

V(A). Planned Program (Summary)

Program # 14

1. Name of the Planned Program

Housing

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures	100%		100%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	3.0	0.0	1.7	0.0
Actual Paid	11.4	0.0	4.8	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
405548	0	60569	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
1499263	0	350684	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
475896	0	173371	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

MAES research in housing spans several departments and research groups, including the work of researchers in social science, community economics, design and public policy. More often than not, MAES research is connected back to Extension education programming and compliments Extension's work in this area.

One new research project for 2014 is looking at pest management in urban housing and how research can offer new information on pest dispersal. Additionally, researchers in this area are placing more focus on under-served populations whom are often at risk for housing issues.

Research highlights for 2014 include:

- Researchers exploring the effects of recreational housing in rural areas expanded their collected data by adding a case study in Aitkin County.
- Last year, we mentioned a move toward researchers exploring groups at high risk for housing security issues, such as seniors and low-income families. In 2014, focus groups with African American seniors in the Twin Cities area were completed and are now being analyzed.
- We have previously mentioned a cross-cultural study being done on housing needs that takes into account the requirements of varying cultural groups. This year, researchers identified eight principles needed for culturally sensitive design which will aid community leaders and minority group advocates.
- In an ongoing study of multi-family housing, interviews were conducted with owners, architects, property managers and residents of five affordable multi-housing projects in the Twin Cities. Researchers will assess this data concerning energy and water consumption in the buildings.

Extension.

The housing market is slowly recovering from a long downturn, and economic pressures have increased the need for sound decisions on the part of both builders and buyers. Extension housing programming supports Minnesota's housing industry, and provides information to potential buyers on energy efficiency and new housing options. The impact of Extension radon training programming was discussed in 2013. This program continues to train home inspectors, contractors and builders to test occupied housing for indoor radon concentrations and how to mitigate harm. Course graduates have reduced radon in more than 60,000 homes per year.

Another highlight of the Extension Cold Climate Housing program in 2014 was collaborating with the U of M Center for Sustainable Building to create an exhibit on high-performance housing for the Eco Experience building at the Minnesota State Fair. The building attracted more than 100,000 visitors during the 10-day event. It was an opportunity to demonstrate four efficient and durable Zero Energy Ready home construction systems that the Cold Climate Housing team has been modeling and demonstrating to builders and contractors. Extension's housing team is small, but in 2014 it increase its visibility and impact to larger audiences.

2. Brief description of the target audience

The target audiences for Extension housing programs are builders, remodelers, contractors, radon mitigaters and others involved with avoiding and resolving environmental problems in homes. Another audience is home owners and prospective home buyers interested in innovation and energy efficiency in new home construction and energy retrofit options for existing homes.

The target audience for research also includes economic developers, planners, elected officials, businesses interested in the housing stock market of their communities, social science researchers, interior designers, architects, urban designers, and planners.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	1272	7000	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2014

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	3	2	5

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Educational courses will be delivered to the target audiences.

Year	Actual
2014	58

Output #2

Output Measure

- New research will result in the development of new and revised educational materials. (Target expressed as the number of new or revised curriculum materials.)
Not reporting on this Output for this Annual Report

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Improve the durability of new homes by working with builders. (Target expressed as the number of builders trained.)
2	Improve the availability of healthy and affordable housing through the mitigation of indoor environmental risks. (Target expressed as number of homes affected.)

Outcome #1

1. Outcome Measures

Improve the durability of new homes by working with builders. (Target expressed as the number of builders trained.)

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	1272

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

New housing construction costs are rising while existing home prices are still not back to previous levels. As a result, builders are experiencing pressure to keep costs down and provide innovative, energy efficient homes. Home remodelers also need options to improve the health and energy efficiency of existing Minnesota homes.

What has been done

A new set of workshops focused on high performance building practices. Housing specialists provided information on Zero Energy Ready Homes efficient enough to use a renewable energy source such as solar. Training also demonstrated three new techniques to improve energy efficiency in existing homes. One was a method to add exterior foundation insulation; another installed a high efficiency water heater to heat both space and water in a home. Another innovation resolves ice dams by wrapping a roof from the outside.

Results

All three of these options were demonstrated at an affordable housing project in north Minneapolis, which was put on the market and sold. The innovative home building and retrofitting innovations demonstrated at the workshops are now being accepted and used by some Minnesota builders and contractors who are interested in establishing in a niche market. One builder who collaborated on a Parade of Home high performance home in 2013 received a Housing Innovation Award given by the U. S. Department of Energy for leading edge construction.

4. Associated Knowledge Areas

KA Code	Knowledge Area
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures

Outcome #2

1. Outcome Measures

Improve the availability of healthy and affordable housing through the mitigation of indoor environmental risks. (Target expressed as number of homes affected.)

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Bed bugs have been a household pest for over 3,300 years. In the 1950's bed bug populations were dramatically reduced thanks to mass insecticide treatments like DDT and Lindane. However, in recent years, bed bugs have become an increasing issue with every state in the U.S. reporting infestations. Bed bugs impact overall health, finances, and even the emotional well-being of those facing an infestation.

What has been done

Researchers and extension educators are focusing on integrated pest management strategies (IPM) and developing key partnerships to attack the bed bug issue with Extension's "Block the Bug 2020" campaign. The Bedbug.umn.edu website received 436,733 visits during the reporting period (a 300 percent increase over 2013). The site features three multilingual bed bug control videos developed in partnership with City of Minneapolis, Minnesota Department of Agriculture, and ECHO Minnesota. Additional research is now taking place to discover more on how and why pests move within and between city buildings and how this movement can be anticipated and ultimately stopped. A SCOPE (Scientific Coalition On Pest Exclusive) leadership group was assembled to aid in this process.

Results

By using IPM strategies researchers plan to reduce bed bug populations without negatively impacting the environment. By focusing on awareness and outreach they are catching infestations early which help limit costs for both individuals and property managers, and ultimately the spread of these pests.

4. Associated Knowledge Areas

KA Code	Knowledge Area
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Competing Programmatic Challenges

Brief Explanation

The limited number of housing specialists in Extension was decreased even more in 2014, due to retirements. This depleted the accomplishments of the program.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Evaluations of housing programs involve models by the Environmental Protection Agency, along with known learning gains and behavior changes among home inspectors, contractors, and builders who participated in measurement and mitigation courses. In 2014, programming was focused on incorporating new energy-saving technology into the work of home builders.

Key Items of Evaluation

In 2014, programming was focused on incorporating new energy-saving technology into the work of home builders.