

Rental Housing Energy Efficiency Work Group

# Energy Efficiency in Rental Housing

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## INTRODUCTION

In early 2010, Minnesota Community Action Partnership (MinnCAP) convened the Rental Housing Energy Efficiency Work Group. The overall goal of the work group was to explore barriers to and effective energy efficiency solutions within the rental housing sector. The work group considered solutions identified within the boundaries of consensus.

MinnCAP convened a diverse group of stakeholders that represented utility companies, affordable housing owners and advocates, renter advocates, a landlord association, energy efficiency advocates, state departments of energy and housing finance, and the public utilities commission. See Appendix A for a complete list of participants. Seven meetings were held throughout 2010 exploring barriers and opportunities that exist within Minnesota in furthering energy efficiency within the rental housing sector.

In the fall of 2010, the work group broke into small teams based on three prioritized topic areas that grew out of earlier discussions: benchmarking, consumer education and outreach, and multi-family Conservation Improvement Program. Each team generated a list of recommendations. This paper is the result of the meetings held in 2010 and presents the recommendations of each team. The work group continues to meet regularly and therefore, this document is a work in progress.

### Structure of Paper

The structure of this paper reflects conversations had during a series of meetings held in 2010. Initially, there was a brief discussion reviewing the general *background* of energy efficiency in rental housing in Minnesota. Next, work group participants identified *barriers and opportunities* that exist within this sector. Through these conversations, objectives for increasing energy efficiency in rental housing in Minnesota were identified. Work group participants then worked in small groups to further explore specific objectives and generated *recommendations*. The recommendations were presented to the large work group. For the purpose of this paper, additional objectives and recommendations that were not taken up by this group, but that were identified during meetings have been included here in the last section, future considerations.

# BACKGROUND

## Overview

Nationally, many people recognize energy efficiency as an important resource that can help meet future energy needs. In Minnesota, programs have been developed to address the barriers in increasing residential energy efficiency and conservation, but most programs are focused on homeowners, single family homes, or on commercial and industrial properties with high energy intensity where lighting and other equipment are on throughout the day. Rental housing has unique constraints that require a different approach from other residential energy efficiency programs. Programs have been developed to increase consumer awareness of energy efficiency, to provide incentives for homeowners and businesses, or to provide financing options to make investments feasible. There has not been a similar focus on providing specific tools for rental property owners to make similar improvements.

Rental housing includes a wide variety of types of buildings, ranging from single family detached to multi-family properties with 100 or more units. For the purpose of this paper, the term “rental housing” will include all building types. The term, “multi-family” will refer to buildings with five (5) or more units. This distinction reflects the definition used by many utility companies in Minnesota.

## *Rental Housing in Minnesota*

According to the 2000 US Census, there are 1,895,127 occupied housing units in Minnesota. Roughly 25 percent of households live in a rental property. While 75 percent of households owned their homes according to the 2000 Census, this percentage is anticipated to decline due to economic conditions and demographic changes. The 482,403 households that rent live in all types of housing structures, from single family homes to buildings with 100 or more units. Table 1 shows the number of rental households in Minnesota. This data, broken down by county, can be found in Appendix B.

**Table 1: Housing Units, Owner and Renter Occupied, Minnesota**  
Source: US Census 2000

COUNTY	Total Occupied Housing	Owner Occupied	Renter Occupied	% Renter Occupied
TOTAL	1,895,127	1,412,724	482,403	25.45%

In Minnesota, close to 17 percent of housing units are in multi-family buildings (five or more units). This state average is above the national average, which is around 14 percent. Tables 2 and 3 show the breakdown of housing units statewide.

**Table 2: Housing Units Grouped by Size, Minnesota**

Source: US Census 2000

	<b>Actual</b>	<b>Percentage</b>
<b>1-4 units</b>	1,711,368	<b>82.84%</b>
<b>5+ units</b>	349,302	<b>16.91%</b>
<b>Other type of Housing</b>	5,276	<b>0.26%</b>
<b>TOTAL</b>	2,065,946	<b>100%</b>

**Table 3: Housing Units, Minnesota**

Source: US Census 2000

<b>Housing Units</b>	<b>Total</b>	<b>Percentage of Total</b>
<b>Single Family detached</b>	1,399,993	<b>67.8%</b>
<b>Single Family attached</b>	107,385	<b>5.2%</b>
<b>Duplex</b>	62,137	<b>3.0%</b>
<b>3-4 units</b>	48,235	<b>2.3%</b>
<b>5-9 units</b>	49,307	<b>2.4%</b>
<b>10-19 units</b>	79,019	<b>3.8%</b>
<b>20-49 units</b>	99,966	<b>4.8%</b>
<b>50+ units</b>	121,010	<b>5.9%</b>
<b>Mobile Homes</b>	93,618	<b>4.5%</b>
<b>Total</b>	2,065,946	<b>100%</b>

Rental housing in the United States and Minnesota is dominated by lower income households. Seventy-eight percent of renters have incomes of less than \$50,000 as compared to 37 percent of owners. Renters occupying subsidized housing units have even lower incomes. The average income for a renter in a subsidized unit was \$17,961, compared to \$38,463 for a non-subsidized unit (2001 American Housing Survey). Additionally, because energy prices are rising faster than the overall rate of housing costs in the US, energy costs are a growing factor in housing affordability. According to Brown & Wolfe (2007), overall housing costs increased by 110 percent between 2003 and 2006 while energy costs increased by 126 percent during that same period (Brown & Wolfe, 2007).

According to the US Energy Information Administration, residential housing accounts for 22 percent of energy use in the US. Of that amount, 72 percent is accounted for by single-family housing and 28 percent by multi-family housing. Multi-family buildings tend to be less energy intensive than single-family homes. Energy used in multi-family housing buildings varies depending on a range of

characteristics, such as the condition of the building, the age, original design, HVAC equipment, and other factors or policies, such as who pays the utility bills. Individual building factors create a scenario with wide variances in energy consumption, making it difficult to use generalities when discussing this sector.

## *Energy Efficiency in Minnesota*

### **Building Codes**

In 2009, the Minnesota Department of Labor and Industry updated the residential and commercial energy building codes for Minnesota, based on the International Residential Code (IRC), as published by the International Code Council, with Minnesota Specific Amendments, and the American Society of Heating, Refrigerating & Air Conditioning Engineers, Inc. (ASHRAE) Standard 90.1-2004, as published by ASHRAE, with Minnesota Specific amendments. The building code establishes a minimum code of standards for the construction, reconstruction, alteration, and repair of residential buildings governing matters including design and construction standards regarding heat loss control, illumination, climate control, and radon control methods pursuant to Minnesota Statutes, sections 326B.101, 326B.106, and 326B.13. On June 1, 2009, these new Energy Codes became effective. The new residential energy code, Minnesota Residential State Building Code Chapter 1322<sup>1</sup>, addresses improvements to residential, rental, and multi-family housing structures that are three (3) stories or less in height contain no conditioned common space that is shared between dwellings, and each dwelling unit must have a separate means of egress. Chapter 1322 has been simplified to the point that, in virtually all cases, a software program is not needed to show code compliance under the prescriptive path of compliance. The code now simply requires minimum R-values and maximum U-factors<sup>2</sup> for building components without regard to square footage of those elements.

### **Conservation Improvement Program (CIP)**

The Conservation Improvement Program (CIP) is mandated by Minnesota state statute §216B.241<sup>3</sup>. First enacted by the Minnesota Legislature in 1982, CIP requires Minnesota natural gas and electric utilities to invest a portion of their revenues in energy efficiency and conservation programs as well as meet a minimum spending requirement. Utilities fund CIP activities through dollars collected by ratepayers. Electric utilities that provide retail sales in Minnesota and natural gas utilities with more than one billion cubic feet in annual throughput sales in Minnesota are required to develop CIP plans. The Office of

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<sup>1</sup> Minnesota Residential State Building Code Chapter 1322 is available at [http://www.dli.mn.gov/celd/pdf/sbc\\_1322.pdf](http://www.dli.mn.gov/celd/pdf/sbc_1322.pdf)

<sup>2</sup> R-values and U-values are heat loss and heat transfer measurements used in the building and construction industry.

<sup>3</sup> <https://www.revisor.mn.gov/statutes/?id=216B.241>

Energy Security (OES) in the Minnesota Department of Commerce (DOC) provides regulatory oversight over CIP programming.

Since 1992, Minnesota state law has mandated that utilities *spend* a percentage of their gross operating revenues on conservation programming. Electric utilities are required to spend 1.5 percent, gas utilities are required to spend 0.5 percent, and electric with nuclear utilities are required to spend 2.0 percent. In 2010, the amount electric utilities are required to spend toward low-income programming changed from 0.1 percent to 0.2 percent of gross revenue from residential customers. Natural gas utilities were already required to spend 0.2 percent of gross revenue from residential customers on low-income programming.

The Next Generation Energy Act of 2007 established an energy *savings* goal. Beginning in 2010, in addition to the spending requirement, all electric and gas utilities are mandated to achieve an energy savings goal of 1.5 percent of their gross annual retail sales. With the Next Generation Act, the energy savings goal moved from being based on revenue to retail sales.

CIP programs are intended to provide incentives to consumers and businesses for saving energy through the purchase of energy efficient equipment and/or changing behaviors related to energy consumption. The goals<sup>4</sup> of utility Conservation Improvement Programs are to:

- Promote awareness and adoption of energy efficient technologies;
- Help households and businesses reduce their energy costs;
- Defer costly utility infrastructure investments; and
- Reduce emissions and conserve resources.

Typical residential CIP programming includes rebates for air sealing and insulation, heating and cooling equipment, lighting, and appliances. There are also CIP projects for commercial/industrial customers. These projects include: rebates for chiller replacement, cool storage systems, refrigeration efficiency improvements, heating systems, and rooftop air conditioners; rebates for lamp ballast replacement, street lighting or new lighting systems; rebates for farm equipment, high-efficiency motors or customer-designed projects; and grants or low-interest loans may be available for energy efficiency improvements.

Utilities file their CIP plans with OES no more than every three years. In Minnesota, utilities are required to design and administer programs. The state has regulatory oversight and a varying degree of authority

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<sup>4</sup> <http://www.state.mn.us/portal/mn/jsp/content.do?subchannel=-536895041&programid=536917273&sc3=null&sc2=null&id=-536893853&agency=Energy>

depending if the utility is investor owned, municipal owned, or a cooperatively owned utility. The Public Utilities Commission Rate approves rate structures and customer classification structures individually for each utility. As a result, rate structures and classifications vary from utility to utility.

### **Landlord Tenant Law**

In 2009, the Minnesota legislature passed a law that requires landlords to ensure a reasonable level of energy efficiency in rental housing. This was passed under the Landlord Tenant Law (504b)<sup>5</sup>.

“In every lease or license of residential premises, the landlord or licensor covenants to make the premises reasonably energy efficient by installing weather stripping, caulking, storm windows, and storm doors when any such measure will result in energy procurement cost savings, based on current and projected average residential energy costs in Minnesota, that will exceed the cost of implementing that measure, including interest, amortized over the ten-year period following the incurring of the cost [Minnesota State Statute 504B.161(a)(3)].”

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<sup>5</sup> <https://www.revisor.mn.gov/data/revisor/statute/2009/504B/2009-504B.pdf>

## **BARRIERS AND OPPORTUNITIES**

### **Barriers**

The Rental Housing Energy Efficiency Work Group came together to (re-)examine the issues that act as barriers to increase energy efficiency in the rental housing market in Minnesota. While other issues were raised, the following is a review of the barriers that garnered the most attention during work group discussions.

#### **Split Incentive or Principal-Agent Dilemma**

In energy efficiency arenas, a principal-agent dilemma situation arises when one agent is responsible for making decisions or investments from which another, second agent benefits. In the case of rental housing, when a property owner pays the utility bill, the renter does not receive the financial benefit of conserving energy. If the renter pays the utility bill, the property owner receives no financial benefit from investing in energy efficiency measures.

The impact of split incentives between property owners and tenants is the most often cited primary barrier to increased efficiency in multi-family buildings (Granade H.C., Creyts J., Derkach A., Farese P., Nyquist S., and Ostrowski K., 2009). As with other issues in this arena, the incentive barrier is complicated by the high segmentation of the parties involved in this arena. Motivated property owners respond to market based incentives differently than non-motivated owners. For profit companies respond differently than non-profit organizations.

The split incentive is exacerbated within energy efficiency programming when incentives are available to one party, yet only the other party has the authority to implement the measures. For example, to access income eligible programs, renters must meet the income eligibility criteria, but they do not have the authority to approve changes to the structure or, in many cases, replace appliances. A tenant in an apartment rarely has input into the decision about the efficiency of a heating system, even when they are responsible for paying the utility bill. Tenants who pay their own utility bill may benefit from a property owner investing in added insulation, duct sealing, efficient lights, and energy efficiency appliances, but often tenants are not in a position to implement these measures to the property or pay for the associated costs. Investments in energy efficiency may not be visible, therefore, owners may not have the ability to demonstrate the benefits to tenants or prospective renters.

## Financial Constraints

Financial constraints and competing capital expenses can hinder property owners from providing an energy efficient property. Motivated property owners may be prohibited from investing in energy efficiency measures if capital is not accessible. In extreme cases, financially constrained property owners may opt to sell their property or not be able to maintain properties, resulting in less access to affordable and unsafe housing with high utility costs.

Energy efficiency incentives or tax credits from government, utilities, and other sources are intended to overcome such financial constraints, but they typically are not designed to meet the unique needs of multi-family property owners. As noted earlier, the majority of residential energy efficiency incentives are targeted to homeowners. The majority of commercial energy efficiency incentives are targeted to office and industrial properties. While some rebates and financing mechanisms exist for multi-family properties, encouraging more financing options may not always be the answer. Financing options for the multifamily sector needs to be carefully designed to meet the specific needs of this sector.

## Market Segmentation

As mentioned earlier, rental housing is a highly segmented market sector. There are wide variations of buildings, property owners, tenants, and utility providers. The segmentation creates difficulty in addressing energy conservation in the rental housing market.

Rental housing building types vary in design, construction, age, condition, and size. The variation in buildings makes it difficult to generalize about the potential energy savings and to establish best practice models that can be easily implemented or promoted throughout the sector. In addition, multi-family buildings often do not fit into residential building standards, whereas single family and 2-4 unit property do.

Along with building differences, property owners vary from individuals who live in a building which they own, to individuals who own a few buildings as an investment or source of additional income, to large non-profit and for-profit companies. In some cases, property owners are the main decision maker, while in other situations, third party property managers wield greater influence and are the primary decision makers.

Renters vary widely, as well. While some people rent out of necessity, others rent by choice. There is wide variability in the education levels of tenants, in tenant incomes, and in their interest and knowledge of energy efficiency.

Lastly, the decentralized nature of utility conservation programming in Minnesota results in varying programs. Programs may not be consistent between utilities which can lead to confusion. Utilities that are small may not have the capacity to develop specific programs for the diverse needs of this highly segmented market. All these differences make it more complex to design energy conservation and consumer education programs that are applicable to all customer segments.

### **Baseline Information**

Defining a baseline against which a property owner or manager can compare their property to other similar properties can make it easier to identify where and how to invest in efficiency upgrades. Due to the diversity of building types, it may be difficult for a property owner or manager to evaluate how one building performs in relation to other buildings and to assess the potential energy savings within a particular building. Accessing baseline information is often difficult and property owners who are motivated to invest in energy efficiency may find it difficult to identify which buildings to prioritize without expensive expert assistance. Creating a benchmark (baseline against which to measure performance) can be especially useful for multi-family property owners who are interested in investing in energy efficiency measures. Having access to tools that convey baseline information will facilitate property owners in understanding where and how to invest. Unfortunately, the most commonly used baseline databases do not include a multi-family property category, so most benchmarking tools cannot provide comparative information.

Improving the estimates of potential energy savings can educate property owners in understanding the benefits of investing in energy efficiency. Property owners hesitant about the potential return on investment of energy efficiency investments may gain interest with a better understanding of the energy and financial savings. Additionally, having access to benchmarking information may make property owners feel more in control of the process and the decision making.

### **Access to Reliable and Trusted Information**

For property owners, it may be difficult to find technical expertise and information on the costs and savings available through energy efficiency measures. There is little reliable information on the costs of implementing energy efficiency measures in multi-family properties or on reasonable expectations for the savings from implementing these measures. Uncertainty in energy savings potential can create or further increase a sense of reluctance on behalf of a building owner or property manager to invest in building

assessments. Similarly, capital improvements are unappealing without clarity on the return on investment.

It is not easy for property owners to find information regarding available incentive and financing programs. The Minnesota Department of Commerce, Office of Energy Security has links to utilities in Minnesota that offer Conservation Improvement Programs<sup>6</sup>. The US Department of Energy hosts the Database of State Incentives for Renewables and Efficiency (DSIRE) website<sup>7</sup> that acts as a source of information on state, local, utility and federal incentives and policies. Variability in program requirements, utility service territory, and finance options can be confusing though.

A lack of consistency in communications creates confusion and can create a sense of mistrust. For success, it is critical to overcome that sense of mistrust by providing clear and accurate information from a reliable source that does not appear to have a financial stake in the transaction.

Renters typically are unaware of their rights to energy efficiency improvements or, if aware, how to hold landlords accountable. Renters lack information on the efficiency of units when applying for apartments. There are few energy efficiency programs made available to renters. Those that are available rely on the property owners and the renter making an agreement involving property rights, which may be confusing and complicated.

Lastly, interested property owners or renters may not know how to seek out information in order to reduce their energy consumption through conservation. Interested property owners may not be familiar with research conducted on best practices or education programs geared toward renters. Renters that do not pay their own utilities may not receive information explaining how their behavior affects their energy consumption.

### **Owner Motivation**

As noted earlier, motivated property owners may find it difficult to access technical expertise and information on energy efficiency upgrades. For property owners that are not motivated, there are not many factors that create an incentive for property owners to improve energy efficiency. The split-incentive reduces financial motivations. The lack of transparency in the market means tenants do not demand efficiency information. If property owners wanted to market energy efficiency performance information, they lack tools to demonstrate this information to renters. Efficiency programming designed

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<sup>6</sup> <http://www.state.mn.us/portal/mn/jsp/content.do?programid=536917276&id=-536893853&agency=Energy>

<sup>7</sup> <http://www.dsireusa.org/>

for homeowners or other types of commercial property do not provide a compelling motivation to owners. The inconsistency of programs confuses owners and further reduces motivation for improving investing in energy efficiency.

### **Identifying Decision-Makers**

Due to the nature of ownership or tenant owner relationships, identifying a decision-maker for a specific community or sector is critical, and in the rental housing sector identifying an individual is a challenge. In some instances, the identified decision maker may be difficult to reach because they may not be directly involved in paying utility bills or have no presence on the property. In some cases, it may be necessary to involve more than one decision maker, such as the property owner and the property manager. If the communication or coordination between these two decision makers is not consistent and clear, there may be added barriers to implementing energy efficiency measures.

### **Opportunities**

Many opportunities are available for improving adoption of energy efficiency within the rental market. The work group generated a list of opportunities to consider in Minnesota's rental housing sector.

### **Financing**

Due to the economies of scale available in rental housing, particularly in multi-family buildings, there is the opportunity for a higher return on investment, both in terms of reaching more homes per project and in terms of achieving greater energy savings per dollar invested. The multi-family sector of residential housing has not been the target of energy efficiency programming in Minnesota in several decades, so there is ample low-hanging fruit for cost-effective investments.

Minnesota Housing Finance Agency provides financing and regulatory oversight for a large portion of Minnesota's subsidized rental housing sector. Minnesota Housing has expressed interest in promoting and investing in energy efficiency within their portfolio. This provides a significant opportunity in the form of an existing relationship with a trusted partner for outreach regarding energy efficiency programming and financing. In addition, as a housing lender, they are able to set requirements for projects using their funding. For example, property owners seeking rehabilitation financing from Minnesota Housing via the Minnesota Multifamily Rental Housing consolidated financial packaging process must use the Green Communities criteria (Minnesota Housing, 2010).<sup>8</sup> Minnesota Housing-

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<sup>8</sup> <http://www.mnhousing.gov/housing/developers/common-app/index.aspx>

funded loan programs administered through the Neighborhood Energy Connection and the Center for Energy and Environment also have energy efficiency improvement requirements.

Along with Minnesota Housing, local banks or other private financing agencies may have interest in providing energy efficiency financing. Using American Recovery and Reinvestment Act (ARRA) of 2009 funds, Chicago's Multi-Family Energy Retrofit Program leveraged funds from four banks to provide loans in order to deliver energy efficiency retrofit services to affordable, multi-unit rental properties (Chicago's Multi-Family Energy Retrofit Program, 2009).

### **Regulatory Perceptions and Interpretations**

Shortly after the ARRA of 2009 was signed into effect, the US Housing and Urban Development (HUD) and US Department of Energy (DOE) signed a memorandum of understanding (MOU). This MOU was the result of an interagency effort to improve the energy efficiency and livability of HUD assisted and Low-Income Housing Tax Credit (LIHTC) homes by minimizing barriers to participation of these homes in the Weatherization Assistance Program (WAP). DOE and HUD continue to work together to address barriers that prohibit more multi-family buildings being served by WAP funds. The National Housing Trust published a summary of the memorandum.<sup>9</sup> This increased attention on finding ways for WAP funds to be used with multi-family housing provides impetus to strengthen this partnership. This partnership could be built on and extended by applying the same or similar concepts to CIP programming.

CIP and WAP programs use cost-effectiveness tests to evaluate the amount of assistance that can be provided to a given project. Historically, the benefits recognized are limited to a small set of benefits. Based on the DOE/HUD MOU, practitioners have identified other benefits provided to the resident and the community as a result of energy efficiency in residential units. There are health and safety benefits, increased disposable income that can be used for other needs, decreased arrearages, preservation of affordable housing, decreased greenhouse gas emissions, and increased energy security on a national level.

Regarding regulatory definitions of building structures, the opportunity to reconsider current utility definitions of "residential" and "commercial" to better accommodate the unique needs of multi-family buildings could be explored. Another opportunity may lie in working to more fully incorporate rental housing, specifically multi-family buildings, into the "residential" category.

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<sup>9</sup> [http://www.nhtinc.org/downloads/nht\\_summary\\_doe\\_final\\_rule\\_multi-family\\_wap.pdf](http://www.nhtinc.org/downloads/nht_summary_doe_final_rule_multi-family_wap.pdf)

## **Consumer Education**

Consumer education is another opportunity for increased energy efficiency and conservation. In this discussion, “consumer” is defined as both landlords and tenants with recognition that given the segmentation of both categories, multiple types of education approaches will be required. Within market-rate housing, a marketing tool providing information for prospective tenants on building or unit energy efficiency and utility costs can provide landlords with the opportunity for market differentiation. Case studies that demonstrate the return on investment for other owners can be used to encourage landlords to make investments. Other ideas generated include utilizing local banks to provide education to consumers, creating a “one stop” model for interested parties where all required steps from audit to implementation are coordinated by one service provider, and lastly, holding small group meetings with landlords to gauge their level of interest in differently designed programs aimed at their specific market sector.

## **Pre-existing Tools and Programs**

Since the 1970s, the US DOE and Environmental Protection Agency (EPA) have provided resources to educate consumers about energy consumption and energy savings opportunities. Over time, private companies have developed tools and programs to identify energy saving opportunities. Non-profit organizations, government programs, and private organizations have designed initiatives to assist energy consumers in understanding how to reduce consumption. There exist building certification programs like Leadership in Energy & Environmental Design (LEED) and product certifications programs such as Energy Star. For a list of some available tools and programs that currently exist, see ATTACHMENT D: Tools.

## **Partnerships**

Partnerships have the ability to reach a wider audience, as well as overcome fear or mistrust that exists between stakeholders in this sector. Any recommendations and pilot programs designed by and implemented by partnerships that include these different stakeholders offers an opportunity to overcome this mistrust.

## RECOMMENDATIONS

After exploring the issue of energy efficiency within the rental sector, the Rental Housing Energy Efficiency Work Group identified a list of *objectives* that were designed to address barriers and take advantage of opportunities, as aforementioned. Of these, three priority objectives were identified as meriting further consideration. Table 4 presents priority objectives, along with related opportunities. Challenges were also identified and included in Table 4.

These three objectives were selected because they embody the potential for increased energy efficiency and provide the unique opportunity to take advantage of partnerships within this work group. Each objective was assigned to a small work group. The small work groups were named in accordance with their objective: Benchmarking, Conservation Improvement Programs, and Consumer Outreach and Resources.

Each small work group was tasked with generating recommendations in response to their respective objective. Each work group identified a set of goals to meet their objective. Recommendations were then developed. The following presents the goals each small work group identified along with recommendations for how to meet those goals. A background has been given in order to explain how the small work group made their recommendations.

**Table 4: Priority Objectives, Assigned to Small Work Groups**

Created by the Rental Housing Energy Efficiency Work Group

Objective	Rationale	Opportunity	Challenges
<p><b>Identify and make accessible benchmarking tools that provide whole-building information to rental property owners on the performance of their properties relative to their portfolio and other properties.</b></p>	<p>Most building owners have little or no information on how their buildings perform compared with other similar buildings. This makes it difficult or impossible to make sound financial decisions on whether to make energy efficiency improvements to properties.</p>	<p>Better information will make it easier for motivated owners to prioritize investments and make sound decisions; It can also assist funders in underwriting energy efficiency lending.</p>	<p>Privacy concerns with releasing data; incompatible data systems; property owners don't understand the value of benchmarking; utilities interest in benchmarking is unclear.</p>
<p><b>Encourage Conservation Improvement Programs (CIP) for rental housing</b></p>	<p>There are no CIP programs specifically designed for multi-family (MF) buildings. Some utilities define MF housing as Commercial/Industrial (C/I). Utilities typically offer low-income weatherization, C/I custom projects and mechanical equipment rebates. Mechanical equipment rebates are a set rebate amount for a certain piece of equipment while C/I Custom projects are more complex. C/I Custom rebate amounts tend to be individually tailored to a customer project that may involve multiple measures or installation of specialized equipment.</p>	<p>Offer rebates that apply to this underserved customer segment while allowing utilities to claim the associated energy savings.</p>	
<p><b>Increase and improve consumer education outreach</b></p>	<p>Getting the word out is difficult – Even when programs or incentives do exist, it has been difficult to spread the word. Due to the nature of energy efficiency, identifying a driver for a specific community or sector is critical. Identifying who the driver is may pose a challenge. There seems to be a disconnect between information that is available and consumer awareness.</p>	<p>“One stop” shops decreases opportunity costs, increases energy savings;</p>	<p>A lack of consistency in communications may create confusion that will result increased barriers to energy efficiency upgrades. What is best way to reach out to landlords: word of mouth, small group meetings, consumer education/information.</p>

## BENCHMARKING

Benchmarking is the comparative analysis of energy use among similar buildings using a variety of metrics including building size, age and fuel type. A number of benchmarking tools exist in the market to help with this analysis, but few specifically address multi-family properties. Benchmarking itself does not save money, but the tools provide enough analysis of utility data to identify areas with the greatest financial savings opportunity, and they can identify properties where energy audits are a cost-effective second step.

There are barriers to successfully completing benchmarking in Minnesota. First, there is no publicly accessible baseline data for properties representative of common multi-family building types found in Minnesota. Most building owners have little or no information on how their buildings perform compared with other similar buildings that have received typical maintenance and upgrades. This makes it difficult for them to make sound financial decisions on whether to make energy efficiency improvements to properties. This also means energy efficiency is generally not used as a marketing tool and makes it difficult for renters to use energy efficiency as a criterion in choosing housing.

In addition, there is no multi-family-specific benchmarking in the CBECS (Commercial Buildings Energy Consumption Survey) database. This database is developed by EnergyStar Portfolio Manager and used by other nationally-recognized benchmarking tools. Due to the different usage patterns of multi-family properties from the building types that are included and the wide variability of multi-family building types, efficiency programs struggle to identify buildings with the greatest opportunity for savings or to provide accurate savings predictions to multi-family property owners.

**GOAL: Identify and promote accessible benchmarking tools that provide whole-building information to rental property owners on the performance of their properties relative to other similar properties.**

**Background:** *There are multiple benchmarking tools available. The working group explored all tools available, and found only three that are tailored to multi-family housing. Energy ScoreCards and WEGO Wise were selected by the working group as the two strongest options available. Both tools import information automatically, and while they are working to implement that function locally it is not yet available in Minnesota. A third tool the working group examined is Energy Star Portfolio Manager. The Energy Star Portfolio Manager has significant drawbacks, in particular imposing administrative costs on projects through requiring manual data uploading and the lack of benchmarking against similar*

*properties. The Work group determined that whatever tool/program is selected, it needs to be able to interface with Minnesota's utilities to automatically import data. Additionally, cost should not be prohibitive.*

**RECOMMENDATION:** Encourage the use of Energy ScoreCards or WEGO Wise by Minnesota property owners because they provide the most useful information for multi-family buildings and are the easiest for owners and managers without energy manager training to use.

**GOAL: Explore ways to make data sharing between Minnesota utilities and property owners easier.**

**Background:** *Utilities have the ability to provide property owners with energy consumption data in CSV format, with customer consent. It's not yet clear whether it could be provided directly to a benchmarking project or program, as concerns about privacy are still being explored.*

**RECOMMENDATION:** In partnership with Minnesota utilities, develop procedures to share data between utilities and property owners. In particular:

1. Develop electronic utility waiver access forms so that tenants provide access to their utility information to property owners;
2. Explore providing one whole-building consumption number for sites that have multiple meters (to preserve the privacy of occupants), possibly providing a lowest user, median user, and highest user number to reveal the outliers;
3. Develop tools and agreements to provide data in CSV formats to benchmarking platforms; and
4. Explore whether data can be provided in CSV formats to benchmarking platforms.

**GOAL: Develop a pilot project to benchmark energy (and water) consumption for rental housing in Minnesota.**

**Background:** *Minnesota Housing is interested in benchmarking the agency's portfolio. Minnesota Housing staff are exploring a pilot project to test the concept. The Director of Research has taken the concept back to the agency's sustainable housing team, which is very supportive, but the concept still needs to be brought to the agency's leadership. More evaluation of a potential pilot project is needed before a decision can be made. Evaluation of the benefit of the Minnesota Overlay to the Green Communities criteria should be included.*

*Minnesota Green Communities is able to commit staff support to developing a pilot and fundraising. The Minnesota Multi Housing Association will communicate the opportunity to participate in the pilot with its members.*

Goals of the pilot include:

1. Demonstrate that benchmarking plus targeted outreach and education can deliver energy savings that can help meet utility savings goals;
2. Provide property owners tools to better manage utility consumption and efficiency investment decisions;
3. Test whether tools can assist energy efficiency programs and organizations to better identify buildings with significant savings opportunity and to more accurately predict savings to building owners; and
4. Test whether benchmarking tools facilitate underwriting energy efficient or 'green' loans that capitalize improvements.

**RECOMMENDATION:** Develop a pilot project for benchmarking energy (and water) consumption in Minnesota. In particular:

1. Select the preferred benchmarking tool, noting that currently small group members who have tested both tools have a strong preference for Energy ScoreCards;
2. Identify pilot project partners including energy efficiency organizations, state agencies, non-profit partners, property owners, utilities;
3. Identify funding for pilot program;
4. Negotiate contract with benchmarking tool provider;
5. Develop materials to recruit participants, to help participants upload data into tools, to educate owners on savings opportunities and implementation assistance; and
6. Evaluate effectiveness of benchmarking pilot.

## CONSERVATION IMPROVEMENT PROGRAM

Develop strategies to increase Conservation Improvement Program (CIP) programming offerings for the rental housing sector. Recommendations address both low income and non-low income housing and span across all rental properties from single-family homes to multifamily buildings.

### **GOAL: Develop methodology to demonstrate tenant benefits under shared metering.**

**Background:** *In instances where residents of rental properties have individual utility meters and are responsible for payment of their own energy usage, the benefits of energy efficiency investments will be reflected in reduced energy consumption. While it is possible that the tenant may experience an overall increase in energy consumption or energy cost due to behavior, increased use of other equipment, increased commodity costs or changes to rate structures, it is reasonable to assume that if other factors do not change then energy savings will occur. If the landlord owns the equipment being improved (appliances for example) the assumption is that this energy efficiency investment will stay with the property and will not become property of the tenant.*

**RECOMMENDATION:** Develop proposal to submit to the Office of Energy Security regarding methodology to demonstrate tenant benefits under shared metering for Low Income renter properties.

In instances where utilities are master-metered and tenants pay indirectly for energy usage (e.g. apportioned in their rent, utility allowances), benefits from energy efficiency investments may be difficult to demonstrate and quantify. While the primary goal of CIP programming is to save energy, there are several underlying concerns that have historically guided CIP programming:

1. Utility ratepayer contributions should not be transferred from one class of customers to be used to improve the property of a second class of customers when the second class of customers does not make a reasonable contribution towards the improvement.
2. Many energy efficiency investments are often a higher quality option for a planned capital expenses when maintaining property. Further consideration is needed of whether it is acceptable for property owners to use the entire energy cost savings from an investment to offset the expense of the investment. This is especially relevant in circumstances where tenants only have the ability to influence energy consumption in their own unit, but the energy consumption of each unit is a small portion of the total consumption in the whole building.
3. In order to practically use CIP funds to leverage another program, such as WAP, it may be necessary for CIP programs and participants to meet the requirements of the other program. For

example, tenants may need to meet income eligibility guidelines or the property owner may need to demonstrate direct accrual of benefits to tenants.

Permit the party making the energy efficiency investment to be eligible for payment of applicable utility rebates or benefits. For example, if a landlord purchases a high efficiency appliance for a rental property where the utilities are individually metered and the utility account is in the tenant's name, the landlord is eligible to receive the rebate if one is offered from the utility. Furthermore, when the property meets one of the conditions in the following outcome, the utility may track the rebate and associated energy savings as part of their low-income program.

When tenants do not pay for energy directly, it must be demonstrated that quantifiable benefits from efficiency measures accrue primarily to tenants. Several methods of demonstrating this that could be combined, include, but are not limited to:

1. Longer term preservation of the property as affordable housing;
2. Continuation of protection against rent increases beyond that required under the WAP regulations (10 CFR 440.22(b)(3)(ii));
3. Investment of the energy savings in facilities or services that offer measurable direct benefits to tenants;
4. Investment of the energy savings from the efficiency measures in specific health and safety improvements with measurable benefits to tenants;
5. Improvements to heat and hot water distribution, and ventilation, to improve the comfort of residents; and
6. Establishment of a shared savings programs.<sup>10</sup>

Utilities or their agents must obtain the required documentation from rental housing property owners or managing agents to certify the accrual of benefits to tenants to qualify for use of low-income CIP funds on the rental housing property, regardless of whether the property is individually or master-metered.

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<sup>10</sup> DOE, Weatherization Program Notice 10-15A, April 8, 2010. Available at: [http://www.waptac.org/data/files/website\\_docs/government/guidance/2010/wpn%2010-15a.pdf](http://www.waptac.org/data/files/website_docs/government/guidance/2010/wpn%2010-15a.pdf)

**RECOMMENDATION:** Develop proposal to submit to the Office of Energy Security regarding methodology to demonstrate tenant benefits under shared metering for non-low income renter properties.

Three scenarios need to be considered regarding the home, the meter and who pays for the improvement made:

1. Both gas and electric are individually metered and paid for by the tenant;
2. Both gas and electric are single-metered and paid for by the landlord; or
3. Electric is individually metered and paid for by the tenant and gas is single-metered and paid for by the landlord.

When a CIP investment is made to a non-low income property, the party making the investment is eligible for payment of any applicable rebates. For example: If the landlord makes the improvements but the unit is metered individually in the tenant's name, the landlord is the eligible party to receive the rebate, not the tenant as the assumption is that the CIP investment will stay with the property.

**GOAL: Develop guidance for utilities on how multi-family fits into the current residential and business segments.**

**Background:** *Multi-family building ownership structures can provide unique challenges to conservation program design and participation. Often, for a building with 5+ units, the party that makes utility payments for the common areas, a landlord or property owner, is eligible for commercial CIP program offerings while a party that makes utility payments for an individual unit is eligible for low-income and/or residential CIP program offerings. While many multi-family buildings house low-income customers, historically, utilities have not made it their practice to offer rebates to commercial customers within their low-income program segment. However, Minnesota statutes and rules do not preclude offering rebates to a party paying for the energy efficiency improvements when that party is not responsible for paying the utility bills for the residence where the improvements will be installed.*

**RECOMMENDATION:** Special treatment of a multi-family unit may be necessary to address the unique challenges due to ownership structures. For example, utilities should be allowed to develop multi-family programs or segments that will allow for both market rate and low-income investments. Programs should allow a landlord to receive rebates for energy efficiency investments. Meanwhile, low-income qualified residents of a multi-family building should not be excluded from opportunities afforded low-income single family unit renters or homeowners. A multi-family building meeting the income eligible

thresholds as approved by OES would qualify under CIP as eligible for low-income programming. In regards to a low-income multi-family program, a utility may develop a program that falls under the low-income segment. Establishing functional multi-family programs for either low-income or non low-income ratepayers will enable utilities to meet the needs of this untapped demographic while helping utilities to meet their energy savings goals.

**GOAL: Develop guidance for utilities on what qualifies as low-income participants.**

**Background:** *CIP statutes are ambiguous regarding what qualifies as CIP spending on low-income customers. Historically, utilities have used the U.S. Department of Energy (DOE) Weatherization Assistance Program (WAP) guidelines as guidance. The benefit of this practice has been that CIP funds can be used to leverage WAP funds, thus providing more funds to a particular property than would otherwise be available.*

**RECOMMENDATION:** The Rental Housing Energy Efficiency workgroup recommends that in order to use LI CIP funds on a multifamily property, the property must meet **one** of the following conditions:

1. The U.S. Department of Energy (DOE) publishes lists<sup>11</sup> of prequalified multi-family rental income-eligible properties that have been deemed income eligible for the Weatherization Assistance Program based on tenant income data collected annually by the federal government. For example, the U.S. Department of Housing and Urban Development (HUD) and U.S. Department of Agriculture (USDA) have identified income-eligible properties for the DOE lists. Any property on the most recent DOE lists is eligible for CIP low-income spending.
2. For properties not on the HUD lists, the following types of properties that are eligible for WAP based on (DOE) guidance<sup>12</sup> are also eligible for CIP low-income spending:
  - a. For properties with 2-4 units, at least 50% of the households must meet the WAP income eligibility guidelines;
  - b. For properties with 5+ units, 66% of the households must meet the WAP income eligibility guidelines.

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<sup>11</sup> HUD lists are available at: [http://www1.eere.energy.gov/wip/multifamily\\_guidance.html](http://www1.eere.energy.gov/wip/multifamily_guidance.html)

<sup>12</sup> CFR § 440.22(b)

3. Properties for which the owner can demonstrate by written statement that 50% of households (for 2-4 units) or 66% of households (for 5+ units) have applied for and have been determined to be LIHEAP eligible or eligible for WAP are also eligible for CIP low-income spending.
4. Properties for which the property owner or its agent can demonstrate to the utility confirmation that the tenants meet the eligibility guidelines such that 50% of households (for 2-4 units) or 66% of households (for 5+ units) have Section 8 vouchers or for whom Section 8 payments are made on their behalf are eligible for CIP low-income spending. Utilities are not required to collect income documentation from each tenant. Note that such properties do not necessarily qualify for WAP funds.
5. Properties for which the property owner has made a declaration as part of the mortgage that 50% of households (for 2-4 units) or 66% of households (for 5+ units) have an annual income of less than or equal to 60% of area median income are eligible for CIP low-income spending. For example, many properties have agreements with Minnesota Housing or a local city when receiving funding that designate a proportion of the units to be occupied only by tenants with certain income levels as a condition of funding. Utilities are not required to collect income documentation from each tenant. Note that such properties do not necessarily qualify for WAP funds.
6. Properties for which 50% of households (for 2-4 units) or 66% of households (for 5+ units) self-disclose to utilities that their annual income is less than or equal to 60% of area median income are eligible for CIP low-income spending. Utilities and the property owner or its agent must obtain confirmation voluntarily from tenants that they meet these eligibility guidelines. Utilities are not required to complete an income certification akin to that required for Low Income Home Energy Assistance Program (LIHEAP) or WAP eligibility. However, the utility must describe their procedures in their CIP filings and their procedures must be approved by OES as appropriate. Note that such properties do not necessarily qualify for WAP funds.

## Low Income Eligibility Demonstration for Multi-family Buildings for Conservation Improvement Programs (CIP)

Low Income Eligibility Demonstration	Percent of Households that must meet requirement (2-4 Units)	Percent of Households that must meet requirement (5+ Units)	CIP Low Income	WAP Low Income	Method of Demonstrating Income Eligibility
Property is on a US Department of Energy (DOE) list of pre-qualified multi-family properties that are income eligible for Weatherization Assistance Program (WAP) <sup>13</sup>	NA	NA	X	X	Annual certification to US Department of Housing and Urban Development (HUD)
Households that meet income eligibility qualification guidelines for a federal, state, or local government subsidized housing program	50%	66%	X	X	Annual certification to HUD or State
Individual households in property have applied for and have been determined to be LIHEAP <sup>14</sup> eligible and WAP eligible	50%	66%	X	X	WAP service provider determines eligibility
Individual households in property have applied for and have been determined to be WAP eligible but not LIHEAP eligible	50%	66%	X	X	WAP service provider determines eligibility
Housing Choice Voucher (Section 8) <sup>15</sup> payments are made on behalf of households (renters) to the landlord	50%	66%	X		Landlord
Households (renters) have Housing Choice Vouchers (Section 8)	50%	66%	X		Landlord
Individual households in property have an annual income of less than or equal to 60% of area median income	50%	66%	X		Process for resident self-disclosure to be developed by utility and approved by State

<sup>13</sup> Weatherization Assistance Program (WAP), as administered by the US Department of Energy. <http://www1.eere.energy.gov/wip/wap.html>

<sup>14</sup> Low Income Housing Energy Assistance Program (LIHEAP), administered by U.S. Office of Community Services, Administration For Children and Families. <http://www.acf.hhs.gov/programs/ocs/liheap/>.

<sup>15</sup> <http://www.hud.gov/offices/pih/programs/hcv/about/index.cfm>.

**GOAL: Compile research in order to better understand the needs and potential of energy efficiency investments in rental housing.<sup>16</sup>**

**Background:** *Research can help CIP administrators and agencies design effective programs and resources. Areas of research should include, but are not limited to, landlord motivation, rental property population, existing and past programs for rental properties (success stories and failures) and current needs for low income renters. Work group participants have expressed interest in allocating resources from their organization towards this effort.*

**RECOMMENDATION:**

1. Gather research that has been conducted on energy efficiency programs in rental housing. Leverage current expertise and previous research findings.
2. Seek out best practices for Minnesota in order to guide future CIP program development.
3. If necessary, identify additional research needs which may include:
  - a. Survey property owners who have made energy efficiency investments to learn what factors influenced their decisions.
  - b. Work with Minnesota rental property owners to develop appropriate financing packages. Different packages may be better suited for different types of the rental housing property owners. For example, rebates, low interest loans, deferred loans, or various combinations of these products may appeal to different types of property owners. This research should explore methods to assure that utility contributes meet the cost-effective tests used for analysis of CIP programming.
  - c. Conduct research to gather examples of successful multifamily energy efficiency programs around the nation. The research should also identify what energy efficiency measures were included in programs and what factors influenced the decision making process of property owners who made energy efficiency investment.

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<sup>16</sup> Conducting research focused on motivated landlords and the rental housing population in Minnesota is a recommendation being made from two work groups, Multi-family CIP and Consumer Education. While these two groups may move forward jointly, the recommendation is included in each subset of recommendations in order to demonstrate the interest expressed in both groups.

**RECOMMENDATION:** Conduct research to characterize Minnesota multi-family housing and to identify the energy efficiency measures that are generally most cost effective. The information gathered should include distribution of building location, size, and vintage; fuel consumption by end use; and utility metering design. The research should help to identify high priority buildings and sub-sectors and to illustrate potential energy savings from energy efficiency investments. This research should also characterize the range of rental property owners and the types of building they own.

## CONSUMER EDUCATION AND RESOURCES

Getting the word out is difficult – even when programs or incentives do exist, it has been difficult to spread the word. Due to the nature of energy efficiency, identifying a driver for a specific community or sector is critical. Once a decision maker has been identified, it may be difficult to share best practices with them. It is not easy to locate information regarding resources that do exist for landlords, property managers, renters, etc.

**GOAL: Identify or create best practices to be shared with program developers and motivated property owners and renters.**

**Background:** *Research can help organizations design effective consumer outreach programs and resources. Areas of research should include, but are not limited to, landlord motivation, rental property population, and existing and past programs for rental properties (success stories and failures).*

**RECOMMENDATION:** Gather research that has been conducted on energy efficiency programs in rental housing. In particular, focus on how to motivate property owners to invest in energy efficiency measures.

**RECOMMENDATION:** Develop a list of existing networks of landlords and property managers, segmented according to size/income categories.

**RECOMMENDATION:** Determine if more research needs to be conducted. Specifically, conduct research on motivated landlords and property managers to better understand how to design programs to meet this segments needs.

1. Work with networks of landlords and property managers to identify interested parties
2. Work with peer organizations to develop list of interview questions.
3. Write case studies.
4. Distribute through existing networks.

**GOAL: Increase and improve consumer education outreach by developing a comprehensive accessible resource list.**

**Background:** *The Consumer Education work group identified the EnergySmartsPay.com website as an existing tool in that serves the East Metro area. EnergySmartsPay.com is a web screening tool that*

*gathers program resources from low-income energy assistance/improvement programs and general energy improvement finance programs for homeowners, landlords, and renters in East Metro.*

**RECOMMENDATION:** Determine if EnergySmartsPay.com is expandable to statewide.

1. Engage EnergySmartsPay.com stakeholders.
2. Assess feasibility of expanding statewide.
3. Determine funding necessary to expand.
4. Develop marketing plan if necessary.

## FUTURE CONSIDERATIONS

The Rental Housing Energy Efficiency Work Group developed a set of recommendations pertaining to three priority areas. While time did not permit the Work Group to address all facets of this issue, there were additional objectives identified that may address barriers to increased energy efficiency in the rental housing sector. Table 5 reflects additional objectives with relating opportunities and challenges as identified by the Work Group.

In addition, small work groups focused on recommendations that were acceptable to all stakeholders. While priority areas were selected, within small group discussions there were issues that arose that small work group participants identified as being significant yet did not have the time necessary to come to consensus or to make a complete recommendation with regard to specific details and logistics. Not wanting these important issues to be lost, they are listed below.

The Benchmarking Work Group identified the need to focus on providing better information on energy consumption to the rental housing market. Action steps for future consideration and exploration include:

- Develop a voluntary labeling system for rental properties.
- Share energy efficiency information with tenants through that labeling system (voluntary).
- Create marketing tools highlighting energy efficiency buildings that participate in energy labeling (voluntary).

**Table 5: Additional Objectives**

Created by the Rental Housing Energy Efficiency Work Group

Objective	Rationale	Opportunities	Challenges
<b>Ensure adequate financing to meet demand for energy efficiency improvements.</b>	There is adequate financing for energy efficiency improvements to meet current demand, but if successful marketing and programming is created to result in significant improvements, demand for financing will exceed supply. It is also unclear whether current financing terms are appropriate.	There are a variety of opportunities (utility bill financing, energy efficient mortgages) that may be available in addition to current available financing.	
<b>Develop the capacity and tools to increase Energy Performance Contracting</b>	The need for experienced energy auditors and tools specific to the needs of rental housing may need to be investigated. Multi-family housing is constructed differently than single family residence and therefore may pose different issues during rehabilitation work.	Energy Performance <ul style="list-style-type: none"> <li>• Energy Performance Contracting</li> <li>• DOE and Utilities have tools</li> <li>• Certification</li> <li>• LEED</li> <li>• Energy Smart</li> <li>• Energy performance program in the UK designed for homes</li> </ul>	With Energy Performance Contracting, transaction costs are high, landlords feel like it is expensive, and there is a mistrust by landlords. In regards to building certification, structure is important and cyclical. Measurement and verification.
<b>Develop a comprehensive accessible resource list</b>	It is not easy to locate information regarding resources that do exist for landlords, property managers, renters, etc.		
<b>Increase energy efficiency regulation, i.e. building codes</b>		Building Codes	Ensuring compliance is difficult; Metro ordinances versus greater Minnesota ordinances.
<b>Use specific point of contact to encourage energy efficiency requirements</b>	To take advantage of a specific point of contact, e.g. financing, as an opportunity to incorporate energy efficiency requirements.	Conversion, licensing; Green Communities, Minnesota state requirements for green criteria; Minnesota Housing has adopted green criteria; Create a “one-stop shop” for landlords that are advertised or linked into Licensing at city level; Licensing may be a place to look. This has proven successful for other groups looking at this problem. It provides the only place that all landlords have to go.	

## APPENDIX A: Stakeholders

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**HOME Line**

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## APPENDIX B: Minnesota Rental Housing Data

### Occupied Housing Units, Minnesota, by County

Source: US Census 2000

COUNTY	Total Occupied Housing	Owner Occupied	Renter Occupied	% Renter Occupied
Aitkin	6,644	5,666	978	14.72%
Anoka	106,428	88,776	17,652	16.59%
Becker	11,844	9,528	2,316	19.55%
Beltrami	14,337	10,675	3,662	25.54%
Benton	13,065	8,772	4,293	32.86%
Big Stone	2,377	2,024	353	14.85%
Blue Earth	21,062	13,988	7,074	33.59%
Brown	10,598	8,488	2,110	19.91%
Carlton	12,064	9,892	2,172	18.00%
Carver	24,356	20,327	4,029	16.54%
Cass	10,893	9,366	1,527	14.02%
Chippewa	5,361	4,103	1,258	23.47%
Chisago	14,454	12,582	1,872	12.95%
Clay	18,670	13,377	5,293	28.35%
Clearwater	3,330	2,717	613	18.41%
Cook	2,350	1,838	512	21.79%
Cottonwood	4,917	3,953	964	19.61%
Crow Wing	22,250	17,719	4,531	20.36%
Dakota	131,151	102,549	28,602	21.81%
Dodge	6,420	5,416	1,004	15.64%
Douglas	13,276	10,244	3,032	22.84%
Faribault	6,652	5,363	1,289	19.38%
Fillmore	8,228	6,641	1,587	19.29%
Freeborn	13,356	10,508	2,848	21.32%
Goodhue	16,983	13,401	3,582	21.09%
Grant	2,534	2,082	452	17.84%
Hennepin	456,129	301,835	154,294	33.83%
Houston	7,633	6,187	1,446	18.94%
Hubbard	7,435	6,199	1,236	16.62%
Isanti	11,236	9,577	1,659	14.77%
Itasca	17,789	14,744	3,045	17.12%
Jackson	4,556	3,603	953	20.92%
Kanabec	5,759	4,840	919	15.96%
Kandiyohi	15,936	12,026	3,910	24.54%
Kittson	2,167	1,793	374	17.26%
Koochiching	6,040	4,856	1,184	19.60%
Lac qui Parle	3,316	2,675	641	19.33%
Lake	4,646	3,902	744	16.01%
Lake of the Woods	1,903	1,625	278	14.61%
Le Sueur	9,630	7,983	1,647	17.10%
Lincoln	2,653	2,134	519	19.56%
Lyon	9,715	6,643	3,072	31.62%
Mahnomen	1,969	1,522	447	22.70%

COUNTY	Total Occupied Housing	Owner Occupied	Renter Occupied	% Renter Occupied
Marshall	4,101	3,437	664	16.19%
Martin	9,067	7,014	2,053	22.64%
McLeod	13,449	10,558	2,891	21.50%
Meeker	8,590	6,997	1,593	18.54%
Mille Lacs	8,638	6,896	1,742	20.17%
Morrison	11,816	9,684	2,132	18.04%
Mower	15,582	12,197	3,385	21.72%
Murray	3,722	3,144	578	15.53%
Nicollet	10,642	8,050	2,592	24.36%
Nobles	7,939	5,961	1,978	24.91%
Norman	3,010	2,440	570	18.94%
Olmsted	47,807	36,311	11,496	24.05%
Otter Tail	22,671	18,140	4,531	19.99%
Pennington	5,525	4,121	1,404	25.41%
Pine	9,939	8,315	1,624	16.34%
Pipestone	4,069	3,154	915	22.49%
Polk	12,070	8,927	3,143	26.04%
Pope	4,513	3,647	866	19.19%
Ramsey	201,236	127,703	73,533	36.54%
Red Lake	1,727	1,371	356	20.61%
Redwood	6,674	5,336	1,338	20.05%
Renville	6,779	5,494	1,285	18.96%
Rice	18,888	14,722	4,166	22.06%
Rock	3,843	2,997	846	22.01%
Roseau	6,190	5,208	982	15.86%
Scott	30,692	26,591	4,101	13.36%
Sherburne	21,581	18,125	3,456	16.01%
Sibley	5,772	4,668	1,104	19.13%
St. Louis	82,619	61,690	20,929	25.33%
Stearns	47,604	35,111	12,493	26.24%
Steele	12,846	10,304	2,542	19.79%
Stevens	3,751	2,632	1,119	29.83%
Swift	4,353	3,357	996	22.88%
Todd	9,342	7,744	1,598	17.11%
Traverse	1,717	1,382	335	19.51%
Wabasha	8,277	6,829	1,448	17.49%
Wadena	5,426	4,202	1,224	22.56%
Waseca	7,059	5,645	1,414	20.03%
Washington	71,462	61,336	10,126	14.17%
Watonwan	4,627	3,564	1,063	22.97%
Wilkin	2,752	2,218	534	19.40%
Winona	18,744	13,310	5,434	28.99%
Wright	31,465	26,531	4,934	15.68%
Yellow Medicine	4,439	3,522	917	20.66%
<b>TOTAL</b>	<b>1,895,127</b>	<b>1,412,724</b>	<b>482,403</b>	<b>25.45%</b>

## APPENDIX C: Resources

### Minnesota Organizations

- [Minnesota Green Communities](http://www.mngreencommunities.org/) is a statewide collaboration of the Greater Minnesota Housing Fund, the Family Housing Fund, and Enterprise. The National Green Communities initiative provides funds and expertise to enable developers to build and rehabilitate homes that are healthier, more energy efficient and better for the environment -- without compromising affordability. The Minnesota initiative is designed to foster the creation of affordable, healthier, and more energy-efficient housing throughout the state of Minnesota. Website: <http://www.mngreencommunities.org/>
- [Minnesota Housing Finance Agency](http://www.mnhousing.gov/index.aspx) is the State's affordable housing bank. They offer products and services to help Minnesotans buy and fix up homes and we support the development and preservation of affordable rental housing by offering financing and on-going asset management of affordable rental housing developments. Website: <http://www.mnhousing.gov/index.aspx>
- [The Minnesota Multi Housing Association \(MHA\)](http://www.mmha.com/) promotes the highest standards in the development, management and maintenance of rental and owner-occupied multi housing. Our nearly 2,100 members together own or manage more than 250,000 multi family units in the state. MHA is one of the country's strongest and most emulated trade associations for the housing industry. Our mission is to support the multi-housing industry through public policy leadership, educational opportunities, and communications and marketing in ways that enhance the industry for its members, its residents and its communities. Website: <http://www.mmha.com/>
- The [Neighborhood Energy Connection](http://www.thenec.org/) (NEC) is a Saint Paul-based nonprofit organization that provides energy conservation information, services and programs to residents, businesses, and communities across Minnesota. NEC offers, along with a handful of other programs, financing for rental property owners and a Rental Rehabilitation Loan Program. Website: <http://www.thenec.org/>
- The [Center for Energy and Environment](#) (CEE) is a nonprofit organization that promotes the responsible use of natural and economic resources. Distinctive among nonprofits, CEE is staffed by experts in engineering, technical analysis and financing, who apply innovative technical approaches and proven business processes to increase building efficiency, reduce energy costs and ultimately improve occupants' health and safety. Founded in 1979, CEE offers a full spectrum of energy, environmental and building rehabilitation services designed to improve the lives of business owners, homeowners and tenants. CEE's research and engineering department has conducted field research in commercial, multi-family and single family buildings for 25 years. The department has also designed and directed market research studies of groups ranging from low-income households to business

owners, manufacturers and contractors. CEE is nationally known for its research and has published more than 60 technical papers on building and mechanical systems performance. Website: <http://www.mncee.org/>

- The Mission of the [Energy CENTS Coalition](#) is to promote affordable utility service for low and fixed income people, to ensure the basic necessity of energy to all citizens, and to encourage the participation of low and fixed income citizens in energy issues and energy related decision-making. Website: <http://www.energycents.org/>
- The [Clean Energy Resource Teams](#) (CERTs) connect community members with resources to identify and implement energy efficiency and renewable energy projects. The Clean Energy Resource Teams are diverse—individuals, small business owners, farmers, members of environmental groups, local utility representatives, local, state and federal government staff and elected leaders, academics—and all share common goals and values. They want strong communities, local jobs, and secure, clean, reliable energy. Website: <http://www.cleanenergyresourceteams.org/>
- The [Izaak Walton League](#) is a diverse group of over 35,000 men and women dedicated to protecting our nation's soil, air, woods, waters and wildlife. Our strength lies in our grassroots, commonsense approach to solving local, regional and national conservation issues. Our interests span the spectrum of outdoor recreation and conservation activities, from angling and birding to stream monitoring, wildlife photography and hunting. But we all share one major goal: to protect and use sustainability America's rich resources to ensure a high quality of life for all people, now and in the future. Website: <http://www.minnesotaike.org/>
- [Office of Energy Security, Minnesota Department of Commerce](#) works to move Minnesota toward a sustainable energy future, managing energy assistance funds, advocating in the public interest on energy utility rates and facility siting. We provide information and assistance to residents, builders, utilities, non-profits and policy-makers on home improvements, financial assistance, renewable technologies, policy initiatives, and utility regulations. Website: <http://www.state.mn.us/portal/mn/jsp/home.do?agency=Energy>
- [Minnesota Community Action Partnership \(MinnCAP\)](#) is made up of member organizations in communities across the state of Minnesota. Our members are Community Action agencies that offer the last local line of defense for families in need. Website: <http://minncap.org/>

The [Weatherization Assistance Program \(WAP\)](#) is funded by the [United States Department of Energy \(DOE\)](#) and provides eligible households with residential energy conservation measures and energy education. The program is administered by the Minnesota Department of Commerce

through 32 Service Providers which include Community Action Agencies, Tribal Governments and non-profits.

- [HOME Line](http://www.homelinemn.org/) provides free legal, organizing, educational and advocacy services so tenants throughout Minnesota can solve their own rental housing problems. HOME Line works to improve public and private policies relating to rental housing by involving affected tenants in the process. Website: <http://www.homelinemn.org/>
- [Minnesota Housing Partnership](http://www.mhponline.org) provides a comprehensive array of resources that help local organizations, businesses, communities, and elected officials in Minnesota create homes for all. MHP's resources include research, advocacy, technical assistance, and financial tools and support. The mission of Minnesota Housing Partnership (MHP) is to promote homes for all Minnesotans and assist Minnesota communities in the creation and preservation of housing affordable to low- and moderate-income people. Website: <http://www.mhponline.org>

## Utilities

- [The Minnesota Municipal Utilities Association \(MMUA\)](http://www.mmua.org/) represents the interests of Minnesota's municipal electric, gas, and water utilities. There are 125 municipal electric and 31 municipal gas utilities in Minnesota. MMUA was formed in 1931. MMUA's mission is to unify and serve as a common voice for municipal utilities, and to provide them with the support they need to be able to improve service to their customers and community. Website: <http://www.mmua.org/>
- [Xcel Energy](http://www.xcelenergy.com) generates electrical power from a mix of fuel sources, and distribute natural gas and electricity over transmission and distribution lines throughout our service area. As a leading combination electricity and natural gas energy company, Xcel offers a comprehensive portfolio of energy-related products and services to 3.4 million electricity customers and 1.9 million natural gas customers. Xcel has regulated operations in 8 Western and Midwestern states, and revenue of more than \$9 billion annually; and own more than 35,000 miles of natural gas pipelines. Website: <http://www.xcelenergy.com>
- [Great River Energy](http://www.greatriverenergy.com) is a not-for-profit electric cooperative owned by its 28 member cooperatives. Great River generates and transmits electricity for those members, located in the outer-ring suburbs of the Twin Cities up to the Arrowhead region of Minnesota and down to the farmland region in the southwestern portion of the state. Website: <http://www.greatriverenergy.com>

## US and International Organizations

- The [American Council for an Energy-Efficient Economy \(ACEEE\)](http://www.aceee.org/) is a nonprofit, 501(c)(3) organization dedicated to advancing energy efficiency as a means of promoting economic prosperity, energy security, and environmental protection. Website: <http://www.aceee.org/>  
Multifamily Homes: <http://www.aceee.org/topics/multi-family-homes>
- Based in Washington, DC, **National Multi Housing Council (NMHC)** is a national association representing the interests of the larger and most prominent apartment firms in the U.S. NMHC's members are the principal officers of firms engaged in all aspects of the apartment industry, including ownership, development, management, and financing. Nearly one-third of American households rent, and over 14 percent of households live in a rental apartment (buildings with five or more units). Website: <http://www.nmhc.org/>
- **The Building Owners and Managers Association (BOMA) International** and the Clinton Climate Initiative (CCI) are pleased to present the BOMA Energy Performance Contracting (BEPC) model, a groundbreaking model contract and supporting documents that allow building owners and operators to execute sophisticated energy efficiency retrofits to existing buildings. The Building Owners and Managers Association (BOMA) International is an international federation of more than 100 local associations and affiliated organizations. Founded in 1907, its 16,000-plus members own or manage more than nine billion square feet of commercial properties. BOMA International's mission is to enhance the human, intellectual and physical assets of the commercial real estate industry through advocacy, education, research, standards and information. Website: <http://www.boma.org/Resources/TheGREEN/EnergyResources/Pages/GreenRelatedWebSites.aspx>
- **Enterprise Green Communities** provides funds and expertise to enable developers to build and rehabilitate homes that are healthier, more energy efficient and better for the environment -- without compromising affordability. Green Communities also assists state and local governments to ensure their housing and economic development policies are smart and sustainable. Website: <http://www.greencommunitiesonline.org/>

## Financial Resources

- [Database of State Incentives for Renewables & Efficiency \(DSIRE\)](#) is a comprehensive source of information on state, local, utility and federal incentives and policies that promote renewable energy and energy efficiency. Established in 1995 and funded by the U.S. Department of Energy, DSIRE is

an ongoing project of the N.C. Solar Center and the Interstate Renewable Energy Council. Website: <http://www.dsireusa.org/incentives/index.cfm?re=0&ee=1&spv=0&st=0&srp=1&state=MN>

- [Energy Efficient Rehab Advisor](#) provides individualized information about energy efficient housing rehabilitation or renovation, based on U.S. Department of Housing and Urban Development guidelines. This tool includes information about estimated costs, savings, benefits, and general energy efficiency resources. Website: <http://rehabadvisor.pathnet.org/index.asp>
- The [US Department of Energy \(DOE\)](#) overarching mission is to advance the national, economic, and energy security of the United States; to promote scientific and technological innovation in support of that mission; and to ensure the environmental cleanup of the national nuclear weapons complex. Website: <http://www.energy.gov/>
  - [Office of Energy Efficiency and Renewable Energy](#) provides information about energy efficient building technologies and design practices, efficient building operation, energy codes, energy audits, renewable energy use, and financing options. Website: <http://www.eere.energy.gov/>
  - The [U.S. Energy Information Administration \(EIA\)](#) collects, analyzes, and disseminates independent and impartial energy information to promote sound policymaking, efficient markets, and public understanding of energy and its interaction with the economy and the environment. Website: <http://www.eia.gov/>
  - [Energy Prices and Trends](#) provides the latest forecasts and analyses of energy markets and costs by the [Energy Information Administration](#), the statistical agency of the Department of Energy. It provides policy-independent data, forecasts, and analyses to promote sound policy making, efficient markets, and public understanding regarding energy, and its interaction with the economy and the environment. Website: <http://www.energy.gov/pricestrends/index.htm>

## Programs

- The **Minnesota Housing Finance Agency (MHFA)** [Rental Rehabilitation Loan Program](#) provides low interest financing for making energy conservation and other basic improvements to residential rental properties located in Minnesota. The purpose of the Rental Rehabilitation Loan Program is to assist owners of smaller rental properties finance improvements to their investment properties, occupied by persons or families that have an income less than 80% of the statewide median income. The loan is a 6% annual percentage rate, with a term of up to 15 years. The loan is

non-assumable, and due on sale. You may receive up to \$25,000 for a one or two unit property, or \$10,000 per unit for larger properties, with a maximum amount of \$100,000.

<http://www.mnhousing.gov/resources/apply/rehabilitation/index.aspx>

- The **National Action Plan for Energy Efficiency** was a private-public initiative to create a sustainable, aggressive national commitment to energy efficiency through the collaborative efforts of gas and electric utilities, utility regulators, and other partner organizations. Such a commitment can take advantage of large opportunities in U.S. homes, buildings, and schools to reduce energy use, save billions on customer energy bills, and reduce the need for new power supplies.

<http://www.epa.gov/cleanenergy/energy-programs/suca/resources.html>

- There are three active residential **Green Building Programs** in Minnesota. All three - Minnesota GreenStar, LEED® for Homes and Minnesota Green Communities - do the following:
  - Ensure a credible, objective green standard is met
  - Prioritize the most important aspects of green building
  - Create healthier and safer homes by encouraging best construction practices
- [Minnesota GreenStar](#) is a residential building and remodeling standards and certification program created by Minnesotans for Minnesotans. The program promotes healthy, durable, high-performance design and construction for both new and existing homes. Flexible and adaptable to any type of residential remodeling or building project, MN GreenStar provides green strategies and best practices
- [LEED® for Homes](#) was created and is administered by the U.S. Green Building Council. It is a voluntary, consensus-based national rating system for building high-performance, sustainable homes. LEED-certified homes are energy efficient, use non-toxic building materials, are water-smart, and respect the environment in which they are constructed.
- [Minnesota Green Communities](#) is a statewide collaboration of the Greater Minnesota Housing Fund, the Family Housing Fund, and Enterprise. The National Green Communities initiative provides funds and expertise to enable developers to build and rehabilitate homes that are healthier, more energy efficient and better for the environment -- without compromising affordability. The Minnesota initiative is designed to foster the creation of affordable, healthier, and more energy-efficient housing throughout the state of Minnesota.
- The [Weatherization Assistance Program \(WAP\)](#) enables low-income families to permanently reduce their energy bills by making their homes more energy efficient. Funds are used to improve the energy performance of dwellings of needy families using the most advanced technologies and testing

protocols available in the housing industry. The U.S. Department of Energy (DOE) provides funding to states, U.S. overseas territories, and Indian tribal governments, which manage the day-to-day details of the program. These governments, in turn, fund a network of local community action agencies, nonprofit organizations, and local governments that provide these weatherization services in every state, the District of Columbia, U.S. territories, and among Native American tribes. Website: <http://www1.eere.energy.gov/wip/wap.html>

## APPENDIX D: Tools

### Benchmarking

- [Energy Score Cards](http://www.energyscorecards.com) is an online *energy benchmarking and management tool* for people who make decisions about energy use in buildings – property managers, owners, energy consultants and utilities. Website: <http://www.energyscorecards.com>
- [WegoWise](http://wegowise.com/) allows you to understand your entire portfolio's water and energy usage quickly and easily. Website: <http://wegowise.com/>
- Sponsored by the U.S. Environmental Protection Agency and U.S. Department of Energy, [Energy Star Resources for Multi-family Housing](#). Information is provided about energy efficient practices and an energy performance rating system for buildings and products.
  - [Portfolio Manager](#) allows users to track their building's energy and water consumption for both individual properties as well as entire building portfolios. It can help owners establish baseline levels of usage and identify ways to remain at those benchmarks. Additionally, the Portfolio Manager can use those statistics to compare consumption with other similar properties, both locally and across the country to see if specific buildings are more or less efficient than their counterparts.  
  
[http://www.energystar.gov/index.cfm?c=evaluate\\_performance.bus\\_portfoliomanager](http://www.energystar.gov/index.cfm?c=evaluate_performance.bus_portfoliomanager)  
  
Improvements were made to Portfolio Manager on June 7, 2010. Changes can be viewed at <https://www.energystar.gov/istar/pmpam/>.
  - [Bulk Source for Energy Star Products](#) is a DOE online marketplace to connect large quantity buyers with suppliers of energy-efficient products.

### Consumer Education and Resources

- [EnergySmartsPay.com](http://energysmartspay.com) (ESP) was created after recognizing the need to provide an easier way for the homeowner, renter and energy consumer to find resources to reduce energy consumption, weatherize homes and short-term bill payment assistance in Ramsey & Washington Counties. Like many helpful programs and resources, locating them can be difficult for the consumer. Non-profit agencies, government programs and local companies sometimes work together and sometimes work separately on programs to help. For the consumer, figuring out various eligibility and application requirements can be a tough assignment. Website: <http://energysmartspay.com/>

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