County, California.

At the time the Kresge Foundation’s Initiative launched in 2009, five major federal agencies: The United States Department of Housing and Urban Development (HUD), Centers for Disease Control and Prevention (CDC), the United State Department of Agriculture (USDA), United States Department of Energy (DOE), and the Environmental Protection Agency (EPA) formalized a workgroup to establish an expanded intervention model targeted at addressing housing issues in a more comprehensive way. The proposed model is known as the Healthy Homes Model.

The Healthy Homes Model now involves: a) conducting a comprehensive home assessment to identify all of the deficiencies; b) developing a plan of action; c) getting the “buy in” of agencies that need to be engaged in funding the work; and d) identifying the individuals/agencies that will make the repairs/upgrades in an integrated fashion such that all identified problems can be resolved in a comprehensive and timely manner. This transition to healthy homes will impact all Kresge Foundation grantees that are working to eliminate lead poisoning – both in terms of required activities and the ability to more effectively leverage funding – in their communities.

This paper discusses the history and rationale for this programmatic transformation and identifies funding opportunities that the philanthropic community could consider as they move to develop a healthy homes agenda for grant making. It is intended as a working document, a “road map” that can be used to assist in the development of a healthy homes agenda.

II. THE LINK BETWEEN HEALTH AND HOUSING: HOUSING AS A DETERMINANT OF HEALTH

A. Introduction

“Health problems associated with housing-and the neighborhoods that the housing services-are too important to be dealt with on a strictly categorical basis.”

Florida M. Pond, Assistant Surgeon General for Special Projects, 1967

Public interest in the relationship between housing and health has fluctuated over time in response to a number of factors. Among these factors are outbreaks of diseases related to the home environment, the presence of revolutionary social and class conflict, the emergence of an interest in maintaining a healthy workforce during periods of industrial revolution, and severe economic changes in the availability and quality of housing.² However, the fact that improved housing means improved health in a general way has been accepted for well over a century.

An article published in the Journal of Urban Health in December of 2003 by Mary E Northridge, Elliott D Sclar, and Padmini Biswas focused on creating an urban planning and public health framework which was centrally concerned with the social, political, economic, and historical processes that generate health in the urban built environment. The authors hypothesized that three domains—the natural environment (including topography, climate, and water supply), macro social factors (including historical conditions, political and economic orders, and human rights doctrines), and inequalities (including those related to the distribution of wealth, employment and educational opportunities, and political influence)—contain the fundamental factors that underlie and influence health and well-being via multiple pathways through differential access to power, information, and resources.”^{3, 4}

B. The Context of Central Cities and the Need for Healthy Homes

“Given the complexity of the built environment, understanding its influence on human health requires a community-based, multilevel, interdisciplinary research approach.”⁵

Shobha Srinivasan, Liam R. O’Fallon, and Allen Dearry, 2003

Large shares of the residential units with home-based environmental health challenges in the United State are located within central city regions. These areas have faced an increasing number of challenges over time, dating as far back as the 1950s. Since then, many of these cities have endured substantial disinvestment, first as industry began long term decentralization away from urban centers, then as globalization and competitive pressures undermined the manufacturing base in older urban centers. Along with these changes in industry and manufacturing, freeways facilitated the decentralization of the middle class to suburbs, riots accelerated “white flight” from areas that were becoming increasingly minority, and households in poverty were increasingly concentrated in central cities.

Many excellent neighborhoods continue to thrive in central cities, but a substantial amount of housing has suffered from disinvestment, absentee landlords, increasing deterioration, lax housing code enforcement, which have resulted in increases to risk of injury and disease associated with the presence of excess dust, pests, lead paint and safety issues. The racial segregation of communities creates a situation in which many of these risks fall predominantly on minorities in central cities, ultimately leading to increases in health disparities across a number of conditions and diseases. These problems confront a population that struggles with higher rates of unemployment, lower incomes, weakened educational systems, and substantial and persistent occupational risks from “dirty jobs.”

C. The Effect of Housing Conditions on Health

“The bottom line is that a healthy, safe, affordable, and accessible home supports residents’ fundamental physical and psychological needs and protects them from illness and injury.”

US Surgeon General’s Report, 2009

Recent studies have found that people in the United States spend over 90 percent of their time indoors, and 50 percent or more of every day inside their homes⁶. In addition, recently published scientific literature has concluded that poor housing conditions have a direct statistical linkage to a number of negative health outcomes, including but not limited to asthma, lead poisoning, respiratory illness, mental health, and unintentional injuries⁷. By linking historical science related to health and the home environment with today’s trends of increasing amounts of time spent indoors, the gains that would be achieved by adopting a healthy homes approach would be significant.

D. The Cost Impacts of Unhealthy Housing

“The conceptually limited approaches to dealing with home health hazards have resulted in the existence of multiple factors directly and indirectly costing billions to the United States economy, including the cost of resulting illness, the cost paid through inefficient practices, and the cost associated with unintended crossing effects of multiple interventions.”

US Surgeon General’s Report, 2009

As noted in the prior section, there is a strong link between health and housing: the poorer the quality of the house, the greater the possibility of there being a negative impact on the health of the residents. Although there are only a limited number of definitive studies directly linking the proportional cost of illness to hazards found in the home, there are some recently completed studies that can be illustrative.

In 2007, the National Heart, Blood, and Lung Institute estimated “the total cost to the U.S. economy from asthma at \$19.7 billion (including \$14.7 billion in direct medical costs and \$5 billion in indirect costs such as lost work and school days).”⁸

Unintentional injuries are the leading cause of death and disability among children younger than 15 years of age, with over 2,800 child and adolescent deaths occurring each year due to injuries in and around the home. The elderly are also at an elevated risk for residential injuries; each year, 35 – 40 percent of adults 65 and older fall at least once. It is estimated that “falls account for 33 percent of injury-related medical expenditures and cost Americans more than \$38 billion annually.”⁹

Finally, a more recent study conducted in 2008 examined the cost of childhood lead poisoning in Detroit.¹⁰ The study focused on estimating the lifetime cost of lead poisoning for a cohort of children in the year 2003. For each cohort, low and high limit costs of lead poisoning were estimated. These estimates took into account lost income, special education, juvenile justice costs, and medical costs. The range of total costs at the low end was \$356 million, and at the high end was \$1.8 billion.

III. MOVING TO A HEALTHY HOMES APPROACH

A. Making the Case

“A comprehensive, coordinated approach to dealing with health hazards in the home produces the greatest public health impact.”

US Surgeon General’s Report, 2009

Although health risks and hazards associated with housing are many and varied, they tend to be interrelated. Excess moisture, poor indoor air quality, and high levels of contaminated dust are common root causes for residential health hazards as they each may influence and exacerbate one another. Addressing these deficiencies simultaneously, rather than attempting to tackle each hazard individually, yields the most efficient, cost-effective results. A comprehensive, coordinated approach to dealing with health hazards in the home also produces the greatest public health impact.

Additionally, “because of economies of scale and more efficient use of human and other resources, a holistic approach can be less expensive than addressing problems individually.”¹¹ Finally, using a holistic approach in addressing problems may enhance housing affordability by reducing the costs associated with uncoordinated housing improvements.

B. Developing a Healthy Homes Agenda

“The key over-arching healthy homes principles are to keep homes dry, clean, pest-free, well ventilated, free from contaminants, safe, and well-maintained.”

HUD Healthy Homes Strategic Plan

“The healthy homes approach grew out of the observations of Lead Hazard Control grantees that homes with lead-based paint hazards often had other important health hazards that could be addressed simultaneously. The core of this concept is that it is more efficient and cost-effective to identify and mitigate multiple health hazards in high-risk housing rather than to follow the traditional approach of addressing individual hazards through multiple categorical programs.”¹²

Federal efforts to move in this direction began to take shape in the 1990s. In the FY 1999 budget, HUD proposed, and Congress and President Clinton approved, a new Healthy Homes Initiative (HHI). Responsibility of this program was delegated to HUD’s Office of Healthy Homes and Lead Hazard Control (OHHLHC) and was intended to build upon HUD’s existing activities and expertise in housing-related health and safety issues.¹³ HUD launched its Healthy Homes Program in 1999 but has not received substantial funding from Congress to expand the Initiative. As a result, HUD has sought to increase collaborations with federal agencies and local programs to leverage other resources that can aid in furthering the Healthy Homes agenda. Subsequently, CDC, through its Lead Poisoning Prevention branch, and EPA, through its Office of Children’s Health Protection, have also emerged as playing major roles in moving the concept forward.

One of the most recent efforts toward this end has been the creation of the Federal Healthy Homes Work Group. To date, the group has been meeting monthly or bi-monthly to develop a ‘strategy for action’ in operationalizing the model. Key issues that Work Group members have been addressing include:

1. Cross training workers who address housing problems;
2. Streamlining applications for needs based programs;
3. Expanding opportunities to blend funds across programs and agencies and coordinate applications and reporting requirements such that one application would suffice for all agencies involved;
4. Aligning the Healthy Homes Model with the Green Agenda; and
5. Crafting an interagency healthy homes strategy.

C. Getting it Right

“A healthy home is one that is sited, designed, built, renovated, and maintained in ways that support the health of residents.”

The Surgeon General’s Call to Action to Promote Healthy Homes, 2009

If the Surgeon General’s goal is to be realized, we must first reform the programs designed to transform our existing housing stock so that we can address health issues from a holistic perspective. From observing national, state, and local efforts, a series of characteristics have been identified that must exist in order to produce a robust Healthy Homes Model that can be implemented at the local level.

These characteristics include:

- Creating a clear set of standards that direct public and private sector investments towards producing healthy housing.
- Cross training inspectors and workers from different agencies and disciplines in the standards and techniques of making homes healthy so that the capacity to conduct comprehensive healthy homes assessments expands.
- Modifying and coordinating program eligibility standards to make it easy for families living in unhealthy housing to cross-qualify for a range of programs (e.g. lead abatement, weatherization, etc.)
- Building “integrated, holistic intervention” programs by creating teams of workers from different agencies that can collaborate to develop an integrated comprehensive action plan.
- Eliminating existing barriers across federal and state programs to allow the blending of funds to ensure that sufficient resources are available.
- Designing and using the web to create interoperable cross agency databases that facilitate day-to-day activities.
- Building three levels of collaboration: system, agency and ground level.
- Updating statutes and codes at the state and local levels to provide a means to prosecute owners of properties.

- Training community health workers to act as case managers to support impacted families through this transition.
- Creation a marketplace demand for healthy homes standards, especially in low to moderate income communities.
- Identifying new financing mechanisms to spur private investment in healthy homes related interventions.
- Institutionalizing self-evaluation at the local level and the sharing of best practices.

IV. THE CHALLENGES OF IMPLEMENTATION AND RECOMMENDATIONS FOR INVESTMENT BY THE PHILANTHROPIC COMMUNITY

“Creating communities that are conscious of environmental health concerns may require partnerships and collaborations among policymakers, governments, researchers, communities, and health specialists with interdisciplinary perspectives.”¹⁴

Shobha Srinivasan, Liam R. O’Fallon, and Allen Dearry, 2003

If the criteria outlined above represent the optimal community Healthy Homes Model, much work needs to be done to effectively implement it. Most of the challenges we face relate to how “systems” of addressing substandard housing and health conditions have evolved over time. Additionally, remedying the problem is a major challenge in that its solution requires addressing multiple funding streams, multiple agencies, and multiple laws and regulations at the federal, state, and local levels. That is, change must improve many ‘moving parts’ simultaneously to achieve the intended outcome.

Noted below are the key challenges that must be addressed accompanied by a set of recommendations regarding where investment by the philanthropic community would make a significant difference.

Challenge 1: Silos of agency responsibility and funding discourage cross-agency communication and collaboration

One of the most challenging aspects of achieving a model healthy homes program results from the fact that responsibilities for various program components are allocated to different agencies at all three levels of government – federal, state, and local. To address this challenge, the following recommendations are proposed.

Recommendation 1: Support the work of the Federal Interagency Work Group.

Recommendation 2: In key states of interest, support the creation of a state-level Healthy Homes Commission or Task Force.

Recommendation 3: In key cities of interest, consider funding the creation of a position in the mayor’s office known as the “Healthy Homes Czar”.

Recommendation 4: Support communication across agencies at the state and local levels through the development of inter-agency databases.

Challenge 2: The lack of housing codes, outdated housing codes and lack of enforcement have significantly limited the transition to healthy homes.

Responsibility for formulating and enforcing property and health codes currently resides at the state and local levels. The review and updating of state and municipal building codes to add healthy homes components is a necessary strategy. Having codes that reflect the key healthy housing components is essential as they form the basis for legal enforcement targeted at correcting hazardous conditions in homes.

In addition to updated codes, an aggressive enforcement strategy is needed in dealing with homeowners and landlords who are unwilling to address the hazards that have been identified in their properties. Without an effective enforcement strategy, any code is useless. Effective

strategies may include: the creation of special housing courts dedicated to handling these types of cases as well the creation of specialized units within prosecutors' offices dedicated to enforcement actions. Based on the foregoing, we make the following recommendations:

Recommendation 1: At the federal level, support the efforts of advocacy groups working to update the International Codes by providing funding to organizations such as the Home Safety Council, the National Safe and Healthy Housing Coalition, and the National Center for Healthy Housing.

Recommendation 2: At the state and local levels, fund efforts to analyze existing housing codes to determine where there are gaps and/or modifications needed, and support the efforts of key stakeholders and advocacy groups working to get the codes updated.

Recommendation 3: Support positions in local prosecutors' offices that are dedicated to healthy homes cases.

Recommendation 4: Support the education of attorneys in prosecutors' offices at the local level so they can effectively litigate these cases.

Recommendation 5: Fund the development and dissemination of effective educational materials targeted at various audiences: tenants, landlords, home owners, and agency personnel.

Challenge 3: Working effectively with impacted families is critical to ensure their cooperation and participation.

A key outcome of implementing the Healthy Homes Model will be the establishment of a fully integrated approach to addressing the multiple problems often found in the home. Keys to achieving this outcome are 1) establishing a comprehensive action plan that involves all agencies needing to be engaged, and 2) assuring that those doing the work communicate effectively with one another.

Whereas before, one individual from one agency normally dealt with the family to address one problem, under a healthy homes approach a single staff person may now be talking to the family about the six or seven problems that have been identified. In order to alleviate the family's becoming overwhelmed, the following strategies are recommended.

Recommendation 1: Invest in the development of key standardized healthy homes messages and materials.

Recommendation 2: Support the training and employment of community health workers to be key partners in implementing the Healthy Homes Model.

Challenge 4: Facilitate knowledge transfer from fully developed healthy homes projects to new projects.

To date there are few healthy homes projects, and fewer still that are comprehensive. As a result, knowledge is narrowly held by a small number of agencies with regard to the best practices for intervention, funding, cross agency eligibility and other key aspects of running a healthy homes project. This could become a major hurdle to the expansion of the number of

healthy homes projects and especially to the dissemination of high quality practices. Given the urgent need to build a broad base of knowledge, supporters must deploy both the traditional training and technical assistance approaches as well as new technologies to broadly disseminate techniques and knowledge.

Recommendation 1: Invest in evaluation efforts designed to assess training and technical assistance capacities to establish a baseline.

Recommendation 2: Support the establishment of a healthy homes training and technical assistance system.

Recommendation 3: Provide scholarships to staff from various agencies so they can participate in healthy homes training programs.

Recommendation 4: Fund the development and use of new technologies such as Wiki's, "You-Tube" style videos, teleconferences, and recorded webinars to document healthy homes techniques.

Recommendation 5: Conduct cross-project networking meetings to support the development of community-based healthy homes initiatives.

Recommendation 6: Support the work of healthy homes organizations engaged in advocating for needed policy change.

Challenge 5: Invest in efforts to secure sufficient revenue to sustain healthy homes initiatives for the long term.

Securing the long-term viability of these programs is the most important challenge to be addressed. It has become even more critical given the current state of the economy and reduced public funding now available.

Using grant funds as the major sources of revenue is problematic for several reasons. First, it creates a great degree of instability and uncertainty in the program. Second, where such instability exists, these programs may not be able to attract the caliber of people required given that they will not have any job security. Third, grant funding is becoming much more competitive and the overall funding pool is getting smaller. Fourth, grants are costly to write and administer.

Recommendation 1: Support establishing a dedicated funding source to provide a stable revenue stream that is not subject to the politics of the state or city's annual budgeting process.

Recommendation 2: Use Challenge Grants in cities of interest to encourage participation from philanthropic community members and/or to other entities in supporting the creation of a special dedicated fund.

Recommendation 3: Explore all leveraging and Healthy Homes funding opportunities that exist for complementary funding.

Challenge 6: Avoid the use of a "one size fits all" Healthy Homes Model.

Unlike some initiatives where one dominant model has been proven effective, there is no dominant Healthy Homes Model available today, and it is likely to be a while before one or

more dominant models emerges if for no other reason than projects are relying on various funding streams which tend to produce different program designs.

Within projects that have been implemented, there are several dimensions where these projects may vary with respect to the extent to which they approach the “ideal” project (See Appendix 1). These include: passage and implementation of healthy homes standards, cross training of personnel across the range of interventions, building methods of helping families become eligible for multiple programs, and blending a variety of funding sources. These variations are likely to affect the success of healthy homes projects so it is important to document the pathways to success and test which are the most robust.

Recommendation 1: Support a diversity of projects adapted to a range of environments to assess the robustness of multiple models.

Recommendation 2: Identify and disseminate healthy homes best practices by supporting evaluations at the state and local levels.

Recommendation 3: Identify jurisdictions that have existing healthy homes elements and capacity but need help in developing comprehensive healthy homes models and strategies.

V. PULLING IT ALL TOGETHER: DEVELOPING A SOUND INVESTMENT STRATEGY

“The moment is right to transition the platform we’ve established for lead to a broader Healthy Homes agenda.”

HUD Secretary Shaun Donovan
Council on Foundations Conference, October 2009

Introduction

This section provides a framework for developing programming in the healthy homes arena. The recommendations made are those of the authors, based upon years of experience in working with the philanthropic community to design new initiatives as well as working with government and not for profit organizations at the federal, state and local levels to implement them. The recommendations are written to support the decision making process of members of the philanthropic community that have been tasked with developing a new national healthy homes initiative.

Recommendation 1: Fund the triad by supporting stakeholders at the federal, state, and local levels.

Recommendation 2: Select states first, as a majority of healthy homes funding goes to them and is then reallocated to local projects.

Recommendation 3: Be rigorous about selecting cities that will receive grants under the initiative.

Recommendation 4: Support the application of a healthy homes framework at the local level, but be flexible regarding its adoption.

Recommendation 5: Invest for the long term.

Recommendation 6: Capitalize on the opportunity to leverage work of the philanthropic community with the National Green and Healthy Homes Initiative.

VI. CONCLUDING COMMENTS

“Be the change you want to see in the world.”

Mahatma Ghandi

This paper was written to inform the Kresge Philanthropic community’s interest in fostering the development and diffusion of the Healthy Homes Model. Equally important – given the events which have occurred over the past six months, i.e. the meeting at the White House and the development of the Green and Healthy Housing Initiative – is the fact that the philanthropic community has an opportunity to foster the implementation of these initiatives at the state and local levels.

Investing in this arena – the intersection between environment and health – provides several benefits. First, this funding strategy is one which focuses on addressing root causes (e.g. lead paint) of disease rather than just treating the outcomes (e.g. childhood lead poisoning). Second, because the initiative is place based, it provides an opportunity for the philanthropic community to support the development of a population health model.¹⁵ This approach is focused not only on treating the specific health issues of a population; but is also focused on improving their health status through health promotion and disease prevention measures. Finally, this opportunity comes at a unique period of time, as there has been a confluence of interest in pursuing this agenda among a broad number of policy makers. Thus, if the philanthropic community seeks to invest significantly in this arena, it can potentially have a large impact on the evolution of the Healthy Homes Model for years to come.

Executive Summary Endnotes

¹ Memoranda from the Health Team to the Kresge Philanthropic community Board of Trustees.

² Jacobs M, Stevenson G. Health and Housing: A Historical Examination of Alternative Perspectives. *International Journal of Health Services*. 1981; 1.

³ Northridge ME, Sclar ED, Biswas P. (2003). Sorting out the connections between the built environment and health: a conceptual framework for navigating pathways and planning healthy cities. *Journal of Urban Health: Bulletin of the New York Academy of Medicine*, 80(4).

⁴ Link BG, Phelan J. (1995) Social conditions as fundamental causes of disease. *Journal of Health and Social Behavior*. 80-94.

⁵ Srinivasan S, O’Fallon LR, Deary A. Creating Healthy Communities, Healthy Homes, Healthy People: Initiating a Research Agenda on the Built Environment and Public Health. *American Journal of Public Health*. September 2003, Vol. 93, No. 9; 1446-1450.

⁶ Centers for Disease Control and Prevention and U.S. Department of Housing and Urban Development, 2006

⁷ Krieger J and Higgins DL. Housing and Health: Time Again for Public Health Action. *American Journal of Public Health*. 2002; 92: 758-768.

⁸ United States Department of Housing and Urban Development. “Healthy Homes Strategic Plan”

⁹ United States Department of Housing and Urban Development. “Healthy Homes Strategic Plan”

¹⁰ Sarbaugh-Thompson M, Thompson L. “The Cost of Doing Nothing: The Case of Lead Poisoning in Detroit.” (Working Paper)

¹¹ U.S. Department of Housing and Urban Development, 2000

¹² U.S. Department of Housing and Urban Development. “Leading our Nation to Healthier Homes: The Healthy Homes Strategic Plan.” 2009.

¹³ U.S. Department of Housing and Urban Development. “Leading our Nation to Healthier Homes: The Healthy Homes Strategic Plan.” 2009.

¹⁴ Srinivasan S, O’Fallon LR, Deary A. Creating Healthy Communities, Healthy Homes, Healthy People: Initiating a Research Agenda on the Built Environment and Public Health. *American Journal of Public Health*. September 2003, Vol. 93, No. 9; 1446-1450.

¹⁵ For additional information on this approach, see David A Kidie’s *Purchasing Population Health: Paying for Results*. University of Michigan Press. Published 1997; And Shortell et al. *Remaking Health Care in America*. Published by Jossey Bass. Published 2000.

PREFACE

This report was prepared at the request of Kresge Philanthropic community Program Director David Fukazawa, to provide background and recommendations for the Kresge Foundation's Health Team, guiding their decision-making regarding the expansion of a new program area targeted at exploring the interface between the built environment and population health. The new programming focus is intended to build upon and expand the investment made by the Kresge Foundation in its initial effort in this arena: "Getting the Lead Out: Keeping Kids and Communities Safe".

This document and its related findings and recommendations are drawn from several sources: one, an analysis by the Kresge Program Office at MPHI of the grantee experiences to date; two, a review of literature on the topic; and three, a series of interviews conducted with key personnel at the federal, state, and local levels. The preparation of this paper has been a partnership between the Kresge Program Office and the Wayne State University Center for Urban Studies. We believe the framing of this report will act as a think piece in assisting members of the philanthropic community as they forge new investment strategies at the interface between health and the built environment.

This paper is intended to be a working document; a "road map" that can be used by members of the philanthropic community as they develop a new agenda around the healthy homes concept. To facilitate the decision-making process, this paper has five major discussion sections.

They are:

- I. Introduction
- II. A discussion of the link between health and housing
- III. A discussion of the healthy homes approach, the actors involved, and the implementation of the model at the federal, state, and local levels
- IV. A discussion of the challenges of implementing the model and a proposed set of recommendations framed for the philanthropic community's consideration
- V. A discussion of investment strategies and a framework for developing programming in the healthy homes arena that can be supported by the philanthropic community
- VI. Concluding Comments

Note:

This report has been prepared by Pamela Paul-Shaheen, Dr.P.H., Senior Fellow, Michigan Public Health Institute and Lyke Thompson, Ph.D., Director, Wayne State University Center for Urban Studies with research assistance from Mark Sorbo and Betsy Palazzola. Contributions have also been made by Matt Ammon, Deputy Director, US Department of Housing and Urban Development; Elaine Beane, Senior Fellow, Michigan Public Health Institute; Mary Jane Brown, Healthy Homes and Lead Poisoning Prevention Chief, Centers for Disease Control and Prevention; Linda Kite, Director, Healthy Homes Collaborative; Rebecca Morley, Executive Director, National Center for Healthy Housing; Mary Morrow, Attorney, Wayne County Prosecutor's Office; Ruth Ann Norton, Executive Director, National Coalition to End Childhood Lead Poisoning; Mary Sue Schottenfels, Executive Director, CLEARCorps Detroit; Kathy Seikel, Senior Advisor for Children's Health, Environmental Protection Agency; Wes Stewart, Program Services Director, National Coalition to End Childhood Lead Poisoning.

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I. OVERVIEW

“The connection between health and dwelling is one of the most important that exists.”

Florence Nightingale

Early in 2008, the Kresge Foundation Health Team adopted a new framework for health programming – community approach targeted at improving health. A major goal of the approach was to reduce health disparities through fostering healthy places and lifestyles for vulnerable populations. Its specific focus was on promoting health and preventing disease and injury among residents of low-income communities or other vulnerable populations by improving the natural, built, and social environments in which they live¹.

As a starting point, the Health Team elected to explore the problem of childhood lead poisoning. Childhood lead poisoning is a problem that produces major negative effects on a child’s health, especially for children under the age of six, and these effects are lifelong. The key sources of lead contamination—soils and waste sites, the work place, and most importantly, the use of lead based paint in homes built before 1978—are well known. It is the latter source that today is the primary cause of lead poisoning in children given that many homes in cities across the United States—especially those concentrated in inner city areas—were built prior to 1978 (when lead was prohibited in residential paint). Most importantly, the solution to the problem is straightforward; eliminating and controlling the sources of lead contamination eliminates the problem.

To obtain additional background on the subject, as well as to identify possible areas for investment by the philanthropic community, the Health Team commissioned a paper on the topic. The paper provided background on the issue of lead as a health problem and described federal, state, and local actions taken to reduce lead poisoning. In addition, the paper included case studies of the activities undertaken in eight cities to address the problem². Using the recommendations contained in the paper as a guide, the Health Team established a new grant making program called “Getting the Lead Out: Keeping Kids and Communities Safe Initiative.” Through the program, the Kresge Foundation awarded seven grants to support community efforts to address childhood lead poisoning in three of the cities that were included in the case studies: Detroit, Michigan; Newark, New Jersey; Oakland/Alameda County, California. Although each of the grants was unique, all were directed toward reducing childhood lead poisoning in these cities.³

When the Kresge Foundation’s Initiative launched in 2009, three major agencies, HUD, CDC, and the EPA, were in the process of formalizing a collaborative to establish an expanded intervention model to address housing issues in a more comprehensive way. The proposed Healthy Homes Model would comprehensively address multiple health hazards found in a single home. This approach, the result of an effort launched in 1999 by President Clinton, is designed to reduce the fragmentation that has led to a lack of coordination, higher overall cost per house, and increased disruptions to families where multiple problems are identified.

The Healthy Homes Model involves: (a) doing a comprehensive assessment of all the deficiencies of a home; (b) developing a plan of action; (c) getting the “buy in” of agencies that need to be engaged in funding the work; and (d) identifying the individuals/agencies that will make the repairs/upgrades in an integrated fashion such that all identified problems can be resolved in a comprehensive and timely manner.

The transition to a Healthy Homes Model will impact all Kresge Foundation grantees that are working to eliminate lead poisoning in their communities. In addition, the healthy homes

agenda correlates with the Kresge Foundation's interest in playing an expanded role in addressing environmental issues that negatively impact health.

This paper discusses the history and rationale for this programmatic transformation and identifies opportunities for the philanthropic community to consider as it moves to develop a healthy homes agenda for grant making. The timing of this transition is opportune given that key federal agencies—HUD, CDC, and EPA—are focusing on making the Healthy Homes Model fully operational at the close of 2010, a date which corresponds with the conclusion of the “Getting the Lead Out: Keeping Kids & Communities Safe” grant program, as well as the culmination of efforts to end childhood lead poisoning that were framed in the report “Healthy People 2010.”

Section I Endnotes

¹ Memoranda from the Health Team to the Kresge Philanthropic community Board of Trustees.

² The cities identified for purposes of the study were: Camden and Newark NJ, Cincinnati and Cleveland OH, Detroit MI, New Orleans LA, Oakland CA, and Philadelphia PA

³ Alameda County Lead Poisoning Prevention Program, Alameda County CA; Newark Department of Child and Family Well-Being, Newark NJ; Department of Health and Wellness Promotion, Detroit MI; CLEARCorps Detroit in partnership with the Wayne County Prosecutor's Office, Detroit MI; Michigan Department of Community Health, Detroit MI; Wayne State University Center for Urban Studies, Detroit MI.

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“Health problems associated with housing-and the neighborhoods that the housing services-are too important to be dealt with on a strictly categorical basis.”

Florida M. Pond, Assistant Surgeon General for Special Projects, 1967

Public interest in the relationship between one’s housing and one’s health has fluctuated over time in response to a number of factors. Among these factors are outbreaks of diseases related to the home environment, the presence of revolutionary social and class conflict, the emergence of an interest in maintaining a healthy workforce during periods of industrial revolution, and severe economic changes in the availability and quality of housing.¹ “The fact that improved housing means improved health in a general way has been accepted for well over a century. The advent of improved sanitation in the form of indoor plumbing, separation of housing from industrial emissions through zoning, and improvements in housing durability, among others, have led to demonstrable health gains by eliminating or controlling cholera, typhoid, tuberculosis, injuries”² and other diseases and conditions.³ In the 19th Century, health and housing officials focused their joint efforts on containing and reducing infectious diseases spread through “...poor sanitation, crowding, and inadequate ventilation.”⁴

“In the classic Report of the Sanitary Commission of Massachusetts 1850,⁵ which established the context for developing public health infrastructure in the United States, Lemuel Shattuck urged that local boards of health be authorized to make rules and regulations not inconsistent with the constitution and laws of the state for the location, and for preventing the location, of pigsties, slaughter-houses, chemical works, and any trade or employment offensive to the inhabitants or dangerous to the public health.”⁶

In the 20th Century, fire departments began to place an emphasis on the reduction of fire hazards in the home and workplace, specifically electrical wiring and home construction materials.⁷ In recognition of the impact that these changes have made on health conditions, formal codes were established to regulate housing quality throughout the country. “As attention has shifted from communicable diseases to more chronic conditions, such as asthma, cancer, lead poisoning, and unintentional injuries, the link between housing and health has received a new appreciation and more in-depth investigation.”⁸

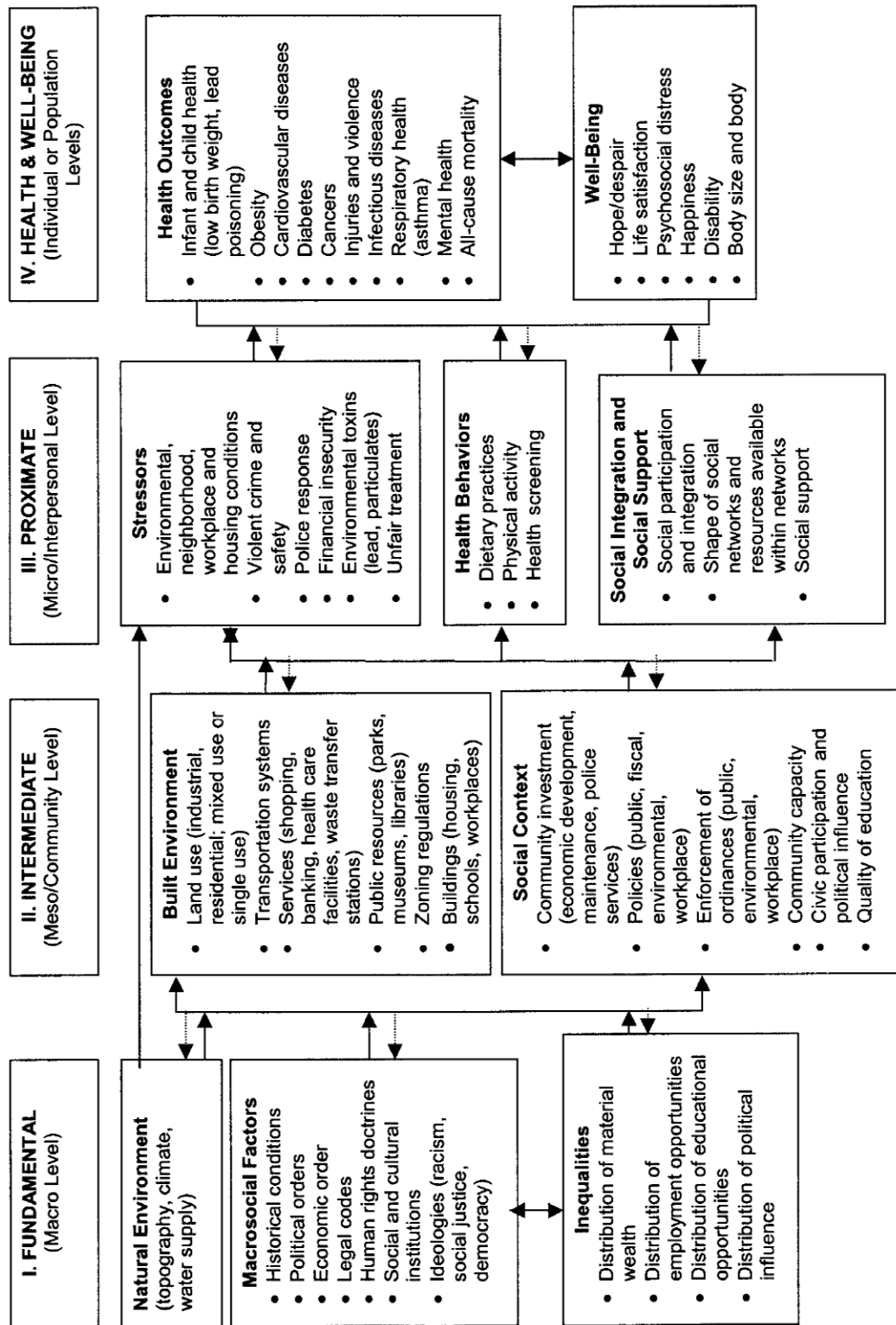
An article published in the Journal of Urban Health in December of 2003 by Mary E Northridge, Elliott D Sclar, and Padmini Biswas focused on creating an urban planning and public health framework which was centrally concerned with the social, political, economic, and historical processes that generate health in the urban built environment. The authors described the built environment as that part of the physical environment made by people for people, including buildings, transportation systems, and open spaces. The remainder of the physical environment is the natural environment. The authors propose that none of the natural environment *per se* remains in cities, since even parks and waterways have been created or at least significantly modified by people, and are therefore defined as being part of the built environment. In order to provide a framework for their hypotheses, the authors developed a logic model to describe this relationship (Figure 1). The model,^{9,10} originally developed by Schulz and Northridge, “... is adapted from a conceptual model for understanding racial disparities in health that appears in a previous published article by Shulz and Northridge. In keeping with their emphasis on social determinants of environmental health disparities, the model has been modified to specifically examine relationships between social inequalities, the

built environment and social context, and environmental health disparities, while drawing on the previous works of Northridge and Sclar.”¹¹

“The model posits that three domains—the natural environment (including topography, climate, and water supply), macrosocial factors (including historical conditions, political and economic orders, and human rights doctrines), and inequalities (including those related to the distribution of wealth, employment and educational opportunities, and political influence)—contain the fundamental factors that underlie and influence health and well-being via multiple pathways through differential access to power, information, and resources.”^{12, 13} We include the model on the following page as we believe it provides an excellent context for the discussion to follow.

Figure 1¹⁴

Logic Model Representing the Interface Between Health and the Environment



B. The Context of Central Cities and the Need for Healthy Homes

“Given the complexity of the built environment, understanding its influence on human health requires a community-based, multilevel, interdisciplinary research approach.”¹⁵

Shobha Srinivasan, Liam R. O’Fallon, and Allen Dearry, 2003

Large shares of the residential units with home health challenges in the United State are located within central cities. These areas have faced increasing challenges over time, dating as far back as the 1950s. Since that time, many of these cities have endured substantial disinvestment, first as industry began long term decentralization away from urban centers, then as globalization and competitive pressures undermined the manufacturing base in older urban centers. Along with these changes to industry and manufacturing, freeways facilitated the decentralization of the middle class to suburbs, riots accelerated “white flight” from areas that were increasingly being occupied by minorities, and households in poverty were becoming concentrated in central cities. Both jobs and middle class households of all racial and ethnic backgrounds have continued to migrate to the suburbs and regions outside of the old manufacturing belt.

Many excellent neighborhoods continue to thrive in central cities, but a substantial amount of housing has suffered from disinvestment, absentee landlords, increasing deterioration and the resulting increases in risk of injury and disease associated with the presence of excess dust, pests, lead paint and safety issues. The racial and class segregation of households creates a situation in which many of these risks fall predominantly on low-income minorities in central cities, ultimately leading to increases in health disparities across a number of conditions and diseases. These problems confront a population that already has higher rates of unemployment, lower incomes, weakened education systems, and substantial and persistent occupational risks from “dirty jobs.”

The information profiled in Table 1 for Detroit demonstrates many of these points.

**Table 1
City of Detroit Profile**

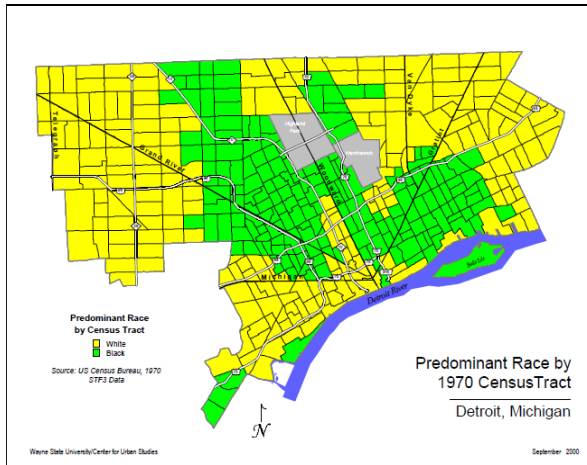
Population Profile				
	1970	1990	2008	National 2008
Population				
Total population (#)	1,514,063	1,027,974	797,131	
Race*				
White (%)	55.5	21.6	10.5	74.3
Black (%)	43.7	75.7	83.0	12.3
Hispanic (%)		2.8	6.4	15.1
Asian (%)		0.8	1.0	4.4
Economic/Poverty Profile				
	1970	1990	2008	National 2008
Per Capita Income (\$)			15,255	34,560
Median Family Income (\$)			29,423	63,211
Families with children under 18 in poverty (%)	18.4	36.0	38.2	14.9
Families with children under 5 in poverty (%)	33.7	32.0	34.0	16.1
Families in poverty (%)	11.3	29.0	28.3	9.6
Education Profile (For People 25 Years and Older)				
	1970	1990	2008	National 2008
Population				
Population 25 Years and Older (#)			502,069	197,794,576
Educational Attainment				
No High School Diploma (%)			24.2	15.5
High School Graduate [Includes Equivalency] (%)			35.1	29.6
Some College [No Degree] (%)			23.3	20.1
Associate's Degree (%)			6.2	7.4
Bachelor's Degree (%)			7.0	17.3
Graduate/Professional Degree (%)			4.3	10.1
Employment Profile				
	1970	1990	2008	National 2008
Employment Indicators				
Unemployment Rate (%)	8.0	19.7	21.3	6.4
Occupations of Employed Population				
Management, Professional, and Related Occupations (%)			22.1	34.5
Service Occupations (%)			28.0	16.8
Production, Transportation, and Material Moving Occupations (%)			17.8	12.7
Industry of Occupations				
Manufacturing (%)			14.1	11.3
Professions, Scientific, and Management (%)			9.5	10.3

* Due to overlap between Hispanics and other categories, percentages may add to more than 100.

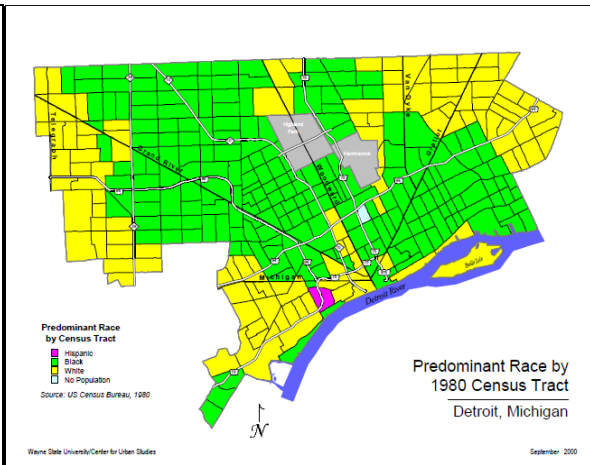
Source: American Community Survey 2006-2008, U.S. Census Bureau

Detroit's population reached nearly 2 million people in the 1950s, after which it has steadily declined. It is now at or below 800,000 people and will probably be lower after the 2010 Census. Much of this population decline is attributed to suburbanization, "white flight" following the 1967 riot, and subsequent court battles over school desegregation. The city moved from a position of racial balance in 1970 to having a more than 90 percent Non-Caucasian population in 2008. Today, Detroit has the largest African-American population proportion of any major city in the United States. The gradual change in Detroit's predominant race is graphically described in Maps 1-4. At present, the metropolitan Detroit area is estimated to be among the most segregated in the country.^{16, 17, 18}

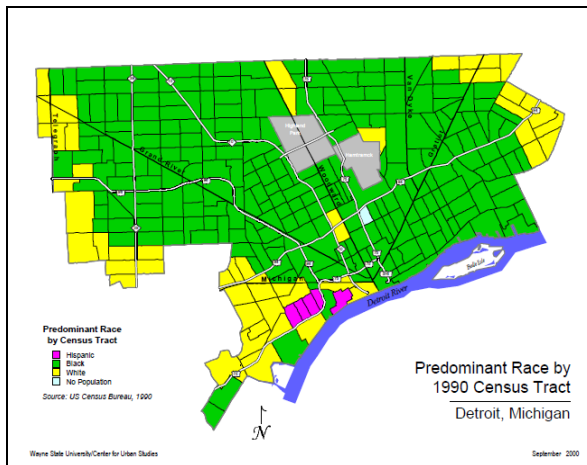
Map 1



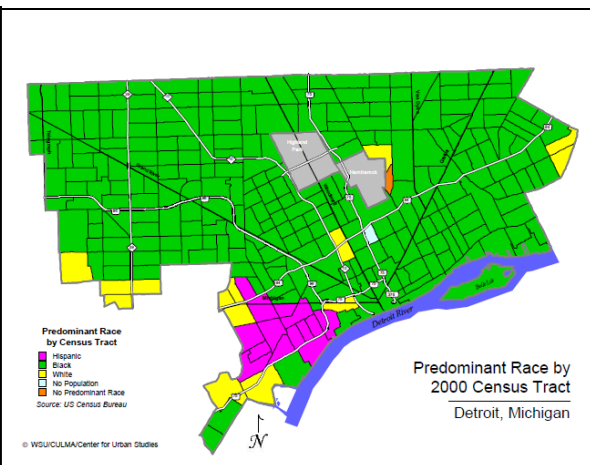
Map 2



Map 3



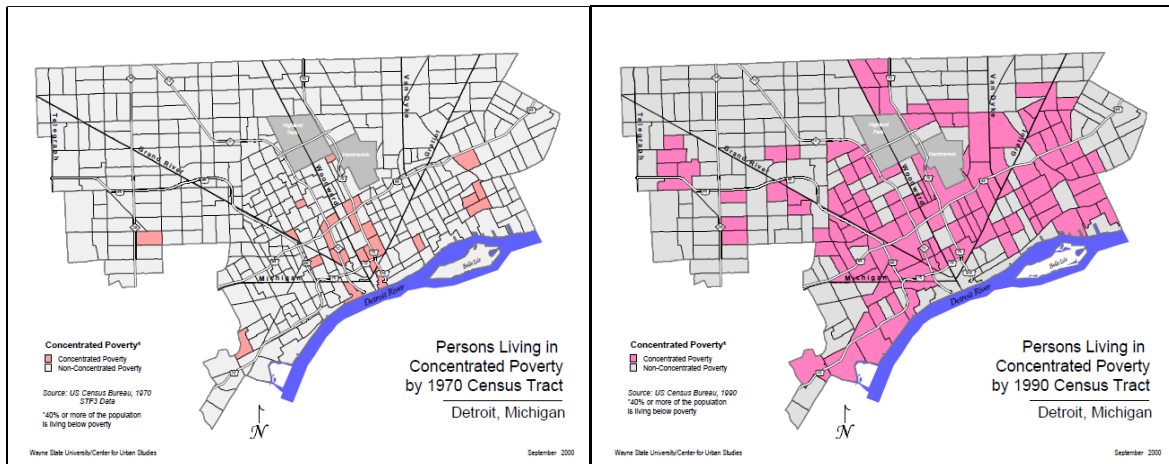
Map 4



As noted in Table 1, Detroit residents have a per capita annual income of \$15,255 compared to a national per capita income of \$34,560. Median family income in Detroit, at \$29,423, is less the half that of the national median at \$63,211. Of Detroit’s citizens, 33.1 percent have incomes below the poverty line. This compares to 13.2 percent nationally, based on data from the 2006 through 2008 American Community Survey. All poverty indicators identified in Table 1 are significantly above the national rates. The percentage of families with children under the age of five living in poverty in Detroit is most notable. As Maps 5 and 6 below depict, the concentration of persons living in poverty in the city has significantly increased from 1970 to 1999. Although data is available from the 2000 Census, changes to the manner in which the federal government defined poverty levels significantly decreases its reliability. As such, we elected not to present maps of the results.

Map 5

Map 6

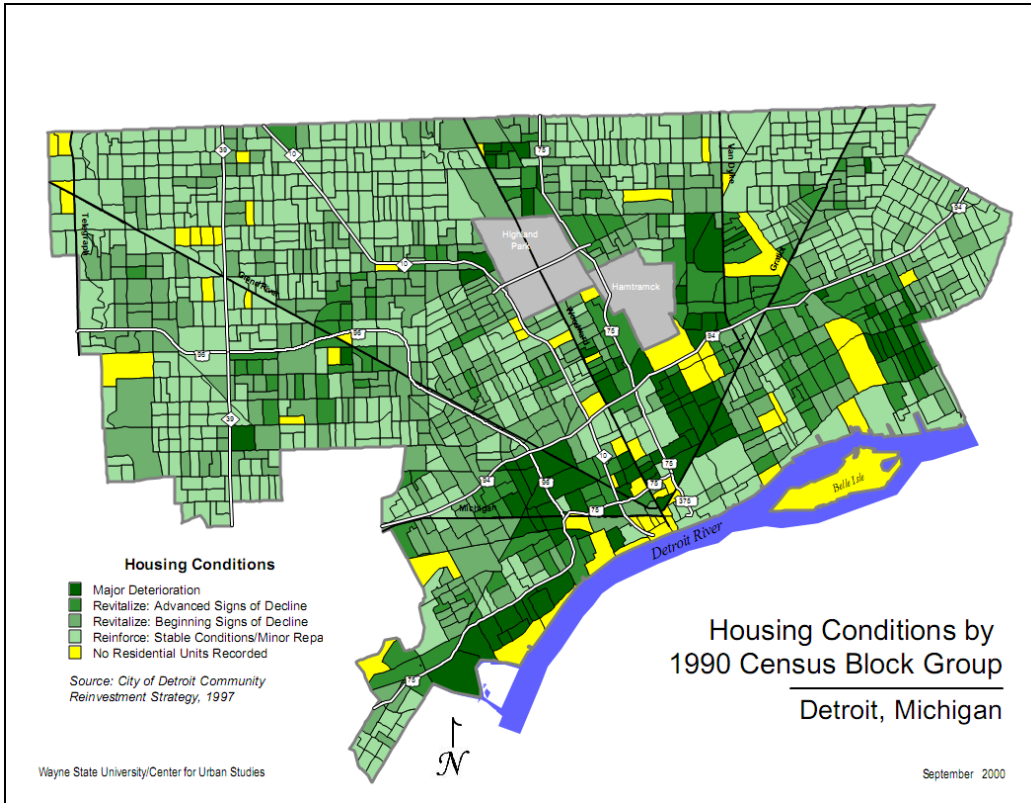


Additionally, Table 1 identifies key indicators related to the levels of education of Detroit’s population. As noted in the table, Detroit has a significantly higher percentage of individuals with less than a high school diploma as compared to the national average. A total of 24.2 percent of adults in Detroit have not completed high school, compared to 15.5 percent nationally. While it is interesting that the percentage of high school graduates and those with some college in Detroit are higher than the national averages, the percentages for individuals in the city with college degrees and graduate degrees are substantially less than the national averages. Thus, a significant percent of Detroit’s population is unprepared to work effectively in today’s “knowledge economy”.

Table 1 also profiles employment data for the city. As noted, the unemployment rate in Detroit— 21.3 percent in 2008 – is dramatically higher than the national average of 6.4%, and is the highest among large cities. Among those employed in Detroit, a large percentage (about 45%) work in service and production occupations. Additionally, Detroit has a lower proportion of individuals working in professional occupations than the national average and a correspondingly higher proportion working in service and production jobs. Among employed individuals in Detroit, 14.1% work in the manufacturing industries and 9.5% work in the professional, scientific, and management industries. These percentages compare to national occupational industry averages of 11.3% for manufacturing and 10.3% for professional, scientific, and management.

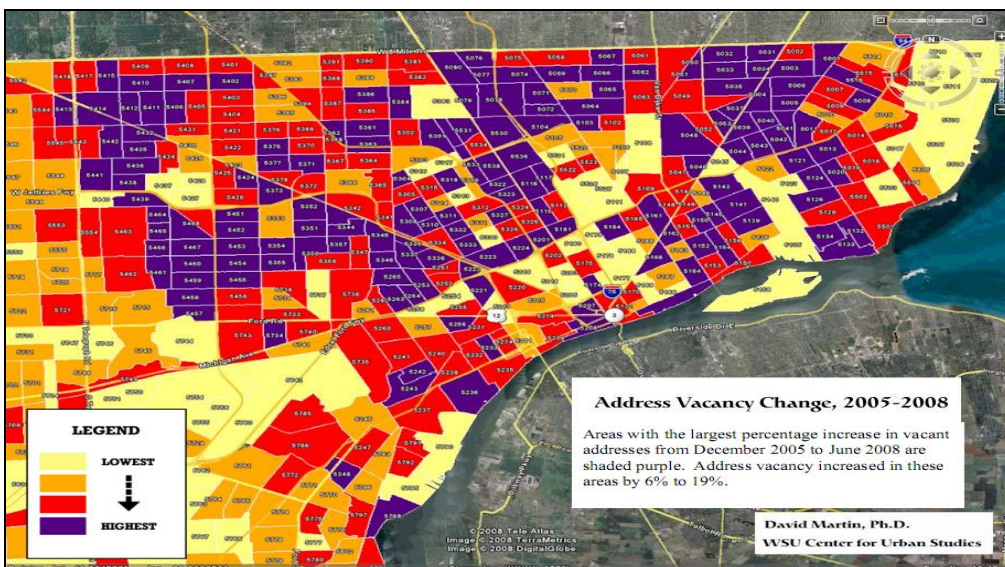
In terms of environmental indicators, Detroit's housing stock consists primarily of single family homes. Over 90 percent of these homes were built prior to 1980. As depicted in Map 7, there are concentrations of severely deteriorated houses within the city.

Map 7



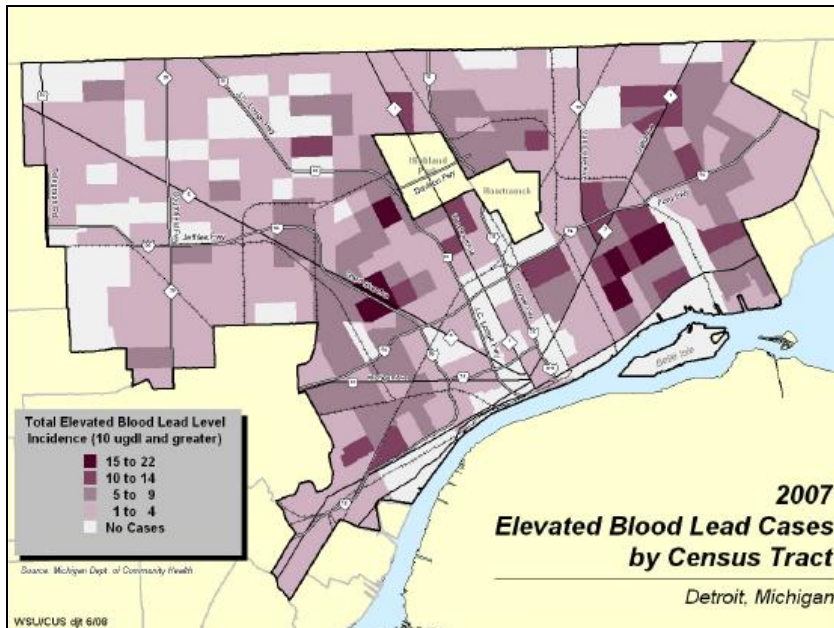
Additionally, Map 8 depicts the increase in vacant houses across the city from 2005 to 2008.

Map 8

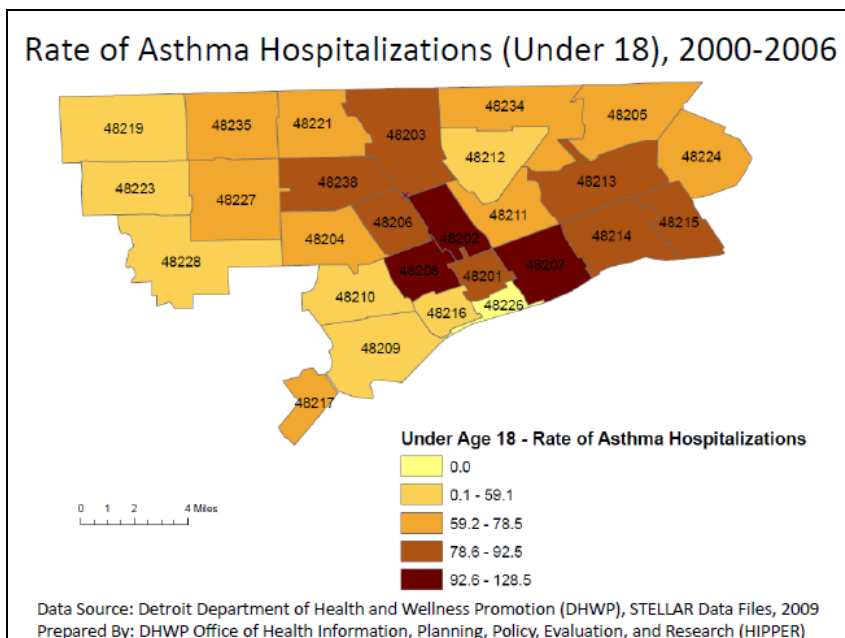


The percentage of owner occupied homes in Detroit has dropped over the time period presented below, standing at 54.8 percent in 2008. Detroit has an aging housing stock where many of the homes are moderately or severely deteriorating. Because of this, the city as a whole has categorized all children under the age of six as being at risk for lead poisoning. The age of Detroit's housing stock, when combined with increasing poverty and incidence of absentee home ownership, has led to accelerated decay and increased prevalence of healthy homes issues such as lead poisoning, asthma, pests, and safety problems. Maps 9 and 10 below show lead poisoning cases and asthma cases for the city of Detroit.

Map 9



Map 10

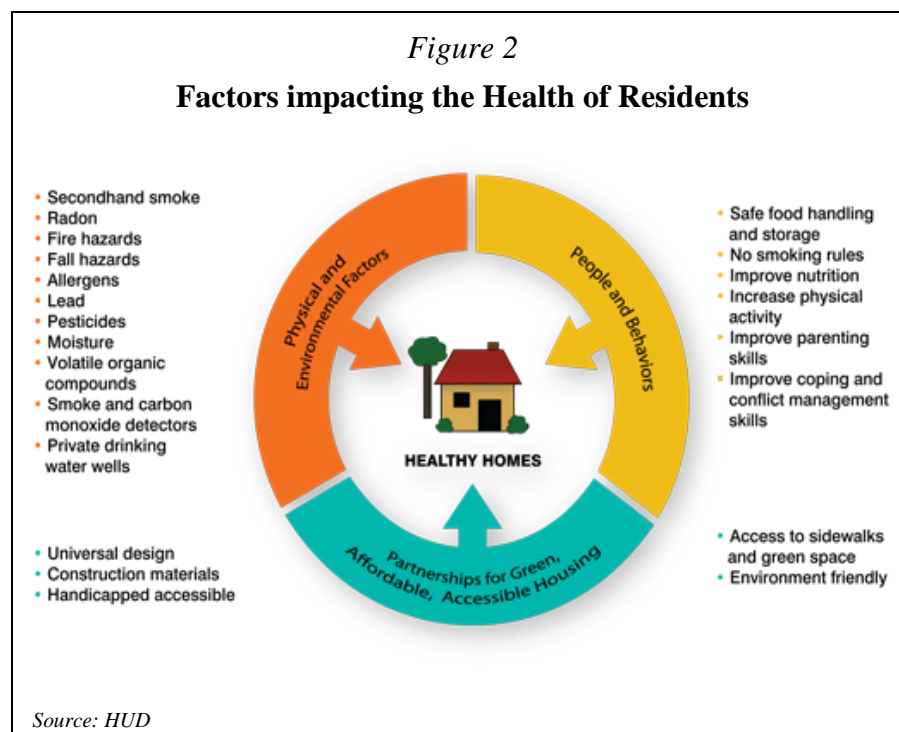


C. The Effect of Housing Conditions on Health

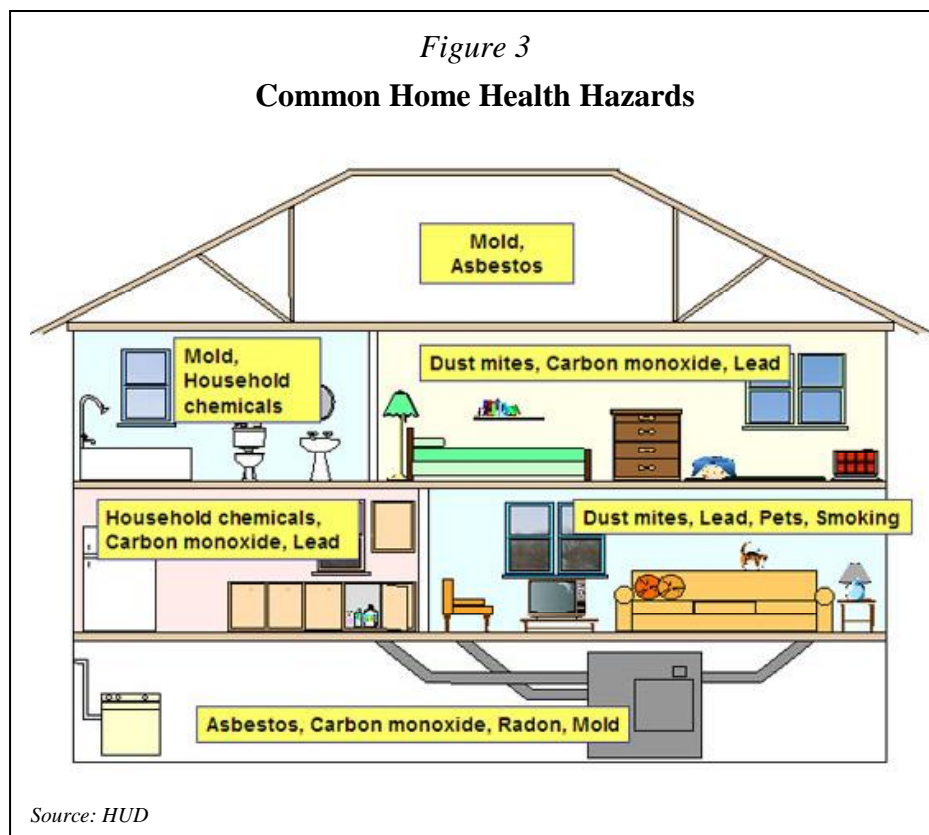
“The bottom line is that a healthy, safe, affordable, and accessible home supports residents’ fundamental physical and psychological needs and protects them from illness and injury.”

US Surgeon General’s Report, 2009

Recent studies have found that people in the United States spend over 90 percent of their time indoors, and 50 percent or more of every day inside their homes.¹⁹ In addition, recently published scientific literature has concluded that poor housing conditions have a direct statistical linkage to a number of negative health outcomes, including but not limited to asthma, lead poisoning, respiratory problems, mental health, and unintentional injuries.²⁰ By linking health outcomes and data on the home environment to today’s trends of increasing amounts of time spent indoors, the gains that would be achieved by adopting a healthy homes approach can be significant, a point that will be discussed later in this paper.



“According to HUD’s 2007 American Housing Survey, nearly six million households live with moderate or severe physical housing problems, including heating, plumbing, and electrical deficiencies.”²¹ Recent data also indicates that about 24 million households face significant lead based paint hazards and roughly 13.5 million people are unintentionally injured in and around the home environment each year.²² It is important to note that many factors influence health and safety in a home, including: its structural and safety aspects (i.e., how the home is designed, constructed, and maintained); its physical characteristics; and the presence or absence of safety devices. Also important are: indoor air quality, water quality, resident behavior, and the house’s immediate surroundings. Such factors will either support or detract from the health of those who live there. As noted in Figure 3 below, all components of a home can have health implications.



Some common hazards that affect health and safety include: “house fires caused by smoking or electrical hazards; carbon monoxide exposure; poor or inadequate lighting; slips and falls on stairs; open upper-story windows; improperly stored firearms and poisonous substances; moisture intrusion; radon gas; and inadequate supervision of children around bathtubs and pools. Many of these hazards have the potential to negatively affect everyone, regardless of socioeconomic status or residential location. Secondhand smoke, exposure to chemicals such as pesticides and some household cleaning products, allergens such as dust mites, fire and burn hazards, and fall hazards such as clutter and poor lighting can be found in many homes and in all neighborhoods.”²³

In addition, “the structural and safety features of a home can increase risk for injuries, elevate blood lead levels, and exacerbate other conditions. Poor indoor air quality contributes to cancers, cardiovascular disease, asthma, and other illnesses. Poor water quality can lead to gastrointestinal illness and a range of other conditions, including neurological effects and cancer. Some chemicals in and around the home can contribute to acute poisonings and other toxic effects, and all are influenced both by the physical environment of the home and by the behavior of the people living in the home.”²⁴ Figure 4 on the following page provides examples of relationships between health and hazards in the home environment.

Figure 4

The Relationship of Health to Home Hazards

Home Hazards										
Health Impact	Secondhand Smoke	Carbon Monoxide	Radon Gas	Allergens	Mold	Water Quality	Household Pests	Smoke Detectors	Pesticides	Lead Hazards
Asthma	X			X	X		X		X	
Respiratory Problems	X	X	X	X	X		X		X	
Unintentional Poisoning		X	X			X			X	X
Neurologic Disorders						X			X	X
Bites							X			
Cardiovascular Disease	X									
Cancer	X		X						X	
Burns								X	X	

It is also important to highlight the fact that some populations are more vulnerable to and disproportionately affected by housing hazards. For example, “childhood lead poisoning, injuries, respiratory diseases (such as asthma), and quality of life issues have been linked to the more than six million substandard housing units nationwide. Residents of these units are also at increased risk for fire, electrical injuries, falls, rodent bites, and other illnesses and injuries. Other issues of concern include exposure to pesticide residues, indoor toxicants, tobacco smoke, and combustion gases. The burning of oil, gas, and kerosene in unvented heaters are often relied upon by low-income families in the winter, even though they can release a variety of combustion products including carbon monoxide, a known cause of illness and death.”²⁵ This confluence of environment with demographics results in “people with low-household incomes, the elderly, people with disabilities, and minority populations being least likely to have access to safe, healthy, affordable, and accessible homes.”²⁶

D. The Cost Impacts of Unhealthy Housing

“The conceptually limited approaches to dealing with home health hazards have resulted in the existence of multiple factors directly and indirectly costing billions to the United States economy, including the cost of resulting illness, the cost paid through inefficient practices, and the cost associated with unintended crossing effects of multiple interventions.”

US Surgeon General’s Report, 2009

As noted in Section C, there is a strong link between health and housing: the poorer the quality of the house, the greater the possibility of there being a negative impact on the health of the residents. Although there are only a limited number of definitive studies directly linking the proportional cost of illness to hazards found in the home, there are some recently completed studies that can be illustrative.

In 2007, the National Heart, Blood, and Lung Institute estimated “the total cost to the U.S. economy from asthma at \$19.7 billion (including \$14.7 billion in direct medical costs and \$5 billion in indirect costs such as lost work and school days).”²⁷ In addition, research shows that “about 21 percent of asthma cases in the U.S. are linked to dampness and mold, at an annual cost of approximately \$3.5 billion. Pests can also play a significant role in triggering the symptoms of allergies and asthma; a recent study of asthma among inner-city children found that 69 percent were allergic to cockroaches and 33 percent to rodents.

Meanwhile, unintentional injury is the leading cause of death and disability among children younger than 15 years of age, with over 2,800 child and adolescent deaths occurring each year due to injuries in the home. The elderly are also at an elevated risk for residential injuries; each year, 35 – 40 percent of adults 65 and older fall at least once. It is estimated that falls account for 33 percent of injury-related medical expenditures and cost Americans more than \$38 billion annually.”²⁸

Finally, a more recent study conducted in 2008 looked at the cost of childhood lead poisoning in Detroit.²⁹ Lead poisoned children and their families incur a high cost, specifically in terms of acute care and decreased quality of life, but increases in special education utilization, crime and juvenile justice costs, medical costs, and decreased lifetime earnings burden society as well.³⁰ The study focused on estimating the lifetime cost impact of lead poisoning for a cohort of children in the year 2003. These children had lead exposure levels ranging from 5 µg/dL to a high of 40 µg/dL. For each cohort, low and high limit costs from lead poisoning were estimated. The estimates took into account lost income, special education, juvenile justice costs, and medical costs. Total costs ranged from \$356 million to \$1.8 billion. Table 2 on the following page provides a summary of the components used to estimate low and high cost figures for lead poisoning in Detroit’s children.

Table 2
Summary of Lead Poisoning Costs*

Based on 2003 Lead Test Data for Detroit
for 68% of cases or 17,233 newly lead
poisoned children

	Low Estimate	High Estimate
Lost Income**	\$279,178,548	\$1,534,046,310
Additional Special Education Costs***	\$54,118,843	\$232,525,707
Additional Crime Costs	\$33,796,020	\$337,651,054
Medical Treatment Costs****	\$3,089,003	\$3,125,581
Total Cost to Society and Individuals	\$370,182,414	\$2,107,348,652
Average Total Cost per Child	\$21,482	\$122,289

*Multi-year costs adjusted to constant dollars using a 2% rate of inflation and a 3% discount rate
** Assuming a 50 year work life
*** Assuming 9 yrs. of service for < 10 IQ pts. lost; 15 yrs. of service for 10-20 IQ pts. lost; and 20 yrs. for > 20 IQ pts. lost
**** Using Detroit Public Health Department guidelines for service and using 20 years of parental care to estimate parental productivity loss included in the high estimate only.

This type of analysis shows the hidden costs of environmental health hazards and the diseases associated with exposure in children. There is a great deal to be gained—both in terms of the quality of life and cost savings—if there is a concerted effort not only to treat illness, but also to address the housing conditions and environmental hazards that have either caused or contributed to it.

Section II Endnotes

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III. MOVING TO A HEALTHY HOMES APPROACH

A. Making the Case

“A comprehensive, coordinated approach to dealing with health hazards in the home produces the greatest public health impact.”

US Surgeon General’s Report, 2009

“As early as the mid-19th century, physicians advocated for decent housing as a strategy to reduce death and illness among the poor¹. The typhoid and tuberculosis experiences showed that basic sanitation, ventilation, reduced household crowding, and other improvements in housing made a powerful contribution to conquering these epidemics. Furthermore, improved sanitation through indoor plumbing, the creation of smooth and cleanable interior surfaces, and better food preservation and storage facilities in homes were clearly linked to other advances in public health. Many modern homes and building codes trace their ancestry to the public health responses to epidemics that occurred with the rapid industrialization and urbanization in Western countries over a hundred years ago.”²

By the 1940s and 1950s, the government agencies regulating housing and health became organizationally separated. These agencies continue to operate isolated from each other today. On the housing side, the result has been the creation of many public and private agencies engaged in dealing with specific aspects of the problems found in substandard housing. Not only have these functions been parceled out across a multitude of agencies, but using a holistic approach has also been compromised by the creation of multiple funding streams, laws, rules, and regulations, as well as the creation of multiple highly specialized groups of workers, each with responsibilities for addressing specific hazards. At the local level, improving one house involves a number of different workers, each with their own specialized training. In Detroit, for example:

- Weatherization services are addressed by the Detroit Department of Human Services (DHS)
- Lead hazard assessments and investigations are done by the Detroit Department of Health and Wellness Promotion (DHWP) and CLEARCorps/ Detroit
- Lead abatement work is completed by the Detroit Planning and Development Department (P&DD)
- Residential property code inspections and code enforcement is handled by the Detroit Department of Buildings and Safety Engineering (B&SE)
- Prosecutions are done by the Wayne County Prosecutor’s Office (WCPO)

This ‘shotgun’ approach means that service providers are limited to addressing a clearly defined problem (e.g. a lead hazard), without having the capacity to deal with other risks that might be identified as a result of their visit. One unintended consequence of this is that families in these homes may face additional risks that are not taken into consideration because they do not directly relate to the service providers’ responsibilities.

Although health risks and hazards associated with housing are many and varied, they tend to be interrelated. Excess moisture, poor indoor air quality, and high levels of contaminated dust are common root causes for residential health hazards as they each may influence and exacerbate

one another. Addressing these deficiencies simultaneously, rather than individually, yields the most efficient, cost-effective results.

A comprehensive, coordinated approach to dealing with health hazards in the home also produces the greatest public health impact. “Directing resources toward single environment-based problems rather than working to improve the overall housing environment is inefficient and does not address residents’ health and safety risks holistically.”³ Additionally, “because of economies of scale and more efficient use of human and other resources, a holistic approach can be less expensive than addressing problems individually.”⁴ Finally, using a holistic approach in addressing problems may enhance housing affordability by reducing the costs associated with uncoordinated housing improvements, because one intervention may address two or more adverse health conditions. For example, repairs to deteriorated lead-based paint caused by a roof leak can be less expensive to complete if the roof leak and the deteriorated paint repairs are coordinated; just repairing the paint without fixing the leak would be more expensive because deterioration would continue, leading to more repairs and increased costs over the long run.”⁵

B. Developing a Healthy Homes Agenda

“The key over-arching healthy homes principles are to keep homes dry, clean, pest-free, well ventilated, free from contaminants, safe, and well-maintained.”

HUD Healthy Homes Strategic Plan

“The healthy homes approach grew out of the observations of Lead Hazard Control grantees that homes with lead-based paint hazards often had other important health hazards that could be addressed simultaneously. The core of this concept is that it is more efficient and cost-effective to identify and mitigate multiple health hazards in high-risk housing rather than to follow the traditional approach of addressing individual hazards through multiple categorical programs.”⁶

Federal efforts to move in this direction began to take shape in the 1990s when children’s environmental health issues received national attention with President Clinton’s Executive Order 13045, “Children’s Environmental Health Risks and Safety Risks.” “In the FY 1999 budget, HUD proposed, and the Congress and President Clinton approved, a new Healthy Homes Initiative (HHI). Congress and President Clinton agreed that ‘the healthy homes approach appears superior to addressing problems one by one’ and appropriated funds for the initiative to ‘develop and implement a program of research and demonstration projects that would address multiple housing-related problems affecting the health of children.’”

Responsibility for the program was delegated to HUD’s Office of Healthy Homes and Lead Hazard Control (OHHLHC) and was intended to build upon HUD’s existing activities and expertise in housing-related health and safety issues.”⁷ Subsequently, CDC, through its Lead Poisoning Prevention branch, and EPA, through its Office of Children’s Health Protection, have each emerged as playing major roles in moving the concept forward.

One of the most recent efforts to move the process forward has been the creation of the Federal Healthy Homes Work Group. The group was the product of a meeting between key philanthropic community—of which Kresge was one—and White House staff. The Work Group was originally composed of HUD, CDC, and EPA, and was intended to facilitate coordination across the agencies in the implementation of the model. Subsequently additional agencies have been added to the group.⁸ The White House views the Healthy Homes Work Group as a model for interagency cooperation. To date, the group has been meeting monthly or bi-monthly to develop a ‘strategy for action’ in operationalizing the model. Key issues the Work Group has been addressing include:

1. Cross training workers who address housing problems;
2. Streamlining applications for needs-based programs;
3. Expanding opportunities to blend funds across programs and agencies and coordinate applications and reporting requirements such that one application would suffice for all agencies involved; and
4. Aligning the Healthy Homes Model with the Green Agenda.

EPA is taking the lead in drafting the Work Group’s report which will be completed and forwarded to the White House in 2010.

C. Getting it Right

“A healthy home is one that is sited, designed, built, renovated, and maintained in ways that support the health of residents.”

The Surgeon General’s Call to Action to Promote Healthy Homes, 2009

If the Surgeon General’s goal is to be realized, we must first reform the programs to transform our existing housing stock so that we can address health issues from a holistic perspective. From watching national, state, and local efforts, a series of characteristics have been identified as prerequisites for producing a robust healthy homes model that can be implemented at the local level.

These characteristics include:

- Creating a clear set of standards, reinforced by various agencies, that directs public and private sector investments towards producing healthy housing. This includes updating health and housing codes.
- Cross training inspectors and workers from different agencies and disciplines in the standards and techniques of making homes healthy so that individuals from various agencies and disciplines have the capacity to conduct a comprehensive healthy homes assessment.
- Modifying and coordinating program eligibility standards to make it easy for owners and families living in unhealthy housing to cross-qualify for a range of programs (e.g. lead abatement, weatherization, etc.)
- Building “integrated, holistic intervention” programs by creating teams of workers from different agencies that collaborate to develop an integrated comprehensive action plan to address the problems identified during a comprehensive healthy homes assessment.
- Eliminating existing barriers across federal and state programs to allow the blending of funds to ensure that sufficient resources are available to address the multiple problems identified in the home.
- Designing and using web-based tools to create interoperable cross agency databases that facilitate the day-to-day work of individuals from different agencies addressing multiple problems in the same home.
- Building three levels of collaboration; system, agency and ground level. First, collaboration is needed at the ground level, where people actually work to eliminate housing hazards. Second, interagency collaboration needs to be created at the supervisory level so that workers get support from their superiors and their unions for their efforts. Third, agency leaders with responsibilities for addressing housing problems need to meet periodically to ‘bust barriers’ to facilitate interagency cooperation.
- Updating statutes and codes at the state and local levels to provide a means to prosecute owners of properties that endanger children and other vulnerable populations, and sufficient prosecutorial staff to enforce the laws.
- Training community health workers to act as case managers so they can support impacted families through this transition.

Section III Endnotes

¹ Krieger and Higgins, 2002; Von Hoffman, A, *The Origins of American Housing Reform*. Providence, RI: Harvard University Joint Center for Housing Studies. 1998.

² U.S. Department of Health and Human Services. “The Surgeon General’s Call to Action To Promote Healthy Homes”. 2009.

³ U.S. Department of Health and Human Services. “Surgeon General’s Call to Action to Promote Healthy Homes.” 2009.

⁴ U.S. Department of Housing and Urban Development, 2000

⁵ U.S. Department of Health and Human Services. “Surgeon General’s Call to Action to Promote Healthy Homes.” 2009.

⁶ U.S. Department of Housing and Urban Development. “Leading our Nation to Healthier Homes: The Healthy Homes Strategic Plan.” 2009.

⁷ U.S. Department of Housing and Urban Development. “Leading our Nation to Healthier Homes: The Healthy Homes Strategic Plan.” 2009.

⁸ Other agencies include the United States Department of Agriculture (USDA), Department of Energy (DOE), National Institute of Standards and Technology, National Institute of Environmental Science, and Office of the Surgeon General.

IV. THE CHALLENGES OF IMPLEMENTATION AND RECOMMENDATIONS FOR INVESTMENT BY THE PHILANTHROPIC COMMUNITY

“Creating communities that are conscious of environmental health concerns may require partnerships and collaborations among policymakers, governments, researchers, communities, and health specialists with interdisciplinary perspectives.”¹

Shobha Srinivasan, Liam R. O’Fallon, and Allen Dearry, 2003

If the criteria outlined above represent the optimal healthy homes model in a local community, much work needs to be done to effectively implement the model. Most of the challenges we face relate to how “systems” of addressing substandard housing and health conditions have evolved over time. Additionally, remedying the problem is a major challenge in that its solution requires addressing multiple funding streams, multiple agencies, and multiple laws and regulations at the federal, state, and local levels. That is, change must improve many “moving parts” simultaneously to achieve the intended outcome.

In this section of the paper we provide examples of the challenges that must be addressed and provide a set of recommendations regarding where an investment of funds from the philanthropic community would make a difference. These challenges and recommendations are an outgrowth of the knowledge gained in: implementing the “Getting the Lead Out: Keeping Kids and Communities Safe” initiative; interviews we have conducted at the federal, state and local levels; literature we have reviewed as background to the development of this paper. We have not tried to identify every challenge. What we have done is select those challenges and recommendations that we feel deserve near term attention. We believe these provide a solid basis for the philanthropic community to consider.

Challenge 1: Silos of agency responsibility and funding discourage cross-agency communication and collaboration

One of the most challenging aspects of achieving a model healthy homes program results from the fact that responsibilities for various program components are allocated to different agencies at all three levels of government- federal, state, and local. For example, at the federal level, the EPA sets codes and standards, the CDC addresses the health issues that arise from sub-standard housing, and HUD provides funds to remedy various housing problems.

At the state level, using Michigan as an example, the Michigan Department of Community Health has two separate divisions that deal with the issue – the Childhood Lead Poisoning Prevention Program deals with childhood lead poisoning cases across the state; and the Lead and Healthy Homes Section manages HUD funds and oversees training and certification programs in Michigan. In addition, several other agencies are involved: the Michigan State Housing Development Authority (MSHDA) manages HUD funds that also can be used to address substandard housing; and the Bureau of Construction, housed within the Department of Energy, Labor, and Economic Growth, is responsible for establishing construction codes and standards. This same plethora of agencies is replicated at the the local level.

Where program components are parceled out to agencies that have a track record of not working well together – which is often the case – it makes it very difficult to implement a comprehensive program such as the Healthy Homes Model which, to be successful, requires cross agency communication and collaboration. The situation has become even more complicated given the current budget crisis. For the Healthy Homes Model to be effectively implemented at the state and local levels one of two things must happen: either (a) realignment

of program components so that they are integrated and placed in one agency – an unlikely scenario given organizational politics, or (b) breaking down each agency’s “go it alone” culture by creating opportunities and rewards for agencies to work together in ways that build trust and encourage communication and collaboration. Kresge grantees, however, have a greater opportunity to leverage private sector entities to reduce silos, blend funding, and create comprehensive healthy homes models than strictly public initiatives.

Recommendation 1: Support the work of the Federal Interagency Work Group.

As noted earlier, the Work Group was catalyzed by an invitational meeting convened for White House staff and members of the philanthropic community. The Work Group is expected to release their strategic plan for 2010–2020 sometime in 2010. The philanthropic community should consider hosting invitational meetings with Work Group members and other members of the philanthropic community shortly after this strategic plan is made public. These meetings would provide an opportunity for dialogue among participants to explore where agency partnerships can be forged. A precedent for this type of partnership has already been established by the Green and Healthy Homes Initiative. Several philanthropic organizations are in a position to convene such meetings, as they are seen as national leaders working at the interface between the built environment and health. The philanthropic community should also consider advocating for the adoption of resolutions at the National Governors Association and the U.S. Conference of Mayors meetings supporting the creation of healthy homes commissions and task forces to provide a national platform that can support local healthy homes initiatives.

Recommendation 2: In key states of interest, the philanthropic community should support the state’s creation of a Healthy Homes Commission or Task Force.

In many cases, where such entities have been created, they have been effective in that they provide a forum for dialog among the key stakeholders, as well as raising the political visibility of the issue. These entities can either be established by an Executive Order of the Governor or by statute. In Michigan, for example, the Childhood Lead Poisoning Prevention and Control Commission was established by Public Act 434, 2004.

Its mission is to:

1. Maximize the effectiveness of Michigan’s public infrastructure;
2. Mobilize and enable the private sector infrastructure; and
3. Integrate the capacity and effects of the public and private sector strategies in order to prevent and control childhood lead poisoning through public awareness, testing and treatment of lead poisoned children, and prevention and remediation of lead hazards.

While the scope of the Commission’s work could easily be broadened to address the challenge of implementing the Healthy Homes Model in the state, the Commission’s continuation is now in jeopardy due to budget cuts.

This situation is probably being duplicated in other states where these entities have been established. Yet, as noted above, their creation has proven to be an effective strategy for bringing together the key state stakeholders who need to be engaged in framing a transitional strategy for moving the Healthy Homes Model forward. Most importantly, their visibility often creates accountability. One advantage to supporting these groups is that their

continuation does not require a significant level of funding on the part of the philanthropic community, yet it can lead to a large return on investment – especially if there is a clear agenda for change articulated at the outset.

Recommendation 3: In key cities of interest consider funding the creation of a position in the mayor’s office known as the “Healthy Homes Czar”. Where such positions are necessary and established, additional revenue should be provided to allow the office to finance a “re-engineering analysis” both within and across city agencies.

The Healthy Homes Czar position is modeled after a similar position established in the 1990s to more effectively allow city government to address the problem of childhood lead poisoning. Known as the “Lead Czar”, the individual occupying this position was stationed in the mayor’s office and was empowered to hold all city agencies with responsibilities for program elements accountable for effectively implementing the Childhood Lead Poisoning Prevention Program. The position proved to be very effective in several city governments: Philadelphia, Cleveland, Washington D.C, and Baltimore. Particularly in strong mayor systems, having an official in the mayor’s office to whom department heads are accountable appears to go a long way toward insuring that the expected collaboration is achieved and performance benchmarks are met. A somewhat different structure may be required when dealing with city manager forms of municipal government.

If such a position is funded, it should be coupled with additional funding to allow the city to purchase contracted services to conduct re-engineering studies - both within and across city departments responsible for various aspects of the program. The recommendations drawn from these studies will provide the Healthy Home Czar with an agenda to follow in modifying policies, procedures, organizational responsibilities and funding allocations to maximize the city’s capacity to successfully in implement the model.

Recommendation 4: Support communication across agencies at the state and local levels through the development of inter-agency databases.

Both at the state and local level, responsibilities for healthy housing are spread across a variety of agencies. While lead poisoning is usually under the province of health departments, abatement and repair may be in other housing related departments, and inspection services may be in a building inspection department. The recycling of foreclosed homes may be the responsibility of both state and local housing authorities. Various mechanisms have been created to facilitate cooperation at the managerial and policy levels, such as task forces or collaborative groups. Coordinating services at the level of the individual housing unit often requires detailed understanding of the ownership, inspection status, tax status, and other aspects of the home. One way of lowering the transaction costs involved in this kind of collaboration is to make information collected by one agency available to all the others. So, in order to build interagency collaboration, both at the state and local level, we propose construction of databases that reach across agency lines.

At the state level, there is a need to build state housing registries that track the presence of risks in houses, residential code violation and enforcement data, and activities undertaken to make homes healthier. Some states have created housing registries aimed at childhood lead poisoning. These track homes with risks and often homes that have been remediated or that are considered lead safe. This approach needs to be expanded to include a range of healthy homes risks—vectors, indoor air pollution, safety, and high levels of energy consumption per square

foot. The state level may be the most appropriate tier for this function because of access to data, training and capacity (including fiscal capacity).

A place to start is the state of Michigan. The state government supports a Lead-Safe Housing Registry which identifies homes that were lead poisoned but where lead hazards have been remediated. Currently, because of budget constraints, there is no money that will be put toward expanding the registry and there is no money to implement new CDC software for tracking children with high lead levels or other issues. The philanthropic community could finance its expansion of these capacities to include a broader range of risks and dangers.

Given the fragmentation of responsibilities for healthy housing at the local level, one way to help agencies see the problem holistically is to create an interagency database that is interactive and encompasses the range of partners and multiple healthy homes issues. The Kresge Foundation is already supporting this approach in Detroit, and a working model currently exists.

The Detroit Lead Housing Database is managed by the Wayne State University Center for Urban Studies. The database includes information on all homes in the city where children have been identified as lead poisoned from 1988 through 2008. The system also includes data about agency actions with respect to many of these homes. It includes data from the City of Detroit Department of Buildings and Safety Engineering (B&SE), the Planning and Development Department (PDD), the Department of Health and Wellness Promotion (DHWP), the Wayne County Prosecutor's Office, and CLEARCorps Detroit, among others. The database is unique because: (a) it provides any authorized user with information on what has been done to the house by their agency and any other partnering agency; and (b) each participating agency can look at its own and other agencies' data to guide case management.

Over the coming year, the Detroit model will be expanded in two major ways—first to include a broader range of healthy homes data so that mapping and assessment is more multi-dimensional, second to build a database to support the operation of a healthy homes project set in the North End neighborhood. This database will include a version of the comprehensive assessment and other key data about the home and the clients. The philanthropic community should consider supporting similar databases in other cities.

Challenge 2: A lack of housing codes, outdated housing codes and lack of enforcement have significantly limited the transition to healthy homes.

Responsibility for formulating and enforcing property and health codes currently resides at the state and local levels. There is, however, a membership organization known as the International Code Council (ICC) which develops model codes and standards frequently adopted by states and municipalities to regulate the construction of residential and commercial buildings, including homes and schools. International Codes (I-Codes) are a set of coordinated building safety and fire prevention codes. The ICC is currently focused on developing a new building code that will revisit the existing building code as it relates to property maintenance and housing rehab. This is the code that is the most relevant to existing housing stock and is the target for the addition of sections that pertain to healthy homes. For example, last year, healthy homes advocates were successful in having this code amended to include carbon monoxide alarms. In addition, advocates are currently working on incorporating EPA's Renovation, Repair and Painting Rule (RRP) into this code. Successful incorporation of the RRP will go a long way toward the elimination of childhood lead poisoning and the current practice of requiring lead-safe work practices only *after* a child has been lead poisoned and irreparably harmed.

Model codes such as the I-Code are important because they are frequently adopted by states and localities and form the backbone of enforcement policies in the area of housing. It is critical that these codes continue to be updated to integrate the elements of a Healthy Homes Model. However, adoption of new code elements is often slow and typically requires a 3-year cycle. In the interim, efforts to review and update state and municipal building codes to add healthy homes components is a necessary strategy. Having codes that reflect the key healthy housing components is essential, as they form the basis for legal enforcement targeted at correcting hazardous conditions in homes.

In addition to updated codes, an aggressive enforcement strategy is key to dealing with homeowners and landlords who are unwilling to address the hazards that have been identified in their properties. Without an effective enforcement strategy, any code is useless. Effective strategies may include: the creation of special housing courts dedicated to handling these types of cases, as well the creation of specialized units within prosecutors' offices dedicated to enforcement actions. Growing evidence indicates that, where such strategies are implemented, property owners are more likely to correct key housing hazards. Additionally, the prosecution of recalcitrant landlords has a deterring effect that appears to "spill over" to other property owners, making them more likely to proactively remediate housing hazards.

To effectuate systemic change, it is important that *all* the players – property owners, landlords, tenants, code enforcers, local prosecutors and other involved agencies – work together and are familiar with each others' roles, responsibilities, and limitations. For example, in the State of Michigan, state prosecutors are limited to enforcing state criminal statutes. Fortunately, Michigan's Landlord Penalty Law is a state statute that provides for the prosecution of landlords who rent properties with known lead hazards to families with children. To date, enforcement actions under the statute have resulted in the remediation of over 185 rental properties within Wayne County (MI) alone. Clearly, the law is an effective tool in the fight to eliminate childhood lead poisoning and is only limited only by the current paucity of monetary resources to fund enforcement actions. Based on the foregoing, we make the following recommendations:

Recommendation 1: At the federal level, support efforts being undertaken to update the International Codes (I-Codes).

Funding should be dedicated to supporting organizations that are working to: 1) identify needed code changes to incorporate the Healthy Homes Model, 2) communicate this information to the international code council, and 3) advocate for their adoption. Organizations that could be funded to engage in this work include the Home Safety Council, the National Safe and Healthy Housing Coalition, and the National Center for Healthy Housing, and the Coalition to End Childhood Lead Poisoning.

Recommendation 2: In key states and localities, fund an analysis of existing housing codes to determine where there are gaps and where modifications are needed to support a transition toward healthy housing. This is an important investment, given that codes are enforced at these two levels of government.

For example, in Michigan, what is primarily needed is a state property maintenance code which incorporates criminal penalties. This incorporation is key because, at present, state and county prosecutors cannot enforce local ordinances or state laws without civil penalties included.

Recommendation 3: Support attorneys in local prosecutors' offices that are dedicated to healthy homes cases, especially in communities that have a poor track record of effectively prosecuting environmental health cases.

This approach has been implemented in Wayne County as part of the Kresge Foundation's "Getting the Lead Out: Keeping Kids and Communities Safe" initiative. To date, the investment has allowed the county prosecutor's office to handle more cases and obtain resolution faster. Philanthropic community investments are becoming more important as funds for city and county governments become more constrained. Active enforcement of environmental health violations and housing code violations is a critical component of any long term hazard reduction strategy. In order to produce more private leverage investment in the repair, maintenance, and reduction of hazards in properties, property owners must be subject to the threat of prosecution for failure to abate environmental health violations, housing code violations, or respond to notices of defect from tenants.

Recommendation 4: Support the education of attorneys in prosecutors' offices, legal services agencies, and non-profit organizations at the local level so they can effectively litigate these cases.

One approach is to fund attorneys who are proficient in healthy homes work and have them serve as consultants to attorneys in other offices – acting much like the circuit riders of old. These consulting attorneys will be able to share their knowledge and identify best practices that will assist attorneys in other areas to augment their skill sets in order to produce more effective public prosecutions and private sector legal actions to reduce housing code violations and other home-based health hazards. Properly trained private sector, pro-bono, and public interest attorneys can also be effective in producing results in at-risk housing by representing tenants in court for the repair of hazards in their home.

Recommendation 5: Support the development and dissemination of effective educational materials that are targeted at various audiences: tenants, landlords, home owners, judges, and agency personnel to enable them to gain a fuller understanding of all aspects of the legal process as it relates to addressing housing hazards.

If effectively written and distributed to various audiences, these types of materials would motivate home owners and rental property owners to maintain their properties, inform tenants of their rights under the law, and educate agency personnel so that applicable ordinances and statues can be expeditiously enforced. Local judicial bench books for judges at the rent court level can also be effective to educate the judiciary on home-based environmental health hazards and the legal remedies that are available to tenants under local laws without requiring formal legal tenant representation.

Challenge 3: Working effectively with impacted families is critical to ensure their cooperation and effective participation.

As noted throughout this paper, a key outcome of implementing the Healthy Homes Model is the establishment of a fully integrated approach to simultaneously addressing multiple problems found in the home. Key to achieving this outcome is (1) establishing a comprehensive environmental assessment and action plan for scope of work that involves all agencies needing to be engaged to address the problems encountered, and (2) assuring that those doing the work communicate effectively with one another and coordinate the work to be done to assure that it is completed efficiently and in a cost effective manner. Although there are major benefits to be gained, the process must be carefully managed to avoid its having a negative impact on the family (i.e. the impact of the intervention on the family living in the home).

Whereas before, one individual from one agency normally dealt with the family to address one problem, under the healthy homes approach a single staff person may now be talking to the family about the six or seven problems that have been identified - everything from lead hazards to pest management, to mold in the basement, improper ventilation, and so on. Having an inspector come into your home and say: "I need to talk to you about how the lead paint on your windows caused your child to become lead poisoned...and we also need to discuss the mold we found in your basement...and your poor ventilation system because those have an impact on your child's asthma...and it's also important that we get your cockroach problem under control" can be overwhelming for any family. This can be especially difficult when the family is dealing with other issues such as unemployment, keeping food on the table, and making sure the house is adequately heated.

Recommendation 1: Support the development of key healthy homes messages and materials.

It is critical to develop standardized materials that can be used to explain 1) what a comprehensive integrated home assessment is, 2) how it is conducted, 3) how the problems that have been identified will be addressed, 4) how and when the work will be done, 5) what agencies will be involved; and 6) the role that the family needs to play in making their home healthy and safe. It is equally important that these materials be written and communicated in a culturally sensitive manner so they can be easily understood by the families.

Recommendation 2: Support the training and employment of community health workers.

Community health workers (CHWs)² have been utilized in the United States health care system since the 1960s. Their key function includes: creating effective linkages between communities and the health system; providing health education and information; assisting and advocating for underserved individuals to receive appropriate services; providing informal counseling; directly addressing basic health needs; and building individual and community capacity in addressing health issues.

CHWs are drawn from neighborhoods similar to those of their clients, which means they are better able to gain the trust of and communicate effectively with the families they are attempting to serve. They are ideally suited to help the family understand the healthy homes approach and to serve as their guide and advocate in the process. CHWs are a low cost investment which delivers a high rate of return. This approach could be combined with the AmeriCorps Model³ to provide an immediate resource for working in central city neighborhoods.

CHWs should serve as key members of the teams that will be organized to conduct the comprehensive assessments, develop integrated actions plans, and organize and execute the work targeted at remediating the problems found in the house. If the philanthropic community elects to invest in this, they would be a leader in creating a new category of CHW, one focused on working at the interface of the environment and health.

Challenge 4: Facilitate knowledge transfer from fully developed healthy homes projects to new projects.

To date there are only a few healthy homes projects, and fewer still that are comprehensive. As a result, knowledge is narrowly held by a small number of projects regarding: best intervention practices, funding, cross agency eligibility and other key aspects of running a healthy homes project. This lack of information across a broad range of sites could become a major hurdle to the expansion of the number of healthy homes projects and especially to the dissemination of high quality practices. Given the urgent need to build a broad base of knowledge, efforts must be financed which deploy both the traditional training and technical assistance approaches as well as new technologies to broadly disseminate techniques and knowledge. Organizations such as the National Center for Healthy Housing and the Coalition to End Childhood Lead Poisoning are both in positions to take on this type of responsibility.

Recommendation 1: Fund the assessment of training and technical assistance capacities to establish a baseline.

There are a number of existing providers of training, though the curricula for training and its quality and completeness are not clear. An immediate assessment of the healthy homes training across the nation is needed to identify capacity, geographic coverage, comprehensiveness, quality, and the extent to which these technical assistance programs follow a consistent and complete curriculum. This assessment should include key healthy homes providers, experienced trainers, and evaluators and should become the basis for a set of detailed recommendations on how to improve and expand a system of training and technical assistance. Investment in evaluation should not replace funding for healthy homes pilot projects as the priority for philanthropic community support. While research is important, priority for funding support should be directed to funding actual interventions in project sites. Information from these projects should then be used to better inform other project sites and the further development of healthy homes models.

Recommendation 2: Support establishing a healthy homes training and technical assistance system.

Healthy homes training currently operates as a collection of pieces and parts. However, it is important that these become integrated into a high quality system that assures local providers are able to receive the specific and complete training they need. Technical assistance should include trainings on lessons learned and best practices in both the development and implementation of healthy homes models and protocols. This system would incorporate existing providers and build capacities on topics and in areas where no capacity or weak capacities exist. Such systems should explicitly incorporate an arrangement of cross-project mentoring so that more experienced projects take responsibility for helping along newer projects.

Recommendation 3: Provide scholarships to staff from various projects to enable them to attend training programs.

Many healthy homes projects are starting up in non-profits and in lower income communities which have minimal resources. Because of this, it is particularly important to provide support for training as a majority of these healthy homes projects are still small and not richly endowed. Funding for these scholarships could be allocated to a national non-profit which has capacity to set up regional centers to accomplish the training.

Recommendation 4: Support the use of new technology to document healthy homes techniques.

A considerable amount of knowledge is necessary to make healthy homes safe, and much of this is tacit knowledge (e.g. how to remove lead paint, how to install windows, and techniques for mold removal). There is a need to document this expertise in highly accessible ways so that workers have a reference they can easily use. This is an opportunity to deploy this knowledge base using the latest technologies such as Wiki's, "You-Tube" style videos, teleconferences, and recorded webinars. The project to do this documentation should be tightly linked to the training and technical assistance projects, but should be separately funded both to assure that the right skills are incorporated (videography, website construction, etc) and to assure that traditional technical assistance methods are not substituted.⁴

Recommendation 5: Support networking meetings conducted at the state and local levels to foster the development of community-based healthy homes initiatives.

It is crucial that both new and older projects are brought together regularly so that they can learn from each other, particularly because we are recommending the creation of an explicit system for mentoring projects. Networking meetings are ideal for this purpose. They allow individual agencies engaged in the same work to talk among themselves about what works and doesn't work in their agencies. Such meetings are a very effective way of communicating information because they support peer-to-peer learning. Additionally, depending on how they are structured, they provide an opportunity for individuals from different levels of government to obtain information on what is happening at each of these levels.

Recommendation 6: Support healthy homes advocates in their efforts to educate/lobby for needed policy change at the state and local levels.

The ongoing development and support of healthy homes projects will come substantially from advocates of family and child health. These organizations – whether members of government, the non-profit community, or neighborhood advocacy groups – need funding support to continue their efforts. This is especially important, given the significant budgetary constraints these organizations face in the current fiscal climate.

Challenge 5: Finding sufficient revenue to sustain healthy homes initiatives.

In terms of the long-term viability of these programs, this is the most important challenge to be addressed. It has become even more critical given the current state of the economy and the pressure it has placed on federal, state and local governments to cut expenditures. As healthy homes programs are ramped up, they will be principally funded by – and heavily dependent on – grant funds for their survival, primarily those from CDC and HUD with some additional funding available from EPA.

In a recent conversation with Mary Jean Brown, Chief of CDC's Lead Poisoning Prevention Branch, she indicated that last year the Office awarded \$34 million to fund 40 lead programs and four healthy homes programs.⁵ At present, if there is no increase in her budget for 2011, she will be required to eliminate two of the programs these dollars currently fund. This reduction comes at a time when these programs are already struggling to meet their current obligations to reduce childhood lead poisoning. Without increases in revenue from CDC, states and localities will be under tremendous financial pressure as they attempt expansion to embrace the Healthy Homes Model, given they are spreading the same funding allocation over more activities. Undoubtedly they will have to look for other sources of funding – a majority of which will be grants funded by other agencies and the philanthropic community.

Using grant funds as the major sources of revenue for these programs, however, is problematic for several reasons. First, it creates a great degree of instability and uncertainty in the program. A major loss in funding can mean major program components have to be reduced or eliminated. Second, where such instability exists, programs may not be able to attract the caliber of people required given they will have minimal, if any job security. Third, grant funding is now much more competitive and the overall funding pool is getting smaller. This increases the likelihood that programs will find their funding grant awards becoming smaller and/or find they are less able to get a grant because of the intense competition. Smaller communities are the hardest hit by this increase in competition because they are often unable to hire or contract with a professional grant writer. Fourth, grants are costly to administer, requiring a significant amount of dedicated staff time, both to write the grant applications and to complete the necessary reports required by funders to provide assurances that the program is operating within funding guidelines.

Recommendation 1: Support establishing a dedicated funding source to provide a stable revenue stream that, once in place, is not subject to the politics of a city or state's annual budgeting process. Concurrently support the development of a White Paper on healthy homes funding models, including the use of fees (on paint sale, for example), Block Grants and Tax Credits for healthy home improvements.

Although politically problematic, especially given the current recession, this approach is the best way to guarantee the stability of these new initiatives over time. One example of this approach is that employed in Alameda County, California to partially fund their Childhood Lead Prevention Program. The program is partially funded by revenues generated from a \$10 service fee assessed annually on every pre-1978 residential unit in the four cities that are a part of the County Service Area. This assessment generates almost \$2M annually for use in the program.⁶

Other strategies for raising needed revenue include:

- When a house is sold, add a small fee to be paid as part of closing costs.
- Place a small surcharge on paint sales.

- Allow taxpayers to dedicate \$2.00 of their state tax payment to a Healthy Homes Trust, created to fund healthy homes activities at the state and local level.
- When a housing unit is rented, add a small surcharge to the first month's rent.
- Adding a small additional fee to the cost of building permits.

Although the philanthropic community would not be able to lobby for this type of approach, it can fund the publication of papers on the topic. Additionally, especially where there are active campaigns at the state or local level to enact legislation to implement such an approach, the philanthropic community can support non-profit organizations that are advocating for such a change in their state or locality.⁷

Recommendation 2: Use challenge grants in cities of interest to encourage investment by the philanthropic community.

The philanthropic community should consider launching challenge grant competitions by agreeing to provide cities of interest up to 50 percent of the administrative costs of funding a healthy homes project. The remainder of the administrative costs would need to come from local philanthropic community members, other partners, and/or from Federal Grants such as Community Development Block Grants and Neighborhood Stabilization Program funds. The Kresge Foundation has already explored this option as part of its decision to award the city of Newark a grant under its "Getting the Lead Out: Keeping Kids and Communities Safe" Initiative. Prior to this grant award, Kresge Foundation representatives met with a consortium of local funders. The meeting was convened by the city's philanthropic community liaison. Although the meeting did not result in additional philanthropic community partners stepping forward, the key reason for this was one of timing as opposed to a lack of interest. The Kresge Foundation has remained in contact with the Newark philanthropic community liaison and a second meeting will be convened early this year to assess progress and explore the development of a broader funding strategy.

Recommendation 3: Explore all leveraging and Healthy Homes funding opportunities that exist for complementary funding such as CDBG, CSBG, NSP, Rule 1115 Waivers, earmarks, and HUD Office of Healthy Homes and Lead Hazard Control funding.

As noted above, there are numerous "pots" of money that can be tapped to support transitioning to the Healthy Homes Model. An investment by the philanthropic community to assist sites in drawing down additional revenue can pay dividends – especially in mid sized and small communities where staff in the impacted agencies has neither the skill nor the time to pursue said funding streams.

Challenge 6: Avoid the use of a “one size fits all” Healthy Homes Model.

Unlike some initiatives where one dominant model has proven effective, there is no dominant, effective model among existing healthy homes projects. It is likely to be a while before one or more such models emerge – if for no other reason than projects are relying on various funding streams – which tend to produce different program designs. Some healthy homes initiatives have emerged from lead poisoning prevention and have gone on to include a range of other areas from vector control to weatherization. Other initiatives have started as weatherization projects and expanded to include components of a healthy homes approach. Still others have started as efforts to refurbish market-foreclosed homes; while others have emerged as government initiatives or as non-profit programs.

Within projects that have been operationalized, there are a number of dimensions where projects may vary with respect to the extent to which they approach the ideal model (See Appendix 1). These include but are not limited to: passage and implementation of healthy homes standards; cross training of personnel across the range of interventions; building methods of helping families become eligible across a range of programs; and blending a range of funding sources. All of these variations are likely to affect the success of healthy homes projects, so it is important to document the pathways to success and test which are the most robust.

It will be very important to distill which of these programs and approaches are effective. To do this, evaluations need to be funded that are broad enough to recognize and encourage the challenges of producing healthy homes. Thus, the evaluation must document and respect a range of programmatic approaches, while assuring a consistent set of results regarding the safety and health of households. These points lead to the following recommendations.

Recommendation 1: Support a diverse set of projects adapted to a range of environments.

One of the great failures of initiatives and pilot programs is that they are tested in one or two settings, but when they are expanded they fail because the model cannot or was not adapted to the wide variety of environments where it needed to succeed. Healthy homes challenges exist in old manufacturing cities, rural areas, Northern climates, and Southern climates. It is important to represent this variety among projects supported for pilot testing. Only by doing so can we identify the most robust and effective models and also the pathways to optimal development. Additionally, testing a variety of models also allows for the assessment of whether certain ones are better adapted to success in certain settings as opposed to others.

Recommendation 2: Identify and disseminate healthy homes best practices through supporting evaluation work at the local level.

We strongly recommend that the philanthropic community support the evaluation of a diverse set of healthy homes projects across the nation. At first, the evaluations should concentrate on documenting and portraying the processes and structures of healthy homes projects. This should include the development of project-specific logic models or process models, and careful documentation of the implementation processes. At the same time, performance measures should be developed and deployed across the projects, first to assess their internal workings and then to assess the observed outcomes. The first year of the evaluation should concentrate on documenting the implementation process, identifying implementation measures, and developing performance measures. The second year should concentrate on adding measures of

outcomes/effectiveness. In year three, add cross project comparisons and measures of cost effectiveness.

The results of the evaluation should be disseminated annually in multiple ways, including: simple executive summaries, detailed technical reports, presentations by the evaluators, and face-to-face discussions with project directors during networking meetings. The methods of dissemination should further include posting of the results on the proposed Healthy Homes Wiki, discussion on a webinar, and through best practice reports.

Section IV Endnotes

¹ Srinivasan S, O'Fallon LR, Deary A. Creating Healthy Communities, Healthy Homes, Healthy People: Initiating a Research Agenda on the Built Environment and Public Health. *American Journal of Public Health*. September 2003, Vol. 93, No. 9; 1446-1450.

² Community health workers (CHWs) are lay members of communities who work either for pay or as volunteers in association with the local health care system in both urban and rural environments and usually share ethnicity, language, socioeconomic status and life experiences with the community members they serve. They have been identified by many titles such as community health advisors, lay health advocates, "promoters", outreach educators, community health representatives, peer health promoters, and peer health educators. CHWs offer interpretation and translation services, provide culturally appropriate health education and information, assist people in receiving the care they need, give informal counseling and guidance on health behaviors, advocate for individual and community health needs, and provide some direct services such as first aid and blood pressure screening. (Source: HERSA)

³ The AmeriCorps program provides a crucial resource for CLEARCorps/Detroit. The AmeriCorps program, funded by the Corporation for National and Community Service, provides funding for non-profits such as CLEARCorps/Detroit to recruit and employ AmeriCorps members. AmeriCorps members are drawn from the community and spend one-two years as 'members' of a given program. For each term of service, a CLEARCorps/Detroit AmeriCorps member receives a stipend, health insurance, child care vouchers, and a \$4725 Educational Award. The CLEARCorps AmeriCorps members play a crucial role--helping to educate the community and working with families to address lead and healthy homes issues.

⁴ Often technical assistance is provided purely one-on-one or through the production of manuals. These methods take a long time to become fully developed.

⁵ This branch funds the childhood lead poisoning prevention programs at the state and local levels. These programs are scheduled to transition to a healthy homes model over the next two years.

⁶ This source of money is not without restrictions. Because the fee is assessed on homes that re owner occupied, the funds can only be used to abate lead in these dwellings.

⁷ In Michigan, the Michigan Childhood Lead Poisoning Prevention and Control Commission laid out a series of options to this effect in its June 30, 2007 Report.

V. PULLING IT ALL TOGETHER: DEVELOPING A SOUND INVESTMENT STRATEGY

“Purchasing population health is a synthesis of medical care, public health, health economics, sociology, and modern management, with the goal of achieving the most health for every precious dollar spent.”

Phillip Lee

Retired Undersecretary – Department of Health, Education and Welfare

Introduction

The intent here is to provide a framework for developing programming in the healthy homes arena. The recommendations made are those of the authors, based upon years of experience in working with the philanthropic community to design new initiatives as well as working with government and not-for-profit organizations at the federal, state, and local levels to implement them. The recommendations are written to support the decision making process of the philanthropic community members tasked with developing a new national healthy homes initiative. Evidence supporting such an investment strategy has increased over the past 10 years as more has been learned about the interface between the environment and health. The knowledge gained supports the philanthropic community’s ability to craft an effective funding strategy, thereby providing a higher return on investment.

Interest among members of the philanthropic community has also grown, given the Obama Administration’s commitment to moving in this direction. This commitment has led to the creation of a partnership between the Administration and the philanthropic community. The partnership thus far has resulted in the development and implementation of the Green and Healthy Housing Initiative – providing federal and philanthropic support to cities across the nation. The initiative focuses on providing financial and technical support to allow these cities to adopt a healthy homes model and combine it with local weatherization programs. Further, interest was recently stimulated among the philanthropic community when, in February 2010, the Kresge Foundation hosted a roundtable discussion on the topic. What follows next are our recommendations for getting started:

Recommendation 1: Fund the triad (Federal, State, and Local).

Key to developing a national healthy homes demonstration is working with key stakeholders at the federal, state, and local levels. These partnerships are critical because stakeholders at all three levels are currently engaged in this work. Additionally, their efforts are interrelated, and program success is dependent upon their working and playing well together.

At the national level, the philanthropic community needs to develop partnerships with representatives from HUD, CDC and EPA, as all three agencies are major players in this arena. The ability to forge such a partnership has been made easier now that all are members of the Healthy Homes Interagency Work Group (HHIWG). The group has been meeting for over a year to identify ways these agencies can work more effectively together to reduce the programming “silos” that are the result of these departments operating under different statutes and managing different funding streams. (See Challenge 1 on page 30 for a more in-depth discussion) The work group is scheduled to release its recommendations to the White House sometime during the first quarter of 2010 and the Kresge Foundation capitalized on this event by hosting discussions between members of the workgroup and members of the philanthropic community.

The goal of these discussions should be developing a consensus on pursuing a strategy that will allow these agencies to suspend the “rules” for purposes of the national demonstration program. The “ideal” strategy would include the following:

- a. Pooled funding arrangements i.e. funds from more than one agency can be blended with those of other agencies into a single funding stream for investment in state and local efforts.
- b. A single set of reporting requirements that all agencies and their philanthropic partners will use to assess progress in model development and implementation.
- c. One set of eligibility criteria to insure that recipients of services from one agency are not denied services from another because they meet one eligibility test but not the other.

If the above are possible, there is real opportunity for healthy homes projects to be successful, as it is the bifurcation of responsibility in these three critical arenas that causes most of these types of demonstration projects to fail.

Recommendation 2: Select states first.

Although the primary focus of the effort will be on developing healthy homes models in communities across the nation, it is important to carefully identify the states to be funded first. This approach is advantageous because, for the most part, healthy homes funding goes to states which then re-grant the funds to community demonstration projects. To select the states, the philanthropic community should:

- a. Commission case studies on the states of interest. These studies will inform the philanthropic community of the efforts undertaken in each state to date and their degree of success. They also will provide information on how the state agencies that work in this arena are viewed – in terms of their ability to work well and play well together – and how they are viewed by communities that serve as their grantees. In developing the case studies, the philanthropic community should work with the author to identify a set of criteria that will be used to rank each state. Once the criteria have been identified, be rigorous in using them. This will help bias the demonstration project toward success.
- b. Engage the state initially through the Governor’s office. This is an important first step as the Governor’s receptivity to and commitment for the project is critical. The dialogue should touch on key parameters such as:
 - i. Securing interagency cooperation;
 - ii. Identifying a key liaison (staffer) in the Governor’s office to serve as the link between that office and the agencies with primary responsibility for implementing the demonstration program;
 - iii. Obtaining a commitment from the Governor to establish a commission or task force on healthy homes to serve as a focal point for the effort;
 - iv. Gaining a commitment from the Governor that state funds will be identified that can serve as “matching money” for moving the demonstration forward. Without such a commitment, the philanthropic

community may find its revenues flowing in while state revenues are flowing out; and

- v. Defining the roles and responsibilities the state will assume in supporting local efforts.

Recommendation 3: Be just as rigorous about selecting cities receiving grants under the project.

Although philanthropic community members have long standing relationships with many of the cities under consideration, it is important to be just as rigorous about their selection. Utilizing an approach similar to that identified for selecting the states is recommended. In addition, the philanthropic community should consider funding three community demonstration sites in each state selected. The three should include one large city, one medium-sized city and one small city located in a more rural area. Without including different sized communities, it is more difficult to determine the “robustness” of the healthy homes model adopted. Additionally, if the philanthropic community elects to fund in more than one state, the same approach should be used so that cross-state and cross-community comparisons can be made.

Recommendation 4: Apply a framework for a healthy homes model at the local level, but be flexible regarding its adoption.

Our experience to date with community-based programs has underscored the importance of a broad framework within which to organize the demonstration. The general framework we recommend is discussed in Section C – Getting it Right – of this paper. Such a framework provides a “roadmap” for implementing the model in states and localities. Additionally, it provides a template that can be used in framing an evaluation design as well as identifying a set of benchmarks that can be checked along the way to assess progress. In utilizing these types of frameworks, it is important that they are:

- 1) Understood to be used as **templates** and **not** as **mandates**, and
- 2) Applied in a flexible way so that it “fits” with the community’s culture.

Recommendation 5: Invest for the long term.

In the final analysis, it is important to realize that the **pace** of adoption and implementation of a comprehensive change model must ultimately be set by the community – if it is to own the process and the product. Although external change agents can encourage and support communities in moving forward, they cannot dictate the pace of change – as the change proposed must accommodate community norms, values, cultures, and readiness for change to be effective. Thus the philanthropic community must be willing to commit to the long term, adjusting timelines and resource allocations to accommodate the community’s capacity to move forward. Rather than requiring a mandated product within a fixed timeline, allowing communities engaged in a change process to identify key “milestones” as decision points for continued funding or timeline extensions is recommended. The challenge, of course, is to determine what constitutes an acceptable milestone “achievement.” This dynamic approach often makes the process appear very “messy” to the outside observer but, it is through maintaining responsiveness and flexibility in the process that the long-term goals of the project can be achieved.

VI. CONCLUDING COMMENTS

“Be the change you want to see in the world.”

Mahatma Gandhi

This paper was written to inform the philanthropic community’s interest in fostering the development and diffusion of the Healthy Homes Model. Most importantly, it is hoped the discussion of challenges and recommendations in Section IV provides a sufficient framework for building a programming agenda in this arena. Such an approach will also support grantees of the Kresge Foundation’s “Getting the Lead Out: Keeping Kids and Communities Safe” initiative in making this transition. This support is especially needed now, given the severe constraints placed on the use of public funds.

Equally important – given the events which have occurred over the past six months, i.e. the meeting at the White House and the development of the Green and Healthy Housing Initiative – the philanthropic community has an opportunity to foster the implementation of these initiatives at the state and local levels.

Investing in this arena – the intersection between environment and health – provides several benefits. First, this funding strategy is one which focuses on addressing root causes (e.g. lead paint) of disease rather than just treating the outcomes (e.g. childhood lead poisoning). Second, because the initiative is place based, it provides an opportunity for the philanthropic community to support the development of a population health model.¹ This approach is focused not only on treating the specific health issues of a population; but is also focused on improving their health status through health promotion and disease prevention measures. Finally, this opportunity comes at a unique period of time, as there has been a confluence of interest in pursuing this agenda among a broad number of policy makers. Thus, if the philanthropic community seeks to invest significantly in this arena, it can potentially have a large impact on the evolution of the Healthy Homes Model for years to come.

Section VI Endnotes

¹For additional information on this approach, see David A Kidie’s Purchasing Population Health: Paying for Results. University of Michigan Press. Published 1997; And Shortell et al. Remaking Health Care in America. Published by Jossey Bass. Published 2000.

VII. APPENDICES

APPENDIX 1

PORTRAYING THE DEVELOPMENT OF HEALTHY HOMES PROJECTS

One way to see the challenge of implementing a Healthy Homes Model is to recognize the range of components encompassed in an ideal project. The figure on the following page presents seven dimensions on which projects should be optimized. Each dimension is represented as a scale in the figure with the intent of emphasizing the fact that any given site identified on any individual scale (or the initiative as a whole) can be anywhere along these dimensions. In addition, the Xs on each scale represent the current development of a prototypical project, giving one an idea of the progress that has been made.

Consider just one of these areas – the intervention. It is very unlikely that any given local site will be able to create anew a completely holistic healthy homes model. Rather, existing projects have tended to develop from one domain – lead or asthma or energy – and expanded to integrate other interventions. It is the rare site – Baltimore – that has advanced to include the full range of interventions.

There appear to be several starting points around which a healthy homes model is developed. Probably the most frequent starting point is the childhood lead poisoning prevention program, though others include starting with weatherization, foreclosures (Housing Stabilization) and home safety. From these starting points, there are several initial expansions, which often include a move into weatherization. The HUD Healthy Homes Grant opportunity provides the chance to expand into multiple domains simultaneously, but that will probably not be typical, given the demanding learning curves and the need to integrate multiple funding sources and interventions. More frequently, we would expect incremental expansions for many local programs. So, we must recognize that for most sites, the movement toward a broad range of interventions will proceed across a number of stages and over a considerable period of time.

The same process is likely to be relevant for each of the other six domains. The implication of this is that there are likely to be many pathways to a fully developed healthy homes project and a full evaluation would assess the relative progress of projects along these dimensions.

Healthy Homes Model Dimensions

Healthy Homes Standards

|-----|-----**X**-----|-----|-----|-----|-----|-----|

Unchanged *Fully Reformed*

Cross Training

|-----|-----|-----|-----|-----|-----**X**-----|-----|

No Cross Training *Fully Cross Trained*

Eligibility

|-----|-----|-----|-----|-----|-----|-----**X**-----|

No Cross Qualification *Complete Cross Qualification*

Intervention

|-----|-----|-----**X**-----|-----|-----|-----|-----|

Single Intervention *Holistic Intervention*

Funding

|-----|-----|-----|-----**X**-----|-----|-----|-----|

Single Funding Source *All Funding Fully Blended*

Data System

|-----**X**-----|-----|-----|-----|-----|-----|-----|

Siloed *Fully Cross Agency*

Collaboration

|-----|-----|-----|-----**X**-----|-----|-----|-----|

None *Multi-Agency/Multi-Level*

Evaluation

|-----**X**-----|-----|-----|-----|-----|-----|-----|

Process *Outcome*

APPENDIX 2

GLOSSARY OF TERMS

Active Radon Test: Testing device that requires power to function. These include continuous radon monitors and continuous working level monitors. They continuously measure and record the amount of radon or its decay products in the air. (EPA)
<http://www.epa.gov/radon001/pubs/hmbyguid.html#5.a>.

Affordable Housing: The requirement that the cost of housing, both at initial occupancy and throughout the expected life of the tenancy, is within the financial reach of the target market for such housing, typically low-income families. An accepted guideline is that housing will cost no more than 30% of annual income.

Age In Place: The ability to continue to live in one's current residence as one ages, rather than going to live with relatives, especially children, or being placed in a nursing home. The ability for residents to "age in place" is largely contingent upon adapting housing to meet the specialized needs of the elderly.

Built Environment: Includes all the physical parts of where we live, work, and play (e.g., homes, buildings, streets, open spaces, and infrastructure). (CDC)
<http://www.cdc.gov/nceh/publications/factsheets/ImpactoftheBuiltEnvironmentonHealth.pdf>

Environmentally Friendly: To exact minimal harm on the environment.

Housing: A structure that serves as a dwelling for one or more persons or families. In this document, housing includes the structure itself, as well as the land and any additional structures within the property-line boundaries. Housing must be of market-competitive quality that can blend in to its neighborhood; this explicitly excludes substandard locations and configurations.

Green Building: The practice of reducing building impacts on human health and the environment through better siting, design, construction, operation, maintenance, and removal of building structures and by increasing the efficiency with which buildings and their sites use and harvest energy, water, and materials.

Green Home: A home that uses less energy, water and natural resources, creates less waste and is healthier for the people living inside compared to a standard home.(US Green Building Council) http://www.greenhomeguide.org/what_makes_a_green_home/green_homes_101.html

Health Literacy: The ability of an individual to access, understand, and use health-related information and services to make appropriate health decisions.

Holistic: Emphasizing the importance of the whole and the interdependence of its parts. From a housing/human health perspective, this entails considering the interactions between the housing structure, occupant behaviors, and health in an integrated manner.

Mixed Use Neighborhoods: Created in response to patterns of separate uses that are typical in suburban areas necessitating reliance on cars. It includes residential, commercial, and business accommodations in one area. (Citizen Planner Online Glossary from Michigan State University) <http://cponline.msu.edu/resources/Glossary.php#m>

Multi-family dwelling: A building designed to accommodate two or more unrelated households within the same structure. Such structures may require special zoning. Multi-family

dwellings include garden apartments, mid-rise and high-rise apartment buildings, and residential condominiums.

Organophosphate Pesticide: These pesticides affect the nervous system by disrupting the enzyme that regulates acetylcholine, a neurotransmitter. Most organophosphates are insecticides. (EPA) <http://www.epa.gov/pesticides/about/types.htm>

Renovation Remodeling Painting (RRP) Rule: Rule passed by the EPA on April 22, 2008. Under the rule, beginning in April 2010, contractors performing renovation, repair and painting projects that disturb lead-based paint in homes, child care facilities, and schools built before 1978 must be certified and must follow specific work practices to prevent lead contamination. (EPA) <http://www.epa.gov/fedrgstr/EPA-TOX/2008/April/Day-22/t8141.htm>

Research Translation: Interpreting scientific studies so that the outcomes can be put into public health practice quickly.

Rapid Exit Policy: A policy developed to facilitate prompt re-housing by relying on early identification and resolution of a family's or individual's "housing barriers" and providing the assistance necessary to facilitate their return to permanent housing. (National Alliance to End Homelessness) <http://www.endhomelessness.org/content/article/detail/1140>

Seven Principles of A Healthy Home: HUD's recommendation on ways to help make the home a healthier place. (HUD) <http://www.hud.gov/offices/lead/library/hhi/HealthyHomes7Steps.pdf>

They are:

1. Keep your home Dry: Damp houses provide a nurturing environment for mites, roaches, rodents, and molds, all of which are associated with asthma.
2. Keep your home Clean: Clean homes help reduce pest infestations and exposure to contaminants.
3. Keep your home Pest-Free: Recent studies show a causal relationship between exposure to mice and cockroaches and asthma episodes in children; yet inappropriate treatment for pest infestations can exacerbate health problems, since pesticide residues in homes pose risks for neurological damage and cancer.
4. Keep your home Safe: The majority of injuries among children occur in the home. Falls are the most frequent cause of residential injuries to children, followed by injuries from objects in the home, burns, and poisonings.
5. Keep your home Contaminant-Free: Chemical exposures include lead, radon, pesticides, volatile organic compounds, and environmental tobacco smoke. Exposures to asbestos particles, radon gas, carbon monoxide, and second-hand tobacco smoke are far higher indoors than outside.
6. Keep your home Ventilated: Studies show that increasing the fresh air supply in a home improves respiratory health.
7. Keep your home Maintained: Poorly-maintained homes are at risk for moisture and pest problems. Deteriorated lead-based paint in older housing is the primary cause of lead poisoning, which affects some 240,000 U.S. children.

Smart Growth: See Below

- Development that serves the economy, the community, and the environment. (EPA) <http://www.epa.gov/smartgrowth/pdf/whitissg4v2.pdf>
- An approach to land use planning and growth management that recognizes connections between development and quality of life. Smart Growth stresses guidelines and incentives for growth instead of regulations, to encourage development that is sensitive to quality of life factors. (Citizen Planner Online Glossary from Michigan State University) <http://cponline.msu.edu/resources/Glossary.php#s>
- Anti sprawl development that is environmentally, fiscally, and economically smart and involves innovative land-use planning techniques and neighborhood conservation initiatives. (Smart Growth Online) <http://www.smartgrowth.org>

Social Environment: See Below

- Encompass the physical surroundings, social relationships, and cultural milieus within which defined groups of people function and interact. (Barnett and Casper – AJPH 2001) <http://www.pubmedcentral.nih.gov/picrender.fcgi?artid=1446600&blobtype=pdf>
- A person's living and working conditions, income level, educational background and the communities they are part of. All these have a powerful effect on health. (European Union) http://ec.europa.eu/health/my_environment/social_environment/index_en.htm

Translation Research: Characterizes the sequence of events (i.e., process) in which a proven scientific discovery (i.e., evidence based public health intervention) is successfully institutionalized (i.e., seamlessly integrated into established practice and policy). Translation Research is comprised of many complex components which include specialized fields of study. Specifically, translation research is comprised of dissemination research, implementation research and diffusion research. (CDC) <http://grants.nih.gov/grants/guide/rfa-files/RFA-CD-07-005.htm>

Universal design: An approach to the design and construction of housing and environments to be usable by everyone to the greatest extent possible regardless of age, ability, or circumstance. Universal design benefits everyone by accommodating everyone, including those with limitations.

Vector-borne disease: An illness that occurs when an infected mosquito, tick, or other blood-sucking insect bites a person. Examples are West Nile virus and malaria.

Visitability: Construction practices that encourage all housing to offer specific features that make it easier for people, particularly those who develop mobility impairment, the elderly, and persons with disabilities, to live in and visit. A companion to universal design.

Water-borne disease: A disease acquired by drinking water contaminated at its source or in the distribution system, or by direct contact with contaminated water (such as while swimming or wading).

Zoonotic disease: A disease that is spread from animals to humans. Examples include rabies and bird flu (avian influenza).

APPENDIX 3

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