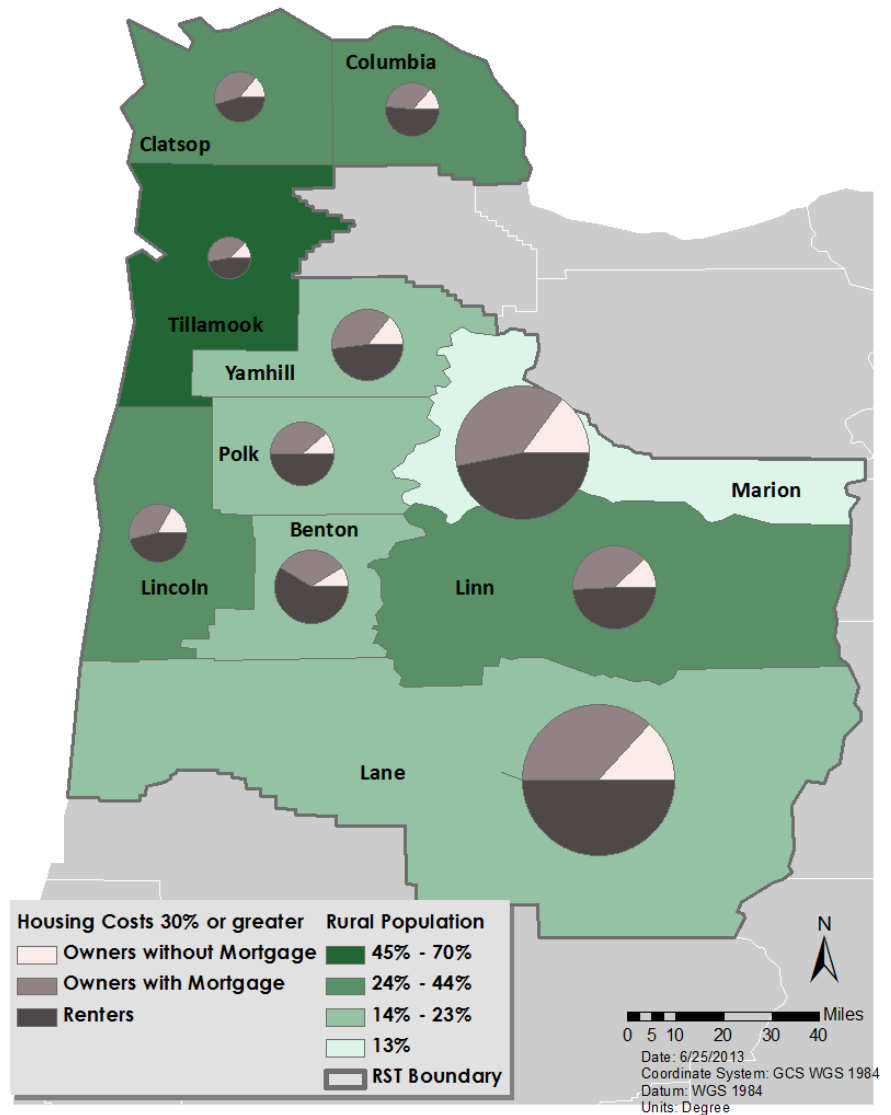


# Expanding the Healthy Homes Initiative In Oregon



July 2013

Final Report

**Prepared for:**

**Oregon Health Authority**

Healthy Homes & Schools Program,  
 800 NE Oregon Street, Suite 640  
 Portland, Oregon 97232

**Prepared by:**

**Community Planning Workshop**

A Program of the  
 Community Service Center





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Barbara Zeal (Oregon Health Authority)

Diana Cvitanovich (OHA Healthy Homes Advisory Group Liaison)

## **CPW Staff**

Robert Parker, AICP, Director UO Community Service Center

Madeline Phillips, Project Coordinator, UO Community Service Center

Terry Lewis, Adjunct Faculty and Researcher, UO Community Service Center

Angela San Filippo, Research Assistant, Community Planning Workshop

Paul Leitman, Research Assistant, Community Planning Workshop

## **About the Community Service Center**

The Community Service Center (CSC) of Oregon is an interdisciplinary organization that assists Oregon communities by providing planning and technical assistance to help solve local issues and improve the quality of life for Oregon residents. The CSC is housed at the University of Oregon. The role of the CSC is to link the skills, expertise, and innovation of higher education with the economic development and environmental needs of communities and regions in the State of Oregon, thereby providing service to Oregon and learning opportunities to the students involved. The Community Planning Workshop (CPW) is the service learning arm of CSC directly integrating community and regional planning graduate students and recent graduates into project work.

## **About the Community Planning Workshop**

Community Planning Workshop (CPW) is one of the core programs of the University of Oregon's Community Service Center (CSC) ([csc.uoregon.edu](http://csc.uoregon.edu)). Established in 1977, CPW provides students the opportunity to address planning and public policy problems for clients throughout Oregon. Students work in teams under the direction of faculty and Graduate Teaching Fellows to develop proposals, conduct research, analyze and evaluate alternatives, and make recommendations for possible solutions to planning problems in rural Oregon communities.



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# EXECUTIVE SUMMARY

This report explores issues related to expanding Oregon's Healthy Home Initiative (HHI) at regional levels statewide. It focuses on the Willamette Valley/North Coast region as defined by Oregon Regional Solutions.<sup>1</sup> The analysis is based on (1) review of socioeconomic and health data, (2) phone interviews with key stakeholders, and (3) an online survey. The report presents a preliminary needs assessment and a high-level formative evaluation for how the Healthy Homes Initiative might be expanded.

## Introduction

The National Center for Healthy Housing defines the seven key characteristics of a healthy home as: dry, clean, well ventilated, pest-free, contaminant free, safe, and maintained.

The United States Center for Disease Control and Prevention's (CDC) Healthy Homes Initiative (HHI) is a coordinated, comprehensive, and holistic approach to preventing diseases and injuries that result from housing-related hazards and deficiencies. The focus of the initiative is to identify health, safety, and quality-of-life issues in the home environment and to act systematically to eliminate or mitigate problems.

Oregon has had an active HHI program in Multnomah since 2005. In 2012, the Oregon Health Authority (OHA) received a CDC grant to explore the issues related to expanding the HHI statewide. OHA staff are working with an advisory group composed of regional, state and local housing and health providers to develop a strategic plan for this purpose. This advisory group met five times between November 2013 and May 2013 to produce goals and strategies for advancement of HHI programming and to identify additional funding sources.

The current issue is how to move forward with broadening the HHI in Oregon given the variability in program capacities, stakeholder engagement, and other factors in different regions of the state. In March of 2013, the advisory group approached the Community Planning Workshop (CPW) at the University of Oregon for assistance in clarifying some of the information needed to move forward with this project. This report presents the results of CPW's preliminary research related to statewide expansion of HHI.

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<sup>1</sup> [http://www.oregon.gov/gov/ERT/pages/regional\\_solutions\\_centers.aspx](http://www.oregon.gov/gov/ERT/pages/regional_solutions_centers.aspx)

## Findings

### Recent Studies by Hicks and White / Thorstenson

As noted in the Preface, two recent studies (May and June of 2013) provide current snapshots of healthy housing issues on a local level for Lane County (Hicks) and statewide (White and Thorstenson). These studies indicate that there are:

- Serious problems around the state in terms of unhealthy housing conditions impacting many individuals and families;
- “Vulnerable populations,” such as children, seniors, low income households, returning veterans and their families, victims of domestic violence, and those with disabilities;
- a variety of groups and organizations working with housing (including weatherization) and/or health-related issues;
- A variety of collaborative efforts are currently employed by housing and social service organizations; and
- Barriers exist to effective unhealthy housing mitigation, including the need for greater collaboration, staffing and funding issues.

### Current UO CPW Oregon Housing Authority Study

#### From Chapter 2: Preliminary Needs Assessment

1. Key factors that can signal the presence of vulnerable or at risk populations (to negative impacts of unhealthy housing conditions) include the following:
  - **Educational Attainment** – generally, the lower the level of educational attainment, the higher the likelihood of having an income that falls below the poverty level.
  - **Age** – Different age groups are more likely to experience poverty, depending on other circumstances (e.g., single mothers with young children; unemployment in the household).
  - **Rural/Urban** – locations of households may indicate greater vulnerabilities to unhealthy housing conditions.
  - **Age of Housing Stock** – Older homes in some areas may be more prone to home environmental issues. For example, homes built before 1980 have a higher incidence of lead paint.
  - **Cost Burden of Housing** –The higher the cost of housing (as a percentage of a household’s income), the greater the stresses may be on a family’s overall budget, which may be manifested in issues related to health and housing.

2. Three health concerns are often tied to housing conditions considered in this report are Asthma, Radon, and Lead.
  - **Asthma** has been shown to be exacerbated by unhealthy housing conditions. In this study, a ten county region was mapped referencing preliminary findings of asthma occurrence by county. This information shows concentrations of asthma across counties within the ten county study area.
  - **Radon**, a key cause of lung cancer, can become trapped under homes, especially in crawlspaces and basements, and can accumulate to unsafe levels. In this study we mapped preliminary findings from home radon tests collected by the Oregon Health Authority, averaged by zip code for the ten county study region.
  - **Lead:** Dust from homes that contain lead-based paints has been shown to cause severe health problems. In this study CPW mapped concentrations of housing stock built prior to 1980 (2010 Census data) with the co-occurrence of preliminary lead tests results collected by Oregon Health Authority by zip code within the ten county region.
3. CPW online survey respondents indicated that in their experience asthma and other illnesses are, on average, the most pressing health concerns of the population they serve.
4. CPW online survey responses noted that exposure to indoor toxicants and rodent bites were the most severe housing environment problems for the residents they serve.
5. According to CPW online survey respondents, populations most vulnerable to unhealthy housing vary by area and by discipline, but several groups overlap, including: households with income beneath poverty level, children, single mothers, households eligible for food stamps, unemployed adults, and adults no longer in the work force.
6. According to CPW online survey results, the majority of housing and social service respondents indicated they have repeat clientele that suffer from the same or similar housing hazards, while health respondents were split on this question.
7. CPW's online survey results show a variety of challenges in rural areas to service delivery by those working to mitigate health and housing issues. While survey respondents identified a number of challenges, funding and staffing were by far the most frequently identified challenges (about 90% of respondents identified funding and staffing as challenges).
8. The primary barriers identified by survey respondents were inadequate funding and insufficient staff to take on additional responsibilities and workload. Decentralized methods such as referrals can lead to inefficiencies in delivery (i.e. overlapping service provision) of existing services such as weatherization or housing rehabilitation. Primarily, survey respondents identified staffing and financial capacity as the greatest barriers to increased delivery of services and/or collaboration.
9. The majority of social service, health, and housing respondents said they currently cooperate with affordable housing agencies, social service organizations, and other groups; coordination is frequently through referrals and education (results of CPW online survey).

10. Based on responses garnered through the CPW online survey, it is clear that unhealthy homes exist in all ten counties within the ten county study area.
11. Within the housing field, weatherization programs, which offer a grant to eligible households, are the most prevalent resource available. Housing rehabilitation programs, which offer a loan to low-moderate income single family homeowners, connect those in need with housing rehabilitation contractors, though the number of staff dedicated to this effort is typically fewer (results of CPW online survey).

### **From Chapter 3: Formatory Evaluation**

1. All social service and housing respondents and the vast majority of health respondents (96%) indicated the need for healthy homes programs in their region (CPW online survey).
2. While there is a high level of interest in augmenting their collaboration efforts to address healthy homes issues, for many organizations, acting upon their interest hinges on the availability of resources and the “capacity” of their organization (CPW online survey).
3. Respondents noted their interest in organizations beyond their own, including: Coordinated Care Organizations (CCOs), Cover Oregon, Oregon Opportunity Network, local community action agencies, and housing rehabilitation programs (CPW online survey).
4. Despite significant interest in addressing unhealthy home environments, barriers may exist to participation by organizations and agencies – especially funding and staff issues programs (CPW online survey).
5. The Federal funding environment, regulatory changes, and health care innovations drive structural change in service delivery models.
6. This report proposes that structural change in service delivery models can be facilitated by enhancing **organizational capacity** both internally and externally. **Internal elements of capacity** can be described as physical, financial, technologic, and programmatic assets; **External elements of capacity** might involve civic and network assets.
7. Developing and building capacity through collaboration will likely become more challenging as the geography increases, making the county-level ideal for healthy homes collaboration between housing, health, and social service organizations and agencies.
8. **Flexibility** at many levels is critical to the collaboration of housing, health, and social service providers around the issues associated with healthy homes.
9. The four opportunities for further coordination that had the highest response rates of all three groups (housing, social services, and health) participating in the CPW online survey were: training offered at the local level, educational resources such as best practices, web materials and information, and conferences about healthy homes programs.

## Conclusions

The foundation has been laid by housing, health, and social service agencies and organizations to establish comprehensive, coordinated, and effective collaborative initiatives to address the unhealthy housing conditions of many Oregon residents living in different urban and rural parts of the state. Networks of collaboration already exist in various forms throughout the ten counties studied and many providers are taking steps to address the pressing needs of residents within their service areas living in unsafe and unhealthy conditions.

Based on responses to CPW's online survey and complemented by interviews conducted by CPW staff, there are unhealthy housing conditions in all ten counties considered in this study. Through secondary data collection and analysis, CPW has identified the socio-economic, health, and housing conditions of each county within the Valley/North Coast Regional Solutions Team boundaries. Not only does this secondary data show the gradation of housing and population characteristics among the ten counties studied, but data analyzed in this report reveals vulnerable populations within each county who may be more susceptible to living in unhealthy homes.

Unhealthy housing conditions in every county are different. The culture and concerns of each county vary by population in rural versus urban areas, socio-economic conditions, and health concerns. Consequently, unhealthy housing manifests itself in different forms. In order to tailor remediation resources to the population in need, healthy housing collaboration must be built out of existing social, civic, and human capital in order to comprehensively address unhealthy housing conditions.

From the research CPW conducted, it is evident that unhealthy housing is a systemic issue. Current approaches rely on funding from federal or state resources to deliver services to those in the greatest need. Service providers of weatherization, housing rehabilitation, and community action agencies have adapted as best they can within the existing resource structure to resolve housing condition issues. However, in many ways, this represents a piece-meal approach that may not be able to achieve the efficiencies of a more holistic approach. This type of approach can likely be most successful by drawing upon the social capital of agencies and organizations at smaller geographic scales.

Knowing that significant shifts are occurring at the federal and state levels regarding funding and resource structures for housing programs and health care delivery, resources may not be available in coming years to support the state's traditional model of addressing unhealthy housing issues. Resources in the form of fiscal or staff support are only one element of organizational capacity.

Resource, organizational, civic, network, and programmatic capacities are critical to the success of any healthy homes collaboration. Despite the fact that time, personnel, and financial constraints have typically limited the ability of individual organizations to comprehensively address unhealthy housing conditions, these organizations are flexible and may need to find new creative ways to look beyond existing barriers to provide healthy housing services. Leadership and experience can augment organizational capacity of existing organizations by institutionalizing on-going, cross-discipline training opportunities. Training could help develop

deeper specialization that complements other collaborating agencies in healthy homes efforts at the local or county level. A collaborative effort with organized methods of sharing information, providing specialized service, and leveraging existing and future resources could increase organizational capacity to provide comprehensive services to households living in unhealthy homes.

Many existing organizations involved in housing, health, and social services already command civic capacity at the county level, but may need to increase their attention to specific problems in different ways within their service area. Partnerships with local organizations (public and private alike) could help develop a more durable base of resources.

Households experiencing unhealthy housing conditions often seek aid simultaneously from housing, health, and social service agencies; hence, effective networking capacity is integral to developing efficiencies in providing care to clientele the organizations mutually serve. Nearly all health, housing, and social service providers CPW spoke with<sup>2</sup> indicated a steady referral system among different service providers, though few indicated a common network that addressed all issues related to unhealthy living conditions. Network collaboration, in the form of data sharing, communication, and issue resolution is critical to the success of a healthy homes program.

Few organizations interpret their goals and objectives broadly enough to provide comprehensive resolution of unhealthy housing conditions. This is often rooted in the regulatory demands of funding sources which can be counter productive to collaboration. Finding common denominators among housing, health, and social services providers may be a critical step towards increasing programmatic capacity and coordinating services to achieve measurable success.

To build healthy homes collaborative efforts that are durable and resilient through changing funding environments, CPW views county-level initiatives to be the largest geography practical to effectively address unhealthy housing conditions. This conclusion comes in concert with HUD's Goal 4 of the HHI program.<sup>3</sup> City-based models are effective in urban environments but may have difficulty reaching rural residents, given cultural and/or situational differences. When considering programs at a multi-county or even state level, efficiency and the capacity to effectively make a difference are often lost or resources become inflexible. County-level collaboration initiatives may have the greatest chance at providing a tailored approach to address unhealthy housing conditions of Oregonians throughout the State.

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<sup>2</sup> In late June 2013, CPW conducted a number of phone interviews with professionals providing services addressing healthy housing issues. These interviews augmented the CPW online survey results.

<sup>3</sup> U.S. Department of Housing and Urban Development, "Leading our Nation to Healthier Homes: Healthy Homes Initiative Strategic Plan" (2009)  
[http://portal.hud.gov/hudportal/documents/huddoc?id=DOC\\_13701.pdf](http://portal.hud.gov/hudportal/documents/huddoc?id=DOC_13701.pdf)

# PREFACE: ESTABLISHING THE NEED – SUMMARIES OF TWO 2013 CASE STUDIES

## 2013 Healthy Housing Issues in Lane County, Oregon

In a June 2013 “Terminal Project” for the University of Oregon’s Department of Planning, Public Policy, and Management, Masters candidate Paul Hicks<sup>4</sup> touched on a number of housing and health issues that are relevant to this CPW/Oregon Housing study and report. In addition to literature reviews and attending Lane Livability Consortium Public Meetings, Hicks interviewed 30 individuals representing 16 Agencies, involved in **housing** (City of Eugene, City of Springfield, Enterprise Community Partners, Oregon Housing and Community Development [OHCD], Housing and Community Services Agency of Lane County [HACSA], Mainstream Housing, Inc., and Metropolitan Affordable Housing Corporation), as well as **health and services** (Eugene Water and Electric Board [EWEB], Lane County Health and Human Services, Lane County Public Health, Oregon Public Health Institute, Peace Health, and United Way of Lane County).

Hicks’ literature reviews noted a number of key relationships on a national scale between health and housing issues. Three key housing characteristics adversely affect health outcomes (1) housing quality, (2) affordability, instability, and crowding, and (3) neighborhood effects. Poor housing quality are frequently linked to dangerous levels of exposure to lead, radon, asbestos and mold, and predominantly effect low-income families, children and the elderly. In extreme poverty neighborhoods (i.e., 40 percent of residents live at or below the Federal Poverty Level) mortality, poor health issues, poor child and adult mental health and negative health behaviors are all attributed to stressors generated by housing cost burdens; housing instability is linked to higher rates of crime and unaddressed mental health issues. Children encounter the greatest and most preventable health exposures based on indoor pollutants. Cost estimates suggest that environmentally based diseases developed through poor housing factors such as exposure to lead poisoning, asthma, cancer derived from radon exposure, and other development disabilities generate \$54.9 billion in costs to the nation’s health care system annually.

Hicks’ interviews confirmed the prevalence of the above noted national issues in Lane County. In addition, a number of key themes emerged from the interviews<sup>5</sup>. Both health and housing professionals view the lack of access to safe and affordable housing as the greatest overarching adverse impact on the health of low-income children, families, and older adults. *Interviewees also acknowledge that a historic lack of coordination between health and housing fields prevents the development of*

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<sup>4</sup> *Re-energizing the Connections between Health and Affordable Housing: A Regional Strategy for Coordination and Implementation*, Paul David Hicks, Master of Public Administration, June, 2013, and Master of Community and Regional Planning, June, 2013.

<sup>5</sup> Only a small fraction of Hicks’ findings are noted in this report. Please see Hicks’ full work for his detailed findings.

*stronger interagency collaborative efforts needed to implement innovative policies and programs.* Both housing and health agencies find frustration in acquiring the necessary operational funds to adequately finance needed case management services. Housing is a conduit to services but the region lacks sustained service funding for the case management needed to support health interventions. Finally, many interviewees were concerned that the region struggles to link low-income and affordable homes with adequate access to healthy foods.

The majority of interviewees strongly agreed that targeted health and housing interventions should prioritize the needs of children, low-income families, and older adults. However, discussion revealed a number of other low-income, at-risk, and vulnerable populations that should be considered when planning healthy housing related interventions, including evaluating the needs of racial and ethnic minority populations, particularly Latinos.

Hicks notes that at risk, homeless, and transitioning foster care youth often fall victim to an overwhelming number of preventable health ailments. Interviewees agreed that this sub-population of children should be prioritized to receive targeted healthy housing interventions linked to health services. Additionally, diagnosed mental health and alcohol and other drug users require particular housing and supportive service needs. Finally, many housing and health service agencies are particularly concerned about the needs of returning veterans and veterans with families. Interviewees were also concerned with supporting the following vulnerable populations: developmentally disabled individuals, homeless and medically indigent persons, ex-offenders and individuals with a criminal history, and victims of domestic violence. Furthermore, low-income families also face the challenge of securing adequate access to child care in order to hold a steady job that meets housing demands.

Hicks' interviewees indicated that a lack of sustained funding resources for innovative programs coupled with a lack of coordination between health and housing fields prevent the successful implementation of innovative policies and programs. Interviewees also noted the difficult nature of quantifying the benefits of housing interventions on health outcomes. There is a lack of inexpensive and effective means of tracking programmatic outcomes, and funding resources remain scarce.

Interviewees agree that any definition of a healthy home should incorporate access to health care, services, and jobs. A healthy home must also be affordable, include access to affordable child care, and should be sited within adequate access to a community of opportunity.

Hicks concludes his paper with a recommendation that the Eugene-Springfield region's community health and affordable housing agencies design a systems approach to building broad based collaborations aimed at increasing community health outcomes.



## Weatherization and Housing Rehabilitation in Oregon: A Spring 2013 Snapshot

In the spring of 2013, Steve White and Karli Thorstenson of the Oregon Public Health Institute (OPHI) released a study<sup>6</sup> providing an overview of publicly funded health-related housing programs in Oregon, including low-income weatherization and housing rehabilitation programs. The OHA Healthy Homes Advisory Group made up of practitioners statewide requested this study as part of their Healthy Homes Initiative project.

The study included a brief on-line survey of the state's low-income weatherization and rehabilitation programs and was designed to provide an initial snapshot of these programs and help stakeholders begin to identify specific needs and opportunities for Oregon's Healthy Homes efforts. The survey was sent to 35 organizations, including public agencies, tribes, Community Action Agencies (CAAs), and other non-profits known to provide weatherization and rehabilitation assistance. Of the 20 organizations that responded, 16 had programs and resources for weatherization and nine had programs and resources for housing rehabilitation. The survey received responses from at least one organization in virtually every county in the state as well as the following cities: Beaverton, Corvallis, Hillsboro, Portland, Salem, and Springfield.

This OPHI study notes that *“the connection between housing and health is well-established. An increasing body of evidence has demonstrated that healthy housing is essential for maintaining individual and community health. Healthy housing helps residents to maintain physical health by reducing exposure to environmental hazards such as allergens, lead, asbestos, vector-borne diseases, and radon, and by decreasing the risk of unintentional injuries that can result from falls, burns, and electrocution caused by faulty building and equipment conditions. Healthy housing can also promote mental health by reducing sources of stress, anxiety, and depression. In contrast, inadequate housing contributes to acute and chronic health problems, particularly for people such as ethnoracial minorities, people with low incomes, children, and seniors that are at higher risk of housing-related health problems.”*

White and Thorstenson note that in Oregon, as in many other states, there currently exists a patchwork of local and state agencies and organizations that work to ensure that housing stock is healthy. To help ensure the construction of healthy housing, the State of Oregon Building Codes Division has established building standards that are enforced at the local level by city or county staff within the relevant planning/community development department when developers propose to construct new housing. The study observes that *“these codes are important for ensuring healthy housing and should be regularly reviewed and updated to help ensure that homes are healthy, [but] the maintenance and rehabilitation programs are likely to be most relevant to public health workers who are working to address health issues related to housing conditions, particularly for low-income households.”*

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<sup>6</sup> *Weatherization, Rehabilitation, and Other Health-Related Housing Programs in Oregon: An Introduction*, May 3, 2013.

Among the report's key online survey findings<sup>7</sup> are the following:

#### WEATHERIZATION PROGRAMS

- *Income requirements vary depending on grant guidelines, but the majority of funding for weatherization programs is through the Low Income Home Energy Assistance Program (LIHEAP), which requires household incomes to be 60% of state median income.*
- *There are other organization-specific requirements to receive weatherization grant services. Depending on the service provider, homes must be not up for sale or in foreclosure. Homes must also not be a safety hazard to contractors or staff; only certain types of houses and/or conditions are considered.*
- *Most weatherization providers partner with other organizations to provide services. Partnerships include local government, housing providers, housing authorities, other rehabilitation programs such as Habitat for Humanity, USDA Rural Development, energy services, and subcontractors.*
- *In general, the waiting lists are long, and are usually proportionate to the number of households served. While they served about 235 homes last year, Mid-Willamette Valley Community Action Agency had about 1500 homes on the waiting list. The average time spent on the waiting list is about 2 years, but can range anywhere from 6 months to 3 years.*
- *The average amount of money spent on a home is around \$6,500, but ranged from \$3,500-10,000.*

#### HOUSING REHABILITATION PROGRAMS

- *Similar to weatherization programs, housing rehabilitation providers work within a defined service area which typically includes single or multiple counties. Program funding in non-entitlement areas of the state comes through Community Development Block Grants (CDBG) from the US Department of Housing and Urban Development (HUD) administered by the Oregon Business Infrastructure Finance Authority(IFA).*
- *The household income threshold for the home rehabilitation program is at or below 80% of area median income. Groups may offer deferred lending to households below 50% of area median income. IFA now offers funding awards to HR providers to make grants available to qualifying households unable to secure a loan due to lack of equity or repayment ability.*
- *Organizations have much fewer staff dedicated to rehabilitation programs than to weatherization.*
- *Most of these providers partner with other organizations, including other CAAs, Habitat for Humanity, USDA Rural Development, and other non-profits.*
- *The maximum allowable CDBG award available over a two-year period to a non-profit Housing Rehabilitation program is \$400,000 which allows for approximately 7-12 loans per year. The average loan term is 20 years which limits access to the revolving loan fund to meet ongoing HR needs.*

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<sup>7</sup> Please see White and Thorstenson's OPHI study for complete survey findings and the other details of their report.

- *Waiting lists are smaller than for weatherization, ranging from 5-225, with most falling between 20-40 households. Wait times are usually less than 1 year, ranging from no wait time to about 2 years. Households on waiting lists are processed on a first-come first served basis with services based on identified health and safety issues.*
- *Loans and grants are offered in different amounts. Loans typically range from \$10,000-\$30,000, with the average amount around \$18,000. Some organizations offer Grants up to \$3,500.*
- *Service providers commented that funding is limited and there are large disparities between funding and need.*
- *The loan program is only available to owner-occupied homeowners. The homeowner must have sufficient equity on the home to cover the loan prior to closing. If the homeowner has an existing mortgage the HR loan can take a second position. Additionally, the home must be structurally sound so that loan-covered rehabilitation is feasible.*

## Observations

The above noted studies were released back to back in May and June of 2013 and provide current snapshots of healthy housing issues on a local level for Lane County (Hicks) and statewide (White and Thorstenson). **Both studies indicate that there are serious problems around the state in terms of unhealthy housing conditions impacting many individuals and families.** A significant portion of those negatively impacted by housing environmental issues are from “vulnerable populations,” such as children, seniors, low income households, returning veterans and their families, victims of domestic violence, and those with disabilities. Both studies indicate that a variety of groups and organizations are working with housing (including weatherization) and/or health-related issues, and that often efforts are made to coordinate and collaborate by these groups. The studies also indicate that there are barriers to more effective mitigation efforts. Such barriers would include the need for greater collaboration, staffing and funding issues.

The current OHA/UO CPW study explores these and related issues in a ten county area designated by Oregon Regional Solutions as the Willamette Valley and North Coast region. The ten counties are Benton, Clatsop, Columbia, Lane, Lincoln, Linn, Marion, Polk, Tillamook, and Yamhill.



# CHAPTER I: INTRODUCTION

This CPW/OHA report explores issues related to expanding Oregon's Healthy Home Initiatives in different rural regions statewide. It focuses on the Willamette Valley/North Coast region as defined by Oregon Regional Solutions.<sup>8</sup> The analysis is based on (1) review of socioeconomic and health data, (2) phone interviews with key stakeholders, and (3) an online survey. The report presents a preliminary needs assessment and a high-level formative evaluation for how the Healthy Homes Initiative might be expanded.

## Background

The United States Center for Disease Control and Prevention's (CDC) Healthy Homes Initiative (HHI) is a coordinated, comprehensive, and holistic approach to preventing diseases and injuries that result from housing-related hazards and deficiencies. The focus of the initiative is to identify health, safety, and quality-of-life issues in the home environment and to act systematically to eliminate or mitigate problems.

The Healthy Homes Initiative seeks to:

- Broaden the scope of single-issue public health programs, such as childhood lead poisoning prevention and asthma programs, to address multiple housing deficiencies that affect health and safety.
- Build capacity and competency among environmental public health practitioners, public health nurses, housing specialists, managers, and others who work in the community to develop and manage comprehensive and effective healthy homes programs.
- Promote, develop, and implement cross-disciplinary activities at the federal, state, tribal, and community levels to address the problem of unhealthy and unsafe housing through surveillance, research, and comprehensive prevention programs.
- Facilitate the collection of local data and monitor progress toward reducing or eliminating housing deficiencies and hazards.
- Expand collaborations with the U.S. Department of Housing and Urban Development, national associations and organizations, academia, community-based organizations, and others, including the American Public Health Association, National Environmental Health Association, and the World Health Organization.

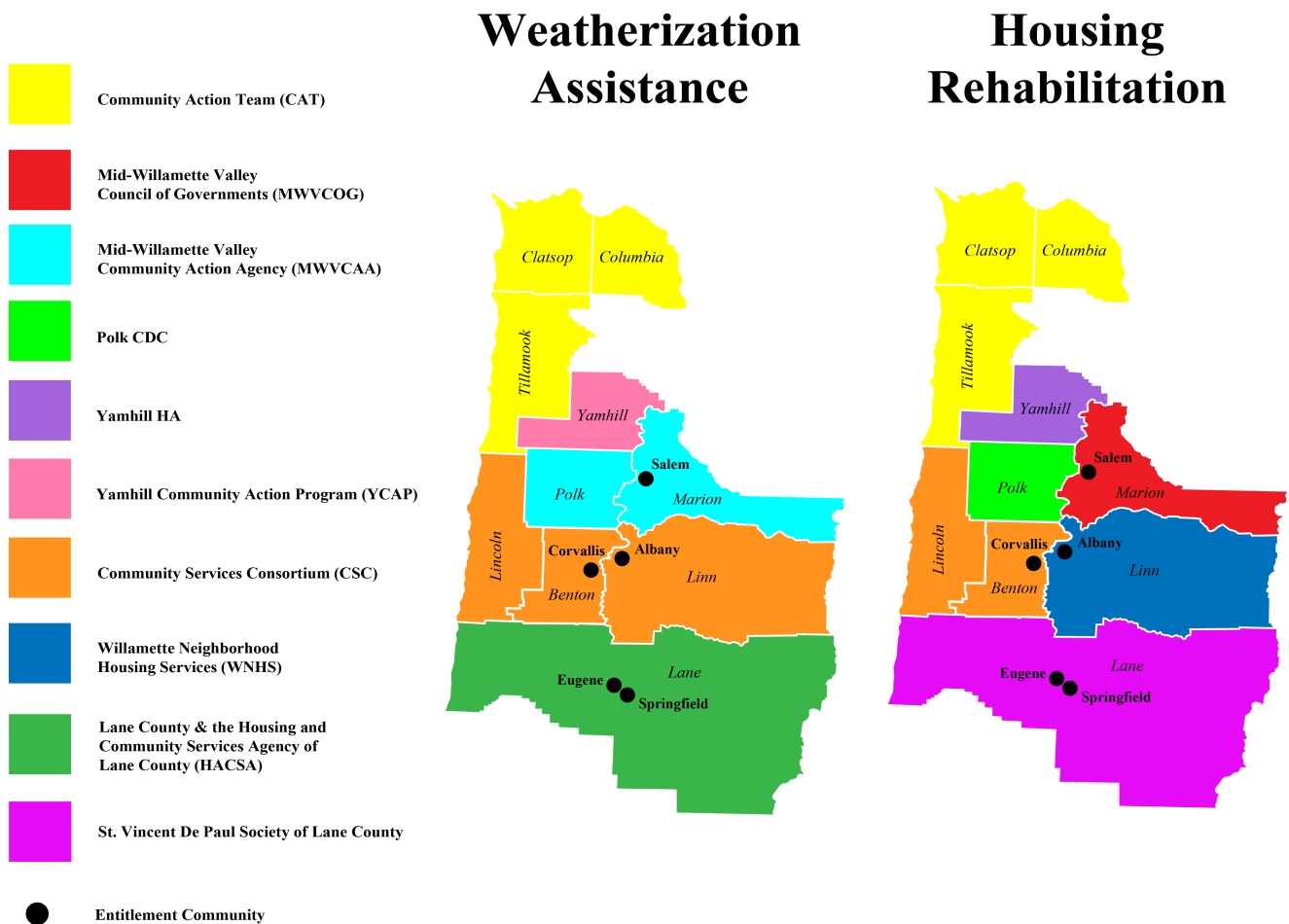
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<sup>8</sup> State of Oregon, Regional Solutions Centers,  
[http://www.oregon.gov/gov/ERT/pages/regional\\_solutions\\_centers.aspx](http://www.oregon.gov/gov/ERT/pages/regional_solutions_centers.aspx)

- Promote research to determine causal relations between substandard housing and adverse health effects.
- Develop guidelines to assess, reduce, and eliminate health and safety risks.
- Identify and implement low-cost, reliable, and practical methods to reduce health and safety risks in substandard housing.

Oregon has had an active HHI program in Multnomah County since 2005 which is now looking at new delivery models given the potential for collaboration with the Coordinated Care Organizations (CCO) in their service area. In 2012, the Oregon Health Authority (OHA) received a CDC grant to explore strategies for expanding the HHI throughout Oregon. OHA is working with an advisory group that emerged from a Weatherization Plus (Wx Plus) Conference that took place in Portland in November of 2012. Conference participants were mainly Weatherization (Wx) Program and Housing Rehabilitation (HR) providers from regions both within and outside the metro area. This advisory group met five times by the spring of 2013 to produce goals and strategies for moving HHI strategies forward.

**Figure 1. Existing service areas of Weatherization and Housing Rehabilitation programs within the Valley/North Coast Regional Solutions Team Area**



The issue addressed in this study is how to move forward with broadening the HHI throughout Oregon given the variability in program capacities, stakeholder engagement, and other factors. In March of 2013, the advisory group approached the Community Planning Workshop (CPW) at the University of Oregon for assistance in clarifying the information needed to move forward with this project. This report presents the results of CPW's preliminary research data related to the statewide expansion of HHI.

In this context, it is worth noting that the National Center for Healthy Housing's seven key characteristics of a healthy home are: it is dry, clean, well ventilated, pest-free, contaminant free, safe, and maintained.

## Purpose

At the foundational level, this study proceeded with the understanding that the desired outcome of this project is research that will identify pathways to broadening the HHI in Oregon. Accordingly, this project was conducted as a combination of (1) a high-level needs assessment and (2) a formative evaluation. The **needs assessment component** sought to answer several key questions:

1. Do identifiable concentrations of need (as measured by health conditions such as asthma along with housing and socio-economic characteristics) exist in areas outside the Portland metropolitan area?
2. What services currently exist, and to what extent are they available to target populations?
3. Do gaps in the service delivery system exist?
4. What barriers exist to more efficient/effective service delivery?
5. What forms of collaboration would be most conducive to support local HHI Programs?

A **formative evaluation** is a type of evaluation that gathers and analyzes information to help with program development and formation. Formative evaluation can be a preliminary step in developing an organizational or business plan. The types of questions that the **formative evaluation component** of this study should answer include:

1. What level of interest do stakeholders have in program participation?
2. What barriers exist among program participants for entry?
3. What programmatic structures make most sense?
4. What implementation approaches might be effective (e.g., geographic or programmatic phasing, etc.)

All of these questions are important considerations as the group moves to expand HHI programming statewide. The main purpose of this study is to provide **baseline research** that will address some of the foundational questions that are necessary to better understand opportunities related to expansion of HHI.

**GOAL:** Ultimately, the goal of all those concerned with HHI and related local community efforts is to identify health, safety, and quality-of-life issues in the

home environment<sup>9</sup> and to act systematically to eliminate or mitigate such problems for the persons impacted by such issues (streamline existing services in support of HHI).

## Methods

The two primary methods used by CPW in this study were an online survey of volunteers (professionals in the fields of housing and health that address healthy home issues in their local communities and counties), and the gathering of relevant secondary data.

### Online Survey

Community Planning Workshop (CPW) conducted an online survey of potential program stakeholders over a three week period: starting at the end of May and concluding after the second week of June 2013. The specific groups surveyed included professionals from a variety of fields that address home hazards or home environmental issues, such as public health practitioners, public health nurses, housing specialists, managers, and others who work in the community. All participants were volunteers who reside and/or work in the following counties in Oregon: Benton, Clatsop, Columbia, Lane, Lincoln, Linn, Marion, Polk, Tillamook, and Yamhill (see Figure 1). The survey was sent to more than 100 potential respondents; 70 completed surveys were returned, along with nearly 20 partial completions.

The survey was administered online using Qualtrics—a web-based survey application. Qualtrics has sophisticated tools for online surveys, data analysis, and survey administration. Community Planning Workshop staff worked with the project advisory group to draft the survey. Appendix A provides the complete survey instrument and unedited responses.

In order to create a more complete picture of where housing, health, and social service agencies and organizations are in terms of collaborating around healthy homes issues, CPW Staff conducted five semi-structured phone interviews. Interviewees were selected based on their involvement in housing, health, and/or social service work, as well as availability to comment for this study in late June, 2013. These interviews augmented the CPW online survey results (see Appendix C for interview summaries).

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<sup>9</sup> **Home Hazard or Home Environmental Issues:** A home hazard or home environmental issue can be described as: a factor or condition that puts residents or inhabitants of a housing structure in danger or at risk of accident or disease.



## Secondary Data Collection

One of the objectives of this project was to develop a better understanding of the geographic extent of certain health conditions and how these health conditions relate to housing. The secondary data collection addresses two main elements, and additionally contains some elements of a literature review (see Preface and List of Additional Resources):

1. **Health data.** CPW worked with the client to identify existing health related data sets and to identify which variables to analyze. This data included issues such as radon, asthma, child lead poisoning. To date, data collection on these issues has begun, though results related to some topics have yet to be validated. Much of what is presented in this report reflects “unreliable” data (per OHA caveat). Accordingly, this report is only able to provide some relevant observations.
2. **Socio-economic data.** This data is available from the 2010 U.S. Census, and the 2007 -2011 five-year American Community Survey. Dollar amounts in the 5-Year ACS data have been adjusted for inflation [generally] to 2011 dollars. Given the methodologies of the ACS, the margins of error (contained in all the online data tables) allow for fairly good generalizations at the county level, but become more inaccurate as one tries to delve into the data at census tract and blocks. This study focuses entirely on county level data. The variables collected and analyzed include population numbers and composition by age, sex, and race, income, unemployment, poverty, educational attainment, occupations (or industries), household characteristics, family characteristics, housing stock, characteristics and costs of housing, and so on. Such data, among other uses, helps identify **vulnerabilities**. More than fifty figures and numerous tables of data were generated for this study using information from the 2010 U.S. Census and the 2007 -2011 five-year American Community Survey. Most of this data is in Appendix B.

## Limitations of the analysis

This report contains a presentation and discussion of the survey results administered online to 90 individuals, professionals in the fields of housing and health that address healthy home issues in their local communities and counties.

So as to not misinterpret the data derived from this survey, it is very important to keep several considerations in mind:

- The participants were not randomly selected.
- The surveys are not statistically representative of all professionals in the fields of housing, health, and social services that address healthy home issues, nor were they ever intended to be.

The survey, associated secondary data collection, and interviews are intended to provide “snapshots” of the current situation regarding healthy homes and how

various groups and organizations currently address the needs, and provide insight on how such efforts may become more effective in the future.

## **Organization of this Report**

The remainder of this report is organized as follows:

- **Chapter 2** addresses the questions noted above in the **needs assessment** component, utilizing both survey results and secondary data.
- **Chapter 3** addresses the questions noted above in the **formatory evaluation** component, utilizing primarily the survey results.
- **List of Additional Resources**

This report also includes three appendices:

- **Appendix A** presents a copy of the online survey instrument, and the survey results.
- **Appendix B** contains figures and tables of secondary data (Demographic data from the 2010 U.S. Census, and the 2007 -2011 five-year American Community Survey).
- **Appendix C** presents brief summaries of key stakeholder interviews conducted by CPW Staff.

## CHAPTER 2: PRELIMINARY NEEDS ASSESSMENT

This chapter presents a preliminary needs assessment related to expanding the Healthy Homes Initiatives into the Willamette Valley/North Coast Region. The preliminary needs assessment explored the following questions:

1. Do identifiable concentrations of need (as measured by health conditions such as asthma as well as housing and socio-economic characteristics) exist in areas outside the Portland metropolitan area?
2. What services currently exist, and to what extent are they available to target populations?
3. Do gaps in the service delivery system exist?
4. What barriers exist to more efficient/effective service delivery?
5. What forms of collaboration would be most conducive to support local HHI Programs?

### Concentrations of need

Though CPW cannot begin to speculate as to the relationship of co-occurring characteristics of a given community, it is important to identify vulnerable populations living within the boundaries of each county. The confluence of these factors, as introduced in Chapter 1, can often lead to unhealthy home environments and concentrations of need for housing remediation, health, and other social services.

**Figure 2** (Potential Vulnerability Matrix) provides a snapshot of variation of key factors by county that can contribute to concentration of populations vulnerable to unhealthy living environments. Key factors that can signal the presence of vulnerable or at risk populations (to negative impacts of unhealthy housing conditions) include the following:

- **Educational Attainment** – generally, the lower the level of educational attainment, the higher the likelihood of having an income that falls below the poverty level.
- **Age** – Different age groups are more likely to experience poverty, depending on other circumstances (e.g., single mothers with young children; unemployment in the household).
- **Rural/Urban** – locations of households may indicate greater vulnerabilities to unhealthy housing conditions.
- **Age of Housing Stock** – Older homes in some areas may be more prone to home environmental issues. For example, homes built before 1980 have a higher incidence of lead paint.
- **Cost Burden of Housing** –The higher the cost of housing (as a percentage of a household's income), the greater the stresses may be on a family's

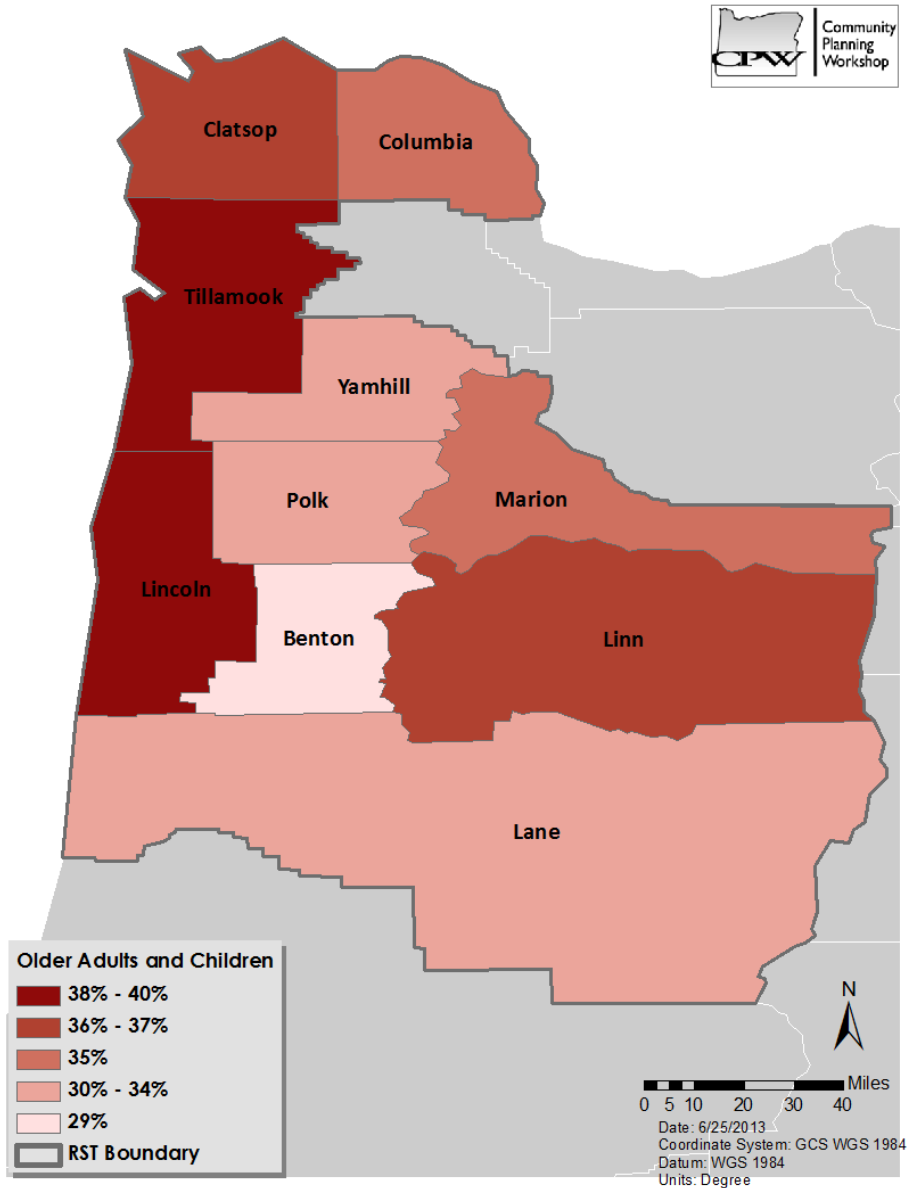
overall budget, which may be manifested in issues related to health and housing.

Figure 2: Key factors by county (Potential Vulnerability Matrix)

<b>Potential Vulnerability Matrix</b>											
<b>Estimated Educational Attainment for Population Below Poverty Level (ACS 5 S1501 - 1)</b>											
County:	Benton	Clatsop	Columbia	Lane	Lincoln	Linn	Marion	Polk	Tillamook	Yamhill	
< high school graduate	29.6%	26.0%	20.7%	23.3%	25.0%	21.0%	24.4%	18.2%	27.2%	20.4%	
High school grad/equiv.	11.4%	13.1%	10.7%	15.1%	16.5%	10.9%	14.0%	11.2%	18.0%	10.4%	
Some college/associate's	14.9%	11.2%	6.5%	12.9%	13.3%	12.1%	10.5%	9.4%	10.9%	7.4%	
Bachelor's degree or >	5.9%	4.8%	5.3%	7.3%	7.8%	5.4%	4.0%	2.8%	6.9%	3.8%	
<b>Estimated Percentage of All People With Income Below Poverty level in Past 12 Months (ACS 5 DPO3 - 8)</b>											
County:	Benton	Clatsop	Columbia	Lane	Lincoln	Linn	Marion	Polk	Tillamook	Yamhill	
< 18 years	15.4%	23.4%	15.8%	18.0%	22.3%	24.3%	26.2%	16.2%	27.3%	17.4%	
18 to 64 years	25.3%	12.8%	11.1%	19.2%	17.0%	14.7%	15.5%	12.4%	17.4%	12.4%	
65 years and >	5.5%	8.4%	8.2%	8.8%	8.8%	7.6%	7.0%	7.9%	8.7%	6.1%	
<b>Estimated Percentage of Families With Income Below Poverty level in Past 12 Months (ACS 5 DPO3 - 5)</b>											
County:	Benton	Clatsop	Columbia	Lane	Lincoln	Linn	Marion	Polk	Tillamook	Yamhill	
All families	8.6%	10.4%	7.8%	10.4%	11.4%	11.9%	13.0%	8.7%	13.4%	9.2%	
With related children < 18	6.9%	9.2%	5.5%	6.9%	9.6%	10.9%	12.2%	7.3%	18.4%	5.9%	
With related children < 5 only	9.2%	6.6%	5.9%	9.1%	7.6%	21.6%	10.2%	11.4%	0.0%	4.5%	
<b>County Populations by Selected Age Groups (Census: CPA - 3)</b>											
	Benton	Clatsop	Columbia	Lane	Lincoln	Linn	Marion	Polk	Tillamook	Yamhill	
Children: 17 or Younger	17.8%	20.5%	23.5%	19.8%	17.3%	24.1%	26.4%	24.3%	19.8%	25.0%	
Adults: 60 and Older	17.5%	24.4%	20.9%	21.6%	31.2%	21.7%	18.3%	20.8%	29.3%	18.9%	
<b>Percentage of Rural Population (Census: SF1 P2)</b>											
County:	Benton	Clatsop	Columbia	Lane	Lincoln	Linn	Marion	Polk	Tillamook	Yamhill	
Rural Population	18.8%	39.0%	43.6%	17.5%	37.6%	31.6%	13.1%	19.9%	69.6%	22.6%	
<b>Estimated Percentage of Housing Stock Built Before 1980 (ACS 11 5 DP04 - 2)</b>											
County:	Benton	Clatsop	Columbia	Lane	Lincoln	Linn	Marion	Polk	Tillamook	Yamhill	
Built before 1980	59.3%	64.4%	55.9%	63.3%	55.1%	60.8%	58.1%	50.3%	56.7%	47.7%	
<b>Housing Cost Burden for Home Owners (ACS 5 DPO4 4-7)</b>											
County:	Benton	Clatsop	Columbia	Lane	Lincoln	Linn	Marion	Polk	Tillamook	Yamhill	
% Owner-Occupied Housing Units	53.1%	46.5%	71.5%	56.1%	45.4%	61.9%	57.1%	62.9%	41.7%	64.2%	
% Owner-Occupied with Mortgage	64.3%	64.0%	69.6%	66.7%	59.6%	66.7%	70.5%	73.2%	58.3%	73.4%	
With Mortgage: Housing Costs 30% or >	34.6%	47.0%	37.1%	41.4%	41.7%	37.5%	43.0%	38.5%	44.8%	40.5%	
No Mortgage: Housing Costs 30% or >	9.5%	15.7%	13.5%	14.9%	19.3%	12.0%	16.7%	11.3%	13.5%	15.3%	
<b>Housing Cost Burden for Renters (ACS 5 DPO4 4-8)</b>											
County:	Benton	Clatsop	Columbia	Lane	Lincoln	Linn	Marion	Polk	Tillamook	Yamhill	
% Renter-Occupied Housing Units	46.9%	53.5%	28.5%	43.9%	54.6%	38.1%	42.9%	37.1%	58.3%	35.8%	
Housing Costs of 30% or > for Renters	62.2%	52.3%	52.7%	56.7%	53.5%	48.0%	52.5%	49.2%	52.5%	52.0%	

As described by the Potential Vulnerability Matrix (**Figure 2**), those under the age of 18 and over the age of 65 are often less mobile and more susceptible to unhealthy housing conditions. To illustrate this, **Figure 3** displays the concentration of these populations by county. **Figure 3** shows a greater concentration of Older Adults and Children present in counties along Oregon’s coast (including Columbia County), as well as significant percentages in the Cascade foothills.

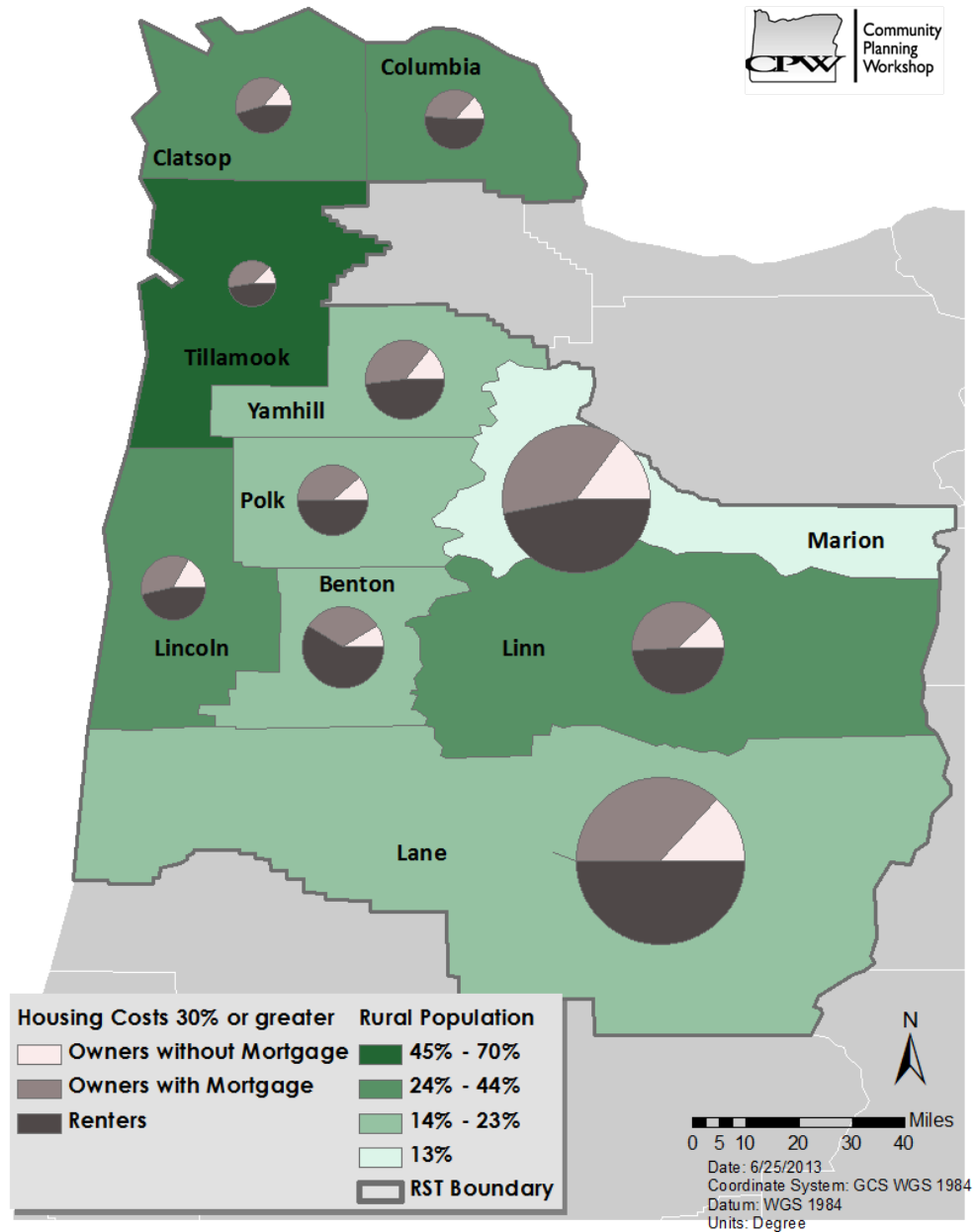
**Figure 3. Map of Vulnerable Populations by Age**



Source: U.S. Census, SF1 2010.

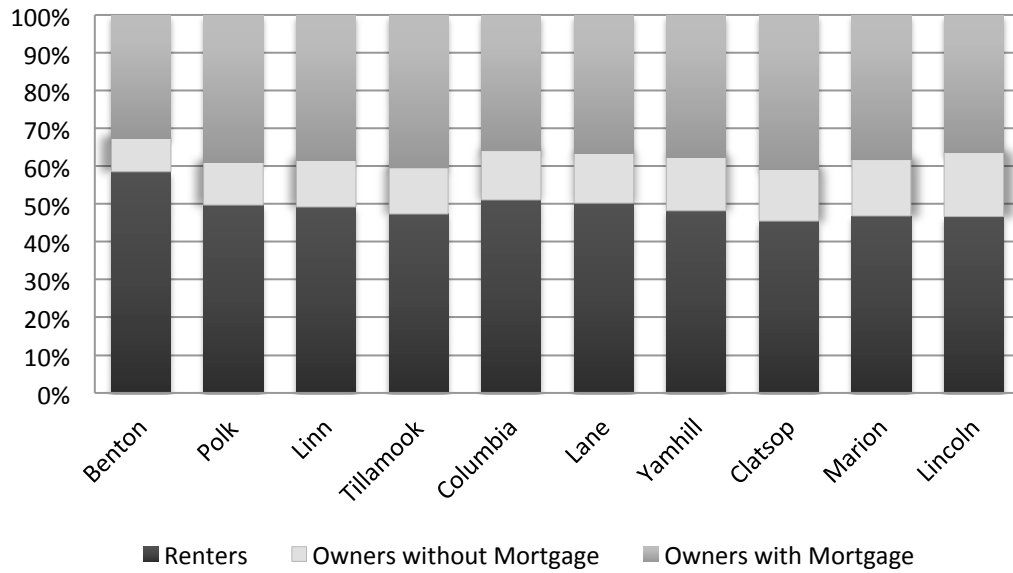
Healthy Homes programs have been successfully implemented in the Greater Portland area by Oregon Health Authority. There are few examples of similar programs implemented in rural areas of Oregon. The percentage of rural population in each county within CPW's study area varies greatly. **Figure 4** shows the percent of population by county living outside of urban growth boundaries as compared to the population size and cost burden experienced by owner and renter households. **Figure 5** shows the same housing-cost burden information by county.

**Figure 4. Rural Population with Cost Burden by Tenure and Mortgage**



Source: U.S. Census American Community Survey DPO4, 2007-11.

**Figure 5. Housing Cost burden by Tenure and Mortgage by County**



Source: U.S. Census American Community Survey DPO4, 2007-11.

## Health Concerns

Oregon Health Authority has identified several health concerns that can often be tied to housing conditions. Health conditions considered for the purpose of this report include:

- Asthma
- Radon
- Lead

## ASTHMA

Asthma, although caused by a variety of symptoms, has been shown to be exacerbated by unhealthy housing conditions. **Figure 6** details rate of current asthma for adults by household income, identifying lower income adults with higher prevalence of asthma.<sup>10</sup>

**Figure 6. Oregon Adults with current asthma by annual household income (age-standardized), 2011.**

Income	Percent	Confidence Interval
< \$15,000	18%	14.5% - 20.9%
\$15,000-\$50,000	11%	9.4% - 12.3%
> \$50,000	9%	7.2% - 10.1%

Note: Confidence intervals are recorded at the 95% Confidence level. Source: Unpublished data, Oregon Health Authority, 2013.

**Figure 7** details the rate of current asthma among children in 8th and 11th grade. Over the seven years the data was collected, asthma rates have fluctuated, climbing in 2011.

**Figure 7. Oregon 8<sup>th</sup> and 11<sup>th</sup> Grade Students with current asthma**

Year	Percent		Confidence Interval (%)	
	8th Grade	11th Grade	8th Grade	11th Grade
2004	10.7%	10.4%	9.9 - 11.5	9.6 - 11.4
2005	10.5%	10.8%	9.7 - 11.3	10 - 11.6
2006	10.0%	9.7%	8.8 - 11.3	8.4 - 11.2
2007	9.7%	10.5%	8.9 - 10.5	9.5 - 11.6
2008	10.7%	10.7%	10 - 11.5	9.8 - 11.7
2009	8.7%	9.9%	7.6 - 10	8.8 - 11
2011	12.2%	11.8%	10.6 - 14.1	10.3 - 13.3

Note: No data was collected in 2010. Confidence intervals are recorded at the 95% Confidence level. Source: Unpublished data, Oregon Health Authority, 2013

**Figure 8** details the rate of current asthma among urban and rural residents of Oregon, while **Figure 9** maps adults with asthma by counties for 2012.

**Figure 8. Adults with current asthma by rural or urban residency (age-standardized)**

Year	Percent		Confidence Interval (%)	
	Urban	Rural	Urban	Rural
2010	10.1%	10.4%	9 - 11.3	8.7 - 12.5
2011	10.4%	12.4%	9.4 - 11.4	10.5 - 14.5

Source: Unpublished data, Oregon Health Authority, 2013. [95% Confidence Level]

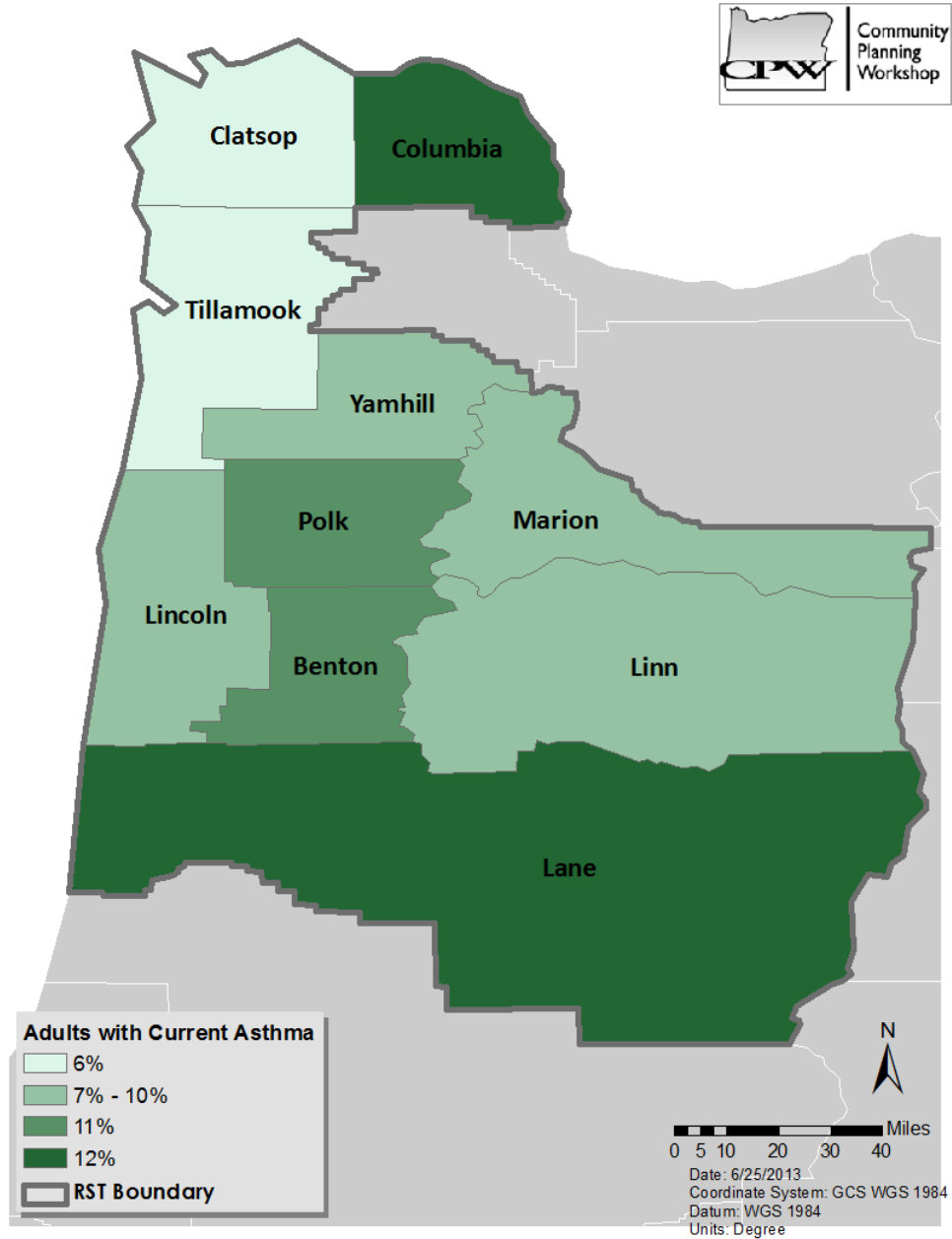
<sup>10</sup> Burden of Asthma, Oregon Health Authority  
<http://public.health.oregon.gov/DiseasesConditions/ChronicDisease/Asthma/Documents/burden/ch5.pdf>



OHA has identified several indoor factors that exacerbate the risk of asthma in the home. These risk factors include:

- Have carpeting or rugs in bedroom
- Have pets inside home
- Use wood burning fireplace or stove
- Use gas for cooking
- Seen or smelled mold inside home in past 30 days
- Smoked inside home in past week
- Seen mice or rats in home in past 30 days
- Have gas fireplace or unvented gas stove
- Seen cockroaches in home in past 30 days

Figure 9. Adults with current Asthma by county, 2012

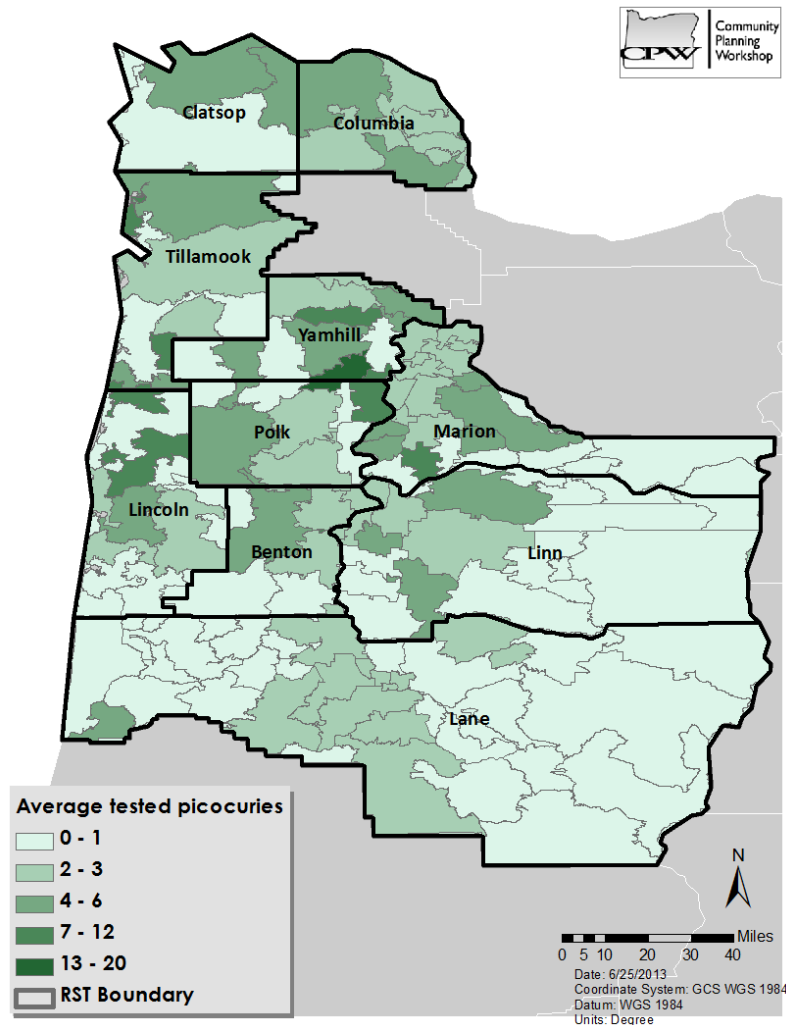


Note: Some data presented in this figure may be considered unreliable for conclusive study. Unpublished data, Oregon Health Authority, 2013.

## RADON

Radon, the residual gas often indicating the presence of radiation in a home is undetectable unless measured. Radon can become trapped under homes, especially in crawlspaces and basements, and can accumulate to unsafe levels. According to the U.S. Surgeon General, “radon is the leading cause of lung cancer after cigarette smoking.”<sup>11</sup> **Figure 10** presents results from home radon tests collected by the Oregon Health Authority, averaged by zip code.

**Figure 10. Average radon picocuries by zip code, 2000-2010**



Note: Some data presented in this figure may be considered unreliable for conclusive study. Potential radon hazard is a combination of the maximum test result, the average test result, and the percentage of tests exceeding 4 pCi/L. ZIP codes with fewer than 10 test results were not categorized. Source: Oregon Health Authority, 2013.

<sup>11</sup> Oregon Health Advisory “What is Radon”

<http://public.health.oregon.gov/HEALTHYENVIRONMENTS/RADIATIONPROTECTION/RADONGAS/Pages/index.aspx>

## LEAD

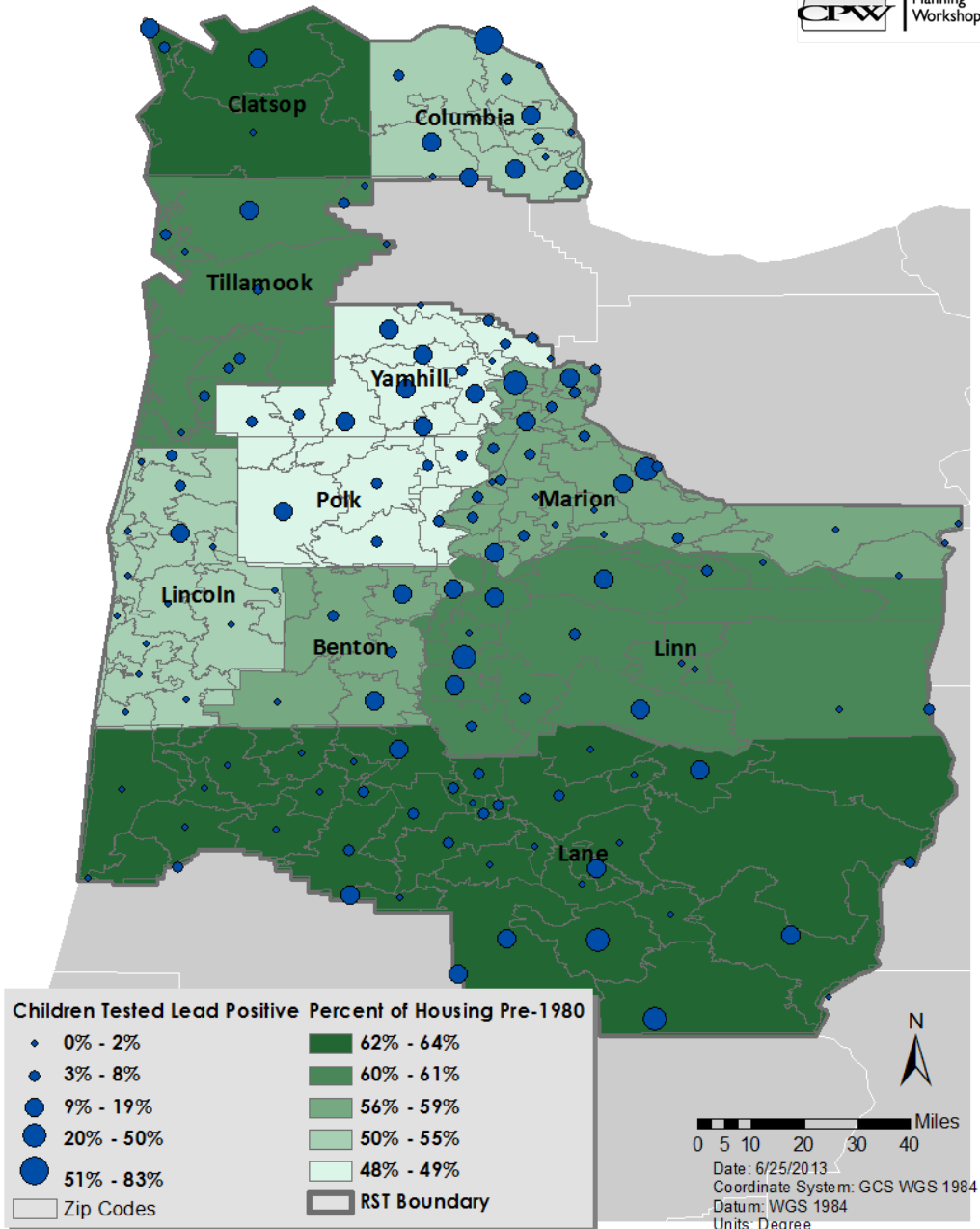
Lead was a common component of paints used in the interior and exterior of homes prior to 1950. In 1978, lead-based paint was banned from use in the United States. Over time, lead accumulates in the body and can have serious health impacts. Dust from homes that contain lead-based paints has been shown to cause severe health problems. Children under the age of six are particularly vulnerable, as lead build-up can affect physical and mental development. **Figure 11** shows the percent of housing stock built prior to 1980. Lead tests results collected by Oregon Health Authority<sup>12</sup> show the percent of tests by zip code which exceeded 10 ug/dl<sup>13</sup>.

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<sup>12</sup> "Impact of Environmental Exposures in Oregon: Childhood Lead poisoning"  
<http://public.health.oregon.gov/HealthyEnvironments/HealthyNeighborhoods/HealthyHomes/LeadPoisoning/Documents/LeadPoisoninInOregon.pdf>

<sup>13</sup> This is the acceptable limit set by the Centers for Disease Control and Prevention, though lower levels have been shown to have behavioral affects at levels from 1-9.9 ug/dl.

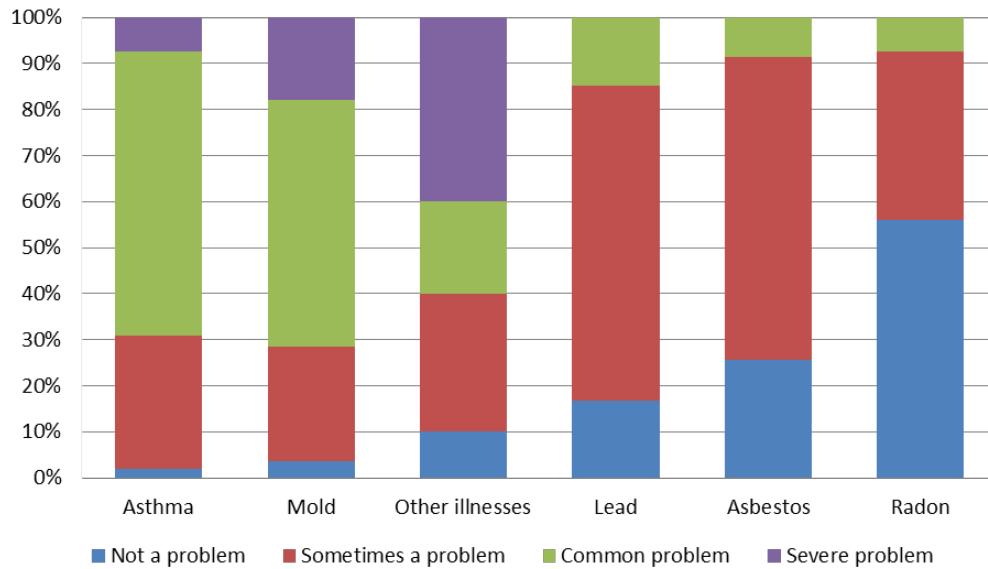
**Figure 11. Lead Tests by Zip Code in Counties with Percent of Housing stock built pre-1980**



Source: U.S. Census, 2010 and Oregon Health Authority, 2000-2012. Note: Blood lead testing measures are the number and percentage of children tested before age 3 and the number and percentage of those tested who have blood concentrations above the action level of 10 micrograms per deciliter ( $\mu\text{g}/\text{dL}$ ). Percentages based on 10 or fewer cases may not be reliable.

Community Planning Workshop’s online survey asked health, housing, and social service providers to indicate the severity of these and additional health issues in their service area. The issues explored covered the prevalence of health concerns as well as common factors that contribute to unsafe or unhealthy housing. **Figure 12** shows that respondents indicated that in their experience asthma and other illnesses are, on average, the most pressing health concerns of the population they serve.

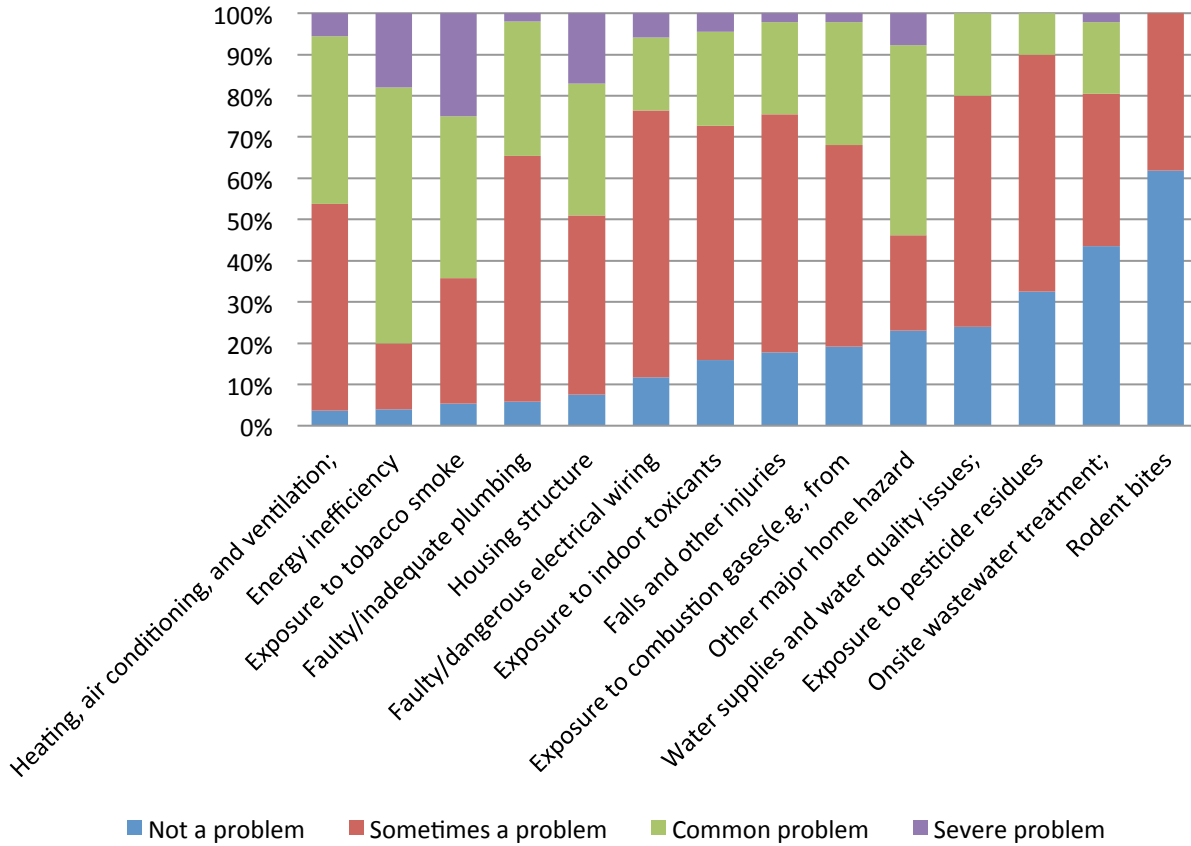
**Figure 12. Health problems identified by frequency in service areas**



Source: CPW Healthy Homes Initiative Survey, 2013

Exposure to indoor toxicants and rodent bites were identified as the most severe housing environment problems for residents in the service areas of the respondents, shown in **Figure 13**.

**Figure 13. Concerns related to housing by frequency in service areas**



Source: CPW Healthy Homes Initiative Survey, 2013

## Existing services and target populations

Organizations and agencies in all ten counties do work related to home environmental issues. These organizations vary in size, organization structure, and programming. Of the organizations and agencies that responded to CPW’s survey, the majority of all respondents said they provide services that aid in improving unhealthy housing or home environmental issues **but public health only receives a few cases**. The majority of health respondents (51%) said it is a secondary focus of their organization. Housing respondents were relatively evenly split with 43% indicating it is a primary focus of their organization and 40% indicating it is a secondary focus.

Similarly, the majority of social service or education respondents (63%) said their organization provides these types of services but only have a few cases now and then; nineteen percent of these respondents said it was a secondary focus. Please note: A small number of social service or education providers responded from Lane County, and Marion, Polk, and Yamhill Counties.

**Populations most vulnerable to unhealthy housing vary by area and by discipline, though there are several groups that overlap.**

Respondents, despite being from different disciplines, indicated that their organization delivers services to some of the same vulnerable populations. Social service and education respondents indicated that they focus on children between 2-18 years old,<sup>14</sup> single mothers with children, households eligible for food stamps, and households with adults who are unemployed. Eighty-eight percent of these providers indicated that the children they serve are primarily 1 to 5 year olds. Similar groups were identified by Health and Housing respondents, adding that households with adults who have dropped out of the work force, and two adults with children were common recipients of their respective services. Information contained in the 2007 -2011 five-year American Community Survey indicate high levels of poverty in households headed by women (no spouse) with the presence of children, especially young children (see Figure D-32 in Appendix B.)

- 
- **Children**
  - **Single mothers**
  - **Households eligible for food stamps**
  - **Unemployed adults**
  - **Adults no longer in work force**
- 

In addition to young children, older adults are often served by existing social service and health organizations. Though many social service and

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**Adults, 66 and older living alone seek services related to unhealthy homes.**

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health respondents were unsure about the age of adults living alone or without children, those who did know indicated many of these adults were over the age of 66. Housing respondents indicated providing services to adults living alone, two or more adults without children, households eligible for food stamps, and households with adults who have retired more commonly than those respondents in the health or social services fields. Most housing respondents (55%) said the adults living alone were 66-75 years old.

According to 2010 Census data, Lincoln, Tillamook, Clatsop and Linn counties had high percentages (28-35%) of adults over the age of 65, many in one-person households; Lane County had the highest number of such households at 14,785 with Marion County second at 11,475 (see Figures D-12, D-13, and D-14 in Appendix B.)

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<sup>14</sup> For age distribution by counties see Figure D-3 in Appendix B.



**Poverty is the common denominator for most service providers.** Social service, health, and housing respondents all identified households living below the poverty line as being their primary clientele. Over 90% of social service and housing respondents said their organizations have an income eligibility threshold, about 50% of each of these groups said the income eligibility is 80% of area median income; an additional 39% said the threshold was less than 60% of area median income. The majority of health respondents (64%) also indicated an income eligibility threshold but they did not know what the threshold of eligibility is for their organization. The 2007 -2011 five-year American Community Survey estimated that the poverty level for those under age 18 ranged from a low of 15% (Benton) to a high of 27% (Tillamook), while for those age 18-64 the poverty level ranged from a high of 25% (Benton) to a low of 11% (Columbia); for those 65 years or older the high was 9% in both Lincoln and Lane Counties and the low was 6% in Benton County (see Figure 1 above and Figures D-30, D-31, D-32 and D-33 in Appendix B.)

## Service delivery system gaps

Service delivery can be a problem when organizations take steps to remediate an unhealthy living condition for residents within their service area. **The majority of housing and social service respondents indicated they have repeat clientele that suffer from the same or similar housing hazards.** Health respondents were split on this question with a slightly higher response rate (57%). Looking at these repeat clients may be a first level of assessment and referral in starting a coordinated HHI program.

Healthy homes programs have had success in metropolitan areas throughout the Nation. Rural populations, however, are inherently different in how unhealthy homes are identified, assessed, and remediated. Rural populations tend to be more dispersed, making unhealthy living conditions less “visible.” In many Oregon counties, rural populations tend to be less well-off than their urban counterparts, making them more vulnerable to unhealthy housing conditions (see Appendix B: Demographic Data for a full comparison of county socio-economic factors). Delivery of housing, health, and social services can be extremely challenging in these areas.

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### Challenges of Service Delivery in Rural Areas

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## Barriers to more efficient/effective service delivery

At this point, existing agencies and organizations are unable to sufficiently meet the need for healthy home remediation with their existing organizational structures and allocation of resources. Anecdotally, cases exist where service overlap occurs, or the same service is provided by multiple organizations with varying improvement standards.

The reality is that identification and inspection of unhealthy homes is incremental and often a secondary objective of a home visit (typically a social or health service is the primary reason for entering the home). Many organizations have done targeted outreach to areas of increased vulnerability, but discovery and

remediation of unhealthy living environments has not been systematic or comprehensive.

Based on survey responses and the limited number of interviews CPW staff conducted, some organizations have tried to develop working relationships with weatherization, housing rehabilitation, and other specialized housing service providers. This approach has brought resources to many unhealthy homes, though inefficiencies persist. Few examples of existing partnerships or memoranda of understanding between organizations to effectively share service delivery information and/or program follow-up exist. For services to be delivered efficiently, this decentralized model may require more consistent stewardship by an established community partner, or may require a more centralized approach. Where Weatherization and Housing Rehabilitation programs exist within the same agencies such as in CAP and CAA agencies there is the ability to create policy to improve service delivery.

### **HHI program collaboration**

The majority of social service, health, and housing respondents said they cooperate with affordable housing agencies and social service organizations. The majority of social service and health respondents also indicated coordinating with **public health** governmental agencies. The majority of housing and social service respondents also indicated (often informally) coordinating with **housing rehabilitation and weatherization** organizations. Social service respondents also indicated coordination with **mental health organizations**.

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**Coordination  
through  
Referrals  
and  
Education**

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Social service, health, and housing respondents all agreed that coordination between organizations primarily happens with referrals. The majority of health and social service respondents also indicated coordination through education.

## Key Findings

1. Major factors that can signal the presence of vulnerable or at risk populations (to negative impacts of unhealthy housing conditions) include the following:
  - a. **Educational Attainment** – generally, the lower the level of educational attainment, the higher the likelihood of having an income that falls below the poverty level.
  - b. **Age** – Different age groups are more likely to experience poverty, depending on other circumstances (e.g., single mothers with young children; unemployment in the household).
  - c. **Rural/Urban** – locations of households may indicate greater vulnerabilities to unhealthy housing conditions.
  - d. **Age of Housing Stock** – Older homes in some areas may be more prone to home environmental issues. For example, homes built before 1980 have a higher incidence of lead paint.
  - e. **Cost Burden of Housing** –The higher the cost of housing (as a percentage of a household’s income), the greater the stresses may be on a family’s overall budget, which may be manifested in issues related to health and housing.
2. Three health concerns that are often tied to housing conditions considered in this report are Asthma, exposure to Radon, and exposure to Lead.
  - a. **Asthma** has been shown to be exacerbated by unhealthy housing conditions. This study has mapped patterns of such unhealthy housing conditions on a preliminary basis for the ten county study region.
  - b. **Radon**, a key cause of lung cancer, can become trapped under homes, especially in crawlspaces and basements, and can accumulate to unsafe levels. This study has also mapped on a preliminary basis for the ten county study region results from home radon tests collected by the Oregon Health Authority, averaged by zip code.
  - c. **Lead:** Dust from homes that contain lead-based paints has been shown to cause severe health problems. This study has also mapped on a preliminary basis for the ten county study the co-occurrence percent of housing stock built prior to 1980 (2010 Census data) with lead tests results collected by Oregon Health Authority.
3. CPW online survey respondents indicated that in their experience, asthma and other illnesses are, on average, the most pressing health concerns of the population they serve.
4. CPW online survey responses noted that exposure to indoor toxicants and rodent bites were the most severe housing environment problems for residents served.

5. According to CPW online survey respondents, vulnerable populations vary by area and by the services they seek. Respondents from several disciplines indicated overlapping groups vulnerable to unhealthy home environments, including: households with income below the poverty line, children, single mothers, households eligible for food stamps, unemployed adults, and adults no longer in the work force.
6. According to CPW online survey results, the majority of housing and social service respondents indicated they have **repeat clientele** that suffer from the same or similar housing hazards, while health respondents were split on this question.
7. CPW online survey results show a variety of challenges in rural areas to service delivery by those working to mitigate health and housing issues.
8. The primary barriers identified by survey respondents were inadequate funding or budget and insufficient staff to take on additional responsibilities and work load. Decentralized methods such as referrals can lead to inefficiencies in delivery of existing services such as weatherization or housing rehabilitation. Primarily, survey respondents identified funding and staffing as barriers to delivery of services and/or collaboration.
9. The majority of social service, health, and housing respondents said they cooperate with affordable housing agencies, social service organizations, and other groups; coordination is frequently through referrals and education (results of CPW online survey).
10. Based on responses garnered through the CPW online survey, it is clear that unhealthy homes exist in all ten counties within CPW's study area.
11. According to housing respondents, weatherization programs are the most common resource available to people living in unhealthy homes. Housing rehabilitation programs connect those in need with housing rehabilitation contractors, though the number of staff and/or resources dedicated to housing rehabilitation is typically fewer than staff dedicated to weatherization programs (results of CPW online survey).

## CHAPTER 3: FORMATORY EVALUATION

This chapter presents a high-level formatory evaluation for expanding the Healthy Homes Initiative. A formatory evaluation is a type of evaluation that gathers and analyzes information to help with program development and formation. Formatory evaluation can be a preliminary step in developing an organizational or business plan. The formatory evaluation explores the following questions:

1. What level of interest do stakeholders have in program participation?
2. What barriers exist among program participants for entry?
3. What programmatic structures make most sense?
4. What implementation approaches might be effective (e.g., geographic or programmatic phasing, etc.)

### Programmatic interest

Housing, health, and social service providers from all ten study area counties are interested in a program aimed at healthy housing. All social service and housing respondents and the vast majority of health respondents (96%) indicated the need for healthy homes programs in their region.

**Interest hinges on the availability of funding and staff**

**For many organizations, their interest hinges on the availability of resources and the capacity of their organization.** Health and social services respondents indicated they do not think they have the current capacity to respond to unhealthy housing or home environmental issues. Housing responses were more split on this issue with slightly more (58%) indicating agreement with health and social service respondents.

Augmenting resources related to healthy homes collaboration may encourage greater interest in participation. Health and housing respondents were more likely to be interested in collaboration if funding were available. Social service respondents were fairly equally split on this issue with about the same response rate indicating interest in collaboration whether or not funding is available. Housing respondents indicated the highest level of interest in collaboration with 71% of respondents saying they were very interested.

Respondents noted their interest in organizations beyond their own. Likely due to imminent changes to healthcare provision in the State of Oregon, of particular interest were organizations related to health care. Coordinated Care Organizations (CCOs) and Cover Oregon were most interesting to respondents.

**In many cases, respondents are particularly interested in learning more about organizations beyond their own discipline.** Housing respondents indicated the most interest in learning more about their region's Coordinated Care Organization (68%), Cover Oregon (45%), and public health services that visit the home (45%). Social services and education respondents indicated the most interest in learning about: Cover Oregon (42%), their region's Coordinated Care Organization (33%), and Oregon Opportunity Network (33%).

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- **Coordinated Care Organizations (CCOs)**
  - **Cover Oregon**
  - **Oregon Opportunity Network**
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Health respondents indicated interest in their own field, in addition to other service providers. Interest focused on Cover Oregon (50%), **community action agency** in their area (45%), the Oregon Opportunity Network (45%), **housing rehabilitation** programs in their area (45%), and their region's coordinated care organization (36%).

Not only are respondents interested in learning more about service providers in their area, but responses indicate strong interest in expanding their **knowledge and understanding** about healthy homes approaches and opportunities. Social services and Housing respondents were most interested in **training** offered in their area (Social services: 75%, Housing: 83%). Health and Social Service respondents were primarily interested in educational resources such as best practices (Health: 72%, Social Services: 58%). All respondents were interested in **collaborative models** for local healthy homes coalitions and **web materials** and **information**.

## **Barriers to participation**

Despite significant interest in addressing unhealthy home environments, barriers may exist to participation by organizations and agencies within the study area. The majority of social service, health, and housing respondents indicated inadequate funding or budget and insufficient staff to take on additional responsibilities and work load as primary barriers that might prevent organizations from partnering with others to advance healthy homes programs. The most commonly identified secondary barrier by all three types of organizations was lack of knowledge and/or expertise to implement such participation.

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**Funding and Staffing Issues**

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Funding is often a challenge for organizations and agencies in this Regional Solutions Team area. Primary funding sources for all three types of respondents rested in **state and federal funding**. Though funding resources vary by organization, region, and their ability to procure grant resources from private and public outlets **grants also** provide a significant portion of budgets for all three types of organizations.

## Programmatic Structures or Models: Revitalizing Organizational Capacity

Today's federal funding environment suggests that large-scale, federal or state-level initiatives may become a thing of the past. Concurrently, Oregon's health care delivery model will change substantially in October of 2013 as Coordinated Care Organizations (CCOs) come on-line to provide care to many previously uninsured residents of CPW's study area. With these facts in mind, the conditions may be ripe to consider ways to build a collaborative model around healthy homes that triangulates the resources of health, housing, and social service providers.

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**Federal funding environment and health care innovations may drive structural change in service delivery models.**

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The common denominator of this research is clear and present need. Based on the findings of CPW's survey, unhealthy homes exist throughout the Valley/North Coast Regional Solutions Team study area. Organizations and agencies often are limited by capacity of staff and funding resources from reaching all unhealthy homes in their service area, though they make every effort to direct weatherization and housing rehabilitation service to homes in need.

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**Unhealthy homes exist throughout the ten county study area.**

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Developing a Healthy Housing program in counties throughout this study area will be complicated, as each organization's resources vary in funding and framework. Also, the most prevalent types of unhealthy housing issue vary by region.

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**Local models to meet local needs.**

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For a healthy homes initiative to be successful, resources beyond financial support and depth of staffing will have to play a major role in enhancing the capacity of a county-level collaborative.

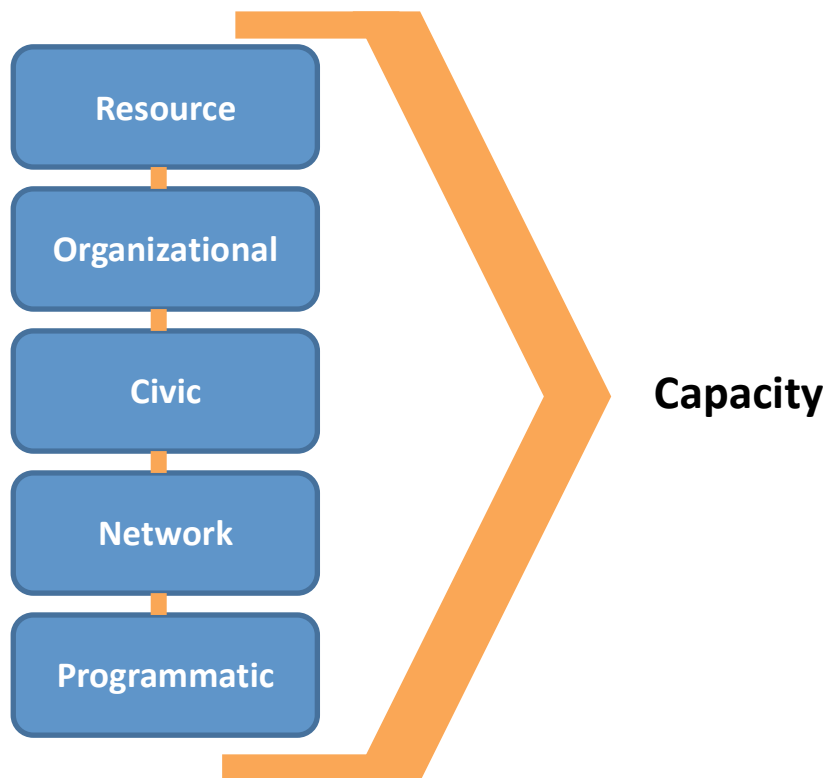
### CAPACITY

Capacity has taken on many meanings through strategic planning efforts. For the purposes of this report, capacity involves internal and external elements. Internally, capacity is described as physical, financial, technologic, and programmatic assets; externally, capacity involves civic and network assets.<sup>15</sup> **Figure 14** presents a diagram illustrating how these five elements interact to yield an organizations "capacity."

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<sup>15</sup> Glickman and Servon, p. 502..

**Figure 14: Elements of Organizational Capacity**



An examination of these five elements of organizational capacity<sup>16</sup> can augment the capacity of existing organizations and their ability to pool their collective capacity in county-level healthy homes collaborations. The results of the CPW online survey indicate that most respondents think that local (county) level collaborations would be most effective for them.

**Resource Capacity.** Housing, health, and social services are dependent on federal, state, and grant funding resources to support staff and programs. Pooling resources between organizations to develop a healthy home collaborative may not only provide a greater base of support at the county-level, but could also strengthen organizations' abilities to secure grant funding for the remediation of unhealthy homes.

Time, personnel, and financial constraints have typically limited the ability of individual organizations to comprehensively address unhealthy housing conditions. Imminent changes at the federal and state level in resource allocation may change the way resources are distributed at the state and local levels.

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<sup>16</sup> Glickman and Servon, p. 503.



**Organizational Capacity.** The management structure and internal operations of health, housing, and social service agencies and organizations can provide support beyond existing financial and staff resources. Leadership and experience can augment existing capacity by institutionalizing on-going training opportunities and specialization that complements other participating agencies in healthy homes collaborative efforts at the local or county level.

**Civic Capacity.** Credibility in representing and/or advocating for households currently living in unhealthy housing conditions is essential to the success of housing, health, and social service organizations. For a collaborative to mitigate unhealthy housing conditions, the participating organizations must have strong ties to neighborhood and municipal representation in order to not only mobilize local support, but also to inform and shape the services the collaborative provides.

Many existing organizations involved in housing, health, and social services already command civic capacity at a single county or at a tri-county level. Such service organizations often have strong, yet piece-meal (i.e., proceeding very slowly by degrees) relationships with more localized leadership across disciplines.

**Network Capacity.** The ability of organizations involved in housing, health, and social services to work together within their service community is key to addressing unhealthy housing conditions. The strength of a network depends heavily on (1) relationships, (2) development of commonly accepted practices, and (3) shared information. Households experiencing unhealthy housing conditions often seek aid simultaneously from housing, health, and social service agencies; hence, effective networking capacity is integral to developing efficiencies in providing care to clientele the organizations mutually serve.

Nearly all health, housing, and social service providers CPW spoke with<sup>17</sup> indicated a steady referral system among different service providers, though few indicated a common network that addressed all issues related to unhealthy living conditions.

**Programmatic Capacity.** Undertaking a collaborative healthy homes effort will require direction and specificity. The program will likely require shared policies and strategies dedicated to improving conditions for those living in unhealthy housing conditions. Finding common denominators for a healthy housing collaboration among housing, health, and social services providers may be a critical step towards focusing actions designed to achieve measurable success.

Many organizations have an existing mission statement and several levels of goals and objectives; however, it may well be the case that few organizations interpret these objectives broadly enough to provide comprehensive resolution of unhealthy housing conditions. Nevertheless, many health care providers (and soon-to-

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<sup>17</sup> In late June 2013, CPW conducted a number of phone interviews with professionals providing services addressing healthy housing issues. These interviews augmented the CPW online survey results.

emerge CCOs) have identified metrics related to health provision goals, specifically in terms of prevention strategies.

## Implementation strategies

Flexibility is critical to the collaboration of housing, health, and social service providers around issues associated with healthy homes. The stakeholder organizations described in this study have adapted to many federal and state funding requirements. With many funding structures and programs in flux, flexibility will include responsiveness to changes in focus and direction in response to shifts in the environment in which an organization works (Glickman and Servon, 505). By being flexible in adapting to new funding environments, these organizations can hope to remain resilient (resilience is defined as the ability to weather change and adversity while continuing service delivery) within their organizations while accomplishing mutual objectives around healthy housing environments in their service area. Many organizations and agencies have the fundamental services and informal relationships needed for healthy homes programming. Many respondents and interviewees noted, however, that they see the number of vulnerable households in need of services growing.

Developing and building capacity through collaboration will likely become more challenging as the geographic size increases. This can be explained when looking specifically at certain kinds of capacity: civic capacity becomes more challenging when organizations are further removed from local leadership; network capacity becomes more time consuming when working across larger geographies to maintain relationships, attend meetings, or coordinate services across larger areas. **Healthy homes collaboration will benefit greatly by developing at the county level.**

There are ways to pool resources among larger geographies specific to education and information. The CPW survey results indicate that the four opportunities with the highest response rates of all three groups (housing, social services, and health) were: training offered in their area, educational resources such as best practices, web materials and information, and conferences about healthy homes programs.

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- **Training**
  - **Educational resources**
  - **Best practices**
  - **Web information**
  - **Conferences**
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All three groups indicated a high response rate of interest in learning more about **Cover Oregon**. Housing respondents also indicated interest in their region's **coordinated care organization** and **public health services** that visit the home. Social service respondents indicated interest in coordinated care organizations and the **Oregon Opportunity Network**. Health respondents indicated interest in **community action agencies** in their area, Oregon Opportunity Network, and housing rehabilitation programs in their area.

## Key Findings

1. All social service and housing respondents and the vast majority of health respondents (96%) indicated the need for healthy homes programs in their region (CPW online survey).
2. While there is a high level of interest in augmenting their collaboration efforts to address healthy homes issues, for many organizations, acting upon their interest hinges on the availability of resources and the “capacity” of their organization (CPW online survey).
3. Respondents noted their interest in organizations beyond their own, including: Coordinated Care Organizations (CCOs), Cover Oregon, Oregon Opportunity Network, local community action agencies, and housing rehabilitation programs (CPW online survey).
4. Despite significant interest in addressing unhealthy home environments, barriers may exist to participation by organizations and agencies – especially related to funding and staff capacity (CPW online survey).
5. Federal funding environment and health care innovations drive structural change in service delivery models.
6. This report, proposes that structural change in service delivery models can be facilitated by imaging **organizational capacity** as involving internal and external elements. **Internal elements of capacity** can be described as physical, financial, technologic, and programmatic assets; **external elements of capacity** might involve civic and network assets.
7. Developing and building capacity through collaboration will likely become more challenging as the geography increases, making the county-level ideal for healthy homes collaboration between housing, health, and social service organizations and agencies.
8. **Flexibility** is critical to the collaboration of housing, health, and social service providers around the issues associated with healthy homes.
9. The four opportunities for further coordination that had the highest response rates of all three groups (housing, social services, and health) participating in the CPW online survey were: training offered in local area, educational resources such as best practices, web materials and information, and conferences about healthy homes programs.

## LIST OF ADDITIONAL RESOURCES

- Dowler, David, *Oregon Healthy Homes Strategic Plan*, Prepared for the Oregon Healthy Homes Program by Program Design and Evaluation Services, Oregon Health Authority, June 2013.
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