

AN ABSTRACT OF THE THESIS OF

Claire D. Smith for the degree of Honors Baccalaureate of Science in Interior Design
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Abstract Approved: _____
Carol Caughey

Every year, hundreds of low-income families on the Oregon Coast are forced to choose between putting food on the table and paying the bills. A local, non-profit agency on the Oregon Coast is working to alleviate the level of crisis that many families face, by offering a holistic approach to lowering their energy bills through emergency payment assistance, home weatherization, and financial and energy education courses. The present study examines the weatherization aspect of the program, and investigates why so many homes on the Oregon Coast do not qualify for weatherization services.

Based on research of current literature and interviews with the coastal weatherization director and families enrolled in the program, the major barriers to weatherizing coastal homes are presented and possible sources are discussed.

Keywords: Weatherization, Low-income, Energy

Corresponding e-mail address: smitclai@onid.orst.edu

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Barriers to Weatherizing Low-Income, Rural Homes on the Oregon Coast

by

Claire D. Smith

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APPROVED:

Mentor, representing Interior Design

Committee Member, representing Human Development and Family Sciences

Committee Member, representing Rural Studies

Dean, University Honors College

I understand that my project will become part of the permanent collection of Oregon State University, University Honors College. My signature below authorizes release of my project to any reader upon request.

Claire D. Smith, Author

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Barriers to Weatherizing Low-Income, Rural Homes on the Oregon Coast

I. INTRODUCTION

Every year, hundreds of families are turned away from government assisted home weatherization. In the Pacific Northwest, and specifically in two Southern Oregon coastal counties, those numbers are drastically higher than in other areas around the United States (Personal Interview, 2011).

The local low-income community action agency, created an energy assistance program in 2009, which helps families get out of debt with the power company by assisting with payment of their power bills, weatherizing their homes, and teaching them how to become more energy- and self-sufficient (MacTavish, 2009, p.1). While the program has a number of success stories, there are many families who are left with no heat in the cold winter months, despite their enrollment in the program.

The present study is in conjunction with a larger, more comprehensive study by a team of researchers at Oregon State University, who are trying to discover the limitations to the success of a local, Holistic Energy Assistance Program (HEA) and suggest ways to improve it (MacTavish, 2009, p.1). The *Empower REAL Families (ERF)* study collected data on the enrolled families and the program, and interviewed a number of the families on three separate occasions. The present study will also use information collected during an interview with the local weatherization

coordinator to discuss his perceived barriers to weatherizing homes on the Oregon Coast, the weatherization process, and collaboration with the HEA program. Using the information gathered, this thesis will compare the perceived barriers of the clients and the weatherization coordinator with the perceived barriers mentioned in previous studies on weatherization of low-income households. Information from this interview will also contribute to the ERF research.

In one study completed on the East Coast (McKnight, 2010, p.3), it was estimated that approximately 12% of households are denied weatherization during the audit process, while it was estimated by the Coastal weatherization manager that approximately 35-40% of coastal homes are not eligible (Personal Interview, 2011). The present study will examine some of the reasons why so many Oregon homes are ineligible for weatherization and how this has affected the lives of those who are in need of the most help.

The Holistic Energy Assistance Program

Nearly all households across the US are affected by the increase in energy use and cost during the winter season, and the recent steep increases in energy costs are affecting families nationwide (MacTavish, 2009, p.1). Rural residents are often hit the hardest, due to the significant portion of manufactured home ownership in such areas (MacTavish, Michelle Eley, and Sonya Salamon, 2006, p.95). Every year, low-income families find themselves unable to handle the burden of high household energy costs, and are forced to take drastic measures, from shutting off heat, to resorting to homelessness in order to cope (MacTavish, 2009, p.1). It is an ongoing

cycle that recurs with every winter season. Despite the fact that many remain hopeful that the following year will not look as bad, when bills do arrive, their only hope may be to turn to local non-profit agencies for help.

There are several programs across the US that attempt to lessen the burden of high energy costs, some by taking preventative measures, such as weatherizing the homes, and others by offering monetary assistance to the low-income families that meet specific criteria (Oregon Coast Community Action, 2010). The local Community Action Agency (CAA) is an umbrella non-profit agency which provides services to low income families on the Oregon Coast with the goal to “feed, house, warm, and educate people” (Oregon Coast Community Action, 2010). In 2009, it introduced a pilot energy assistance program (EAP), which helps low-income families reduce their energy costs in several ways, including emergency monetary assistance that is common with other energy assistance programs such as the Low-Income Home Energy Assistance Program (LIHEAP) (MacTavish, 2009, p.1).

The EAP is a completely voluntary program that is geared towards families who are highly motivated to take measures to reduce energy costs in their homes. They must “be eager to make positive, rewarding steps toward achieving sustainability” (Oregon Coast Community Action, 2010). Although weatherization is a major factor in the program, sustainability and self-sufficiency help make this program different from mere monetary assistance programs. The goals of the program go beyond energy use, by supporting a more holistic approach towards the education, nutrition, employment and medical resources in order to help clients to improve

their lifestyles and reach their goals (2010). Through these measures, the program aims at reducing the level of crisis assistance that occurs on a yearly basis with rural families in two Oregon coast counties (MacTavish, 2009, p.1).

One benefit of the program is that participants are provided with up-to-date information on energy conservation techniques available in rural areas. The program also helps identify local community members and partners in order to create a network of support, in some cases offering a personal family consultant to assist families with progress towards their goals. Incentives are offered to families who show progress towards self-sufficiency, and aids are provided for setting attainable goals in order to reach success (Oregon Coast Community Action, 2010).

Relevance of the Study

The author of the present study is a student in the College of Health and Human Sciences at Oregon State University. She joined Associate Professor Katherine MacTavish and Doctoral student Jennifer J. Maguire, who created a study to monitor families on the local coast who have been enrolled in the HEA. The goal of the *Empower REAL Families* study was to look at the effectiveness of the various forms of assistance that the program offers, as well as the specific family, social, and psychological factors that affect each family's need for the assistance in the first place (MacTavish, 2009, p.1). All twenty families participating in the pilot program were recruited for the *ERF* study. The families (N=13) that agreed to take part in the study all participated in the first round of interviews. There was attrition over time

because families moved, were in personal crises, had serious health issues, or cases were closed. In the end there were 8 families who interviewed at all three time points. Although it is important to note that intensive qualitative interviews are rich with useable data whether or not the participants were able to complete all the three interviews.

Data was gathered on the families and they were interviewed three times over the course of a year. The researcher for the present study was able to assist in conducting four of the Exit Interviews during a visit to County A with MacTavish and Maguire in March of 2011 (n=4) (see appendix for field notes). From the information gathered during the three interviews, the larger study uses all data available for analysis to look at how each household changed as being a part of the Energy Assistance Program and whether their financial and overall well being improved during that time.

The focus of the present study was specifically the weatherization portion of the assistance that The HEA program provides to their clients. This topic is of interest because of the researcher's focus on sustainability and energy-efficient housing. The *ERF* study examines holistic effects of the program on reaching household self-sufficiency, and this study explores how weatherization helps families reach their financial goals and improves their household well-being.

During the initial client interviews, it was apparent that most of the families were interested in receiving weatherization services from the program. However, by the end of the *ERF* study, it was discovered that very few of the clients had actually

received the service. Client perceptions of the weatherization aspect of the program will be discussed. The Director of Weatherization for the two Coastal Counties discussed his perceived barriers to weatherizing homes on the rural coast, and his responses will be compared with barriers discussed in literature from previous studies conducted in other parts of Oregon and across the country.

The Weatherization Process

Eligibility Requirements

In order for a family to become eligible for weatherization of their home, they must first qualify based on their total income. The total family income, before payroll deductions, must fall below 60% of the Oregon median income level based on family size (Oregon Housing, 2011). Below is a chart that shows the poverty income guidelines effective as of January 20, 2011.

Size of Family Unit	Annual Income Threshold 200%	Monthly Income Threshold 200%
1	\$21,780.00	\$1,815.00
2	\$29,420.00	\$2,451.67
3	\$37,060.00	\$3,088.33
4	\$44,700.00	\$3,725.00
5	\$52,340.00	\$4,361.67
6	\$59,980.00	\$4,998.33
7	\$67,620.00	\$5,635.00
8	\$75,260.00	\$6,271.67
Each additional member add	\$7,640.0	\$636.67

(http://www.oregon.gov/OHCS/SOS_Low_Income_Weatherization_Assistance_Oregon.shtml)

If the household meets the income guidelines, they are put on a waiting list to receive an energy audit from the weatherization crew. This waiting list is lengthy; and because of tight funding, the list is ranked based on a priority list (Personal interview, 2011). Disabled seniors are at the top of the mandated priority list, followed by families with children under 6, and households with “high residential energy use” or “high energy burden” (Zimmer, 2009, p.19). “High residential energy use” is defined as: “energy usage above average as a result of household composition or unusual needs for energy” (p.19). “High energy burden” is when “20 percent or more of the household income is going towards energy” (p.19). If families enrolled in the HEA program can prove that they are motivated to get out of debt and improve their energy efficiency based on completed goals and attendance at required education courses, they can move up on the points priority list (Personal interview, 2011).

Energy Audit

Once the household reaches the top of the priority list, they are scheduled for an energy audit, as performed by the auditors of the local weatherization agency. The audit will determine if the house qualifies for weatherization and what measures should be taken to improve the energy efficiency of the home.

During the energy audit process, the inspector will generally perform a blower door inspection and a duct blaster. These processes can help determine the number and severity of leaks throughout the home. The blower door test will usually be

performed at both the beginning and the end of the weatherization process in order to determine the marked improvement from the weatherization services (Van der Meer, p.1).

The blower door system is made up of a variable speed fan and pressure gauges that can be attached to an exterior doorway and measure the pressure differences that are generated when the fan is turned on (Van der Meer, p.1) The test takes approximately 15 minutes to complete, and the Coastal Weatherization Director says that it is one of the more educational pieces that the auditors themselves can offer to the families because it shows them exactly what areas of their home are causing the most heat loss (Personal Interview, 2011).

Based on the energy audit, the weatherization crew will propose the work necessary for the home and will submit a bid package for local insulation contractors. The Coastal Weatherization Agency does not work with a crew base, but instead always subcontracts their work to local contractors. They try to hire general contractors whenever possible because they know the most about the total structure of a home and are often most qualified to make minor home repairs while weatherizing the home (Personal interview, 2011).

The local contractors will take the bid package and submit bids to weatherize the home. The auditor will then run a simulated energy audit through a computer program called RemDesign, which is mandated for use by the Department of Energy (DOE) (Personal Interview, 2011). Based on the bid price and the household's most recent 12-month energy usage, a Savings to Investment Ratio (SIR) will be

generated. If the SIR is not a 1 or above, the agency is not able to weatherize the home because the cost of the measure exceeds the expected savings. There are certain ways to petition a case when the SIR is below one, because there is separate funding available from programs other than the federal government; but like all programs, these funds are in limited supply. The proposed limits to the average unit cost for overall program expenditure for 2010-2011 is \$6,500 as set by the DOE (Zimmer, 2009, p.23).

The Weatherization Process

Weatherization has evolved over the years since it became a mainstream practice in the 1980s. The Weatherization Coordinator for the Southern Oregon Coast has been working with in different areas within the field of weatherization for over 25 years, including as an installer and auditor. It was common for crews to spend their entire visit outside of the home, caulking every crack in a house as a means of locking in heat, but that was later found to be an inefficient process. Locking in heat also locks in moisture, causing an unhealthy indoor living environment (Personal Interview, 2011). Today, weatherization services take a more holistic approach, looking at the house as a whole. Services include adding ceiling, wall and floor insulation, repairing and replacing furnaces, heat duct and other energy related home systems and installing energy efficient appliances and fixtures (Oregon Housing, 2011).

Following is the Oregon Housing and Community Services description of the most common weatherization services provided in Oregon (Torgerson, p.2).

Attic Insulation	Much of a home's heat can escape through an attic. Most attic insulation is "loose" cellulose material, and installed with an attic blower system.	Air Infiltration	Air Infiltration measures (weather-stripping, sealing holes in walls and foundation) helps to prevent unwanted drafts. One component of air infiltration includes "testing" a home for proper air flow and ventilation.
Kneewall Insulation	A "kneewall" is the wall between the floor of an attic and the rafters, or the short wall that separates the main walls of a house from the ceiling. Insulating these walls helps prevent moisture and drafts.	EPDM/Roof Systems	EPDM stands for "Ethylene Propylene Diene Monomer" or a rubber material used for roof systems on mobile homes. Because mobile homes don't have "attics," installing new roof systems allows for insulation of the ceiling cavity
Sidewall Insulation	Insulating the main walls of a house prevents drafts and moisture. Wall insulation is usually batt material (paper/foil backed strips of insulation) although in some cases, loose insulation may be blown in through exterior siding.	Furnace Repair/Replacement	Replacing or repairing inefficient and/or broken furnaces helps to conserve energy, as well as maintain family safety.
Floors	Underfloors and basements are the primary source of moisture and mold in a home. Insulating underfloors and installing vapor barriers can prevent drafts and moisture, as well as ground pollutants and mold from entering a home.	Water Heater	Replacing or repairing older, less efficient water heaters can reduce both household energy (electricity/natural gas) and water usage.
Windows/Doors	By eliminating drafts and "air escape," properly installing energy efficient windows can significantly reduce heating and cooling costs	Refrigerator	Replacing older, less energy efficient refrigerators can considerably cut back on electricity costs, and has the added benefit of maintaining household health and safety standards.
Duct Wrapping	Wrapping air ducts under the home with insulation helps prevent air from "escaping" and reduces heating/cooling costs	CFL	Compact Fluorescent Lamps conserve energy by using less wattage, and lasting 10-15 times as long as conventional incandescent lighting.
Duct/HVAC Sealing	Similar to Duct Wrapping--except "mastic" or caulking material is used to repair cracks/holes.	Energy Education	Energy Education involves talking to homeowners about how they can alter their everyday habits to conserve energy, and reduce utility expenses

** Information gathered from weatherization contractors across Oregon*

Cook stoves cannot be replaced by DOE weatherization services. They may be replaced by another program if the stove is found to be emitting high levels of CO₂ (Zimmer, 2009, p.42).

Homes must meet certain criteria in order to be considered fully weatherized by the US Department of Energy, and for the agency to receive funds for the work.

According to the U.S. DOE State of Oregon Weatherization Assistance Plan for 2010-2011, a DOE Weatherized Unit is defined as follows:

“A dwelling unit on which a DOE-approved energy audit, or priority list, has been applied. As funds allow, the DOE measures installed on this unit have an SIR of 1.0 or greater, but also may include any necessary energy-related health and safety measures. The use of DOE funds on this unit may include, but are not limited to, auditing; testing; measure installation; inspection; use of DOE equipment; vehicles; or DOE provided training and/or administration. Therefore, a dwelling unit that meets both the definition of a DOE weatherized unit, and has DOE funds used directly, must be counted as a DOE completed unit” (Zimmer, 2009, p.24).

II. LITERATURE REVIEW

Benefits of Weatherization

It is estimated that low-income families spend between 12% and 35% of their income on energy expenses (Torgerson, 2009, p.1). The U.S. Department of Energy estimates that the average family saves \$274 per year in energy payments once their home is weatherized, which is money that can be spent on food and other essential household items and services (p.6).

Benefits of weatherization are not limited to monetary rewards for the families whose homes are serviced. There are also several non-energy benefits that come to ratepayers and utility companies, and to households in terms of personal health, safety and comfort (Schweitzer, & Tonn, 2002, p.322).

Weatherization services also generate revenue and income in the area by creating local jobs and by the purchase of local materials. Also, the utility companies are usually located outside the local area, so money that is spent on energy bills is taken away from the local economy, whereas money that is saved due to weatherization services can then be spent within the community (Torgerson, 2009, p.1).

Often, utility companies charge lower rates to their low-income customers. In order to make up the difference, they charge other ratepayers more. When low-income households use less energy due to weatherization, the number of subsidizations is decreased, therefore saving money for the other ratepayers. One study found that non-low-income ratepayers reaped benefits between \$38 and \$467 per year due to

weatherization of low-income houses in the area (Schweitzer & Tonn, 2002, p.323-24).

Thanks to the lowered energy costs after weatherization, more families are able to pay their utilities on time, which results in fewer bad debt write-offs for the utility companies (Schweitzer & Tonn, 2002, p.324). This also reduces the need for notices in response to late payments from the utility companies. One study found an estimated 18% reduction in the number of calls and notices (p.325).

The utility company benefits from weatherization in several ways as well. There are fewer shut-offs and reconnections because of non-payments, so money is saved by the utility company in not having to disconnect and reconnect household energy due to inability of customers to pay bills (Schweitzer & Tonn, 2002, p.325).

Part of the weatherization process is removing deteriorating and malfunctioning gas appliances and replacing them with new, more efficient appliances. This results in fewer service calls, saving money on staffing and resources (Schweitzer & Tonn, 2002, p.325). The replacement of faulty and deteriorating appliances results in reduced risk of household explosions and fires, and tends to reduce the utility's insurance costs (p.326).

Due to low-flow showerheads and faucet aerator retrofits, families benefit from reduced water and sewer charges. Such water-saving processes save families an average of \$271 per year (in 2001 dollars) (Schweitzer & Tonn, 2002, p.327).

Weatherization structural repairs and improvements tend to increase the useful life and overall value of the home (p.327). Many families are able to stay in one home

for longer periods of time thanks to the lowering of energy bills. Increased mobility due to economic hardship leads to an increase in school drop-out rates for children in the families, which can in turn lead to lower lifetime earnings (p.328), so housing stability has far-reaching benefits for the family. According to the Regional Consolidated Services, a weatherization company based in North Carolina, the average annual home energy savings after weatherization is \$358. They estimate that for every \$1 spent to weatherize a home, approximately \$1.53 is saved in reduced energy costs for the family, and gas-heated homes specifically see a 23% decrease in energy bills overall (Regional Consolidated Services).

Safety is improved in many ways thanks to the weatherization process, one being the reduced incidence of home fires. Improved methods of heating due to weatherization reduce need for potentially dangerous methods of heating, such as space heaters. Although it cannot be demonstrated conclusively, authors of Non-Energy Benefits of the US Weatherization Assistance Program, Martin Schweitzer and Bruce Tonn suggest that people get fewer colds when living in a house that is sufficiently heated during the winter months (2003, p.329). By reducing energy costs and installing more efficient forms of heating, families are able to keep their heat on, and may therefore take fewer days off due to illnesses (p.329).

Society as a whole benefits economically from weatherization in several ways. New jobs are created for people who perform weatherization services; so average personal income rises, translating into increases in federal income-tax collections (p.331). Dollars not spent on imported energy are spent within local communities,

therefore increasing local revenues (p.331) and decreasing the need for imported energy. The total combined savings across the United States during the winter of 2005-2006 was \$1.9 billion (Regional Consolidated Services).

Population:

The two counties monitored for this study span the Southern Oregon Coast and are considered by the state to be rural counties. Information from the 2008 OHCS Poverty Report from ORRCA provides a snapshot of the residents who live in the two counties.

County A

In 2007, 15.6% of County A residents lived in poverty, which is high when compared to the Oregon average of 13.3% and the US average of 13.3% (Oregon Housing, 2009). Fifty-four percent of households in poverty were headed by a single mother. Twenty-one percent of children under 18 in the county were living in poverty. Twenty-two percent of people with a disability live in poverty. The median household income in County A was \$36,271, which is \$11,000 below the state median income of \$47,385 (Oregon Housing, 2009). According to the 2005-2009 American Community Survey for County A, there are 30,000 housing units in the area, 27,300 of which are occupied units. Sixty-eight percent of the total homes are single-unit structures, 14% are multi-unit structures, 17% are mobile homes, and 32.9% of all homes are rental units. Only 20% of the homes in County A were built

after 1990. Electricity is the most common source of heat at 62.8%, followed by wood at 18.3% (U.S. Census Bureau, 2009)

County B:

The poverty level of County B, 12.1%, is lower than that of County A and the overall state of Oregon at 12.1%. County B has the highest percentage of elderly people in Oregon. Twenty-seven percent of its residents are older than 65, which is more than double the average elderly population in Oregon. Nineteen percent of the population living in poverty is elderly, while 65% of the families had children under the age of 18 (Oregon Housing, 2009). According to the U.S. Census Bureau 2005-2009 American Community Survey, there are a total of 12,222 housing units in County B, 10,430 of which are occupied. Twenty-four percent of the homes in County B are mobile homes, and 28.1% of all homes are rental units. Three-quarters of homes in the area are heated by electricity, the second most common source of fuel being wood, at 15.8% (U.S. Census Bureau, 2009)

Families Used In this Study

For the *Empower REAL Families* study, enrolled families were interviewed on three separate occasions. Based on information from the Initial and Exit interviews, eight of the families were available to participate in all three of the interviews. The researcher for the present study joined in conducting four of the Exit Interviews, so information from those families will be used in this paper (see field notes by researchers in appendix).

Defining Rural

Oregon weatherization programs separate low-income households into two categories based on climate (and therefore how many average heating degree days each area is likely to experience) (Hammond, 2009, p.19). Heating Degree Days (HDD) are defined as the cumulative number of degrees per year by which the mean temperature falls below 65°F (“Heating Degree Days Definition” 2011). The heating degree days for the wetter climate of Western Oregon (West of the Cascades) is 4,500, while Eastern Oregon (East of the Cascades) experiences a drier, colder climate and therefore has an average of 6,000 degree days (Zimmer, 2010, p.21). It is argued that this may not be an accurate way of calculating budgetary allotments to geographic areas because the percentages of urban and rural differ, and the definition of rural is not always clear. It may be necessary to allocate more funds to more sparsely populated areas because of the increased costs of supplying the services to such areas, due to barriers such as transportation and lack of supplies (Hammond, 2009, p.19).

There is much debate over the proper definition of rural, which may have an effect on the number of qualified families who are able to enroll in the program. While the Oregon Department of Energy defines rural Oregon based on a specific set of criteria, many characteristics unique to rural living situations may help shed more light on the types of homes and families that were used in the present and ERF study. It may be important to look at the family characteristics and cultural norms associated with rural lifestyles than it is to look at the mere geography of the homes.

Rural Poverty:

Because the study is focused on rural, low-income families, it is important to understand this demographic group. Although many of the families in the present study live in single-unit houses or apartments, and only one lived in a mobile home, the Weatherization crew reports that many of the homes they audit for weatherization are mobile homes (Personal Interview, 2011).

Katherine MacTavish, Associate Professor of Human Development and Family Sciences at Oregon State University, has focused her research on low-income rural family households, and published an article in 2006 with Michelle Eley and Sonya Salamon in The Georgetown Journal on Poverty Law & Policy called *Policy and Practitioner Perspectives: Housing Vulnerability Among Rural Trailer-Park Households* (2006). The article outlines the issues surrounding the insecurities of such families and possible policy changes that could help alleviate some of the problems faced. Many of the problems discussed in the article pertain to the families who are enrolled in the Holistic Energy Assistance program.

For many households, one of the most daunting and constantly increasing financial burdens associated with mobile homeownership is the high cost of utilities. Energy costs can account for 25% of a low-income family's monthly income, and it can be as high as 70% during harsh winters (p.101). Samples cited by MacTavish and social service providers for Oregon weatherization programs reported that it was not uncommon to find poorly insulated trailers and homes with energy bills topping \$200 per month in the winter. (p.101). Households often must choose between

turning on the heat and having enough money for food. With 65% of evictions due to electric and gas service termination and water discontinuance, homelessness may be a daunting reality for many of the rural poor. People are often caught in a vicious cycle of using rent money to pay the electric bill. Before they know it, they are forced to move out (p.102).

The financial burden caused by high energy costs is very much related to the structural insecurity and poor insulation in mobile homes. *Consumer Reports* surveyed mobile-homeowners; while 82% stated that they were satisfied with their home, most of them reported at least one major problem with the home (p.103). This was similar to the responses that were given by the families interviewed for the present study. While many were happy to have the home that they lived in, they reported many problems or structural insecurities. Weatherization Assistance Programs (WAP) will not service homes that are structurally unsound or have health or safety hazards, which leaves some of the most needy families without the means to lower their energy bills (McKnight, 2010, p.3).

Rural Poverty vs. Urban Poverty

The International Fund for Agricultural Development defines rural poverty as follows:

Rural poverty results from lack of assets, limited economic opportunities and poor education and capabilities, as well as disadvantages rooted in social and political inequalities. Yet large

numbers of households move in and out of poverty repeatedly, sometimes within a matter of years. So while there are rural households that find themselves in chronic, or persistent, poverty, relatively large proportions of people are poor only at specific points in time. Households fall into poverty primarily as a result of shocks such as ill health, poor harvests, social expenses, or conflict and disasters. Mobility out of poverty is associated with personal initiative and enterprise. It is highly correlated with household characteristics such as education and ownership of physical assets, and it is also dependent on good health. Beyond household-level factors, economic growth, and local availability of opportunities, markets, infrastructure and enabling institutions – including good governance – are all important (2011, p.5-6)

According to one study by sociologist Paul R. Amato of University of Nebraska-Lincoln, rural poverty can be more devastating than urban poverty. This is because of the negative attitude toward government assistance that is often associated with rural populations more than urban populations (1992, p.231). The sense of community may be less apparent in rural communities because of the large geographic distance between neighbors. A study done in 1988 found that low-income welfare recipients were more likely to give up their assistance than urban recipients, and the reason was associated to the social pressure that is often found in rural communities (p.231).

Rural Poverty and the Perception of “White Trash” in the United States

Jennifer Sherman looks at low-income families in all housing situations in her essay *Coping with Rural Poverty: Economic Survival and Moral Capital in Rural America* (2006, p.891-908), and how the cultural norms differ in the various poverty settings in America. She argues that rural low-income families often chose certain survival strategies not because they are economically beneficial, but because they are morally acceptable. Poverty rates have been higher in rural settings than urban settings since the 1960s. It is more difficult to escape the mainstream American culture in rural settings than in cities, so cultural and gender norms often lead to reluctance to ask for public assistance due to the stigma placed on it (p.891-3).

The essay by Lucy Jarosz and Victoria Lawson, “Sophisticated People Versus Rednecks: Economic Restructuring and Class Difference in America’s West”, attempts to define and understand the politics of class and whiteness and analyze how the term “redneck” fits in to the rural, white, poor community (2002, p.9).

The derogatory definitions of “redneck” include “backward, a breed apart, inbred, lazy, dirty, uneducated, coarse, uncouth, racist, right-wing, violent, intolerant, poor, trashy, and of questionable morality” (Jarosz & Lawson, 2002, p.9). However, those who categorize themselves as rednecks have a different view of the definition, saying they are “honest, hardworking, resilient, tough, enduring, patriotic, proud, religious manual laborers” (Jarosz & Lawson, 2002, p.9). Although many group the entire rural poor under the “white trash” or “redneck” stereotype, people in those communities find ways of distinguishing different levels, based more on morality

than on economic state (Sherman, 2006, p.893). A sort of moral wealth is often achieved based on their coping behaviors, and it can have a major influence on access to the local job market and community charity. Sherman believes that “cultural homogeneity and lack of anonymity in a small rural community can create greater social pressure on the poor to be culturally acceptable according the existing local standards” (p.893). Those who don’t have high moral wealth not only experience lower self-respect, but lower community respect, which makes it that much more difficult to escape the burdens of poverty.

Sherman studied a particular rural community in California, and pointed out that the stigma related to receiving welfare often stops families from getting help when they need it most. While unemployment insurance and Supplemental Security Income (also known as “disability”) were considered acceptable forms of welfare, cash assistance or food stamps were a humiliating last resort and avoided at all costs, since it is almost impossible to remain anonymous when receiving welfare in small rural communities (p.899). She reports that welfare was often referred to as a shameful means of coping with poverty, and those who received it were often referred to in the community as deadbeats, alcoholics and drug addicts. Illegal activities such as drug dealing were some of the only forms of coping considered lower than receiving means-tested welfare (p. 899).

Because the participants in the ERF study did seek and/or accept the assistance of the Holistic Energy Assistance program, any stigma associated with being poor in rural America did not affect their decision to apply for government assistance.

However, these studies help better understand why many families who are in need of assistance may not seek the help from the government, creating an inherent barrier to the weatherization of low-income families. There may be many more families who qualify for the HEA program, but do not seek it because of the stigma.

Limitations to Increasing Weatherization Services to Rural Oregon

For the degree of Masters in Public Policy at Oregon State University, D'Anne Hammond wrote an essay in 2009 titled *Low-Income Weatherization: Practical and Policy Limitations to Increasing Services to Rural Oregon*. Similar to the areas explored in the present study, Hammond researched policy and governmental barriers that limit the effectiveness of low-income weatherization programs in Oregon. She used a combination of literature research and interviews with program directors of weatherization services. Hammond's essay provides significant insight into the policies surrounding low-income welfare services in Oregon.

Hammond's essay addresses the following questions:

1. Are rural regions under-served by the program?
2. What are the difficulties in reaching and delivering services to more rural households?
3. Is it the case that policy mandates make it more difficult to increase service delivery in rural areas?
4. What role does the spatial distribution of the population and rural economy play in delivering services to households in rural areas?

(Hammond, 2009, p.1)

Hammond's essay discusses Oregon Weatherization programs and how they are funded, and then examines past experimental data regarding the ability of the services to provide benefits to low-income rural households (2009, p.2). Based on her literature review, Hammond points out some of the barriers that arise when providing general welfare services to low-income rural areas. In order to be considered "cost effective," homes that are weatherized are required to meet or exceed a one-to-one spending-to-savings ratio (*State of Oregon Weatherization Assistance Plan*, 2010-11, 22). Because of several barriers that are unique to rural areas, this ratio may be more difficult to reach, thus reducing the number of weatherized rural homes for low-income families. These barriers include transportation to remote areas lack of qualified human capital for employability, limited access to weatherization materials, and the general stigma associated with welfare found in rural communities (Hammond, 2009, p.11-16). This final barrier correlates with the study mentioned earlier by Sherman, which suggests that there is moral disdain towards those in rural communities who receive welfare. This stigma is more visible in rural communities than in urban communities because of the decreased anonymity in rural parts (2006).

Hammond also notes that transportation is an issue for many in regards to weatherizing low-income households in rural areas. For clients who wish to access weatherization program services, they often are required to travel to the program headquarters in order to attend education sessions or sign up for energy assistance.

Many low-income families do not have a reliable form of transportation available to them, which can impact their ability to receive weatherization services (Hammond, 2009, p.12).

Transportation is also an issue for the weatherization crew, who are responsible for visiting each home to decide if the house is suitable for weatherization services. In rural areas, homes are often spread very far apart, making trips from one house to another much longer than in urban neighborhoods. This increases time and money spent for travel, and increases the wait time for families to receive an energy audit of the home (Hammond, 2009, p.12).

Another barrier to the delivery of weatherization services mentioned by Hammond is the lack of satellite offices in rural communities in Oregon. While other states, such as Arizona, have found satellite offices that serve a small number of rural clients to be rather successful, Oregon program policy only allows 5% of administration costs to be distributed to each agency. This does not allow enough money to run a satellite office, therefore not making it an option (Hammond, 2009, p.17).

The lack of trained professionals in rural communities means that qualified subcontractors who are trained to weatherize homes are hard to find. Hammond explains this as a lack of education of workers in rural communities compared to the education in urban communities. According to a study by the Institution for Employment Research, only approximately one-eighth of rural workers obtain college degrees, while one-fifth of urban workers obtain a degree (p.13).

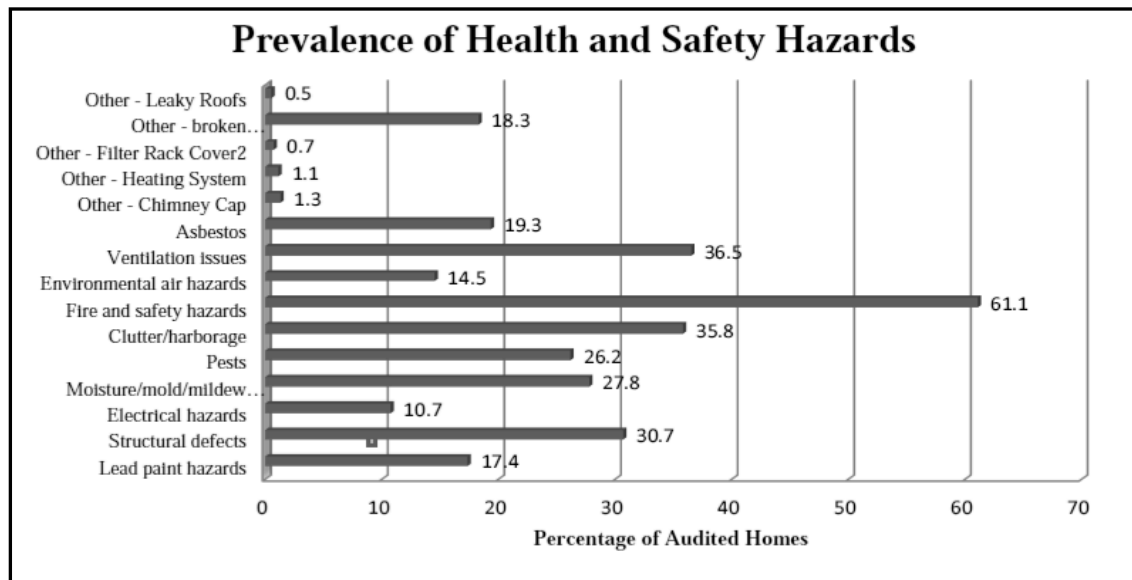
Finally, the geography of rural Oregon makes it very difficult to transport the necessary supplies to weatherize homes. In some cases, weatherization materials must be shipped hundreds of miles to remote rural areas, because such supplies are available only in densely populated urban regions (p.15). This additional transportation cost increases the total cost of weatherization per home in rural areas, therefore decreasing the cost-to-savings 1:1 ratio (p.16).

Health and Safety Issues that Prevent Weatherization

The Green and Healthy Homes Initiative (GHHI) is a national group, which focuses on creating healthier, safer, and more energy-efficient homes for families across America. Through collaboration with different types of non-profit agencies, the GHHI treats homes in a holistic manner (McKnight, 2010). The group published a pamphlet, entitled "Identified Barriers and Opportunities to Make Housing Green and Healthy Through Weatherization," which outlines the various barriers to weatherizing low-income homes based on health and safety hazards. While the study focuses on homes located on the East Coast, the data is similar to Weatherization Assistance Programs (WAP) across the country.

The preceding graph shows the prevalence of health and safety hazards that are found during the weatherization audit process (McKnight, 2010, p.6). While many of the families in the study were uncertain as to why their homes had not been weatherized, they did point out various health and safety issues that they were

aware of, such as leaking roofs or ventilation issues, that burdened them on a daily basis.



The study found that 12.88% of homes are deemed ineligible for weatherization during the pre-audit or audit phase due to various health and safety hazards. The cost of addressing such hazards is often two to three times more expensive than the funds allowed by WAP to spend, and the time spent addressing the issues while weatherizing the home more than doubles on average (McKnight, 2010, p.4). Roofs are the most common elements that require fixing, and require the most additional time. This is time that could be spent weatherizing homes for other families in need. In 2009, the State of Oregon Weatherization Assistance Plan for 2010-2011 acknowledged this issue, and in order to remedy the barrier of insufficient funds to address health and safety hazards, they allow 15% of the “Average Cost Per Home” (ACPH)(which, for 2010-2011 is set at \$6,500) to be used towards addressing such issues (Zimmer, 2009, p.26). The ACPH may be increased to \$6,688 if renewable measures are used (p.26).

When looking at the current definitions of allowable health and safety hazards under weatherization funding, the scope is too narrow to cover all of the harmful health and safety hazards that exist in homes (ex. asbestos and mold) (McKnight, 2010, p.7). There also is no formal, standardized manner or tool to use to address health and safety issues, which makes the intervention process longer and more costly than necessary (p.8). The GHHI recommends that WAPs redefine weatherization health and safety hazards in order to address a wider range of issues. Also, a standardized establishment should be created to take charge of addressing such issues nationwide and make the referral system more efficient. This will help improve the speed of weatherizing homes with cited health and safety issues, and will eliminate duplicate efforts (p.7-8).

III. METHOD

The purpose of this study was to examine the perceived barriers to weatherizing low-income homes on the Oregon Coast, in two Southern Counties specifically. Barriers discussed are from the point of view of a local weatherization coordinator and from opinions expressed by other researchers and some of the families enrolled in the Holistic Energy Assistance program.

Findings from this study will contribute to a study being conducted by Oregon State University Associate Professor Katherine MacTavish in conjunction with the local Community Action Agency (CAA). The goal of the *Empower REAL Families* study is to improve the local Holistic Energy Assistance program (HEA).

Parent Study: Empower REAL Families

The specific population monitored in this study is residents of two Pacific Northwest Coastal counties. For confidentiality purposes, they will be referred to as County A and County B in this study. The residents are supplied energy assistance through the local Community Action Agency (CAA). While the CAA weatherization crew may potentially provide services to the entire population, the *ERF* study focuses on participants enrolled in the HEA program specifically. It was estimated that thirty-six families were to be enrolled during the first year of the program in 2009 (MacTavish, 2009, p.3), but the *ERF* study focuses on ten families who agreed to take

part in three separate interviews. The present study focused on four of the families who were interviewed, and at information pertaining to the weatherization aspect of the program.

The *ERF* study has four goals, as described in the Empower REAL Families IRB Protocol (See Appendix). They are as follows:

1. To examine the links between the Holistic Energy Assistance Program and the families' improved household self-sufficiency
2. To Identify which specific individual, structural and institutional factors determine how the households experience the HEA program
3. To identify any specific opportunities or barriers associated with delivering the HEA's services to more remote rural households, as compared with more urban locations.
4. To examine how the HEA fits with the broader spectrum of mainstream energy assistance and poverty reduction programs.

(MacTavish, 2009, p.1)

In order to address these goals, the *ERF* study first examined existing administrative data on all of the households who applied for energy assistance through the local Community Action Agency. This information was available through the CAA office and includes client demographic characteristics, economic stability/vulnerability, and public assistance use by the families over time. The data reviewed relates to all families who receive energy assistance from the CAA, and were then used to compare with those families who also enroll in the HEA program.

In addition to household history, the *ERF* study looked at the on-going records of the families' participation in program activities, including which meetings and education seminars they attended, the geographic location of the household, and how these factors might be related.

All of the families enrolled in the HEA program were asked to be part of the interview process. Ten families agreed to participate in the interviews by the OSU study team. The team traveled to the families' homes on three separate occasions to complete initial, middle and exit surveys and to learn of the changes in household finances over time. The Initial interview was used to get background information on the household and included questions such as: who is living in the home, how satisfied is the family with their living situation, how long they plan to live in their current home, how many times they have moved in the past five years, their friends and family network, their level of support in the community, work experiences, community experiences, family health and well being, and expectations and experiences with the HEA program thus far (See *IRB Initial Interview* in Appendix).

The second interview was the "Daily Life" interview and was performed a few months after the initial interview. Questions asked during this interview related to a typical day for the family, how they manage their finances and possessions, and how they cope with daily and emergency causes of stress. Because this interview did not discuss weatherization, it does not pertain to the present study.

The Exit interview, which was administered when the families had enough financial stability to leave the HEA program, focused on their experiences with the program

as a whole, asking if their initial expectations of the program were fulfilled. It will also ask the families to describe where they see themselves in one year, five years and fifteen years down the road.

Family Interviews

The present study examines information gathered from the Initial and Exit interviews, specifically noting interviews with four of the families that researcher for the present study was able to participate in. Participants whose homes had been weatherized were asked whether or not the process helped them succeed with their goals in the program. If their homes had not been weatherized, they were asked for their perceptions of why this process did not occur, and how it affected their ability to manage their finances.

Weatherization Coordinator Interview

The Southern Coast Weatherization Coordinator was interviewed in March 2011 to examine the weatherization process, participation and collaboration with the HEA program, and perceived barriers to weatherizing Oregon Coastal homes. The IRB approved interview (see *Focus Group Interview: Collaborators* in appendix) was designed specifically to discuss the structural and policy limitations preventing proper coordination between the HEA program coordinators and collaborators with the program (in this case, the CAA weatherization team), and potential

opportunities to improving the HEA program. Information from this interview is used not only for the present study but will also be used for the ERF study to help improve the HEA program and the CAA as a whole.

Analysis and Comparison

The present study will compare data reported by D'Anne Hammond in "Low-Income Weatherization: Practical and Policy Limitations to Increasing Services in Rural Oregon" with the findings from field interviews with the Holistic Energy Assistance Program clients, and the Oregon Coast Weatherization Director. As noted in Chapter II, Hammond goes into detail about the policy barriers and that limit services to low-income families in rural areas, specifically in Linn County, Oregon.

IV. RESULTS

The purpose of this study was to identify barriers to weatherizing homes on the Oregon Coast based on information provided from the Coastal Weatherization Coordinator, families enrolled in the Holistic Energy Assistance program, and data from previous literature. The Coastal Weatherization Coordinator was interviewed in March of 2011, to discuss the weatherization process, perceived barriers to weatherizing homes in the area, and collaboration with the Holistic Energy Assistance program. Information from the Weatherization Coordinator interview and Family Interviews will be compared with barriers discussed in previous studies. This chapter discusses the barriers found based on the interviews and on the results reported by D'Anne Hammond in *Low-Income Weatherization: Practical and Policy Limitations to Increasing Services to Rural Oregon* (2009).

Population

The present study defines barriers to weatherization based on several different populations. The barriers that are discussed from the Weatherization Coordinator interview relate to any low-income family that applies for weatherization services in the two Southern Coastal Counties used in the study. Other barriers that are discussed are based on the interviews with families who are enrolled in the Holistic Energy Assistance program, conducted by the OSU research team for the *Empower REAL Families* study. Each family was interviewed on three separate occasions, for

an Initial, Daily Life, and Exit interview. Of the families enrolled in the *ERF* study, the researcher of the present study was able to assist the Exit interviews for four of the families. Information from the Initial and Exit interviews of these four families will be included in the results of this study (see appendix for field notes). The second, Daily Life Interview does not pertain to the present study so will not be included in the notes of this study. The size and scope of the *ERF* study is much larger than the present, undergraduate study. There was information gathered from the eight families interviewed for the *ERF* study that was available to this researcher and pertains to the weatherization aspect of the HEA program. However, it will not be included in this paper due to the excessive amount of background information that would have to be included in order to provide clear results.

Findings

Perceived Barriers Based on Weatherization Director Interview & Hammond Essay

The Coastal Weatherization Program coordinator oversees the program and manages the budget and the delivery of the program to clients. He has a staff of three, attends meetings, administers, and tries to keep his department in compliance with all of the rules and regulations set forth by the DOE, the Oregon Housing and Community Services (located in Salem), and Installer specifications. He also oversees local contractors. Their agency does not operate with a crew base, but instead operates with a contract base. They utilize local insulation contractors who provide the services.

According to the Weatherization Coordinator, roughly 35-40% of homes in the Coastal Counties do not qualify for weatherization. Throughout the interview he identified the various problems that arise during before, during, or after the audit process that disqualify a home from weatherization services. He was asked to prioritize the barriers in order of occurrence, and is thus how they will be presented in this paper.

#1 Barrier: Poor housing stock on the Oregon Coast

The housing stock on the Coast is a prominent barrier to weatherizing homes. The wet environment on the coast can be very detrimental to the homes, especially to the older residences. They often audit homes with leaky roofs, ceilings that are falling in, bad electrical systems, or too much rot or mildew, all of which would require rehabilitation work prior to weatherization work.

The Weatherization Coordinator explained, “Usually when the cost of the repair exceeds the cost of the measure, basically we have to walk away from it. We are allowed minimal repairs to a structure, but we are also limited to how much we can put into a residence. I can’t put more into repairs than the actual weatherization project is going to cost. It just doesn’t make any sense... We are not a rehabilitation program. There is an organization in our area that provides rehabilitation, but of course they have very limited funding and they also have an extensive waiting list” (Personal interview, 2011).

One family interviewed said that their main source of heat was via a ceiling fan which circulated heat from the wood stove – an inefficient and costly process. The

family had found whatever ways they could to cope with the state of their home, but because of the structural insecurities of the dwelling, they were unable receive the weatherization necessary to lower their power bills. They were stuck in a vicious cycle of not being able to improve their home because of the lack of finances, and were constantly burdened by the high cost of energy, requiring that they spend what little they had on heating the home (Initial Interview, ERF 101, 2010).

Barrier #2: Distance and lack of major roadways

Limited access to weatherization materials

The geography of rural Oregon makes it very difficult to transport the necessary supplies to weatherize homes. In some cases, weatherization materials must be shipped hundreds of miles to remote rural areas, because such supplies are available only in densely populated urban regions (Hammond, 2009, 15). This additional transportation cost increases the total cost of weatherization per home in rural areas, therefore decreasing the cost-to-savings 1:1 ratio (16). Coastal counties on the Oregon Coast are not on a major corridor such as I-5, so shipment takes more time and increases shipping costs.

Travel Barriers for Families

The Holistic Energy Assistance program requires that for certain funding to be offered to families, they must first attend educational courses on self-sufficiency and energy efficiency. This requires that the families travel (often long distances from their home) to the education course locations. Low-income families are much less likely than higher-income families to have access to a proper vehicle (Hammond,

12) thus making this option impossible. Several of the families interviewed for the present study reported having limited and/or difficult means of transportation. For those who did have cars, few had the valid insurance, drivers' licenses or necessary funds needed to use such options. A prevalent reason why many of the families had not yet received weatherization services during the initial interview was because they had not had the time or means to attend the self-sufficiency training programs offered in their areas.

Lack of Satellite Offices

Hammond notes that the lack of satellite offices in rural communities in Oregon is a barrier to the delivery of weatherization services. While other states, such as Arizona, have found satellite offices that serve a small number of rural clients to be rather successful, Oregon program policy only allows 5% of administration costs to be distributed to each agency. This does not allow enough money to run a satellite office, therefore not making it an option (2009, 17). This barrier was not discussed during the Weatherization Coordinator interview.

Barrier#3: Lack of local Contractors

Travel Distance for local contractors

The Coastal weatherization program works on homes as far south as the California border, which is about 2.5 hours from the agency headquarters. Because it is so difficult to find contractors in the southern county (County B) especially, the weatherization coordinator will often have to send County A contractors down to County B. Although most of their contractors have been willing to do so thus far, he

is concerned that with the rising fuel costs, this will become more of an issue in the future.

Hammond noted this as a prevalent barrier to providing weatherization services to families in rural areas in her essay. She stated that increased travel distances require more time and money spent for travel, and increases the wait time for families to receive an energy audit of the home (2009, 12).

Extensive regulations scare off potential contractors

One problem encountered when hiring local contractors is that many are only interested in working with new construction. Because the housing stock on the Coast is so poor, and because there are so many additional requirements associated with older houses, such as EPA certification for lead and insurance requirements, many contractors are reluctant to work on weatherization jobs. The Weatherization Coordinator explained that whenever the government announces new funding for weatherization programs, they often see a dramatic increase in contractor interest. However, when they explain to the contractors all of the insurance they have to carry, regulations, and guidelines they have to follow, that interest quickly evaporates (Personal Interview, 2011).

Lack of Qualified Contractors

The lack of trained professionals in rural communities means that qualified subcontractors who are trained to weatherize homes are hard to find. Hammond explains this as a lack of education of workers in rural communities compared to the education in urban communities. According to a study by the Institution for

Employment Research, only approximately one-eighth of rural workers obtain college degrees, while one-fifth of urban workers obtain a degree (Hammond, 13).

Barrier #4: Increasing fuel and material costs.

In addition to high fuel costs, many of the products that they use, such as insulation and vinyl windows, are petroleum based. In the past year, the weatherization crew has seen a 28% increase in insulation product costs alone. As gas prices rise to above \$4.00 a gallon, the Weatherization Coordinator predicts that their contractors will start adding a fuel surcharge to any work that they do. This will mean that the more remote rural areas will cost even more to weatherize than they already do.

Barrier #5: Lack of funding

As with many government aid programs, there is a rising concern about available funding. Due to the current uncertain political climate, the Weatherization and Holistic Energy Assistance programs both have the potential to lose federal funding, which may result in the loss of such programs or require that the programs be redesigned or combined with other programs. If the budget for the programs shrinks, it will inevitably mean that they will have to either limit further the number of services or decrease the number of clients they serve.

Barrier #6: Issues with Rental properties

There are some cases where the landlord of a rental home doesn't want to participate in weatherization program. The Weatherization Coordinator explained that, "any time we do a rental, [the landlord] has to sign a contract with our program saying that they agree to not raise the tenant's rent for a period of 1 year from the

time that we've completed the work on that dwelling and we also ask them to not sell it for a 2 year period." Many landlords want the flexibility to raise the rent any time they want or they want to sell it after weatherization has been completed, which has happened in the past. Their biggest concern is protecting the families who are renting the home, but in the end the landlord has final say.

Barrier #7: Limitations from the State Historic Preservation Office (SHPO)

The Weatherization Coordinator explained that in order to complete weatherization for any home that is over 50 years old, his department must submit paperwork to SHPO, to determine if home is considered an historic landmark, if it has potential to be historic, or has "historic properties." SHPO determines whether the dwelling is historic or has historic value and limits what can be done on the property for weatherization. When replacing windows on historic dwellings, the crew cannot alter the front of the house (street facing side) in any way. Any new floor and attic insulation or ventilation can't be visible from the front. John laughs as he says, "they even count 50 year old mobile homes."

Barrier #8: Insulated Homes

Sometimes they go into homes that are already fully insulated. At that point there is nothing else they can do, so they tend to walk away.

Barrier #9: Income Guidelines

Sometimes, after deeper investigation, they find that the families were over the maximum income guidelines. Occasionally the family does not properly report all of

their income to the HEA program, which will render them unqualified for weatherization services.

Barrier #10: Homes for sale

In the past, the weatherization crew has have been asked to weatherize homes that are for sale. This is against their policy guidelines; they cannot weatherize a home that is for sale.

Barrier #11: SIR ratings below 1

As described before, the Savings to Investment ratio should be higher than 1 for the crew to be able to receive Department of Energy funding to weatherize the home. They encounter many homes that for various health, safety or quality issues, they cannot justify working on the home.

Barrier #12: Stigma

The Weatherization Coordinator brought up the elderly population several times, noting that they often aren't aware of the weatherization program, or they don't think they qualify or "deserve" the services. He has had seniors decline the offer to have their home weatherized and he asks, "Have you worked hard all of your life? Have you paid your taxes? Then here's your reward."

Hammond discusses a perceived stigma often associated with low-income families in rural areas, which will sometimes limit the number who apply for welfare services. This stigma is not an issue in the present study, because the population that was studied is low-income families who have applied for government assistance programs. This stigma, however, may account for an unknown number of

low-income families who do not receive weatherization services because they never apply for it.

Barriers Specific to the Holistic Energy Assistance Program Participants

High Employee Turnover

The Coastal Community Action Agency has headquarters located in County A, which is where the Weatherization Coordinator was interviewed for this study. The agency runs several welfare programs including a pre-school for children of low-income families, a nutrition program, a substitute care home program for abused and neglected children, as well as housing, energy, and medical services ("Annual Report" 2010). The Weatherization Coordinator explained that all of the services are located in one building, so collaboration between departments is easy (Personal Interview, 2011). However, when asked what issues he saw for the Holistic Energy Assistance program as far as providing adequate services to as many applicants as possible, he noted that the program had gone through several transitions since it started a couple of years ago, and was currently trying to get back up to full speed. One major issue that he noted was the high rate of employee turnover that the program had experienced lately.

Many of the families expressed uncertainty with how much the HEA program had helped them reach self-sufficiency, in large part because the lack of a stable and consistent caseworker. One family noted that the only communication they had had

with the program after an initial meeting was the three interviews that had been administered by the Oregon State University research team.

Miscommunication between Families, HEA Caseworker, and Weatherization Auditors

During the initial interview, nearly all of the families expressed an interest in receiving weatherization services while enrolled in the HEA program. One woman was excited by the idea of “turning the home totally green” with the long term goal of installing “windmills” on the roof in order to generate electricity (Initial interview, ERF 101, 2010) By the time the Exit Interviews were administered, only one home in the survey had been weatherized. When asked why they had not received weatherization services, a prevalent response from the families was, “they never came... someone was supposed to come and test the walls, but they never came” (Exit Interview, ERF 101, 2011). Most were unsure as to why their homes had never been weatherized, under the impression that they should have been put at the top of the list to receive such services, yet had never been contacted for an audit. For the few families who had been visited by the weatherization crew for an audit, they explained that the visit had been very short and after minor visual inspection, the auditors stated that their home was ineligible.

According to one family, the weatherization crew had spent a few minutes looking at their house before stating that it did not qualify. The stucco walls and small crawl spaces made it impossible to insulate, and therefore inefficient to replace the windows. They were then told that they would hear back from the crew at a later

date to determine if there was anything that could be done on the home, but nearly six months had passed, and they had yet to hear anything (Exit Interview, ERF 205, 2011).

Confusion based on the lack of communication between the families and the caseworker for HEA was a recurring issue that was brought up during the Exit Interviews. While the weatherization coordinator made it clear that HEA families were not usually placed at the top of the priority list, most of the families seemed to be under a different impression based on promises made by their caseworker.

Summary

A summary of the points made by the Coastal Weatherization Coordinator includes observations that the primary barriers limiting their ability to weatherize Coastal Oregon homes is the condition of the homes, the distance from metropolitan areas and major roadways, the lack of local contractors. Many of these barriers are similar to those identified by Hammond (2009), which are transportation, lack of skilled employees, limited availability of weatherization materials and satellite offices.

Although lack of funding was not noted as the most debilitating barrier in the interviews or from previous studies, it is clear that most of the other barriers would be remedied if funding were to increase for both the Weatherization and the Holistic Energy Assistance program.

Lack of, or miscommunication between the families enrolled in the HEA program and the caseworkers for the program seems to be giving families false hopes for getting their homes weatherized. The only family that had their home weatherized was located in an area of County A which appeared more suburban than rural. This may have something to do with why they received the services easily, while many of the families who lived farther out of town never even received a visit from the weatherization auditor.

V. CONCLUSION AND RECOMMENDATIONS

The purpose of this study was to examine the perceived barriers to weatherizing low-income homes on the Oregon Coast, in two Coastal Counties (A and B), both from the point of view of a local weatherization coordinator and from opinions expressed by a few of the families enrolled in the Holistic Energy Assistance Program. Barriers discussed in previously published studies were compared with barriers discussed in interviews with County A residents enrolled in the energy assistance program and with the Coastal Weatherization Coordinator.

Findings from this study will contribute to a larger study being conducted by Oregon State University Associate Professor Katherine MacTavish in conjunction with the Coastal Community Action Agency (CAA). The goal of the *Empower REAL Families* study is to improve the Holistic Energy Assistance (HEA) program.

The results of the study show that the degraded quality of the homes, the travel distances associated rural areas, and the lack of local contactors are the major barriers that limit the number of homes in Counties A and B from being weatherized. Other prominent issues that arose were lack of funding for the assistance programs and miscommunication between the participants in the program and the program coordinators.

Implications of Findings

A recurring theme that appeared from the interviews with the weatherization coordinator, the HEA families, and the background literature research indicate that

if there were more funds available to the assistance programs, many of the barriers would be reduced or eliminated altogether. This is a prominent issue for welfare programs across the United States, and as government funding gets tighter while gas and energy prices continue to rise, the issue may get worse before it gets better.

The results of the study show that it is often the most degraded and run-down homes that do not qualify for weatherization services because of mold, rot, moisture caused damage, or other health and safety issues. However, it may be those very homes that are most in need of assistance, because the safety and health issues often make the home less livable, with drafts, deteriorated insulation, and lead-filled walls.

Because Hammond's essay focuses on the policy limitations that affect weatherization to low-income families, it goes into detail about the various regulations, which are put into place to try and aid in the system of weatherizing homes, but often create roadblocks and complications along the way. Although it is important for regulations to ensure the safety of the workers and families, it may be necessary to consider whether the various regulations hinder the success of the weatherization program.

Limitations

The population for this study was a very small group of participants in enrolled in the HEA Program in County A. Some of the families who participated in the Initial interviews for the *ERF* study were unable to be contacted for the Exit interviews,

due to disconnected phone lines or early termination from the program, therefore a complete data set was not possible. This study and the ERF study merely show a small snapshot of the total population that is served by the Coastal County weatherization crew, so it is not accurate to say that the perceived lack of success is entirely accurate.

There is much debate over the proper definition of rural, which may have an effect on the number of qualified families who are able to enroll in the program. The Oregon Department of Energy defines rural Oregon based on a specific set of criteria (as noted in the literature review) but many characteristics unique to rural living situations may help shed more light on the types of homes and families that were used in the present and ERF study. It may be important to look at the family characteristics and cultural norms associated with rural lifestyles than it is to look at the mere geography of the homes.

The coordinator of the weatherization program recalled several instances where he and his crew were greeted with tears of joy from people they had helped. He seemed most proud of the help that they had been able to provide to their elderly clients, who rejoiced because they were no longer confined to a single room of their home to stay warm, or were able to buy their monthly prescriptions and pay their power bills that month (Personal Interview, 2011). Perhaps if the study had been able to reach a larger portion of the population, there would have been a higher number of success stories.

Due to the nature of this study, certain assumptions must be made that those who were interviewed are giving truthful answers to the questions they were asked.

Because the family interviews were conducted over the course of a year, some families were asked to recall events that had occurred months before, which may have skewed the events of reality slightly.

The present study was also limited in that it only looks at how the families responded to the weatherization aspect of the HEA program. It does not look into the other aspects of the program, such as the financial wellness classes or counseling from a personalized family consultant, as the ERF study does. There are cases where families were able to improve their financial well-being and avoid shut-off notices from the power companies even if their home had not been weatherized. Whether these improvements were because of the program or if they are improvements that can be sustained cannot be answered in the realm of this study.

There are many more barriers that were not discussed in this study, but because each household audited has a unique set of conditions, not every instance could be covered. Also, the interviews were based on an IRB approved set of questions written for the ERF study, which had little focus on the weatherization aspect of the program.

Suggestions for Future Research

Although this study did not reach any solid conclusions for ways to increase the number of low-income, rural homes that are weatherized on the Oregon Coast, it

does provide information to welfare programs that may aid in improving programs like the Holistic Energy Assistance Program in the future. There are other, more successful programs in the United States that offer weatherization and energy assistance to low-income families, and a comparison study could help the Coastal programs improve their system.

Greater insight into the workings of the audit and weatherization process could be gained if researchers were able to join the weatherization crew for a day on the job. Families whose homes were audited but not weatherized were often confused about why their homes did not qualify,

It is also important to note that this study only took into consideration weatherization measures that are considered to be most cost effective and beneficial according to today's standards. As technology advances and as energy efficient materials and products become more affordable and prevalent on the market, it will be necessary for current weatherization methods to be re-evaluated. One question that arose several times throughout research was whether funds could better be spent towards building new homes that are healthier and more efficient instead of spending money to weatherize the homes that were in unstable condition. Again, other programs may already implement this procedure, and research would have to be done to see if it is an effective measure.

Further studies may conclude that the combination of several assistance agencies may increase efficiency, funding, and overall success of programs like the HEA

program. The lack of staff and funding that seemed to be an issue for some CAA programs might be remedied if efforts were combined.

By looking at the successes of other weatherization and energy assistance programs nationally and internationally, it may be possible to find new ways to reach a greater number of those in need. Are there more successful weatherization programs in urban areas than in rural areas? If so, what are the factors that contribute to this success?

Concluding Comments

It should be noted that most of the families involved in the Exit interviews expressed gratitude towards the HEA program, whether their home had been weatherized or not. While it is sometimes difficult to put a positive spin on the current state of America's welfare system, the positive and hopeful demeanor that came from so many of the families may give hope that the efforts of the program were not all in vain.

As with all social welfare programs, there is always room for improvement. What is important is that research is being conducted with the goal of improving these programs and enriching the lives of as many deserving people as possible. By raising awareness about sustainability and weatherization, one can only hope that public support will increase and eventually government funding will follow. Social workers should be commended, as they choose their line of work out of their compassion for mankind. Many only wish that the limited budget didn't require programs to choose

between helping a lot of people a little, or helping a few people a lot. The HEA program is a new and innovative approach to helping families reach financial stability, and whether or not it proves to be a success, it will be a learning tool for future programs to come.

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VII. APPENDICES

Appendix A: IRB Notification of Approval for Student Researcher Addition



Institutional Review Board • Office of Research Integrity
 B308 Kerr Administration Building, Corvallis, Oregon 97331-2140
 Tel 541-737-8008 | Fax 541-737-3093 | IRB@oregonstate.edu
<http://oregonstate.edu/research/ori/humansubjects.htm>

NOTIFICATION OF APPROVAL

November 30, 2010

Principal Investigator:	Katherine MacTavish	Department:	HDFS
Study Team Members:			
Student Researcher:	Jennifer Maguire, Clair Smith		
Study Number:	4659		
Study Title:	EmPower REAL (Reducing Engery Among Lower-income Families)		
Funding Source:	Oregon Coast Community Action Agency		
Submission Type:	Project Revision received 11/16/2010		
Review Category:	Expedited	Category Number:	5,6,7
Waiver(s):	None	Number of Participants:	60
Risk level for children ¹ :	N/A		

The above referenced study was reviewed and approved by the OSU Institutional Review Board (IRB).

Approval Date: 11/30/2010

Annual continuing review applications are due at least 30 days prior to expiration date

Expiration Date: 08/01/2011

Documents included in IRB approval:

- | | | |
|--|--|--|
| <input type="checkbox"/> Protocol | <input type="checkbox"/> Recruiting tools | <input type="checkbox"/> External IRB approvals |
| <input type="checkbox"/> Consent forms | <input type="checkbox"/> Test instruments | <input type="checkbox"/> Translated documents |
| <input type="checkbox"/> Assent forms | <input type="checkbox"/> Attachment A: Radiation | <input type="checkbox"/> Attachment B: Human materials |
| <input type="checkbox"/> Grant/contract | <input type="checkbox"/> Letters of support | <input type="checkbox"/> Other: |
| <input checked="" type="checkbox"/> Project revisions: Addition of Clair Smith to the study team | | |

Principal Investigator responsibilities for fulfilling the requirements of approval:

- All study team members should be kept informed of the status of the research.
- Any changes to the research must be submitted to the IRB for review and approval prior to the activation of the changes.
- Reports of unanticipated problems involving risks to participants or others must be submitted to the IRB within three calendar days.
- Only consent forms with a valid approval stamp may be presented to participants.
- Submit a continuing review application or final report to the IRB for review at least four weeks prior to the expiration date. Failure to submit a continuing review application prior to the expiration date will result in termination of the research, discontinuation of enrolled participants, and the submission of a new application to the IRB.

If you have any questions, please contact the IRB Office at IRB@oregonstate.edu or by phone at (541) 737-8008.

¹ Where parental permission is to be obtained, the IRB may find that the permission of one parent is sufficient for research to be conducted under §46.404 or §46.405. Where research is covered by §§46.406 and 46.407 and permission is to be obtained from parents, both parents must give their permission unless one parent is deceased, unknown, incompetent, or not reasonably available, or when only one parent has legal responsibility for the care and custody of the child.

APPENDIX B: IRB Informed Consent Form
(used for Weatherization Director Interview)

EMPOWER *REAL* FAMILIES
INFORMED CONSENT- COLLABORATORS

Project Title: EmPower *REAL* Families Implementation Study **Principal**

Investigator: Katherine A. MacTavish

Student Researcher: Jennifer J. Maguire

Sponsor: Oregon Housing and Community Services

Version Date: August 2, 2010

1. WHAT IS THE PURPOSE OF THIS FORM?

This form contains information you will need to help you decide whether to be in this study or not. Please read the form carefully and ask the study team member questions about anything that is not clear.

2. WHY IS THIS STUDY BEING DONE?

The purpose of this study is to understand how effective the EmPower program is in helping households reduce energy costs and move toward greater self-sufficiency. To complete this study we would like to include you in a focus group interview where you will be asked to talk about your perceptions of the program.

3. WHY AM I BEING INVITED TO TAKE PART IN THIS STUDY?

You are being invited to take part in this study because you have been identified by ORCCA as a collaborator with the *EmPower* program. All collaborators are invited to participate.

12. WHAT WILL HAPPEN IF I TAKE PART IN THIS RESEARCH STUDY?

If you agree to take part in the study you will be asked to participate in a focus group interview. During that interview you will be asked about your perceptions of program implementation, program impacts, and specific opportunities and challenges associated with program delivery in more remote rural locations.

There are other parts to the study including a focus group interview with program collaborators and interviews with households enrolled in EmPower. We will also look at other program models to gain an understanding of how EmPower fits within a larger spectrum of energy assistance and poverty reduction programs.

Study duration: Your participation in the focus group will take approximately 1-2 hours during one meeting.

Recordings and photographs: The interviews will be recorded with a digital audio recorder. We will use the recordings to transcribe the discussion and to fill in gaps in our field notes taken during the interviews. Audio recording is optional and not required to be part of the study.

_____ I agree to be audio recorded.

Initials

_____ I do not agree to be audio recorded.

Initials

Storage and Future use of data: We may store your focus group data indefinitely. Because it is not possible for us to know what studies may be a part of our future work, we ask that you give permission now for us to use your focus group without being contacted about each future study. Future use of your data will be limited to studies about rural household energy programs. We will not pay you for the use of your data or any products, patents, or licenses that result from it. If you agree now to future use of your data, but decide in the future that you would like to have them removed from research, please contact Katherine A. MacTavish, Principal Investigator, at (541) 737-9130.

_____ You may store my data for use in future studies.

Initials

_____ You may not store my data for use in future studies.

Initials

Future contact: We may contact you in the future for another similar study. You may ask us to stop contacting you at any time.

Study Results: We will share what from the study in several ways. We will share general findings with you and other participants upon request. Formal findings will be shared with EmPower, with other community action agencies across Oregon, and with applied research audiences nationally. Presentations in local places and reports to local media sources may be used to inform leaders about household energy issues. In addition, we may share what we learn through working papers, policy briefs and presentations at professional conferences. No names or personally identifying information will be used in the sharing, presentation, or publication of the data; your information will remain confidential. Please contact Katherine A. MacTavish, Principal Investigator, at (541) 737-9130 with any questions.

12. WHAT ARE THE RISKS AND POSSIBLE DISCOMFORTS OF THIS STUDY?

The possible risks and/or discomforts associated with the being in the study are minimal. Confidentiality will be strictly enforced but there the chance for a breach of confidentiality. Our research team is specially trained in interview techniques but some interview questions or interactions might make you feel uncomfortable. You may also experience effects from the interviews that are not yet known to the researchers.

To minimize risks will remind focus group participants about their role in maintaining confidentiality. We will not tell ORCCA or EmPower which collaborators enroll in the study. We will not link your name directly to any of the information you give us. Instead you will be assigned a code. We will use those codes on any notes, files, or correspondence. All information will be stored in a locking file cabinet in a locked office or on password protected computers.

6. WHAT ARE THE BENEFITS OF THIS STUDY?

This study is not designed to benefit you directly.

7. WILL I BE PAID FOR BEING IN THIS STUDY?

You will not be paid for being in this research study.

8. WHO IS PAYING FOR THIS STUDY?

Oregon Housing and Community Services is paying for this research to be done.

9. WHO WILL SEE THE INFORMATION I GIVE?

The information you provide during this research study will be kept confidential to the extent permitted by law. To help ensure confidentiality, we will use an identification code on data forms, have your data locked in filing cabinets in a locked storage areas and use password-protected computer files. Only the study team will have access to the records. Federal regulatory agencies and the Oregon State University Institutional Review Board (a committee that reviews and approves research studies) may inspect and copy records pertaining to this research. Some of these records could contain information that personally identifies you.

Your identity will not be revealed in any research reports or presentations.

10. WHAT OTHER CHOICES DO I HAVE IF I DO NOT TAKE PART IN THIS STUDY? Participation in this study is voluntary. If you decide to participate, you are free to withdraw at any time without penalty, your partnership with EmPower and ORCCA will not be impacted. You will not be treated differently if you decide to stop taking part in the study. If you choose to withdraw from this project before it ends, the researchers may keep information collected about you and this information may be included in study reports.

Optional questions: All interview questions are optional questions and you are free to skip any questions that you would prefer not to answer.

11. WHO DO I CONTACT IF I HAVE QUESTIONS?

If you have any questions about this research project, please contact: Katherine A. MacTavish, Principal Investigator, at (541) 737-9130.

If you have questions about your rights or welfare as a participant, please contact the Oregon State University Institutional Review Board (IRB) Office, at (541) 737-8008 or by email at IRB@oregonstate.edu

12. WHAT DOES MY SIGNATURE ON THIS CONSENT FORM MEAN?

Your signature indicates that this study has been explained to you, that your questions have been answered, and that you agree to take part in this study. You will receive a copy of this form.

Participant's Name (printed): _____

Focus Group Agency Affiliation (printed): _____

(Signature of Participant)

(Date)

(Signature of Person Obtaining Consent)

(Date)

APPENDIX C: IRB Interview Questions, Weatherization Director

FOCUS GROUP INTERVIEW EMPOWER STAFF

I have been asked by Oregon Coast Community Action to talk with the staff program staff members about the *EmPower Program*.

As many of you know, my name is XXX and I will be asking you some questions today. My colleague YYY will be operating the recorder, taking notes and keeping track of time so we finish by xyz o'clock.

I will be asking for your opinions about three general areas:

1. Your expectations and experiences with the program during this past year.
2. Structural or policy considerations related to the implementation of Empower.
3. Potential opportunities that might make the Empower more effective.

As we proceed, we want you to be aware of 5 things:

- ✓ **First, it is important that you feel free to say what you really think.** There are not right or wrong answers. All of your experiences and opinions are important.
- ✓ **Second, while participation is voluntary,** we would like to **hear from everyone.** If you feel more comfortable talking one-on-one we will be happy to meet with you after this session or at another time.
- ✓ **Third, everything that is said in this discussion will be completely confidential.** No names or other identifying information will be used in any reports. However, some aspects of confidentiality are out of our control and dependent on your ability to keep what is discussed confidential. We ask that what's said in this room stays in this room.
- ✓ **Fourth, we are using an audio recorder** so we can correctly capture all of your ideas. After our discussion today, the recording will be transcribed and then erased. Your answers will be combined with the information we gain from others and reported to Oregon Coast Community Action later in the month.
- ✓ **Finally, Community Action will use the information to help improve its** services to families seeking energy assistance and participating in the *EmPower Program*.

Before we really start the conversation I would like to quickly go around the table and have each of you introduce yourself giving your name and your current role in the program.

1. YOUR EXPECTATIONS AND EXPERIENCES

I want to understand more about your expectations and experiences with Empower during this last year.

- ✓ What were your **expectations** for the program?
- ✓ How do these **expectations match up with your experience this year?** Can you give us a specific example?

2. STRUCTURAL and POLICY CONSIDERATIONS

Any program working with low income families encounters challenges. I want to talk about the specific challenges you might have encountered with:

- ✓ Recruitment of families to the EmPower Program?
- ✓ Engagement of families in the EmPower Program? Any special challenges around:
 - Intake and eligibility?
 - Home energy assessments? Case management?
 - Family participation education classes (energy and budgeting)? The goals are goals that family has chosen so they are happy about that.
 - Families' use of resources (light bulbs and information)?
 - Other?
- ✓ Retention of EmPower families? Why did families leave the program? What strategies were used to retain families?

How could efforts to serve EmPower families be organized or structured to better meet these challenges in your program? What would your program need to effectively make these changes?

Here is a list of additional services families have been offered in the program. What is your impression of how families made use of these services?

- ✓ Energy education
- ✓ Energy saving products,
- ✓ Energy bill
- ✓ Financial education
- ✓ Incentives
- ✓ Goal setting
- ✓ Case management
- ✓ Service referrals
- ✓ Other

How effective, in your view, were these services?

What changes, if any, did you note resulting from families' use of these services? Can you provide a specific example?

3. POTENTIAL OPPORTUNITIES

Below are lists of strategies other energy assistance programs have identified as effective in helping reduce energy costs and move families toward self sufficiency. [Show list including all below]

- ✓ Offering childcare and snacks during education classes – childcare and food is always good. All clients that have children need to make arrangements so this would be. Funding dependent.
- ✓ Providing timely (within 24 hours) follow-up for homebound persons and other households who are unable to maintain adequate home temperatures. If there is an emergency we have a very short turnaround –most people come in before lights are turned off. Power company refers to ORCAA for a crisis.
- ✓ Establishing higher LIHEAP benefits for vulnerable populations.
- ✓ Lowering or eliminating co-payments to vulnerable households during the crisis period of the LIHEAP program
- ✓ Sponsoring special service days just for elderly and other vulnerable LIHEAP recipients.
- ✓ Creating a crisis program especially for vulnerable populations.
- ✓ Providing blankets and throws.
- ✓ Providing a second issuance of regular assistance during the current program year, at least for persons at the lowest end of the income guidelines without additional application, particularly for those with "high energy burdens."
- ✓ Providing year-round services (also helps prevent rush at one time of year).
- ✓ Linking benefits to fuel costs.
- ✓ Providing education to partner agencies about each program's services.
- ✓ Serving in advisory roles about development of education campaigns, program design, and emergency plans.
- ✓ Providing client referrals to partner programs.
- ✓ Providing intake functions for partner programs.
- ✓ Conducting program outreach for partner programs.
- ✓ Providing services to each other's clients.
- ✓ Merging of multiple funding sources to accomplish a common goal.

What strategies do you see as potential opportunities for your program? What would your program need to be able to employ these strategies?

Conclusion

What would you say is the biggest lessons learned from this past year of providing EmPower services?

Are there any other thoughts you would like to share about this past year of the EmPower Program?

I though it was a positive experience, I really enjoyed. I like being able to spend more time with folks. I like getting to know people.

Thank you for your time. If you think of other things you would like to say later, please give us a call or send an email. Here is our address (give out OSU business cards).

Thank you again!

APPENDIX D:**EMPOWER *REAL FAMILIES*****INITIAL HOUSEHOLD INTERVIEW**

INTRODUCTION: I WOULD LIKE TO GET TO KNOW A LITTLE BIT MORE ABOUT YOUR HOUSEHOLD. I'LL BE ASKING YOU SOME QUESTIONS ABOUT YOU AND YOUR HOUSEHOLD, YOUR RESIDENTIAL AND WORK HISTORY, YOUR PERCEPTIONS OF YOUR COMMUNITY, AND YOUR EXPERIENCES WITH THE *EMPOWER*.

RESIDENTIAL EXPERIENCES- First, we are interested in knowing more about your current living situation.

Who currently lives in your household?

Overall, how satisfied are you with your current living situation (type of dwelling, location, who you live with)? Why?

What is the best and worst thing about living here?

Do you think of your living situation as long-term or temporary? Why? How long?

Now I would like to know about the places you have lived during the past five years. Let's start with the place you lived before where you live now and work our way back from there.

For each residence:

Community/location?

Type of housing? (apartment, mobile, house, etc.)

Owner/renter status?

Length of time?

With whom?

Full-time/part-time?

Overall, how satisfied were you with that living situation (type of dwelling, location, who you live with)? Why?

Did you think of this past residence as long-term or temporary? Why and why moved?

You have identified ____ moves in the past five years. Is that pattern typical across your life span?

When you think about your future, what is your "ideal" housing situation (type of dwelling, location, who you live with)? How likely is it that you'll achieve this ideal housing situation in the next year? 5 years? Ever? Why?

FRIEND AND FAMILY NETWORK: NOW I WOULD LIKE TO KNOW A BIT MORE ABOUT OTHER PEOPLE IN YOUR LIFE WHO ARE NOT CURRENTLY IN YOUR HOUSEHOLD. LET'S START WITH YOUR RELATIVES.

First, do you have family in the area? (who, type and frequency of contact, exchanges/ supports)

Are there **other family members** that are/were important to your household?
(who, where located, type and frequency of contact, exchanges/ supports)

NOW I WOULD LIKE TO KNOW A LITTLE ABOUT YOUR FRIENDS. WOULD YOU DESCRIBE YOUR FRIEND NETWORK? (E.G. LARGE OR SMALL? LOCAL OR NON-LOCAL? TIGHTLY KNIT OR MORE LOOSELY CONNECTED?)

When you think about your friend and family network, how satisfied are you with the level of support you have? Why?

When you or your family need help or support, who would you turn to first?
Second? Third?

WORK EXPERIENCES- Tell me about your work experiences over the past five years. Let's start with your current or most recent job and work backward.

For each:

- Type of job?
- Location?
- When hired and duration?
- Full-time/ part-time? Hours/ schedule?
- Pay/ benefits?
- How did you get the job?
- Best/worst thing about that job?
- Short or long term, step on a career path?
- Why left?

Overall, how satisfied are you with the work opportunities you have had?

How do you get by when there is no work?

When you think about the future, what are your work-related aspirations?

What would it take for you to achieve those aspirations?

How probable is it that you will achieve these aspirations in the next year? 5 years?

Ever? Why?

COMMUNITY EXPERIENCES- Now I want to ask you some questions about your experiences in this community.

Were you or anyone in your household born in this community?

If not, what kind of community did you grow up in (rural, small town, city, etc)? How did you come to live in this community?

What area do you consider to be your community? (Show satellite map) Why that area?

What is the best/worst thing about your community?

How do people in your community relate to each other?

Do you feel like you belong? Why/why not?

If you left, what would be the main reasons? Where would you go?

Do you think your children will remain in the community when they grow up? Why or why not?

PROGRAM EXPERIENCES AND EXPECTATIONS- Now we would like to know a bit about your experiences with the *EmPower* program and your expectations for the future.

How long have you been enrolled in the program?

How did you first hear about the program?

The program offers many different services [show card to include: energy education, weatherization, energy saving products, energy bill subsidy, financial education, incentives, goal setting, case management and service referrals]. Which services are you most interested in for your household? Why? Which are you least interested in? Why?

Which services have you made use of so far? How?

What about Empower has helped you the most?

What support services do you use from other sources in your community? (Food bank, South Coast Business Employment Corporation, public transportation, etc.)

What services do you and your family need that aren't available in your immediate community?

What do you do to access those services? Or do you "skip" that need (for example, going to the dentist) or make do some other way?

In your conversations with *Empower* program staff you have identified the following as goals [refer to family goals from case notes].

For each:

What will it take for you and your household to reach that goal?

What could stop you from achieving that goal?

How likely do you think it is you will achieve that goal in next year? 5 years?

Ever?

FAMILY HEALTH AND WELLBEING- Because the Empower program works to affect change in many areas of family life including health and wellbeing we would like you to complete three questionnaires. The first, HEALTH PERCEPTIONS, measures how you and your doctor perceive your general health, times you have been to the hospital, and health conditions you may have experienced in the last year. The second, MOOD RATING, asks you to report your moods for the last week. The third, FEELINGS AND THOUGHTS, asks you to report on your feelings and thoughts.

I want to assure you that all of your personal information will be kept completely confidential. As you can see there is no name attached to the questionnaires-only a code. Please complete all three within one week. Feel free to call if you have **ANY** questions or concerns – I will leave you with my business card and contact information. When you have the forms done, you can mail them to me in this postage-paid addressed envelope. Otherwise, I can pick the questionnaires up on my next visit.

Thank you so much for your thoughtful contributions to our study!

APPENDIX E:



EMPOWER *REAL FAMILIES*

EXIT INTERVIEW

PROGRAM EXPERIENCES: In this interview we would like to ask you about your experiences participating in the EmPower Program.

What were your expectations for taking part in the EmPower program when you first enrolled?

How have your experiences matched up with your expectations?

How, if at all, has your household life changed as a result of taking part in EmPower?

What aspect of the program helped most?

- Energy education?
- Weatherization?
- Energy saving products?
- Energy bill subsidy?
- Financial education?
- Incentives?
- Goal Setting?
- Case management?
- Service referrals?

Now let's talk about next steps.

Do you feel as though you are ready to exit the program?

Why or why not?

Where would I find you in one year?

Five years from now?

In 15 years?

How, if at all, will your experiences with EmPower help you get there?

Thank you so much for your thoughtful contributions to our study!

APPENDIX F:**EMPOWER REAL FAMILIES INTERVIEW NOTES**

(From field notes taken by Katherine MacTavish & Jennifer Maguire)

Family 101*Initial Interview (8/26/10):*

When asked about her current living situation the interviewee is proud of her home, and happy to own it, but wishes she had the funds to improve it. A long-term goal would be to turn the home “totally green.” She hopes for home improvement help from the HEA program including weatherization, and wishes it would “move along faster.” Later, it is discovered that the house does not qualify for weatherization due to several code violations.

Exit Interview (3/10/11):

When asked about weatherization, the family gets confused, saying, “they never came... Someone was supposed to come and test the walls but they never came.” They are unsure as to why no one ever came to audit the house. Apparently someone from the CAA did come out to inform them about how to lower their power bills but simply said to stop using electric space-heaters, and that the CAA “couldn’t do anything” more to help.

Their energy costs didn’t change much over the course of the year. They took an energy class but it didn’t teach them anything new.

Family 205:*Initial Interview (8/26/10):*

Family 205 is a four-person household (mom, dad, and two daughters), and was enrolled in the HEA program for three months at the time of the first interview, and had high hopes for what the program could potentially do for them. They were attracted to the program because of the energy subsidy and the financial education courses that are offered. They were still waiting to be weatherized at the time, but stated that weatherization was a high priority for them. They live in a very old house that is made of stucco, with single pane windows and carpet covered sub-flooring with no padding in between.

Exit Interview (3/10/11):

When asked about their initial expectations of the program, the wife stated that she hadn't really known what to expect, but had hoped to have their home weatherized since they had been told they would be when they signed up for the program. They said that it took over a year for the weatherization assessment crew to come out to their homes, and after a five-minute audit, were informed that their home did not qualify. The husband described the two auditors: "they were in their 20's and when they went under the house they came back and said it was too tight. I thought it might be because they were so large, I fit under the house fine." The weatherization team said that the home could not be weatherized because that the plaster walls made it too difficult to replace the windows and the crawl spaces were too small so it would be difficult to insulate. Without insulation, it would not be worth replacing

the windows. The husband offered to do the insulation himself if the weatherization company would simply give him the materials, but they said that was not an option. They did, however, say they would speak with their supervisor and get back to them in a couple of months, but that never happened. The family was very disappointed that they were unable to receive weatherization.

Family 206

This family is made up of a young mother and her daughter, and during the Exit interview, the mother's boyfriend is living in the house as well.

Initial Interview (8/26/10):

At the time of this interview the mother and daughter had been living in the apartment in County A for 2 weeks. She is happy enough with her living situation although she is a little dissatisfied with the cleanliness of the home when she moved in. She is not very interested in the energy education or weatherization that the program offers, as her energy bill is already fairly low, around \$35 a month. This is because the EmPower program has a structured energy subsidy set up for her. She was interested in receiving energy saving products, such as CFLs. She is unable to attend any of the classes offered because she cannot afford daycare for her daughter and has no reliable means of transportation.

Exit Interview (3/10/11)

The mother felt like the program had done a good job at meeting her expectations in the beginning, but got less reliable as time went on, as she has little to no contact with the program or her caseworker anymore. She assumes that the energy subsidy

that pays half of her energy bill and continues to appear each month is from HEA, which is a huge help.

When asked about weatherization, she says that she is still waiting to be audited. “I thought it would be a priority,” she says, “but it still hasn’t happened yet.” She thinks she has been on the waiting list for at least four months by now. Her home is very drafty and she has to hang blankets over the windows, but it does not do a very good job at keeping the heat in. She has also tried caulking the windows herself, but again, doesn’t think that is working very well. She points out that her front door is crooked, letting in cold air and light from outside. Her interest in weatherization has increased since the first interview, in part because of friends who have told her it is very helpful.

Family 207

Initial Interview (8/27/10):

This family of four (a mother and her three children) lives in a home in North Bend. The home is not far from town, in a neighborhood with on every block.

The mother first enrolled in HEA because of the energy assistance, but showed interest in the energy education and weatherization services. She was interested in these services not only for herself, but because it would help her mother-in-law, who owned the home and was allowing the family to live in the home rent-free. The case manager had told her that she would move up on the weatherization waiting list if she attended the classes.

Exit Interview (3/11/11)

This is one of the few homes in the study that received weatherization services over the duration of the study. The mother feels that the services provided by HEA have met the initial expectations. A few of the windows in the home were replaced (although she wasn't exactly sure why some of the old, leaky windows in the bedrooms hadn't been touched) and insulation was installed. She feels that her bill has dropped from \$400 to \$100 on a good month. When asked about the weatherization procedure, she explains that it was fairly quick and painless, and she was not very involved in the process. She feels she is ready to exit the program, as she has been able to reach her personal goals independently for a while now.