

**A Health Impact Assessment of Proposed Changes in
Rental Housing Policy in Corvallis, Oregon**

by

Sydney Householder

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Introduction and Background

Housing is the single most important environmental factor associated with high rates of mortality and morbidity (United Nations, 2007). Most Americans spend about 90% of their time indoors, and an estimated two-thirds of that is spent in the home (Klepeis et al., 2001). Studies show a link between substandard housing and poor health outcomes (Dales, Miller, and McMullen, 1997). American rental housing tends to be of lesser quality than owner-occupied housing. According to the American Housing Survey, 11% of renter-households were categorized as having moderate to severe physical and/or structural problems, compared to just 3% of owner-occupied households (National Center for Healthy Housing, 2006). Further, renters who are members of vulnerable populations, such as low-income, minority, undocumented, or student renters, generally face worse housing conditions than their more advantaged counterparts (National Center for Healthy Housing, 2012; Johnson et al, 2009).

The City of Corvallis is home to Oregon State University (OSU). In recent years, the student population of OSU has grown rapidly and, as some have argued, unsustainably. One problem that has risen from the growth of the student population was a reduction in the availability of rental housing. The vacancy rate for rental housing dropped to rates as low as 0.1% in 2010, by one city planner's estimate (Day, 2012). This reduction in rental availability has had an impact on the quality of rental housing available to the students and low-income renters in Corvallis, with rental housing becoming more and more substandard.

The problem of substandard rental housing in Corvallis has become a source of public debate. Local advocates have found fault with the city's current enforcement mechanisms in place to address substandard housing, citing that the housing codes are vague and unenforceable, and that the complaint-based system currently in place does not consider the power-dynamic between landlords and vulnerable tenants. As a response to these concerns, and other issues brought about by student growth and local incapacity to sustain the growth, the City of Corvallis and OSU formed the Collaboration Corvallis project. A work group was created within the project to address neighborhood conditions. One of the recommendations considered by this work group was the implementation of a Property Maintenance Code that would address the non-comprehensive nature of the current Corvallis building and

development codes. The group also considered a possible Rental Licensing Program to work alongside the Property Maintenance Code, one which would contain a mandatory inspection process of all rental units prior to leasing, in order to ameliorate the problems caused by vulnerable tenants underreporting their substandard housing conditions, and to take a more proactive approach to healthy housing.

This project uses the Health Impact Assessment approach to evaluate the projected health impacts of three rental housing policy options. Those options are: 1. no change in the current rental housing codes or complaint-based process; 2. the implementation of a Property Maintenance Code, while maintaining the complaint-based process; and 3. the implementation of a Property Maintenance Code in conjunction with a Rental Licensing Program.

This paper provides a literature review demonstrating the links between health and housing, followed by an overview of the theory behind and methods of code enforcement. I then give a description of the methods and use of the Health Impact Assessment as a policy tool, and then detail the methods I employed during my own research. An overview of the research site, including a housing market analysis and the state of rental housing conditions of the site are provided after. I then lay out the projected health impacts of each of the three stated policy options, followed by recommendations based on the findings. I conclude with a description of the limitations of the Health Impact Assessment, as well as the limitations of my own data collection techniques and options.

Literature on the Health and Housing Link

Substandard housing contributes to poor health and health safety risks. Poor quality, substandard housing contributes to health problems such as infectious and chronic diseases, injuries, and poor childhood development (Krieger and Higgins, 2002; Shaw, 2004). Research shows that low-income and minority people are at a higher risk of environmental-related health problems than their non-minority and higher-income counterparts, and that minorities are more likely to suffer from respiratory problems resulting from their built environment (National Center for Healthy Housing, 2012).

Informed by earlier literature on the links between housing and health, this Health Impact Assessment considers the following key health and safety issues: lead (particularly among children), respiratory ailments such as asthma, pests, injury or death resulting from the creation of illegal housing units, and residential crowding.

Lead

Lead poisoning irreversibly affects brain and nervous system development, resulting in lower intelligence and achievement levels. Most lead exposure occurs in the home, particularly in homes built before 1978, when legislation regulating the use of lead-based paint and plumbing systems was put into effect (Jacobs et. al., 2010). Deteriorating paint in older homes is the leading source of lead exposure for children, who ingest paint chips and inhale lead-contaminated dust (Jacobs et. al., 2010).

Indoor air quality

Indoor air quality plays a critical role in the development and exacerbation of asthma and other respiratory ailments, including cancer. Asthma is the more common chronic disease among children, and approximately 40% of childhood asthma can be attributed to residential air quality (Lanphear et al., 2001). Poor indoor air quality is also especially detrimental to the elderly, who are more susceptible to asthma attacks and respiratory problems.

Indoor air quality can become polluted via a number of sources. One source is through unclean heating mechanisms such as wood-burning stoves, fuel, and bottled gas types. These methods of heating emit pollutants that cause respiratory problems. Methods tenants employ to cope with increasing costs of energy, inefficient heating sources, and drafty doors and windows also contribute to indoor air pollution (Wilkinson et al, 2001). Those experiencing fuel poverty, defined as paying more than 10% of household income on energy costs to maintain adequate heating levels, are more likely to be vulnerable to energy-related illness (Gilbertson and Green, 2010; Evans et al, 2000).

Another source of poor indoor air quality is the presence of dampness/moisture in the home. Moisture frequently leads to mold and/or mildew problems, of which repeated exposure

can cause respiratory ailments, as well as other symptoms such as nausea and headaches (Gilbertson and Green, 2010). The Institute of Medicine (IOM) at the National Academy of Sciences declared damp indoor environments "a public health problem" (IoM, 2004). In 2004 the IOM found sufficient evidence to support a link between indoor mold exposure and upper respiratory tract symptoms, coughing, and wheezing in otherwise healthy individuals and asthma symptoms in individuals with asthma. Again, children and the elderly are especially impacted by ailments caused by damp indoor conditions (Hunt, 1993). Studies have linked indoor mold exposure to negative health outcomes in children: the IOM found evidence linking indoor mold exposure with respiratory illness in otherwise healthy children and an increase in the development of asthma in some children, especially those predisposed genetically to the condition. In other words, molds not only exacerbate existing health conditions, they also serve to create health problems in otherwise healthy individuals, especially children (CDC, 2009). Children who live and sleep in damp conditions are twice as likely to suffer from coughing and wheezing compared to those children who live in dry homes (Gilbertson and Green, 2010). They are also more likely to experience aching and pain, fatigue and nervousness than their counterparts (Gilbertson and Green, 2010). Elderly adults living in damp housing are more likely to have reported aching joints, nausea, loss of breath, and nervousness and anxiety than elderly adults not living in damp housing (Hunt, 1993).

The presence of asbestos in the home can cause very serious lung problems. The inhalation of asbestos fiber causes two main forms of cancer: mesothelioma and lung cancer (CDC, 2009).

Pests

Rodents, including rats and mice, and insects, including cockroaches, ants, and bed bugs, can carry diseases and can serve as strong sources of allergens through droppings (IoM, 2004). Diseases carried by pests, that may be transmitted via bites or lesser forms of contact, can cause a variety of ailments, with some potentially being lethal (Cohn et al., 2006). Allergens resulting from the presence of pests cause respiratory ailments that especially impact asthmatics, children, and the elderly (IoM, 2004). While pests are drawn to dwellings for a

multitude of reasons, they are most likely to have a presence in high-density apartment buildings¹. A lack of proper, consistent solid waste removal is cited as one of the primary reasons for the presence of pests, as well as the enforcement of maintaining clean, safe common areas (Cohn et. at., 2006).

Unsafe, dangerous units

Units may be dangerous due to structural problems that increase the risk of injury or death, such as faulty insufficient wiring or electrical structures, inadequate plumbing, or units constructed without proper entrances and exits in case of fire or other means of building collapse. Units may also be dangerous as a result of poor structural quality. Broken or sagging floor boards and ceilings, lack of stable handrails, inadequate lighting, and broken staircases both indoor and outdoor can lead to increased likelihood of obtaining injury from falling in the home (United Nations, 2007). For example, poorly designed architectural features were found to be the cause of 11% of unintentional injuries around the world (United Nations, 2007). Falls are the leading cause of nonfatal injuries for infants, children, youth, and seniors, and constitute 45% of all injuries in the home that require medical attention in the US. (Jacobs et. al., 2010). Nationally, the most commonly reported causes of home-based falls are falls on steps or stairs, slipping, stumbling, or tripping on same-level flooring, and falls from or out of a building (Jacobs et. al., 2010). Further, while structural deficiencies can obviously occur in any home, evidence demonstrates that rental properties may often exhibit them as chronic problems that go unresolved (Jacobs et. al., 2010).

Risk of injury or death from fire is another major structural issue contributing to unsafe housing. Four of the primary causes of house fires are (1) older, deteriorating wiring systems, (2) damaged components of the electrical system due to proper or improper use, (3) outdated products that are not as effective as newer products in preventing fires, and (4) use of products in ways other than their intended use (Hall and Sekizawa, 1991). Most fire-related injuries and deaths result from inhalation of smoke or toxic gases produced by the fire, rather than burns

¹ Reporting on pests tends to come from high-density apartment dwellings (Cohn et. Al, 2006). Owner-occupied dwellings, however, would not necessarily report the presence of pests to local government departments because the onus is on them, as owners of the dwelling, to deal with the pests.

(Hall and Sekizawa, 1991). Other structural issues related to electrical fire injuries and deaths include the presence of functional, properly located smoke alarms and emergency exits. National data suggest that youth and seniors are at highest risk for fire-related injuries and deaths².

Residential crowding

Residential over-crowding contributes to a number of health and safety risks (Lowry, 1991; ODPM, 2004). It is associated with both physical and mental health ailments, including the risk of spreading infectious diseases, accidental deaths and asthma, cardiovascular disease, stress, and depression (Gilbertson and Green, 2010). A number of studies have linked over-crowding to poor physical and mental health outcomes for children (Evans, 2006). Children who live in crowded housing may have poorer cognitive and psychomotor development or be more anxious, socially withdrawn, stressed or aggressive (Evans, 2006). More crowded households also tend to have more problems with food security, further contributing to health and developmental issues (ODPM, 2004).

Spillover

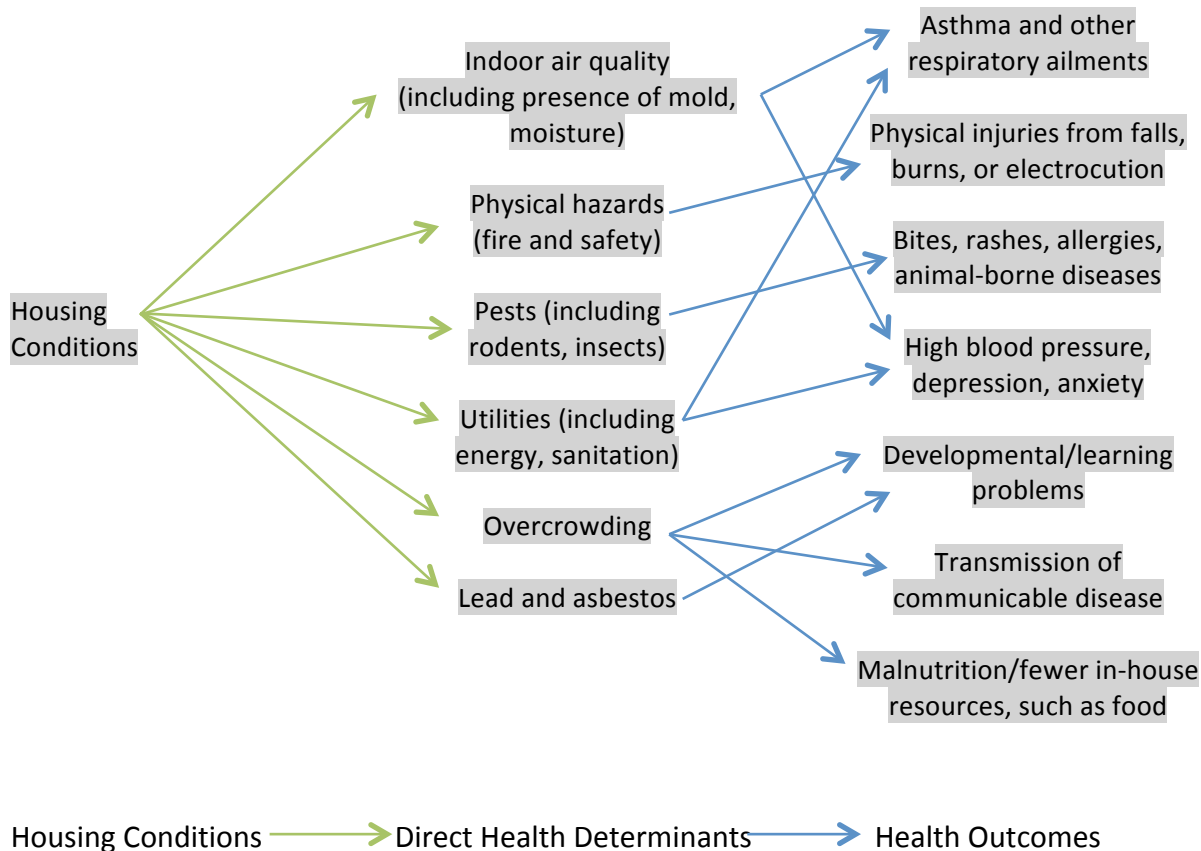
While individuals and their families are personally impacted by low quality housing, society also bears many latent costs of substandard housing. In the United Kingdom, the Cost Effectiveness in Housing Investment (CEHI), a research program operated through the Health and Policy Research Centre at the University of Brighton, designated the term *exported costs* to refer to societal costs generated by under-investment in the housing sector, and specifically, in the rental housing market (Gilbertson and Green, 2010). Examples of exported costs include health care costs incurred as a result of poor physical health outcomes requiring treatment and/or hospitalization, especially when those costs are incurred by individuals enrolled in a form of public health insurance, such as Medicare or Medicaid. Costs of emergency services, such as fire and ambulance service, required to relieve accidents occurring in or around the home, are considered to be exported, especially if they result from property-owner negligence,

² Similar data were not available at a state or local level (Jacobs, 2010).

as may be the case with fires resulting from faulty or outdated electrical wiring systems. Finally, as mentioned in the above review of the literature, child development can be stunted by damp, unsafe living conditions, which may further export costs to society via lost human capital potential and the subsequent earnings-loss that results.

Figure 1 summarizes graphically illustrates these health impacts of housing.

Figure 1: Health Determinants and Health Outcomes



Literature on Enforcement Mechanisms for Safe Housing

In order to prevent the deterioration of housing and to maintain a standard of quality, states and municipalities have codes that establish an acceptable minimum standard of housing quality. Codes can come in multiple forms to cover a range of building/residential standards. These codes include but are not limited to: building codes and development codes that handle the initial structural requirements, codes specific to rental housing properties, maintenance codes that cover how the structures should/must be maintained, and electrical and plumbing

codes. The codes use a variety of enforcement mechanisms, ranging from using suggestive language such as 'should,' to employing a full inspection process to guarantee a blanket enforcement of a code with compelling language such as 'shall.'

Theory of code enforcement

In the rental housing literature, there is a widely accepted concept of a non-waivable duty of habitability that residents ought to be able to expect of the dwellings and buildings in which they live, work, and play. This duty falls under the responsibility of the landlord, and is enforced through the language of the state and municipal codes under whose jurisdiction the dwelling falls. When landlords do not uphold their non-waivable duty, they can be thought of as "milking" the tenants. Kennedy (1987) defined milking as "the decision to reduce maintenance below the level necessary to keep a building in existence as a residential unit." According to Kennedy, premature milking may be rational in a declining housing market, but what is rational to the landlord can have detrimental social effects. Milking and the subsequent deterioration of a property by the owner may affect other property owners' perceptions of the future of the neighborhood, preventing them from maintaining their own properties, and ultimately causing neighborhood deterioration and blight. In order to prevent this from occurring, Kennedy suggests that municipalities engage in selective code enforcement, and that the selection of units on which to enforce code standards ought to depend on the condition of the dwelling being inhabited, and on the net benefit or loss resulting from the enforcement.

Rental housing can be divided, based on its condition, into three categories, in order to evaluate the economic costs and benefits of upholding the duty of habitability. The first category contains units that do not comply with the housing code and are considered unsuitable for habitation. These units can, however, be brought up to code standards with investment. The cost of these investments may be recovered by the landlord later, through higher rents. The economic consequence of a non-waivable duty of habitability in this category of housing is that tenants living in these units will likely pay higher rents, or future tenants of those units will eventually face higher rents.

The second category of rental housing contains non-code compliant units that can be brought up to code through spending that will produce a positive return on the landlord's capital investment. These units tend to be of better quality than the units in the first category. The return on these investments may be reduced by the landlord not being able to fully pass these costs onto tenants via higher rents. In this instance, the non-waivable duty of habitability would have the highest benefit to tenants, producing a transfer of wealth from the landlord to the tenant in the form of improvement in environmental quality that allows the tenant to spend less to mitigate effects of not experiencing upgrades (such as a tenant paying less towards energy costs as a result of weatherization upgrades taken on by the landlord). That transfer would be short term, however, because landlords will only make repairs as long as such costs can be made up for in rents. Meyers (1975) argues: "In the long term, unless rents fully reflect the costs of additional repairs required by the non-waivable duty, the quantity of this category of housing will decrease by attrition, and new investment in such housing will be discouraged." Theorists have expressed support for more strictly enforcing the duty of habitability in this category of rental housing, citing the greater social benefits of income redistribution from landlords to tenants by improving housing conditions without causing rent increases (Ackerman, 1971). Ackerman posited that code enforcement would not lead to rent increases if it is comprehensive (as opposed to selective), and if there exists a group of tenants, "lukewarm families," who are unwilling to pay extra rent for the improved housing (Ackerman, 1971).

The third category of rental housing contains non-complying units for which the cost of code-mandated repairs, combined with other expenses, will result in a negative return on investment. These units are of the worst quality, relative to the first two categories. The consequence of imposing the non-waivable duty of habitability on this category would be eventual abandonment of the properties. The decision to abandon would be based on the landlord's perception of risk of loss and the future potential gain (Meyers, 1975). Theorists have argued that enforcement in this category will reduce housing supply due to eventual abandonment (Komesar, 1973).

When considering the effects of code enforcement, it is important to consider the impacts on tenants, particularly vulnerable tenants, and the impacts on the community-at-large. Markovits (1976) examined the effect of housing code enforcement on poor tenants, finding that code enforcement would produce a net benefit to the entire group, although the extremely poor would benefit less than slightly less-poor tenants. Nevertheless, negative critiques of this disparity in benefit are outweighed by other, less directly quantifiable factors. For example, the children of poorer tenant families, who cannot exercise any economic choice in favor of better housing conditions, would benefit from the safer living environments created by code enforcement. Code enforcement would even benefit residents who are non-renters in the neighborhoods, through various positive externalities, such as reducing their exposure to fire and disease, lowering the risk of crime, redistributing income more equitably, and producing better childhood health and development (Markovits, 1976). Including the value of positive externalities can more realistically determine the benefits of code enforcement. Markovits acknowledged that code enforcement would harm some community members, including the poorest tenants who cannot afford improved housing, the landlords, and the taxpayers who finance the administration of code enforcement. However, he argued that “the value of the average dollar won by the beneficiaries of housing code enforcement is higher than ... the average dollar lost by its victims (1976).”

Code enforcement has been criticized, based on the view that it is paternalistic, removing the ability for some tenants to choose to prioritize spending on other goods and services over better quality housing (Meyers, 1975). Supporters of this position argue that, because many tenants have income constraints that are constricting their housing options to low-cost housing, if code enforcement removes the lowest-cost housing from the market, then the low-income tenants are no longer able to make the choice to forego standard-quality housing in favor of spending their money in other ways, such as on food, health care, or education. I, however, argue that these are not genuine choices, but rather are obligations based on income constraints. Proponents of this position do not appear to have offered any policy solution

*Municipal codes and enforcement mechanisms*³

State and municipal codes vary in scope and enforceability. At one end of the spectrum, codes can be vague and not cover all of the relevant health and safety issues of dwellings. On the other end, codes can be thorough, comprehensive and ensure that all preventable health and safety risks can be soundly enforced. For dwelling units, the model code adopted by thousands of municipalities across the globe is the International Property Maintenance Code (IPMC). The IPMC was first developed in 1998 by a committee appointed by the International Code Council. The committee consisted of representatives of the three statutory members of the International Code Council at that time- Building Officials and Code Administrators International, Inc. (BOCA), International Conference of Building Officials (ICBO) and Southern Building Code Congress International (SBCCI). The committee drafted a comprehensive set of regulations for existing buildings that was consistent with the existing model property maintenance codes at the time. The principles of the IPMC (1998) were written with the intent to:

“establish provisions consistent with the scope of a property maintenance code that adequately protects public health, safety and welfare; provisions that do not unnecessarily increase construction costs; provisions that do not restrict the use of new materials, products or methods of construction; and provisions that do not give preferential treatment to particular types or classes of materials, products or methods of construction.”

The method or process by which violations of respective codes are brought to the attention of code enforcement officials is indicative of the code’s level of enforceability. Two processes discussed in this paper are complaint-based processes and inspection or licensing processes.

A cursory scan of a wide variety of cities illustrates that municipalities tend to operate under a complaint-based process, with generally similar enforcement mechanisms. In a general

³ In the *Theory* section just previous, ‘code enforcement’ assumes a blanket form of code enforcement; i.e., an inspection process of dwelling units. In the section, I refer to a complaint-based process as a method of code enforcement, as well, given that most municipalities do not have an inspection process. The predominant form of enforcement is via a complaint-based process.

complaint-based process, complaints are first made (by anyone - a tenant, neighbor, advocate, etc.) to the landlord or property manager for correction. Upon nonresponse and/or inaction, the complaint can then be taken to the local agency that oversees code enforcement, such as a local housing division, building and development division, or code enforcement office, for example.

Healthy housing advocates argue that complaint-based processes impose unnecessary barriers to health housing (OPHI, 2012). Advocates cite that vulnerable tenants will underreport substandard housing conditions and housing code violations to both their landlord and the local government agency. This underreporting happens for two reasons. The first reason is that tenants fear retaliation in the form of eviction, rent increases, or reporting of undocumented family/friends (WNHS and BCHD, 2012; OPHI, 2012). The second reason is there are language and knowledge barriers that prevent tenants from using the correct and efficient channels to report, if they choose to pursue a complaint (WNHS and BCHD, 2012; OPHI, 2012). Health problems are further exacerbated when the problems are unaddressed. The Community Alliance of Tenants issued a report in 2005 that found that cost-burdened tenants will refuse to complain because they fear retaliation (CAT, 2005). The inherent power dynamic between landlord and tenant is intimidating to many renters, who, as stated previously, fall disproportionately into minority categories, furthering the power divide (CAT, 2005).

A second method by which code violations are brought to the attention of local officials may be through an inspection process. Inspection processes can occur through various modes: at random, regularly and scheduled, in a need-based fashion (such as a landlord having previous complaints against his property), etc. The frequency and thoroughness of an inspection process is determined by local governments/agencies to correspond with local needs. In order to ensure each unit that needs to be inspected actually receives an inspection, municipalities might implement a licensing program for its rental properties, with receipt of the license being dependent upon passage of an inspection.

Healthy housing advocates tend to be more in favor of inspection processes, citing the above-mentioned problems with complaint-based processes, such as underreporting that leads to exacerbated health conditions. Housing inspections and the subsequent improvements to

housing conditions and health safety are shown to improve health outcomes of renters (OPHI, 2012). The city of Portland, Oregon conducted a pilot program in which two neighborhoods were assigned two different housing quality responses: one neighborhood had an enhanced complaint-based system and property maintenance code, and the other had a rental licensing program. The program found that the housing inspections and the subsequent improvements to housing conditions yielded an overall reduction in the occurrence and severity of multiple health problems (OHPI, 2012).

As mentioned, municipalities tend to operate under a complaint-based process. There are several likely reasons for this. One is that the administrative costs to undergo inspections of all, or even most, of the dwellings in a municipality can be financially out-of-reach (Gardner, 2008). Local governments, especially in recent years, have budgetary and administrative constraints that would not be able to sustain an inspection process.

Another reason for the use of complaint-based process over an inspection process may be that city officials and local residents may not think that an inspection process is necessary. Numerous municipalities have attempted to implement inspection processes and failed, or have actually implemented them and have had them subsequently repealed, due to backlash from community members- most frequently landlords and/or property managers (Gardner, 2008). There may also be the perception that the complaint-based process is sufficient, with the idea that if an individual or family is living in conditions that warrant a complaint, then the individual or family will inevitably complain. This view assumes that there are not power-dynamic issues that would inhibit people from complaining, as discussed above. Further, as will be described in more detail in the next section, the public's conception of what constitutes "environment" is evolving to include the indoor home environment, so the social responsibility to promote environmental health is, too, growing to include protections for poor indoor health conditions.

Methodological approach

Health Impact Assessment

A Health Impact Assessment is defined by the World Health Organization as:

“a combination of procedures, methods and tools that systematically judges the potential, and sometimes unintended, effects of a proposed project, plan or policy on the health of a population and the distribution of those effects within the population (WHO, 1999).”

The Health Impact Assessment (HIA) is a structured method for assessing and improving the health consequences of projects and policies not traditionally considered in the health sector. It is a multidisciplinary process that combines a range of qualitative and quantitative data in a decision-making framework (Heller et. al., 2013). The potential impacts identified by HIA are based on evidence collected from a variety of resources including peer-reviewed literature, professional expertise and accepted best practices (Human Impact Partners, 2012). The use of HIA's in the US grew out of the use of Environmental Impact Assessments required by the National Environmental Policy Act of 1969 (NEPA). State-conducted EIA's, also called “mini-NEPAs,” were created in order to create a more interdisciplinary approach to health inequities resulting from public policies and projects. Historically, EIAs had been criticized for failing to take into account the effects of policies or projects on health in general, because they tended to only evaluate issues such as toxic exposures and sources of biophysical issues (Salkin and Ko, 2011). By the late 1980s, the scope of the definition of the term “environment”, as it was used in environmental health policy, expanded to include social, cultural, and human health considerations, which consequently led to the growth of interest in the health outcomes of development policies and projects (Heller et. al, 2013). In 1999, the World Health Organization created the *Gothenburg Consensus Paper*, which introduced and outlined the concept of HIA and eventually led to the development and implementation of HIA as a method for evaluating the potential effects of policies and projects (WHO, 1999). In 2003, the World Bank created a requirement that an HIA be conducted for all large projects receiving World Bank funds (Salkin and Ko, 2011). The first time an HIA was integrated into a federal EIA occurred in 2007 with the proposed Alaska North Slope Oil Lease to evaluate the projected health impacts of expanding oil and gas development on the health of Inupiat residents, an indigenous population in the region. The use of HIA has since grown to include projects and policies such as: paid sick days in California, the development of affordable housing, minimum

wage ordinances, the creation of bike lanes, and permitting and siting new power plants (Human Impact Partners, 2012).

There are six stages in the HIA process. The first phase, the screening phase, determines the need for, and likelihood of success of, an HIA. Second, the scoping phase establishes the

Figure 2: Stages of the Health Impact Assessment Process

Screening

- determines need for, and likelihood of success of, HIA

Scoping

- establishes the objectives of HIA; creates an outline for the steps that will be taken in order to carry out the process

Assessment

- involves 2-step process that first describes the baseline health of affected populations; predicts potential health effects

Recommendations

- suggested policy options based on findings from assessment phase

Reporting

- document and present findings and recommendations to stakeholders and decision-makers

Monitoring & Evaluation

- can include monitoring adoption and implementation of recommendations or monitoring changed in health or health

objectives of the HIA, and creates an outline for the steps that will be taken in order to carry out the process. The assessment phase, third, has two steps: describing the baseline health of the people and groups affected by the policy, and then estimating the potential health effects using a variety of data methods and sources.

Recommendations are made in the fourth phase, based on findings from the assessment phase, considering both the literature review and the data collected by the researcher. The fifth phase requires reporting the findings. The final phase is monitoring and evaluation of the implemented policy (Heller et. al., 2013). This HIA will be completed through the reporting phase, with recommendations to monitor and evaluate changes in housing policies made by the city council in the future.

The HIA is a valuable policy tool for ensuring a more equitable distribution of health impacts across all communities. It is rooted in the principle of health equity, aiming to reduce or eliminate all health inequities that result from factors that are avoidable and unjust (Whitehead, 1990). Health inequities are disparities in health outcomes that arise from unjust

differences in social, economic, environmental, and political conditions. Health inequities are mostly the result of the Social Determinants of Health (SDOH). SDOH are defined by the World Health Organization as “the conditions in which people are born, grow, live, work, and age, including the health system (WHO, 2012).” Studies have found that about 20 percent of individual health outcomes can be attributed to genetic predispositions, while over 70 percent are due to social and environmental factors, including behavior, which was also found to be influenced by social and environmental factors (Schroeder, 2007; McGinnis et. al., 2002). Vulnerable populations endure greater health inequities because they face greater obstacles to healthy opportunities due to some social or economic characteristic, such as race, ethnicity, religion, socioeconomic status, gender, age, disability status, gender identity, or other historically oppressed community (DHHS, 2012).

In order to produce equitable decision-making outcomes, maximizing democracy and civic participation are central objectives of the HIA processes (Quigley, 2006). The goal of equitable health policies is not to reduce or eliminate all health differences so that everyone has the same health level- rather it is to reduce or eliminate health inequities that are a result of avoidable and unjust factors (Whitehead, 1990).

Assessing housing impacts on health

Data for this HIA come almost entirely from archival and secondary data sources. Anonymous key informants offered assistance in the form of ideas and interpretations of public data, but the actual assessment of health impacts is based on my consolidating and evaluating the results of publically-available data and reports from various organizations concerned with housing and community health. Quantitative data came from several sources, including the American Community Survey, Oregon Employment Data, the City of Corvallis website, a collection of data from local social service agencies (both public and nonprofit), and real estate data-gathering sites. The most common method used by local governments to evaluate housing conditions is via the ACS, which is administered by the Census Bureau. Local agencies, such as the Benton County Health Department utilize these sources when completing reports such as a Community Health Assessment (CHA) and Community Health Improvement Plan

(CHIP). Benton County has recently completed a CHA and a CHIP, and used the most recent ACS data to support their reports. Information from said reports was used for the purpose of this report.

Various agencies, such as Oregon Housing and Community Services, their nested agencies, Community Services Consortium, and Willamette Neighborhood Housing Services, keep records of the number of applications received for housing rehabilitation and weatherization programs. This information provided a general estimate of the number of low-income households whose income qualifies them for assistance and who are in need of home-related repairs and upgrades.

Data regarding complaint rates and reasons for such complaints was collected from records kept from the Corvallis Rental Housing Program, by which complaints are made when tenants do choose to file a complaint with the city regarding their housing. However, the Rental Housing Program is a complaint-based program, so the results are likely underreported and possibly do not accurately represent the experience of an average Corvallis tenant.

Willamette Neighborhood Housing Services has conducted “Windshield” surveys in recent years, providing evaluations of the exterior of a dwelling based on an established list of indicators created by their parent organization, NeighborWorks America. These surveys only evaluated a portion of one neighborhood in Corvallis, and the indicators did not necessarily provide an adequately thorough assessment to determine the safety or health risks of the dwelling unit. They were conducted in 2010, 2011, and 2012.

Key informants provided suggestions and interpretations of data and sources, but the analysis reported reflects my own analysis, unless indicated otherwise. Key informants included: Benton County Health Department officials, environmental health experts, community health liaisons for the Latino community, Senior and Disability advocates, student advocates, Code Enforcement officials, affordable housing advocates, Community Services Consortium workers, city planners, public health nurses, housing inspectors, employees of Willamette Neighborhood Housing Services, Linn-Benton Housing Authority, and tenants. Community meetings were used to increase representation of various stakeholder groups in the assessment. The Health Equity Alliance, a local collaboration of public health advocacy groups,

hosted several public meetings in 2012-13 which invited community members and group representatives to participate in discussions around safe and healthy housing, problems they/their served-populations face in the rental housing market, and recommendations for local housing policies to make housing more safe, healthy, and accessible. Public forums held in 2012-13 by the Collaboration Corvallis project to discuss the rental licensing program/property maintenance code, were also used to solicit feedback and gain a better understanding of the perceived implications held by the stakeholders in attendance of the proposed changes in rental housing policy.

Results from a focus group of Latino residents of Corvallis, conducted by the Benton County Health Department and Willamette Neighborhood Housing Services, were also used to further support the representation of vulnerable stakeholders' experiences in the assessment. Finally, results from the Benton County Community Health Assessment contain a Targeted Needs Assessment section, which is also used for the purpose of this assessment. The Targeted Needs Assessment consists of 20 key qualitative targeted assessments conducted by Benton County Health Department in collaboration with other key community partners over a period of five years. Targeted assessments help to better describe the health issues that affect vulnerable populations that difficult to capture through other standard data collection methods.

Research Site: Corvallis- Demographic, Economic, Racial/Ethnic, Social, Health Characteristics

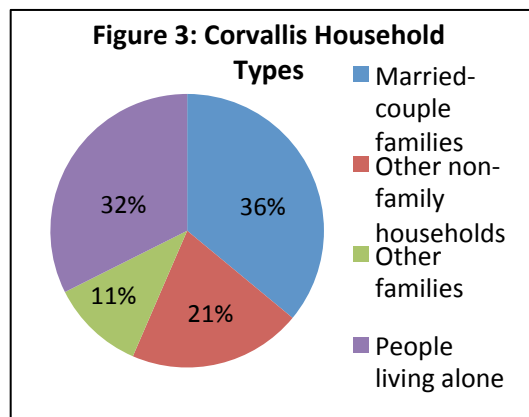
Corvallis is the population center of Benton County, containing about two-thirds of the total county population - 54,462⁴ of the county's 85,579⁵ residents. Because of this, the Corvallis Metropolitan Statistical Area (MSA) represents all of Benton County. Statistics representing Benton County may also be used to represent Corvallis demographics and data. The following section details demographic, economic, racial, and ethnic characteristics, an overview of Oregon State University and the student population, an outline of the housing market of Corvallis, a description of the social and political culture, and finally, the current enforcement mechanisms in place to address poor housing conditions. The purpose of this

⁴ ACS 2009-2011 3-year estimates

⁵ ACS 2009-2011 3-year estimates

section is to provide a context behind Corvallis as a community and the current discussion around housing quality.

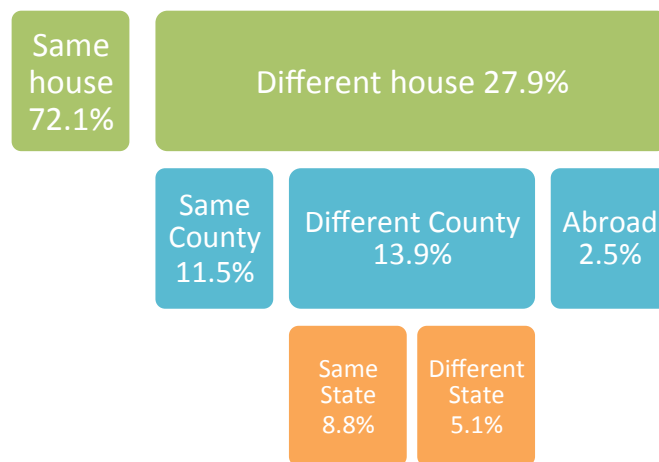
Demographic and economic characteristics



There are an estimated 21,800⁶ households in Corvallis. Owner-occupied units represent 43.5%⁷ of households, and renter-occupied represent 56.5% (This is substantially different from the national averages of 65%⁸ owner-occupied and 35% renter-occupied). The average household size is 2.3⁹, with renter-occupied households averaging 2.25 residents and owner-occupied units averaging 2.48 residents.

Families make up about 47% of households, with an estimated 9,963¹⁰ households being made up of families. This figure includes both married-couple families (36.8%) and other families (10%)¹¹. Figure 3 summarizes this breakdown of family types. Among other families, 7.5% are female-headed including children under 18 years of age with no husband present. Nonfamily households make up 53.3%¹² of all homes in Corvallis. Most nonfamily households are composed of people living alone, but some are people living in households in

Figure 4: House of Residence Last Year



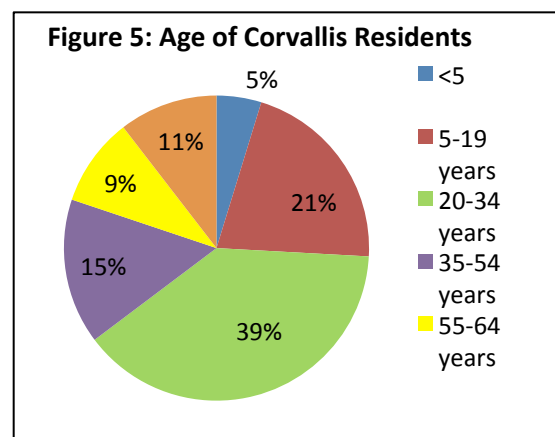
which no one is related to the head of the household (17.2%). The high portion of renter-occupied and non-family households is a partial result of the OSU student population living off-

⁶ ACS 2009-2011 3-year estimates
⁷ ACS 2009-2011 3-year estimates
⁸ ACS 2009-2011 3-year estimates
⁹ ACS 2009-2011 3-year estimates
¹⁰ ACS 2009-2011 3-year estimates
¹¹ ACS 2009-2011 3-year estimates
¹² ACS 2009-2011 3-year estimates

campus, which will be discussed in more depth later. In 2011, more than an estimated one quarter¹³ of residents had lived in a different house during the previous year. Shown in figure 4, about 73%¹⁴ of the population who had moved during the previous year had lived in either Benton County or Oregon prior to moving.

The median age of Corvallis is 25.8¹⁵. The 20-34 year age block is the largest, containing nearly 40%¹⁶ of residents, following by 15-19 year age block, with about 20%. Two-thirds of residents are under the age of 35, provided in Figure 5. Twenty percent of all households have one or more people under the age of 18; 17.6% have one or more people 65 years and old. Among the noninstitutionalized population in Corvallis, 9.6%¹⁷ of total residents reported having a disability. About 5% of children and 33% of persons over the age of 65 were disabled.

Benton County has the highest Median Family Income (MFI) in the state of Oregon. According to Housing and Urban Development, the estimated MFI for Benton County in 2012 was \$74,200. Much of the differentiation in MFI, relative to other Oregon counties, can be



attributed to the fact that Benton County's economy is anchored by government and high-tech manufacturing industries. The large number of government (including university) employees gives the county a more stable job market while higher-paying technical manufacturing jobs help elevate its MFI. As of December 2012, Benton County also has the lowest unemployment rate in the state, with a rate of 6.0% (Oregon Employment Data, 2012). Most of these jobs are located in Corvallis. Most income in Benton County, about three-fourths, is received in the form of earned wages (Oregon Employment Data, 2012). Social Security/SSI, retirement income, and cash public assistance constitute the remaining quarter of income sources. Worth noting is that one-fourth of the population of Benton County is reliant on a fixed income, and when faced

¹³ ACS 2009-2011 3-year estimates

¹⁴ ACS 2009-2011 3-year estimates

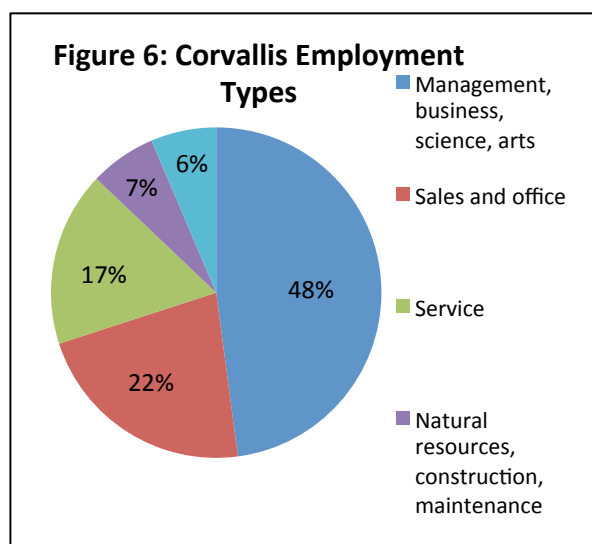
¹⁵ ACS 2009-2011 3-year estimates

¹⁶ ACS 2009-2011 3-year estimates

¹⁷ ACS 2009-2011 3-year estimates

with rising rent prices, this may put a strain on some already tight household budgets for families who do not own their homes.

There are 25,970¹⁸ civilians aged 16 years and over employed in the Corvallis labor force. Figure 6 shows that management, business, science, and arts occupations make up the greatest portion of occupations (47.9%¹⁹). The second highest occupation is in sales and office positions (22.1%). Service occupations represent a slightly smaller portion than sales and office (17.1%). Natural resources, construction, and maintenance occupations and Production, transportation, and material moving occupations split the remaining workforce (6.5% and 6.4%, respectively).



The mean earnings for male full-time, year-round workers are \$47,114²⁰; their female counterparts earn \$36,239.

¹⁸ ACS 2009-2011 3-year estimates

¹⁹ ACS 2009-2011 3-year estimates

²⁰ ACS 2009-2011 3-year estimates

Corvallis has a high level of educational attainment. As provided in Figure 7, more than

Figure 7:
Educational Attainment of 25+ Population

Less than 9th grade, no diploma	2.1%
9th to 12th grade, no diploma	3.2%
High school graduate (includes equivalency)	13.6%
Some college, no degree	22.0%
Associate's degree	6.4%
Bachelor's degree	28.8%
Graduate or professional degree	23.9%

50%²¹ of the population over the age of 25 has a Bachelor's degree or higher, with about a quarter of the population having a Graduate or professional degree. This is in large part due to the presence of OSU, but is also due to the high portion of residents employed in the management, business, science, and art sector. Even though Corvallis has a higher-than-average education level, there remains just over five percent of residents that have not completed high school or an equivalent, and another 14% who have never attended college. Additionally, about one in five Corvallis residents have attended college, but have

not completed a degree. These residents, based on national trends, have likely incurred some amount of college debt, but did not necessarily increase their earning potential as a result.

Despite the high median incomes and low unemployment, the poverty rate in Benton County is higher than the state of Oregon and the nation-at-large²². The county poverty rate increased 9.8% between 2000-2010, moving from 9.3%²³ to 19.1% over the ten-year period, compared to a 5.2%²⁴ increase for Oregon and 4%²⁵ for the nation. The per capita income in 2011 was \$22,259²⁶. Nearly one-in-five (18%) Corvallis families earn less than \$25,000 per year. Thirty percent²⁷ of all Corvallis residents were living in poverty in 2011, including 37% percent of single, female-headed households- more than half of which were households with children only under the age of five (Figure 8). There were an estimated 665²⁸ (3.1%) households

²¹ ACS 2009-2011 3-year estimates

²² Small Area Income and Poverty Estimates, US Census Bureau, 2012

²³ Small Area Income and Poverty Estimates, US Census Bureau, 2012

²⁴ Small Area Income and Poverty Estimates, US Census Bureau, 2012

²⁵ Small Area Income and Poverty Estimates, US Census Bureau, 2012

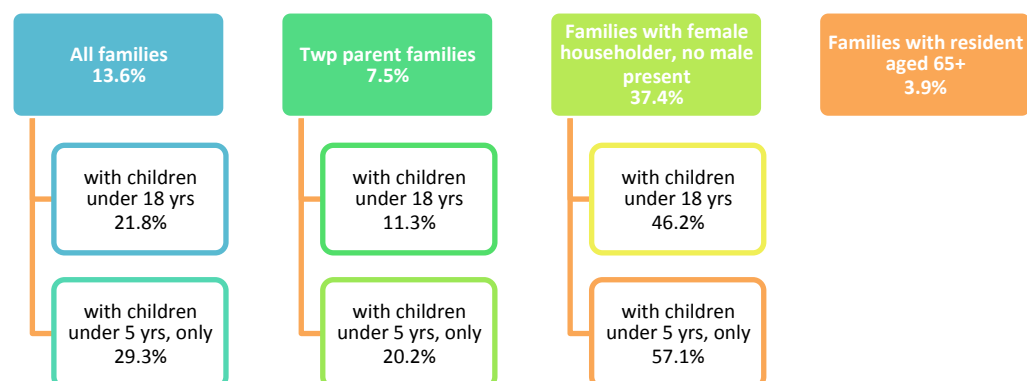
²⁶ ACS 2009-2011 3-year estimates

²⁷ ACS 2009-2011 3-year estimates

²⁸ ACS 2009-2011 3-year estimates

receiving cash
public
assistance
income in
Corvallis in
2011. The
average
annual cash
assistance
amount

Figure 8: Poverty Status by Family Type



received was \$4,278²⁹. In 2011, an estimated 3,087³⁰ (14.6%) households had received SNAP benefits in the previous 12 months. In the Corvallis school district, SD 509J, 34.9% of school-aged children were eligible for free or reduced lunch, or a total of 2,278 children (BCHD, 2012). The Linn-Benton Housing Authority subsidizes approximately 550³¹ Section 8 units in Corvallis, but disclosed that there was still more than a year-long waiting list to receive a voucher in Benton or Linn counties due to high demand for rental assistance. The Figure 8, above, shows the break-down of poverty-status by family type.

It is important to consider poverty and income³² and receipt of social assistance when discussing healthy housing because these factors influence a family's ability to pay for basic maintenance procedures, weatherization upgrades, energy, home repairs, appliance upgrades, etc. It is also important when considering the financial power-dynamic existing between landlords and tenants. With a lower-than-average vacancy rate (as will be detailed later), and a higher portion of rental housing relative to owner households, lower income tenants are faced with fewer affordable housing options, and especially fewer *quality* affordable housing options. Landlords may not be responsive to the needs of tenants living in cheap, poor quality units

²⁹ ACS 2009-2011 3-year estimates

³⁰ ACS 2009-2011 3-year estimates

³¹ Linn-Benton Housing Authority, email correspondence March 2, 2013

³² Income statistics may be skewed downwards due to the sizable population of students, but the effects of limited income are the same regarding property maintenance and living conditions.

because these tenants are not as easily able to find alternative housing if they are unsatisfied with their current housing conditions.

Racial and ethnic characteristics

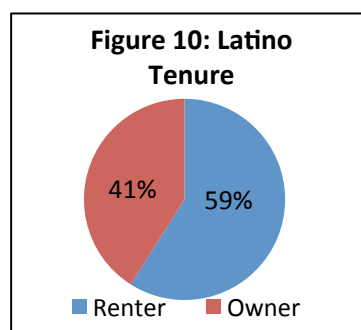
Corvallis is not a very racially diverse city. The racial make-up of Corvallis is predominantly white, with white people constituting 87.2%³³ of the total population (Figure 9).

Figure 9: Race and Ethnicity							
	Population	White	Black	Asian	American Indian/Native	Other	Hispanic/Latino
Corvallis	54,466	87.2%	1.8%	8.9%	2.7%	2.0%	8.0%

The largest racial minority

in Corvallis is Asian, representing 8.9%³⁴ of the population. The high Asian population is largely attributable to the presence of OSU and the tech industry, both of which employ higher portions of the Asian communities. The second highest minority population is Native American, with just 2.7%.

The largest minority population by ethnicity is Hispanic/Latino. Hispanic/Latinos represent about 8%³⁵ of the population. The Hispanic/Latino population of Corvallis had



increased from about 5.5%³⁶ in 2000 to the 2010 rate of 8%. This represents a 45% increase over the ten-year period. There were an estimated 1,335³⁷ Hispanic/Latino households in 2011. Of these, about 41%³⁸ were owner-occupied households and the remaining 59% were renter-occupied, shown in Figure 10. The median Hispanic/Latino household income in 2011 was \$34,145^{39, 40}.

Correspondence with the Benton County Health Department provided that members of the Latino community in Corvallis serve the community in a variety of ways, but most employment

³³ 2010 Census

³⁴ 2010 Census

³⁵ 2010 Census

³⁶ 2000 Census

³⁷ ACS 2009-2011 3-year estimates

³⁸ ACS 2009-2011 3-year estimates

³⁹ ACS 2009-2011 3-year estimates

⁴⁰ Does not include wages for undocumented workers, so median income may be skewed upward

is concentrated in the food service (processing, serving, kitchen aid) and in farm work on the outside of town, such as forestry work, vineyards, grass seed farms, and nurseries.

Latino/a residents may find it difficult to secure safe, affordable, and appropriate housing, possibly due to a lack of appropriate documentation and/or (good) credit, high rent prices, and expensive deposits, or intimidation and discrimination faced during the application process. Though some of these problems are not particular to the Latino community, they are often more likely to experience these shared problems due to lower income, mentioned above. Additionally, documents and applications are often not available in their native language. Latinos may also feel discrimination from landlords when applying for housing due to their accent (Public Forum, 2013; WNHS, 2010). Due to the combination of high rent prices and low incomes of Latino/a workers in Corvallis, these families may be obligated to “double-up” in housing to mitigate high rent costs and to avoid the intimidating and discriminatory application process.

Housing location is especially important for undocumented residents because of their inability to obtain a legal driver’s license⁴¹. This has led to an increased need for housing near schools, grocery stores, and bus lines. Housing options limited by transportation restrictions, according to the Benton County Health Department, has contributed to the concentration of Latino families in specific neighborhoods of Corvallis: Hobart, Garfield, Division, Pickford, Leonard and Circle. These neighborhoods contain a significant portion of the high-density housing in the city, and are located in more commercial-type areas.

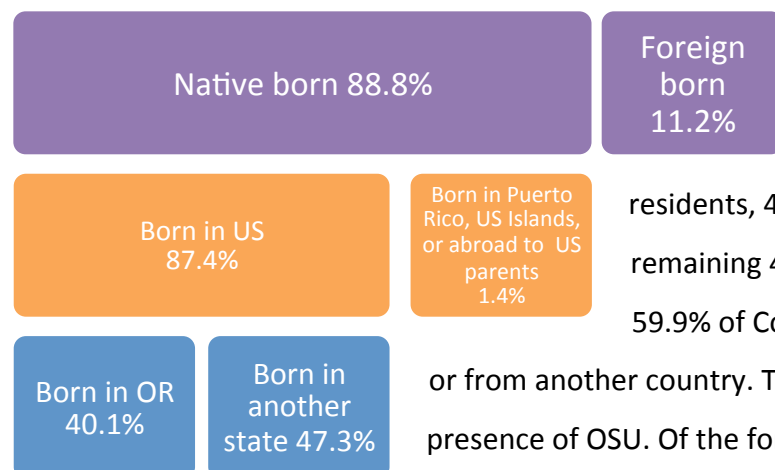
An estimated 13.7%⁴² of people at least five years old living in Corvallis in 2011 spoke a language other than English at home. Of those speaking a language other than English at home, 4.9% spoke Spanish and 8.8% spoke some other language. 5.3% of those speaking a language other than English at home reported that they did not speak English “very well.”

⁴¹ This problem became a problem in 2007, when, by executive order from the Governor, driver’s licenses were no longer available to undocumented residents (Har, 2007).

⁴² ACS 2009-2011 3-year estimates

Figure 11 provides that about 89%⁴³ of Corvallis residents are native born; 87.4% were

Figure 11: Place of Birth



born in the United States and 1.4%

were born in Puerto Rico, US

Islands, or abroad to US parents.

Of the 88.8% native born

residents, 40.1% are native Oregonians and the remaining 47.3% were born in another state.

59.9% of Corvallis residents are from out of state

or from another country. This is largely attributable, again, to the

presence of OSU. Of the foreign born population, three out of

four⁴⁴ are naturalized US citizens (74%) and the remaining one

fourth are not citizens (26%). A little over half⁴⁵ of the foreign-born population entered the county before 2000 (53.6%).

Student population

One of the greatest catalysts of the housing quality problem in Corvallis has been the growing OSU student population. The student enrollment in Fall 2012 at the Corvallis campus was 26,393⁴⁶. Compared to the Fall 2011 enrollment of 24,977⁴⁷, this represents a 5.7% increase in student population over a one-year period. Since five years ago, when the Fall enrollment was 19,753⁴⁸, there has been a 26% increase in the student population in Corvallis. Beginning in Fall 2013, OSU will be implementing a new program called First Year Experience, requiring all first-year students to live on campus. Exceptions may be made upon request and with justification. This is meant to increase retention and relieve stress on the local rental housing market (OSU FYE, 2013).

⁴³ ACS 2009-2011 3-year estimates

⁴⁴ ACS 2009-2011 3-year estimates

⁴⁵ ACS 2009-2011 3-year estimates

⁴⁶ OSU enrollment summary, <http://oregonstate.edu/admin/aa/ir/enrollmentdemographic-reports#enroll-sum>

⁴⁷ OSU enrollment summary, <http://oregonstate.edu/admin/aa/ir/enrollmentdemographic-reports#enroll-sum>

⁴⁸ OSU enrollment summary, <http://oregonstate.edu/admin/aa/ir/enrollmentdemographic-reports#enroll-sum>

Social and Cultural

Politically and ideologically, Corvallis is considered to be a progressive community. Corvallis can be classified as a College Town, based on Gumprecht's criterion for what distinguished a municipality as a College Town (2008). According to Gumprecht, College Towns have the following characteristics: student population constituting at least 20% of the city population, younger-than-average residents, higher-than-average levels of educational attainment and subsequent higher levels of affluence, more workers in white-collar occupations, high costs of living (especially housing), more transience among residents, residents more likely to rent their homes and have roommates, and have higher levels of diversity than neighboring communities (Gumbrecht, 2008, p 6-14). There is a variety of community-oriented nonprofit organizations who are heavily involved in the community, including Willamette Neighborhood Housing Services, Community Outreach, Inc., Casa Latina, CARDV, the Linn-Benton Food Share (and its subsidiary organizations), and more. The Occupy Corvallis organization is still active. Two of the nine members of the Corvallis City Council represent the Green Party, and the mayor is a liberal Democrat. The local government and local organizations have generally good relations, and a willingness to work together to better the community.

In 2011, the city of Corvallis and Oregon State University launched a project called Collaboration Corvallis in order to address the growth of the student population and its impacts on the city-at-large. The structure of this project includes three work groups, each group dealing with a particular category of issues: Neighborhood Livability, Neighborhood Planning, and Parking and Traffic. Each work group is comprised of representatives from local organizations and advocacy groups, local government officials, representatives from OSU, community-members (including some students), and specialists from relevant fields. Because the purpose of the project was to incorporate community-wide input into the policy-making process around student growth, the issue of rental housing quality was considered by the Neighborhood Livability work group, and solicited as much community input as possible from health department officials, housing agency specialists, student and Latino advocates, etc. to work towards representing all stakeholders. However, as was acknowledged concerning problems with the complaint-based process, student and minority tenants were

underrepresented in the public participation process, with most of the public meetings being dominated by landlords and property management representatives speaking against the proposed inspection process (Public Forum, 2013).

Health conditions

Asthma is among the most prevalent chronic ailments facing Benton County residents (CHA, 2012). In Benton County, roughly one in ten adults (9.1%) has asthma. For the past 10 years, the percent of Oregonians with asthma has been steadily increasing, and from 2003-2010, Oregon ranked among the top 10 states with the highest percentage of adults with asthma in the nation (CHA, 2012). The rate of hospitalization due to asthma is generally lower in Benton County (3.7%) compared to the state-at-large (5.9%) (OHA, 2010). Approximately 10.4% of 8th and 10.5% of 11th graders in Benton County were diagnosed as having asthma (OHA, 2010). The Oregon Health Authority cited the following as common asthma triggers for residents in Oregon (in no particular order): tobacco smoke and other smoke, animals with fur or feathers, dust mites and cockroaches, mold or mildew, and air pollution (inside and outside) (OHA, 2010).

Falls are a major cause of injury and hospitalization, and the 10th leading cause of death among older adults in Oregon (BCHD, 2012). Nationally, nearly one in three older adults falls each year, and between 20 and 30 percent of those who fall suffer injuries. Fall hospitalization rates increase quite steeply as adults age; the rate of fall hospitalizations for adults 75 years and older is more than 6 times the rate for adults 60-74 years. Older adults hospitalized for falls are nearly 6 times more likely to be discharged into long term care compared to older adults hospitalized for other conditions (BCHD, 2012). In Benton County, injuries caused by falls that resulted in hospitalization represented 319.1 per 100,000 hospitalizations for those aged 65-74. This number increases to 1115.7 per 100,000 for those aged 75-84, and further increases to 2916 per 100,000 for those 85 years and above (BCHD, 2012).

Housing market analysis

Corvallis has an estimated total of 23,089 housing units⁴⁹. Roughly 21,800⁵⁰ are occupied- with 43.5% occupied by owner households (9,727) and 56.5% occupied by renters (12,025). Vacant units are estimated to number about 1,792⁵¹. The median year a housing unit was constructed is 1976⁵², and 37.5% were constructed prior to 1970. Just 12.4%⁵³ of Corvallis housing was constructed in 2000 or later. As discussed in the review of the literature, housing built before 1970 is subject greater health risks due to a number of issues. I here provide the

Figure 12: Selected Housing Characteristics of Corvallis and Benton County

	Corvallis	Benton County
Total housing units	23,089	36,258
Vacant housing units	1,792	3,370
Owner-occupied units	9,272	19,430
Renter-occupied units	12,025	13,458
Percent owner-occupied units	43.5%	59.1%
Percent built before 1970	37.5%	36.1%
Percent built 2000 or later	12.4%	16.5%
Median year structure built	1976	1976
Median value owner-occupied units	\$256,900	\$255,900

information for greater Benton County, for comparison of Corvallis housing to its surrounding communities (Figure 12).

Shown below in Figure 13, the plurality of Corvallis housing units are in the form of one-unit, detached structures, which represent 47.6%⁵⁴ of total housing units. The second highest portion of housing structures are structures with 20 units or more- the highest density housing structures represent the second highest type of housing found in Corvallis. One in seven housing units is located in high density developments. About 40% of rental property in Corvallis is owned by just a few large property management companies with the remaining 60% owned by “mom and pop” landlords. There are approximately 2500 landlords in Corvallis (RHP,

2013).

⁴⁹ ACS 2009-2011 3-year estimates

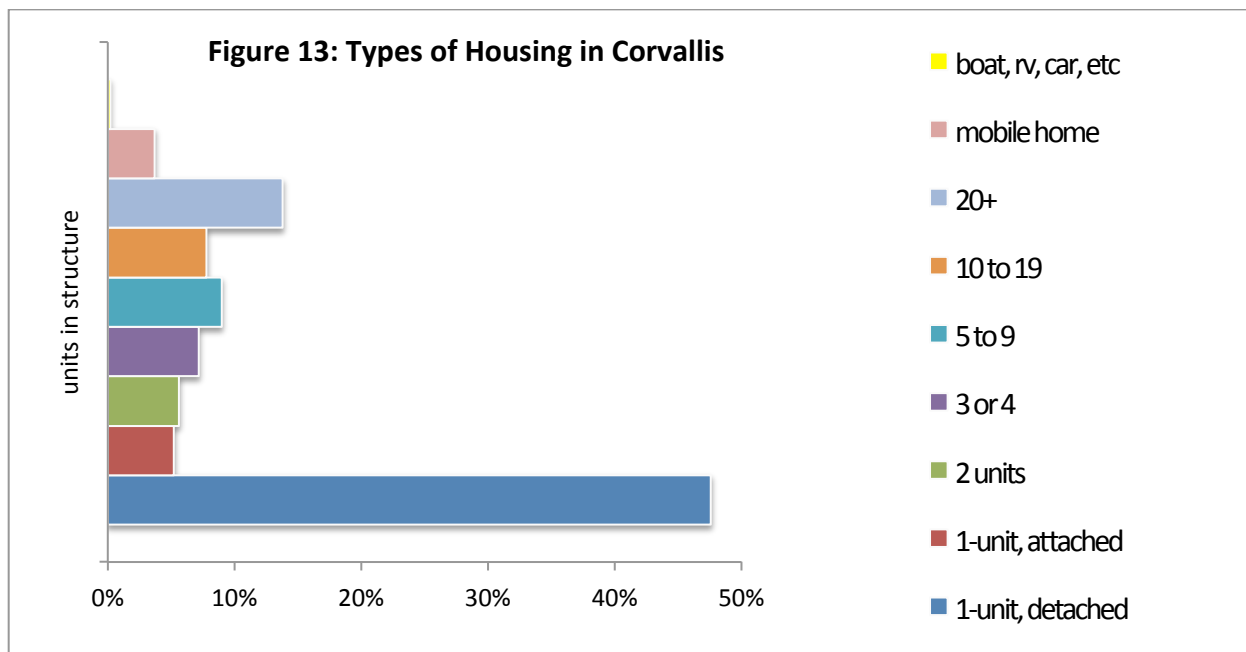
⁵⁰ ACS 2009-2011 3-year estimates

⁵¹ ACS 2009-2011 3-year estimates

⁵² ACS 2009-2011 3-year estimates

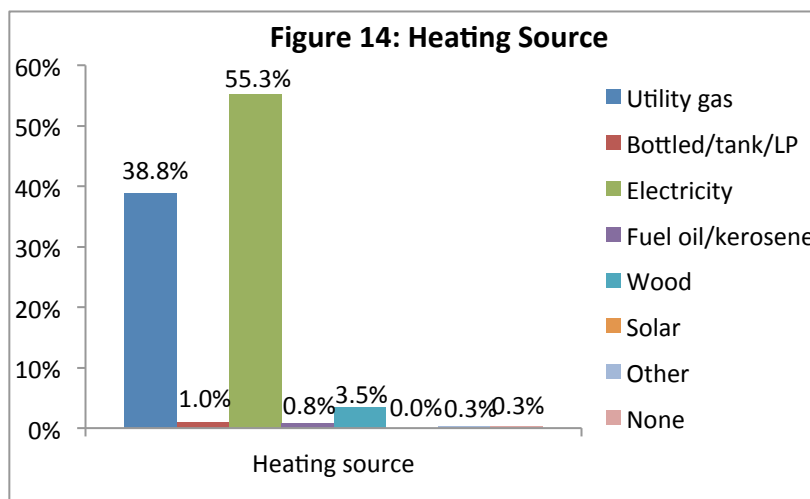
⁵³ ACS 2009-2011 3-year estimates

⁵⁴ ACS 2009-2011 3-year estimates



As described in the literature review, the type and quality of heating sources can impact

a family in multiple ways. The dominant energy source in Corvallis comes from electricity, which represents more than half⁵⁵ of all energy sources (Figure 14). The second highest-used method is utility gas, with 38.8%. The remaining methods are



sparsely used, but still make up a fair number of housing units; 1,242 housing units (6%) use either bottled/tank gas, fuel oil/kerosene, wood, no fuel at all, or some other heating source. The great majority of Corvallis heating sources are among the healthiest methods available as heating sources. However, they can still be prohibitively expensive if the units in which they are located are not properly sealed or weatherized. As previously mentioned, energy-related

⁵⁵ ACS 2009-2011 3-year estimates

problems arise from mitigation techniques employed by tenants to reduce heating costs- of which electric energy can be among the most expensive (USDOE, 2012).

The cost of rental housing is perhaps the biggest problem faced by Corvallis tenants. Over the span of four years, the amount of money paid in gross rent by tenants has increased, causing more tenants to become rent burdened. In 2007, 17%⁵⁶ of tenants paid more than \$1,000 in gross monthly rent. By 2011, 24.4%⁵⁷ of tenants paid more than \$1,000 in gross monthly rent. This represents a 44% increase in the percent of renters paying more than \$1,000 towards rent per month. For the one-in-five Corvallis families who earn less than \$25,000 per year, affordable rent would be about \$700⁵⁸ per month. This increase caused the percent of household income contributed to

rent to increase. In 2007, 56.1%⁵⁹ of renters were rent burdened, meaning they paid more than 30% of their income in rent. That percent increased to 64.5%⁶⁰ of

Figure 15: Renter Households by AMI			
	Total number of renter households below 50% AMI	Number of renter HH 50% AMI cost burdened	Percent of renter HH 50% AMI cost burdened
Corvallis	7,655	6,534	85.4%

renters in 2011- increasing 15% over the four year period. The percent of renters paying more than 35% of income to rent increased from about 51%⁶¹ to about 58%⁶². Among renter households earning 50% or less of the Area Median Income, 85.4%⁶³ (6,534 renters) were rental cost burdened (Figure 15). Nearly 50%⁶⁴ of renters earn less than \$20,000 per year (Figure 20). Figures 16 and 17 show the change in distribution of rental costs over the four year span. Figures 18 and 19 show the increase in the percent of household income paid towards rent over the same four years.

⁵⁶ ACS 2005-2007 3-year estimates

⁵⁷ ACS 2009-2011 3-year estimates

⁵⁸ HUD classifies rental costs as affordable if a household contributes about 1/3 of monthly income towards rent.

(CITATION)

⁵⁹ ACS 2005-2007 3-year estimates

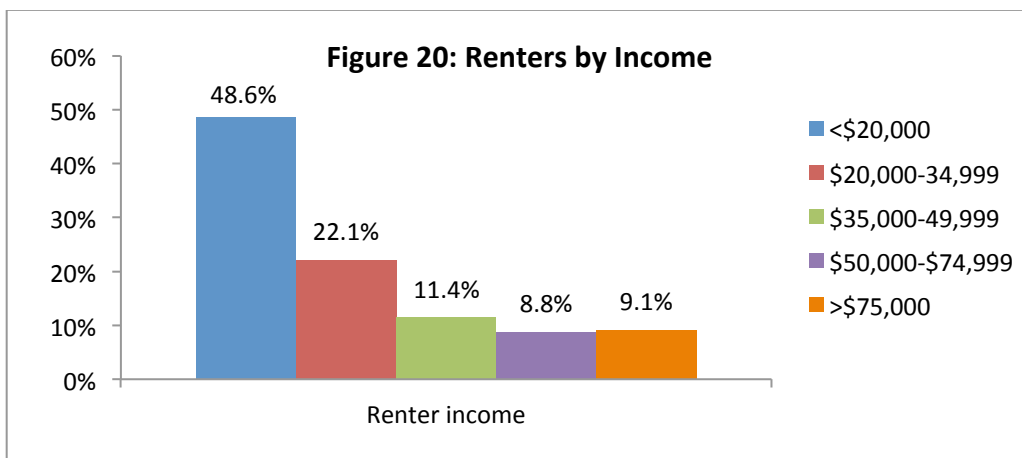
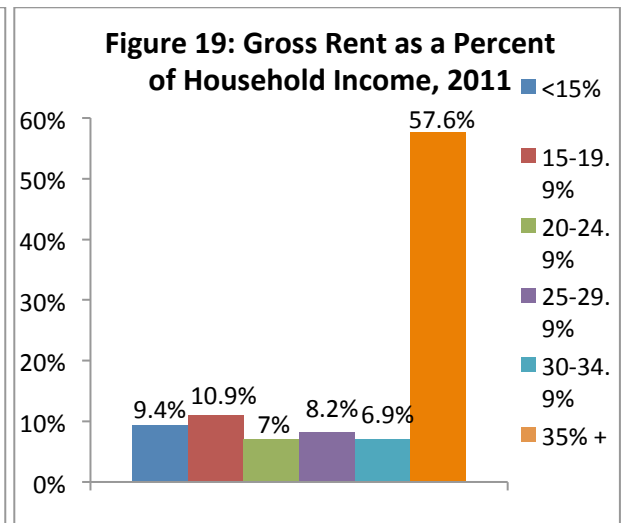
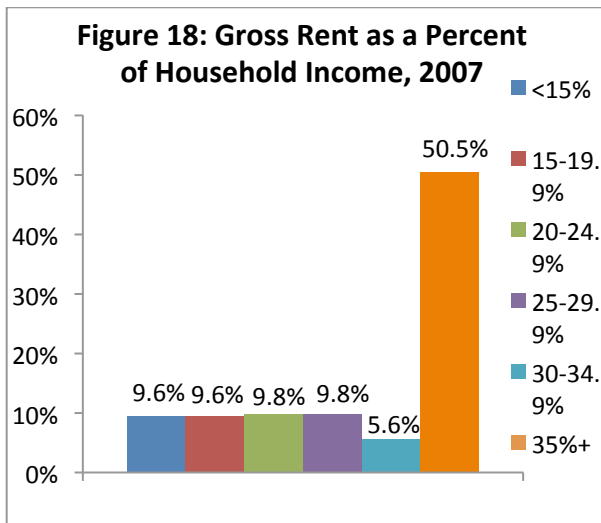
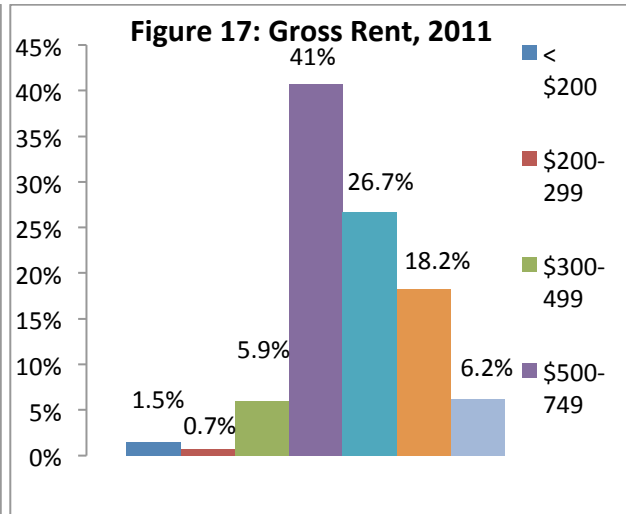
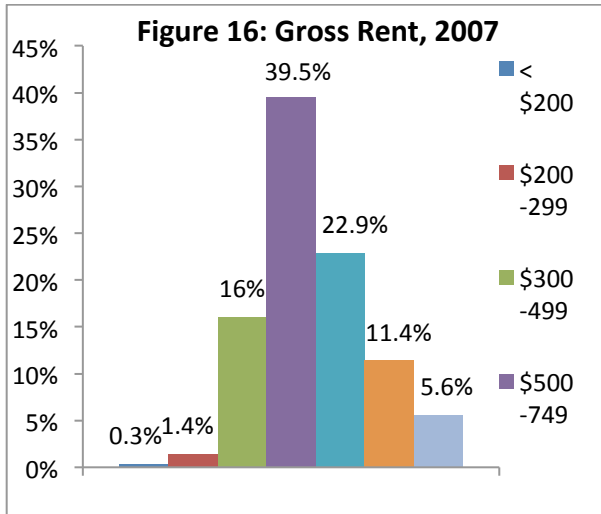
⁶⁰ ACS 2009-2011 3-year estimates

⁶¹ ACS 2005-2007 3-year estimates

⁶² ACS 2009-2011 3-year estimates

⁶³ ACS 2009-2011 3-year estimates

⁶⁴ ACS 2009-2011 3-year estimates



As mentioned above, the Linn-Benton Housing Authority subsidizes approximately 550 units in Corvallis. There are also 200 units that receive City Community Development Block Grant and/or HOME Investment Partnerships program subsidies, and an additional roughly 250 units that receive some other form of affordable housing assistance (Gibb, 2013). These units, just shy of 1,000, are already subject to an inspection process to ensure habitability standards. However, the standards by which these units are inspected are not as comprehensive as the standards contained in the International Property Maintenance Code. As a result, these units may be subject to an additional inspection by a city inspector to ensure compliance with the IPMC.

Some might consider homeownership to be an option for long-term renters, in order to

Figure 21: Loans by Applicant Income

Applicant income	Corvallis MSA	
	number	percent
greater than 100% median	283	62.3%
80-99% median	53	11.7%
50-79% median	94	20.7%
less than 50% median	22	4.8%
total	454	100%

reduce monthly costs. However, homeownership in Corvallis is unattainable for most renters. According to Housing Mortgage Disclosure Act data from 2011, two thirds of loans originated in Corvallis were given to applicants with income greater than 100% of the area median income, as shown in Figure 21.

Due to tightened credit markets and increased value of housing in Corvallis, home ownership has been restricted to households earning more than the median household income. Further, the average home sales value in 2012 was \$291,740⁶⁵. For a thirty-year mortgage, for the monthly payment to be considered affordable, it would need to cost around \$810 per month.

⁶⁵ HDMA 2011, Report data 6/3/2011

Between 2003 and 2005, Corvallis constructed 414 units. Between 2006 and 2010, only 73 multifamily units were constructed, and at least 8 existing units were demolished. In 2011, 150 units were permitted to be completed, while 58 were set to be demolished, resulting in a net increase of just 92 units (WNHS, 2010). The most recent data from 2012 show there were 23 multi-family developments were constructed, creating 213 units; 54 single-family units were constructed; and ten units were constructed via five duplexes, for a total of 277 new units constructed (RHP, 2013). Twenty-seven units were demolished during the same year, creating a net increase of 250 units in Corvallis in 2012. In total, since 2006, Corvallis has only experienced a net increase of 407 units (Figure 22). Recall, since 2007, the student population of Corvallis has increased by 5,224 students. Measurements from the Housing Division at the City of Corvallis indicated a rental vacancy rate of 1/10th of 1% in 2011 (RHP, 2013). This estimate is based on the definition of vacancy being such that a unit is currently vacant and open for immediate leasing. By the same technique, the 18 months prior had not seen a vacancy rate greater than 2.5% (RHP, 2013). The most recent estimate, from the beginning of 2013, showed a vacancy rate of about 3% (RHP, 2013). It should also be noted that the cost of rental housing has continued to rise during the last 3 years. It is worth noting that the simultaneous rise in rents along with the rapid increase in the vacancy rate could be a result of students and other low-income tenants taking residence in illegal dwelling units, such as basements, garages, or small rooms not intended to be bedrooms, or larger units divided into smaller units. Because there is not an inspection process of all units, the extent to which this true cannot be verified.

Figure 22: Net New Construction 2006-2012

	Net new units constructed
2006-2010	65
2011	92
2012	250
Total	407

For the 2012-13 academic year, OSU offered 4657 beds for its students, including 107 family-style housing units (Stroup, 2013). In November 2012, Corvallis voters approved the annexation of 33 acres of land, the Sather Annexation, for the development of student housing. Developers estimate there will be around 650 beds constructed by the Fall of 2014 (Day, 2012). In March of 2013, OSU received approval from the city council to develop enough dorm space to house 300 additional students. Aside from these 300 new beds, OSU does not have

additional plans for new development in the immediate future⁶⁶. The City of Corvallis Consolidated Plan for fiscal year 2013 predicted that by 2020, Corvallis will need a net increase of 5,228 units to accommodate population growth (City of Corvallis, 2013). If the rate of construction remains at the current rate, especially with student housing, Corvallis will not meet this need.

Enforcement mechanisms

Corvallis rental housing falls under the jurisdiction of the Housing Division of the City of Corvallis. In 1999, the city council of Corvallis created the Rental Housing Program to serve the following four purposes: to refer people to community resources that provide assistance in resolving rental housing issues; to educate community members about rental housing issues and direct them to information about Oregon Landlord/Tenant Law; to collect data on Corvallis rental housing issues and conditions; and to, as will be expanded upon next, to enforce compliance with the Rental Housing Code (RHP, 2013). In 2002, the city passed an ordinance creating a Rental Housing Code, and gave enforcement responsibility to the operators of the Rental Housing Program. “The Rental Housing Code gives minimum habitability standards in the following six areas: structural integrity, plumbing, heating, weatherproofing, smoke detectors, and properly working door locks and window latches (Rental Housing Code, p. 1-7). The remaining housing and buildings in Corvallis fall under the Dangerous Building Code, the Municipal Code, and the Fire Code. These codes, together, still fail to cover vital areas of healthy housing determinants. The chart below, Figure 23, was created by the Corvallis Code Enforcement Division to demonstrate the gaps in the housing codes governing Corvallis rental housing, and how those gaps relate to the International Property Maintenance Code. Notice in Figure 23 that there are areas of coverage critical to maintaining healthy housing that are not covered under any of the Corvallis codes, such as ventilation. Additionally, weatherization is weakly addressed in the Rental Housing Code, but only as it pertains to water infiltration. A final point to draw attention to in Figure 23 is that occupancy limits are only addressed in the

⁶⁶ The decision of UHDS to propose new construction is pending the next edition of the Campus Master Plan to estimate future potential campus housing locations, as well as Corvallis campus enrollment (UHDS)

Municipal code, and it is only enforceable for a flat number of people and is not dependent on how large or small the unit is.

Figure 23: Gaps in Coverage in Current Codes Relative to IPMC

	Code Coverage	IPMC	Existing Rental Housing Code	Municipal Codes	Fire Code	Building Code
	Occupancy Limits	Area Basis		LDC Flat Number		
	Fire Safety	All Occupancies; all Systems	Smoke detectors		Triplex+	
	Building Alteration	Routine Inspections			Occasional Inspection, Triplex+	Complaint Basis
Interior Maintenance		All Occupancies; safe, sound, good repair	Plumbing, Heat, Security; Structurally Sound	Sanitation	Limited to fire hazard conditions	**
	Light	All Occupancies; all spaces				
	Ventilation	All Occupancies; all habitable space				
	Electrical System	All elements safe; dwellings 3-wire service only			Limited to Fire Hazard Conditions	**
	Plumbing System	All Elements; to approved systems; no leaks or obstructions; H & C	Installed and maintained; no leaks or obstructions	Connected to approved discharge		
	Heating	68F. @ center/2' in from exterior of all habitable rooms, work spaces, bath and toilet rooms	68F. @ center of all habitable rooms			
	Sanitation	All Spaces; clean, sanitary & in good repair		No Public Nuisance		**
	Security	Egress-type Deadbolt, windows, basement hatch	Door locks, window latches			
Exterior Maintenance		Structurally Sound & in Good Repair; sanitary; vacant lots		Solid waste removal	Limited to Fire Hazard Conditions	**
	Weather & Water Proofing	Weatherproof from wind, water, snow	Only water infiltration			
	Exterior Sanitation	All Areas; clean & sanitary		Rat harborage abatement		
	Solid Waste Removal	Required for All Occupancies		Removal required, but not service	Limited to Fire Hazard Conditions	
	Accessory Bldg. Maintenance	All				**
** Enforcement in the Dangerous Building Code is applicable to buildings already in failure mode, beyond routine maintain						

The Rental Housing Program operates under a complaint-based system. Tenants who have a housing problem are first supposed to submit a formal written request for repairs to the landlord or property manager, prior to filing a complaint with the Housing Division. In general, tenants will mention in their correspondence with their landlord that they believe the issue in question violates some code, which may facilitate a more timely response from the landlord and reduce the number of cases requiring inspector involvement and enforcement. The Rental Housing Program provides educational material and/or referrals when they are contacted by tenants, landlords, or other community members. The material is available in English and Spanish (upon request).

Condition of Corvallis rental housing

According to a 2012 Public Health Assessment Survey conducted by the Benton County Health Department, when asked about which environmental quality issue had the greatest impact on health, 49% of Corvallis residents cited healthy homes (BCHD, 2013). The following section provides information about the current condition of rental housing in Corvallis, as informed by the data sources detailed previously. In general, the problems associated with rental housing in Corvallis centered on: the lack of weatherization upgrades and maintenance and the creation of illegal housing units. The most frequently-cited rental housing problem dealt with the extreme lack of affordable housing, which strongly contributes to subsequent housing-quality problems within rental units.

Lead

Comprehensive data regarding the presence of lead and lead poisoning is not kept at the county or local level. However, Oregon has a relatively low overall prevalence of lead poisoning compared to other states and rates have declined over the past 10 years (BCHD, 2012). This decline is consistent with national trends. In Oregon, roughly 1,000-2,000 children have blood lead levels equal to or greater than 10 µg/dl. Of the 101,797 children screened in the last 12 years in Oregon, 12.3% had blood lead levels in the 5-9 µg/dl range. There have not

been any lead poisoning cases resulting in death originating in Benton County in the last 10 years (BCHD, 2012). Based on these numbers, lead does not appear to be a problem in Corvallis.

Lack of weatherization and/or maintenance upgrades

Corvallis tenants face a number of health issues due to the lack of weatherization and maintenance. I would argue that substandard rental housing in Corvallis, in general, would be classified in the second category of rental housing described in the theory section. Recall, these types of units are non-code compliant units can be brought to code standards with an investment that will produce a positive return, but that the return may be reduced if the landlords cannot fully pass the costs onto tenants. Because the cost of renting in Corvallis has become unaffordable for so many tenants, it may be difficult for landlords to pass the costs of basic maintenance and upgrades onto tenants. This consequent reduction in return has, and will continue to, discourage landlords from investing in basic maintenance and necessary upgrades.

An official in the Rental Housing Program cited that when the vacancy rate was higher, landlords would use the time in between one tenant exiting a unit and another leasing it to complete weatherization upgrades and perform necessary maintenance. With the low vacancy rate, landlords secure tenants for units prior to the current tenant exiting, encouraging the landlord to defer maintenance and upgrades in order to allow the new tenant to move in more quickly. The lack of weatherization upgrades and basic maintenance procedures allows for both structural and non-structural problems to worsen over time, ultimately causing the indirect costs resulting from the lack of upgrades, to be compounded and passed on to tenants. As discussed in the housing market analysis, Corvallis tends to have healthy heating sources, mostly electric. However, without properly weatherized homes, families have to devote more household income to energy costs. Otherwise, tenants will employ mitigation strategies to reduce high energy costs such as using the stove as a heating source by leaving the oven door open and boiling water on the stove to increase indoor humidity, according to a Benton County Health Department official who specializes in asthma treatment and prevention. The most commonly used technique, according to this official, involves tenants placing plastic on the

inside and outside of the windows. The purpose of the plastic is to provide an additional layer of insulation, especially for dwellings with improperly sealed building envelopes, like dwellings with drafty doors and windows, and homes that have not been properly weatherized. This mitigation strategy contributes to poor indoor air quality by increasing mold growth, diminishing the degree of ventilation, and containing dangerous toxins/allergens in the air. Additionally, tenants may use small electric heaters, which are often too powerful for breakers in older units and illegal housing units without necessary electrical upgrades, which increases the risk of fire.

A health department asthma specialist also cited the lack of maintenance on floors as a contributor to poor indoor air quality. Unkempt floors, such as old carpeting, can cause respiratory problems for residents, especially small children who lay, crawl, and play on the floor. In general, old, unclean carpets collect hazardous dust and particles. Old carpet is especially problematic in units that have had asbestos sprayed on their ceilings. Even if the asbestos has been removed from the ceiling, if the carpet has not been replaced it is likely that particles remain in the carpet and are kicked up and inhaled by inhabitants. Residents may also suffer from third-hand smoke, or chemicals from cigarettes that penetrate walls, carpeting, counters, etc.

An additional problem that may be caused by lack of maintenance is the degradation of floors, stairs, hand-rails, etc. As detailed previously, serious injury can result from sagging floors and stairs, or a lack of hand-rails in bathrooms and along stairs. While data for the state of Oregon does not specify where falls resulting in injury occurred, it is likely that they represent a similar proportion of residential injuries in Oregon as the 44% of national falls that occur in the home (Jacobs et. al., 2010 and OHA, 2010). It is not discernible how many of these falls occur due to improper maintenance.

Mold and moisture resulting from lack of weatherization and basic maintenance

The most prevalent and persistent problem facing Corvallis tenants, especially as it relates to the lack of weatherization and upgrades, is the problem of mold and moisture, as indicated during public forums, focus group results, and from health department officials and

housing specialists (WNHS and BCHD, 2012; public forums, 2013; RHP, 2013; BCHD, 2012). Moisture and mold issues are primarily caused by structural deficiencies, but may be caused or exacerbated by tenant behavior, such as through the energy-related mechanisms discussed above. Common structural problems that lead to moisture and mold issues in the Northwest include: roof, window, wall, or plumbing leaks, floor dampness, standing water in crawl spaces, and poor ventilation. Poor ventilation, particularly in bathrooms and kitchens, is also a common structural problem that contributes to moisture problems and consequent mold. Officials from both the Benton County Health Department and the Rental Housing Program reported inspecting or visiting homes in which there were entire walls covered in lichen and mold. While structural characteristics are an important factor in determining the degree to which moisture and mold problems arise, informants described tenant behaviors that contribute to these problems. There is some disagreement about the degree to which mold and moisture are a product of structural problems or tenant behavior. However, there is a general agreement that, even if mold problems are a result of tenant behavior, the tenant behavior tends to be in response to structural problems beyond their control, such as when tenants place plastic on windows in response to the windows not being properly sealed and releasing heat. Mold problems can be caused by tenants who, for example, allow the bathtub to overflow or don't use the bathroom fan when showering to ventilate steam (provided there is a functioning vent in the unit). Additionally, the Benton County Health Department specified that some residents from more tropical or humid climates may use humidifiers year-round, as a cultural preference. It is worth noting that tenants do, sometimes, inform their landlord about the presence of mold, but the sources of the moisture may not be addressed properly, or in a way that would prevent the mold from reoccurring. A common strategy to address mold is to paint over it with common indoor paint. Tenants are also encouraged to use bleach to scrub away mold (RHP, 2013, and WNHS and BCHD, 2012).

Illegal housing units and repairs without permits

The creation of illegal housing units poses a serious health and safety risk to inhabitants of those units and their neighbors. Recall that the rental vacancy rate increased from less than

1% to about 3% in fewer than 3 years, though there was a large increase in the student population and not enough net construction to accommodate this growth. During this time, the rent continued to increase. Though officials were unable to provide sufficient evidence for the existence of illegal units created in Corvallis, during public forums, some tenants discussed living in basements with only small windows for escape if the stairs were to collapse, or electrical systems shorting out daily due to overuse in a house converted into apartments (likely not receiving proper electrical upgrades to sustain the increase in electrical output). The Rental Housing Program stated that “most” electrical systems are not upgraded when homes are converted into apartments (RHP, 2013). Once the problem is identified, electrical problems are relatively simple to enforce. However, tenants are not necessarily aware that their home has an unsafe electrical system, and consequently do not issue a complaint (RHP, 2013). Illegal housing units also include the occupancy problem of residential overcrowding, especially when the housing unit is a converted single-family home.

Complaints filed

Complaints received by the Rental Housing Program are organized into habitability or non-habitability categorizations. The ten habitability categories include: heat, plumbing, weatherproofing, structural, smoke detectors, locks, garbage/vermin, electrical, appliance, or

Figure 24: Complaint Contacts by Tenant Type

Year	Total Contacts	Contacts by Tenant Type ⁶⁷			Contacts by Students Status	
		Tenant	Landlord	Other	Student	Non-student
2006- 07	546	286	113	147	94	452
2007- 08	475	281	86	108	107	368
2008- 09	527	296	115	116	106	415
2009 -10	641	363	146	132	123	518
2010- 11	845	465	179	201	182	663
2011- 12	707	372	177	158	141	566
Total over 5 years	5,543	3,156	1,226	1,161	1,142	4,395

fire/life/safety. The six non-habitability categories include: lease term, Fair Housing, eviction, neighborhood livability, and other. Evidence from the Rental Housing

Program show that during 2006 - 07, 546 complaints were filed with the city. Five years later,

⁶⁷ Graphic adapted from Ken Gibb, Community Development Director in Memorandum to Collaboration Corvallis Neighborhood Livability work group

between 2011- 12, there were 707 complaints filed. For each year in between, the number of complaints fluctuated, ranging from a low of 475 complaints between 2007- 08 to a high of 845 complaints in 2010- 11. It is worth noting that, though the number of complaints filed in 2011- 12 was higher in total than the number filed in 2006-07, it was actually lower in terms of complaints per capita, as the population grew more quickly during that time span. The plurality of complaints (just around half each year) are filed by tenants. “Other” consists of neighbors, parents or family members of tenants, community workers, etc. In 2011- 12, 53% of complaints were made by tenants. One in five calls was made by a student. Figure 24, above, summarizes the above information.

Within the 5,543 complaints, a total of 6,409 issues were identified (as complaints can generate more than one issue). Each issue

is placed into one of three categories: Rental Housing Code related, non-Code related (but involving a habitability issue), and non-habitability

Figure 25: Complaints by Issue Type

		Issue Type ⁶⁸		
		Habitability		Non-Habitability
Year	Total	Rental Housing Code	Non-Code	
2006- 07	901	157	124	620
2007- 08	827	153	128	546
2008- 09	953	184	132	637
2009- 10	1,111	227	126	758
2010- 11	1,454	236	150	1,068
2011- 12	1,163	197	114	852
Total	6,409	1,154	774	4,481

issues (deposits, neighborhood livability, lease terms, etc.) Every year between 2006 and 2012, the number of non-habitability issues far outnumbered habitability issues, representing roughly 70% of all issues. Issues with the Rental Housing Code represented just 18% of issues. The remaining 12% of issues were related to issues not covered by the Rental Housing Code, but that still pertain to habitability standards (Figure 25). This 12% of issues that are not covered under the current code affirm the gaps in coverage demonstrated in Figure 23.

Between 2010- 11, of the 386 habitability issues identified, the greatest portion 26% (100) were due to plumbing problems. The second highest portion of issues was for garbage or vermin, representing 21% (82) of issues. The presence of garbage or vermin is an issue not

⁶⁸ Graphic adapted from Ken Gibb, Community Development Director in Memorandum to Collaboration Corvallis Neighborhood Livability work group

addressed in the Rental Housing Code, but is addressed in the Municipal Code as removal being required but service is not necessary. During the following year, 2011- 12, there were 311 habitability issues identified. The highest portion of issues was related to weatherproofing⁶⁹, with 28% (87) of issues, followed by garbage or vermin with 21% (66).

Fines for violation of the Rental Housing Code cost up to \$250 per day per violation (RHP, 2013). During FY 11-12, three violation cases were opened: one for inadequate heat, one for a lack of heat, and one for plumbing leaks, a broken door lock, and no working smoke detectors (none even installed). In all three cases, the needed repairs were made prior to an inspection. Since the Rental Housing Code was implemented 2002, it has been enforced a total of 26 times, with eight of those actions occurring in FY 07-08. As of 2013, only one landlord had been fined since the inception of the program in 2003. This offender was given fines of \$100 per day, and was fined for a total of 53 days. In the end, the landlord was able to reach an agreement with the city attorney that allowed for him to pay just \$500 rather than the full \$5,300. According to the Rental Housing Program, the number of enforcement actions is very low because, most often, issues are resolved through direct discussions between landlords and tenants.

As stated earlier, complaint-based enforcement systems tend to experience underreporting of code violations. This is likely a driver of Corvallis complaints being quite low. The Community Development Department at the City of Corvallis stated in a memorandum to the Neighborhood Livability work group the extent to which the city estimates there is substandard rental housing in Corvallis:

“Because there is not a comprehensive inspection program for rental units, it is not possible to determine the full extent of community-wide housing condition concerns. However, based on experience, it is the professional opinion of staff that...approximately 30% of the community’s residential rental units have one or more physical conditions that would not meet the standards of the International Property Maintenance Code. This estimate is based in part on staff’s knowledge that roughly 42% of the dwellings in

⁶⁹ Note in call log citing “leaks, mold” as reasons for categorization, as discussed in following paragraph

Corvallis were built before 1960, and the conclusion that given the age of these dwellings, many can be anticipated to have conditions that do not align with IPMC. City code enforcement and inspection experience also suggests that both older and newer units will also have conditions that would not meet the IPMC, particularly in situations where illegal alterations have been performed (Gibb, 2013)."

The current level of reporting demonstrates that roughly 0.5% of rental units had a complaint filed against them, compared to the 30% estimated by the city (RHP, 2013). Correspondence with a housing specialist with the City of Corvallis indicated that an estimated roughly 5% (about 650) of all rental units would fail an inspection due to "severe" habitability issues, and would immediately drop out of the market. This estimation was based on previous inspections (RHP, 2013).

OSU Students may also seek assistance from the Human Services Resource Center on campus if they experience a housing crisis. The director of HSRC noted that, in the past two years, the Center has placed eight students in emergency housing due to some form of landlord-tenant issue (Gibb, 2013). During the same time, they had also served an additional 15 students who had been displaced or had to change their address in order to deal with landlords, but emergency housing was not needed.

Anticipated Potential Impacts

Potential impacts of the three policy options were assessed by analyzing the aforementioned information sources. It is worth noting that the categorizations of violations documented by the Rental Housing Program do not detail the specific reasons for which a complaint was made, but rather organizes complaints into one of the 10 habitability or 6 non-habitability categories. In some of the categories, there may be a more specific description attached, but it does not provide the number of issues within each description. For example, as mentioned above, with the 100 issues identified relating to garbage or vermin, a note was attached to the log listing cockroaches, rats, and mice as specific descriptions. However, there is not a number attached to how many of the 100 calls were a result of any of the three

descriptions. Because of the general categorizations and non-quantified descriptions, the impacts may not be as accurately assessed. Analysis of the three policy options considers the following four indicators: the direction of impact, magnitude of impact, severity of impact, and the equity impacts. The magnitude and severity of impacts are designated as minor, moderate, or major. The health impacts of policy options two and three are measured relative to policy option one, with the health impacts of policy option one being assessed based upon current trends and an assumption that current trends will continue at roughly the same rate.

Impact Assessment

The table below summarizes the potential health implications of each of the three policy options, based on my own interpretation and analysis. With no change in the current policy, I estimate that rental housing conditions will continue to decline as there will still be gaps in the code, and the enforcement levels will remain low. The complaint-based process will remain a barrier to low-income, cost-burdened, and vulnerable renters, who will consequently continue to be disparately impacted by unhealthy and unsafe housing conditions. With the implementation of the Property Maintenance Code, the code will be more comprehensive, causing positive and more equitable health implications. However, the magnitude and severity of the positive health implications will be weak because it will remain under the enforcement of a complaint-based process, which serves as a barrier to low-income, cost-burdened, and vulnerable renters. The Rental Licensing Program, in conjunction with the Property Maintenance Code, will have the benefits of the code comprehension, as well as the more positive equity considerations that come with removing the barriers of the complaint-based process. An inspection process would yield the most severe, and most equitable, health implications for the aforementioned populations of renters.

Figure 26: Summary of Health Implications				
Policy Option	Direction of Impact	Magnitude of Impact (i.e., how many)	Severity of Impact (i.e., how good or bad)	Equity Impacts
1. No change in current enforcement policy	-	Moderate	Moderate	-
2. Implementation of Property Maintenance Code, alone	+	Minor	Minor	+
3. Implementation of Property Maintenance Code, in conjunction with Rental Licensing Program	+	Major	Major	++

Key:

- Direction of Impact refers to whether the policy option will positively impact health determinants (+), negatively impact health determinants (-), or have no impact on health determinants (~).
- Magnitude of Impact reflects the qualitative judgment of the size of the population of the anticipated change in health determinant effect- indicated with: minor, moderate, or major.
- Severity of Impact reflects the nature of the effect on health determinants and its permanence- indicated with: minor, moderate, or major.
- Equity Impact reflects a qualitative judgment of the magnitude of the anticipated change in health inequities related to housing conditions: (--) = moderate increase in health inequities related to housing. (-) = minor increase in health inequities related to housing. (~) = no change in health (in)equity. (+) = minor improvement in health equity related to housing. (++) = moderate improvement in health equity related to housing.

Table adapted from Oregon Public Health Institute's report: Rental Housing and Health Equity in Portland, Oregon: A Health Impact Assessment of the City's Rental Housing Inspections Program

Policy Option One: No change in current enforcement policy

The health impacts of having no change in the current enforcement policy will be negative, as the cited 30% of rental units, about 3,600 units, currently estimated to be in violation of the IPMC will remain on the market without proper enforcement to mandate repair or maintenance, and will continue to degrade in quality. If the current trend continues, the portion of rental units in this category will likely increase, furthering the amount of rental housing with unhealthy or unsafe conditions. Based on the 30% of unhealthy units that are not

currently covered, and the prospective increase in unhealthy units, the magnitude of impact of having no change in the current enforcement policy is moderate.

The Rental Housing Code will continue to cover just six areas of habitability, and the existing gaps will remain in existence. Enforcement efforts will continue to operate under a complaint based-process. There will be no additional mechanisms to address unsafe and unhealthy conditions such as overcrowding, illegally-created units, unsafe work or work done without proper permits, or deferred maintenance. Based on the current trends produced by lack of comprehension and enforceability of the current code, the severity of the impact can be considered moderate, as the impact of experiencing no change in a policy will further the current trend of degrading rental housing quality. As the conditions worsen, the health implications become more severe and more difficult to remedy in the future.

The negative health implications of having no change in the current enforcement policy may be somewhat mitigated by the following two positive health implications. First, the Rental Housing Program will continue to offer information and referral services to landlords, tenants, and other community members upon request. Second, there will be very minimal impact on the supply of rental housing, as fewer units would be considered ineligible for renting than under the IPMC. Along that point, there will be very minimal risk of rent increases due to code enforcement. There will be a minor increase in health inequities related to housing under policy option 1. The positive health implications do not outweigh the negative health implications of the current policy.

Policy Option Two: Implementation of International Property Maintenance Code, alone

The health impacts of implementing the International Property Maintenance Code will be positive. The IPMC would fill the gaps in coverage in the current Rental Housing Code that allow for unsafe or unhealthy housing conditions, such as overcrowding, illegally-created units, unsafe work or work done without proper permits, or deferred maintenance. It would also address solid waste accumulation, reducing the number of complaints resulting from both garbage collection and vermin. Recall that 12% of all complaints received between 2006 and 2012 were habitability issues not covered under the existing code. Habitability issues not

covered under the current code represented 67% of total habitability issues. The issues for which these complaints were made would be covered under the IPMC. The magnitude of impact in implementing the IPMC would be minor, established by the 12% of received complaints that do not qualify under the current housing code.

The International Property Maintenance Code would be enforced under a complaint-based model, as there would be no change in the enforcement mechanism, only in what is eligible for enforcement. Consequently, policy option two would not result in a comprehensive remedy for unhealthy or unsafe housing conditions, due the previously cited problems with underreporting in complaint-based enforcement models. As a result, the severity of the impact of policy option 2 would be minor.

The Rental Housing Program will remain offering information and referral services to landlords, tenants, and other community members upon request. There will be minimal impact on the supply of rental housing, based on the fact that the greatest number of habitability issues not covered by the current code by which complaints were made dealt with vermin and pests, and therefore would not likely be reason for the unit to be taken off the market. Further, there would be a minimal risk of rent increases due to code enforcement, as the number of units taken off the market, again, would be very low. There would be minor improvements in health equity if the IPMC were implemented, with the knowledge that the new habitability issues to be covered under a comprehensive code have more so been experienced by vulnerable renters.

Policy Option Three: Implementation of Property Maintenance Code, in conjunction with Rental Licensing Program

The health impacts of implementing the IPMC in conjunction with a Rental Licensing Program would be positive. The IPMC portion of policy option three would share many of the benefits of policy option two, namely filling the gaps in coverage that exist in the current Rental Housing Code. The Rental Licensing Program portion of policy options would have other positive health outcomes. In order for a unit to be issued a license to lease, the units would be required to pass an inspection conducted by a housing inspector employed by the city, and the

inspection would be based on compliance with the IMPC. The inspection process would proactively address unhealthy or unsafe housing conditions, without requiring tenants to file a complaint (but would still retain a complaint-based system outside of the inspection process for issues arising outside of the inspection process). The roughly 3,600 units estimated to be out of code compliance would be detected and addressed via the inspection, causing the magnitude of policy option 3 to be major.

Due to the far-reaching nature of a blanket inspection process, the severity of policy option would be major. Deteriorating units would either be removed from the market, recall the roughly 650 units with severe habitability issues, or would be brought to code through repairs or upgrades, an additional estimated 3,000 units. Inspecting rental units on a regular basis would also serve the purpose of preventing deterioration, reducing future negative health impacts resulting from poor quality housing.

Policy option three may have some negative health implications. If the predicted 650 units are removed from the rental market, it will further strain the already-tight market for rental housing. Further, because we do not know the extent to which illegal housing units are being inhabited, illegal units may be also be removed from the market. Though living in these units carries unhealthy implications, they do add to the number of rental units, possibly helping contain or reduce the cost of renting. Their removal may drive down the vacancy rate and justify an increase in rental costs. The inspection process may also cause an increase in rental costs to tenants, as landlords may pass the costs of maintenance/upgrades on to tenants. The implementation of the IPMC in conjunction with the Rental Licensing Program would cause moderate improvements on health equity, as it would address the primary barrier to identifying and addressing poor quality housing: the complaint-based process. Despite the negative health implications for some of the lowest-income tenants, having an inspection process would work towards ensuring that rental housing does not cause tenants of any income level, including low income tenants, to become sick or be endangered.

Recommendations⁷⁰

Initiatives to promote healthy housing are most effective when they address both structural housing conditions and tenant and landlord knowledge and behavior. In order for substandard housing conditions to be addressed in Corvallis, there ought to be a stronger, more enforceable set of housing codes than is currently in place. There also needs to be a disbursement of knowledge among both tenants and landlords about how to create and maintain a healthy built environment, as well as to inform both parties about the proper avenues to seek when housing conditions are not kept to a healthy standard.

I recommend the adoption of policy option three: the implementation of the International Property Maintenance Code in conjunction with the Rental Licensing Program. Evidence indicates that one of the most pressing problems facing many Corvallis tenants is that the system of reporting substandard conditions is based on a complaint-based process that is intimidating, difficult, or inaccessible. However, as was the case in similar jurisdictions, there was major push-back against the Rental Licensing Program from property managers and landlords, who argued that an inspection of all rental units was unnecessary and frivolous. During public forums on the topic, this stakeholder group gave testimony about feeling as though an inspection of all rental units was an unfair punishment levied on “good” landlords who had never had a complaint filed against them. In order to ameliorate the push-back, the city of Corvallis could consider a model of selective code enforcement, such as the city of Asheville, NC has in place (Gardner, 2008). Asheville implemented a rental licensing program that required the inspection of all rental units prior to leasing, and received the same push-back that Corvallis received. They scaled back the scope of their inspection process to only include a mandatory inspection of units that have been in violation in the past, or that are owned by landlords who have had a certain number of complaints filed against any one of their properties. Selective code enforcement will create improvements for tenants who aren’t willing or able to file a complaint because it will lead to an inspection of units for which a complaint

⁷⁰ This Health Impact Assessment did not take into account the cost of implementing either policy option two or three to the City of Corvallis. Though there may be some health implications resulting from investing public funds in this program as a result of cutting funds in other areas of the budget, A cost/benefit analysis may be appropriate to determine the actual costs of implementing either of the new policy options, when considering which other areas may be impacted.

was not made, but which are more likely to be substandard because they are in a building owned or managed by an individual or agency whose properties have been substandard. Further, selective code enforcement may be more equitable than having a blanket inspection process because it will allow a higher number of non-code compliant units to remain on the market, but will, hopefully, warrant an inspection of the worst-quality units. Additionally, it may compel landlords to better maintain their units in order to fend off complaints that would open the door for inspections of more units. Based on the recent, quick increase in rental costs, I would not expect that the cost to implement and maintain an inspection process would result in substantial increases in rent for tenants, especially if the enforcement is selective, mandating inspection of a smaller portion of rental units.

There should be an expansion in assistance for weatherization programs and utility assistance. The lack of proper weatherization is one of the leading sources of unhealthy housing conditions. Currently, for Corvallis residents, there is only one weatherization assistance program. The Home Weatherization Program is operated through Community Services Consortium, with funding from Oregon Housing and Community Services, an agency that is currently being dissolved by the Oregon State Legislature. This program offers free assessments and upgrades for income-eligible renter and owner households in both Linn and Benton counties, and has a greater demand for the program than the budget can sustain every year (with the exception of 2010, when OHCS received federal stimulus funds for weatherization upgrades- those funds were exhausted in the following year) (CSC, 2013). Properly heated homes, including being properly weatherized, also reduce the risk of injuries resulting from the use of improper or less safe heating sources such as open fires and space heaters. Up to 25% of families that either lose their primary source or their primary heating sources becomes unaffordable, use space heaters or ovens and stoves, increasing the risk of contact burns, carbon monoxide exposure, and especially deadly house fires (Smith et. al., 2007). Addressing weatherization may reduce the need for an expansion of utility assistance, as families may be able to reduce energy consumption when their home is properly weatherized, ultimately reducing their energy costs.

I also recommend greater investment in the systematic collection of data about housing quality in the city of Corvallis. Because there is inadequate data collection at the local level, it is difficult to systematically assess housing conditions and the resulting health problems. Recommendations are largely based on subjective measures of housing quality, which may not necessarily be problematic, but cannot be substantiated using objectively defined measures. The lack of substantial objective measures dilutes the effectiveness and the ability of recommendations to be compelling to decision-makers. Systematically collected data allows policy-makers to target health-impacting policies to neighborhoods in most need, and creates a greater ability to track housing conditions in relation to specific health outcomes (such as asthma) (Heller et. al., 2013). Where gaps in data exist to assess potential impacts on vulnerable populations, I recommend data collection to monitor the impacts of the policy decision and to inform future policy decisions to address potential inequitable health outcomes. In addition, I recommend monitoring the implementation process, in order to make sure the policy is implemented in a way that benefits vulnerable populations properly. If the implementation of a policy does not maintain measures and systems for ensuring accountability of the policy-implementers, then it often does not serve its proper function (Heller et al., 2013).

Finally, I recommend the development of more affordable housing units. In addition to the aforementioned problems of families seeking shelter in dangerous, unhealthy units, the lack of affordable housing affects Corvallis families' ability to financially meet other essentials, such as food, health care and insurance, and utility costs. Low-income families without access to affordable rents are forced to make unfair trade-offs between basic human necessities. High housing payments relative to income, along with rising utility costs, force some families to choose between heating, eating, and filling prescriptions. One study found that low-income people who are rent burdened or severely rent burdened bills were less likely to have a usual source of medical care, were more likely to postpone treatment, and more likely to use the emergency room for treatment (Kushel et. al., 2006). An increase in the number of affordable rental units would relieve the tight rental market, increase choices for tenants that may be living in substandard housing, and likely reduce the portion of household income allocated to

housing costs so that families will not have to engage in these unfair trade-offs between housing and other essentials. The development of more rental housing, regardless of affordability, could serve the purpose of relieving the tight rental market, but it may not result in more housing options for low-income tenants, unless the cost of existing rental housing were to begin to decline to affordable prices.

Limitations

The Health Impact Assessment has been used more and more frequently to assess projected health impacts of policy decisions. However, there are some limitations of the HIA approach that cause its legitimacy to be called into question in academic setting and in the way it is applied to particular projects. Critics have claimed that some impacts determined through HIA are so small that they may be nearly immeasurable. In this case, the health impacts of a mandatory inspection process may, for example, reduce the risk of fire hazards by ensuring all units are legal and contain proper electrical systems, but Corvallis does not currently have a major problem with fires, so the impact may, in the immediate future, be immeasurable. Some HIA researchers consider that “When choosing outcomes to examine in an HIA, it should be remembered that what is important may not be measurable, and that which is measured routinely or can be measured may be unimportant (Mindell & Boltong, 2005).” However, there are other impacts of the proposed policy changes that would have evident, measurable impacts.

While this Health Impact Assessment identifies several critical issues related to healthy housing, it is not inclusive of all healthy housing-related issues. In many cases, data are not available at the city level, or the data are not stratified by housing type, race/ethnicity, income, etc. When race/ethnicity data are collected, analysis may be further limited by a lack of stratification into more specific racial categories, such as U.S. born vs. foreign born for the Latino population, or the many ethnicities contained within the category of Asian-Pacific Islander.

Another limitation of the HIA approach is that it weighs individual impacts as being equal, regardless of the perceived benefit of those impacts from the public. In the case of a

rental licensing program, it is inevitable that some tenants will benefit more than others, as was indicated in the theoretical section. For example, though housing options will be made safer and healthier, the poorest quality units (such as the estimated 650 units) will likely drop out of the market. These units will also likely be the least expensive units, ultimately requiring the poorest tenants to be forced to spend more towards rental costs when they move into better quality units. The HIA, however, might consider the net benefits to be higher across populations based solely on the direct, immediate implications of living in a higher standard housing unit.

The qualitative data collection methodology is another limitation of the HIA approach. Data is presented in summary form as “Anticipated Potential Impacts.” No record of the data collection is required, and direct quotations or transcripts are expected to be included in the analysis. HIA relies on the writers to appropriately summarize and present this information, without direct attribution or substantiation. The methodology of HIA may contribute to the creation and implementation of more equitable health policies as a result of community input and inclusiveness, but it may not stand up to more rigorous methodological requirements.

Conclusion

Due to the increase in student population and insufficient construction of new rental housing to accommodate this growth, the vacancy rate and the quality of rental housing in Corvallis has decreased in recent years. When rental housing quality deteriorates, there are negative health implications for its inhabitants. In order to ameliorate these negative health implications resulting from poor quality housing, the City of Corvallis considered changes to its current code enforcement policies. The proposed changes included either the implementation of the International Property Maintenance Code, alone, or the implementation of the International Property Maintenance Code, in conjunction with a Rental Licensing Program, which would include an inspection of all rental units prior to leasing. Current data regarding housing quality is insufficient to determine the extent to which Corvallis rental housing is substandard and unhealthy, however, public data allows for the determination that roughly 30% of housing does not fit acceptable healthy housing standards, and that the city does not receive complaints to this extent, indicating that there is underreporting on behalf of tenants

living in poor quality housing. The policy option with the most equitable health outcomes, and the highest magnitude and severity of impact contains both the IPMC and the Rental Licensing Program, as it would strengthen the comprehension and enforceability of local building codes, and would remedy the underreporting experienced in complaint-based enforcement processes. Corvallis should adopt policy option three, and should expand resources for affordable housing and weatherization/utility assistance, while investing in a more systematic collection of housing quality data to better evaluate housing conditions and better cater policy recommendations.

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