



Strength, Dignity, Quality of Life MISSOURI HOUSING

DEVELOPMENT COMMISSION



In the NECAC service area there are 29,586 homes that are older than 50 years old and there are 23, 077 built before 1940. Conservatively and based upon experience, at least, 30% of them could use weatherization services which would mean over 8,000 homes needing services. We, currently, have 253 on our weatherization waiting list and this list grows by 15-20 new applications every week. By the end of the year, there will over 500 households, on our waiting list.







A Presentation of the North East Community Action Corporation (NECAC)



Weatherization:

Helping Families, Benefitting Communities



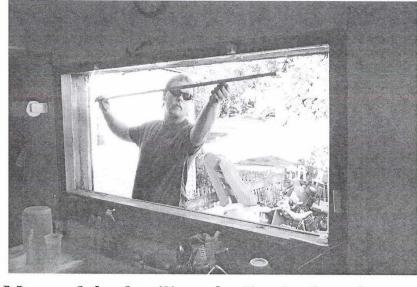




The housing stock in many rural areas and in large pockets of urban centers is aging, and is in poor to average condition. The houses often were built in an era before energy efficiency was a concern.







Many of the families who live in these homes are not able to afford expensive repairs. They will often cut back on other household costs, such as food, medicine and clothing, to make sure they can pay their utility bills.



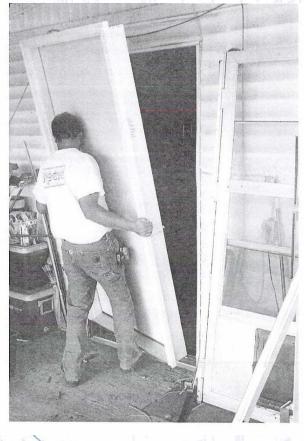




NECAC weatherizes 200 to 300 homes per year in its 12-county area. The general age range of the homes is between 35 and 85 years, but NECAC has worked on homes as old as 150

years.





Weatherization can cut average energy costs by more than \$200 a year.

Source: Missouri Department of Natural Resources





Every dollar invested in weatherization results in benefits worth \$1.88.

Source: Oak Ridge National Laboratory



ENERGY ASSISTANCE FFY 2006

ASSISTED HOUSEHOLDS

		AVERAGE	AVERAGE	AVERAGE	UNDER 75% POVERTY		75%-100% F	OVERTY	101-125% POVERTY		
	ASSISTED HOUSEHOLDS	TED HOUSEHOLD GROSS NET			# % OF TOTAL		# %	OF TOTAL	# % OF TOTAL		
STATEWIDE	125,062	2.5	\$776	\$657	85,377	68.3%	26,896	21.5%	12,789	10.2	
ADAIR	685	2.2	\$957	\$679	433	63.2%	173	25.3%	79	11.59	
ANDREW	208	2.5	\$895	\$732	128	61.5%	51	24.5%	29	13.99	
ATCHISON	244	2.3	\$849	\$713	146	59.8%	73	29.9%	25	10.29	
AUDRAIN	846	2.4	\$831	\$690	536	63.4%	214	25.3%	96	11.39	
BARRY	996	2.5	\$823	\$696	673	67.6%	224	22.5%	99	9.9	
BARTON	380	2.6	\$836	\$699	260	68.4%	78	20.5%	42	11.19	
BATES	499	2.8	\$863	\$730	332	66.5%	125	25.1%	42	8.4	
BENTON	665	2.3	\$765	\$652	449	67.5%	149	22.4%	67	10.19	
BOLLINGER	590	2.3	\$872	\$742	348	59.0%	146	24.7%	96	16.3	
BOONE	2,382	2.5	\$741	\$620	1.674	70.3%	509	21.4%	199	8.4	
BUCHANAN	1,987	2.5	\$763	\$654	1,343	67.6%	460	23.2%	184	9.3	
BUTLER	2,086	2.3	\$780	\$669	1,411	67.6%	479	23.0%	196	9.4	
CALDWELL	2,000	2.6	\$853	\$713	183	62.7%	75	25.7%	34	11.6	
CALLAWAY	822	2.6	\$831	\$692	538	65.5%	166	20.2%	118	14.4	
CAMDEN	770	2.5	\$770	\$652	521	67.7%	173	22.5%	76	9.9	
CAPE GIRARDEAU	1,758	2.4	\$762	\$646	1,212	68.9%	365	20.8%	181	10.3	
CARROLL	322	2.7	\$856	\$721	212	65.8%	66	20.5%	44	13.7	
CARTER	420	2.3	\$784	\$668	287	68.3%	98	23.3%	35	8.3	
CASS	969	2.6	\$775	\$667	645	66.6%	219	22.6%	105	10.8	
CEDAR	538	2.4		\$660	358	66.5%	122	22.7%	58	10.8	
CHARITON	256	2.3	\$787	\$663	167	65.2%	70	27.3%	19	7.4	
CHRISTIAN	864	2.6	\$857	\$724	556	64.4%	181	20.9%	127	14.7	
CLARK	296	2.5	\$850	\$720	176	59.5%	83	28.0%	37	12.5	
CLAY	1,807	2.7	\$770	\$653	1,268	70.2%	360	19.9%	179	9.9	
CLINTON	369	2.5	\$779	\$664	251	68.0%	85	23.0%	33	8.9	
COLE	1,124	2.6	\$742	\$622	788	70.1%	225	20.0%	111	9.9	
COOPER	407	2.4	\$853	\$709	252	61.9%	98	24.1%	57	14.0	
CRAWFORD	848	2.4	\$829	\$700	569	67.1%	200	23.6%	79	9.3	
DADE	288	2.7	\$992	\$801	182	63.2%	77	26.7%	29	10.1	
DALLAS	583	2.4	\$797	\$680	385	66.0%	144	24.7%	54	9.3	
DAVIESS	288	2.6	\$882	\$736	187	64.9%	77	26.7%	24	8.3	
DE KALB	168	2.5	\$895	\$757	99	58.9%	45	26.8%	24	14.3	
DENT	652	2.5			441	67.6%	149	22.9%	62	9.5	
DOUGLAS	606	2.2	the second se	\$649	439	72.4%	116	19.1%		8.4	
DUNKLIN	2,449	2.2		\$649	1,749	71.4%	504	20.6%		8.0	
FRANKLIN	1,215	2.6		and the second se	811	66.7%	262	21.6%	142	11.7	
GASCONADE	378	2.4			245	64.8%	92	24.3%	and the second sec	10.8	
GENTRY	205	2.6		the second se	121	59.0%	61	29.8%	and a second	11.2	
GREENE	4,620	2.5	Contraction in an experimental	and the second se	3,065	66.3%	1,041	22.5%	and the second s	11.1	
GRUNDY	388	2.3	in a strategy of	and the second se	267	68.8%	86	22.2%	and the second se	9.0	
HARRISON	383	2.4		and the second sec	221	57.7%	100	26.1%	and the second se	16.2	
HENRY	880	2.3			599	68.1%	187	21.3%	a contract of the party of the	10.1	
HICKORY	463	2.2		and the second s	299	64.6%	114	24.6%		10.8	
HOLT	161	2.5			100	62.1%	46	28.6%		9.	
HOWARD	320	2.3	\$808	\$686	203	63.4%	79	24.7%	38	11.8	





ENERGY ASSISTANCE **FFY 2006**

ASSISTED HOUSEHOLDS

		AVERAGE	AVERAGE		UNDER 75% POVERTY		75%-100	% POVERTY	101-125% POVERTY # % OF TOTAL		
ASSISTED HOUSEHOLDS		HOUSEHOLD	GROSS	NET INCOME	#	% OF TOTAL	#	% OF TOTAL			
STATEWIDE	125,062	2.5	\$776	\$657	85,377	68.3%	26,896	21.5%	12,789	10.2%	
HOWELL	2.035	2.4	\$791	\$663	1,427	70.1%	415	20.4%	193	9.5%	
IRON	589	2.4	\$811	\$687	400	67.9%	126	21.4%	63	10.7%	
JACKSON	12,432	2.6	\$681	\$583	8,978	72.2%	2,284	18.4%	1,170	9.4%	
JASPER	2,953	2.5	\$781	\$658	2.052	69.5%	605	20.5%	296	10.09	
JEFFERSON	2,183	2.5	\$738	\$632	1,564	71.6%	418	19.1%	201	9.2%	
JOHNSON	724	2.5	\$721	\$602	525	72.5%	130	18.0%	69	9.5%	
KNOX	139	2.4	\$861	\$715	91	65.5%	33	23.7%	15	10.8%	
LACLEDE	1,193	2.5	\$802	\$676	828	69.4%	271	22.7%	94	7.9%	
LAFAYETTE	600	2.6	\$749	\$632	415	69.2%	133	22.2%	52	8.7%	
LAWRENCE	901	2.4	\$833	\$709	591	65.6%	207	23.0%	103	11.49	
LEWIS	322	2.5	\$884	\$742	194	60.2%	80	24.8%	48	14.9%	
LINCOLN	825	2.8	\$732	\$625	602	73.0%	162	19.6%	61	7.4%	
LINN	553	2.6	\$848	\$720	366	66.2%	130	23.5%	57	10.3%	
LIVINGSTON	480	2.4	\$855	\$726	302	62.9%	112	23.3%	66	13.8%	
MCDONALD	711	2.6	\$894	\$682	496	69.8%	140	19.7%	75	10.5%	
MACON	388	2.5	\$908	\$771	239	61.6%	85	21.9%	64	16.5%	
MADISON	661	2.3	\$824	\$708	421	63.7%	149	22.5%	91	13.8%	
MARIES	283	2.4	\$762	\$649	197	69.6%	58	20.5%	28	9.9%	
MARION	949	2.4	\$778	\$604	705	74.3%	170	17.9%	74	7.8%	
MERCER	124	2.6	\$903	\$771	76	61.3%	34	27.4%	14	11.3%	
MILLER	907	2.5	\$848	\$713	610	67.3%	193	21.3%	104	11.5%	
MISSISSIPPI	1,276	2.2	\$780	\$662	848	66.5%	287	22.5%	141	11.1%	
MONITEAU	305	2.6	\$825	\$701	195	63.9%	80	26.2%	30	9.8%	
MONROE	186	2.6	\$891	\$752	118	63.4%	45	24.2%	23	12.49	
MONTGOMERY	335	2.6	\$770	\$651	235	70.1%	67	20.0%	33	9.9%	
MORGAN	632	2.0	\$823	\$704	413	65.3%	140	22.2%	79	12.5%	
NEW MADRID	1,424	2.4	\$764	\$650	1,023	71.8%	283	19.9%	118	8.3%	
NEWTON	1,142	2.6	\$870	\$733	749	65.6%	265		128	11.2%	
NODAWAY	378	2.0	\$929	\$775	223	59.0%	105	27.8%	50	13.2%	
OREGON	598	2.4	\$793	\$677	420	70.2%	112	18.7%	66	11.0%	
OSAGE	243	2.5	\$852	\$712	420	63.4%	51	21.0%	38	15.6%	
OZARK	509	2.3	\$779	\$661	341	67.0%	122	24.0%	46	9.0%	
PEMISCOT	1,995	2.3	\$778	\$648	1,464	73.4%	356	17.8%	175	8.8%	
PERRY	450	2.4	\$878	\$739	276	61.3%	121	26.9%	53	11.8%	
PETTIS	1.243	2.3	\$868	\$739	805	64.8%	279	20.9%	159	12.8%	
PHELPS		2.5	\$803	\$685	715	66.6%	241	22.5%	117	10.9%	
PIKE	1,073	2.4	\$857	\$722	306	62.7%	132	27.0%	50	10.97	
PIKE	488	2.5	\$857	\$681	300	66.1%	109	20.9%	68	13.0%	
POLK	883	2.8	\$810	\$699	597	67.6%	211	20.9%	75	8.5%	
PULASKI	929	2.7	\$829	\$650	660	71.0%	183	19.7%	75	9.39	
PULASKI	266	2.3	\$773	\$663	173	65.0%	62	23.3%	31	9.37	
RALLS	266	2.2	\$773	\$563	1/3	61.8%	62	26.2%	28	11.79	
RANDOLPH	995	and a second sec		and the second	and the second se	66.7%	213	20.2%	118	12.09	
RAY		2.5		\$689	664	65.9%	100		60	11.99	
REYNOLDS	469	2.6	\$825 \$812	\$698 \$689	240		100	21.3% 20.2%	40	12.89	

DSS R&E Source: MO.ENERGY9X

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+Strength, Dignity, Quality of Life MISSOURI HOUSING



DEVELOPMENT COMMISSION



ENERGY ASSISTANCE FFY 2006

ASSISTED HOUSEHOLDS

		AVERAGE	AVERAGE	AVERAGE	UNDER 75	% POVERTY	75%-100	% POVERTY	101-125% POVERTY		
	ASSISTED HOUSEHOLDS		HOUSEHOLD GROSS SIZE INCOME IN		#	% OF TOTAL	#	% OF TOTAL	#	% OF TOTAL	
STATEWIDE	125,062	2.5	\$776	\$657	85,377	68.3%	26,896	21.5%	12,789	10.2%	
RIPLEY	1,053	2.2	\$829	\$710	678	64.4%	251	23.8%	124	11.8%	
ST CHARLES	1,503	2.6	\$780	\$652	1,041	69.3%	317	21.1%	145	9.6%	
ST CLAIR	548	2.4	\$798	\$681	363	66.2%	123	22.4%	62	11.3%	
ST FRANCOIS	2,006	2.5	\$796	\$679	1,359	67.7%	439	21.9%	208		
STE GENEVIEVE	380	2.6	\$898	\$705	250	65.8%	81	21.3%	49		
ST LOUIS COUNTY	9,256	2.6	\$760	\$650	6,305	68.1%	1,948	21.0%	1,003	10.8%	
SALINE	645	2.6	\$845	\$705	401	62.2%	160	24.8%	84	the set of second data and the	
SCHUYLER	174	2.4	\$879	\$733	112	64.4%	45	25.9%	17	9.8%	
SCOTLAND	199	2.3	\$960	\$811	112	56.3%	48	24.1%	39		
SCOTT	1,649	2.3	\$770	\$654	1,132	68.6%	355	21.5%	162		
SHANNON	677	2.3	\$815	\$685	457	67.5%	152	22.5%	68	10.0%	
SHELBY	216	2.5	\$901	\$763	126	58.3%	52	24.1%	38	17.6%	
STODDARD	1,425	2.0	\$801	\$685	894	62.7%	366	25.7%	165	11.6%	
STONE	701	2.5	\$788	\$670	491	70.0%	145	20.7%	65	9.3%	
SULLIVAN	262	2.4	\$809	\$690	175	66.8%	57	21.8%	30	11.5%	
TANEY	828	2.3	\$797	\$679	537	64.9%	203	24.5%	88	10.6%	
TEXAS	1,057	2.3	\$770	\$653	748	70.8%	211	20.0%	98	9.3%	
VERNON	826	2.5	\$852	\$704	548	66.3%	183	22.2%	95	11.5%	
WARREN	615	2.6	\$789	\$666	412	67.0%	131	21.3%	72	11.7%	
WASHINGTON	1,330	2.4	\$750	\$641	924	69.5%	290	21.8%	116	8.7%	
WAYNE	820	2.1	\$781	\$662	559	68.2%	186	22.7%	75	9.1%	
WEBSTER	861	2.5	\$851	\$722	560	65.0%	216	25.1%	85	9.9%	
WORTH	105	2.5	\$884	\$715	64	61.0%	26	24.8%	15	14.3%	
WRIGHT	1,172	2.5	\$811	\$684	803	68.5%	259	22.1%	110	9.4%	
ST LOUIS CITY	12,400	2.4	\$678	\$590	8,701	70.2%	2,574	20.8%	1,125	9.1%	





- Missouri Association for Community Action
- Elaine West
- Executive Director
- ewest@communityaction.org
- Missouri's Weatherization Assistance Program (WAP)
- Since 1977, more than 145,000 Missouri homes have been weatherized. Another 2000 homes will be weatherized statewide in 2005. Each year more eligible applicants are put on multi-year waiting lists.
- Currently Missouri has close to 4000 families are on the WAP waiting list.
- Over the years, changes in federal regulations, technology, and the needs of Missourians have resulted in an improved program. Today, professionally trained staff uses a computerized energy audit to determine the most cost-effective measures to install in each home. Typical weatherization measures include installing insulation; performing basic heating tune-ups and repairs; and mitigating air infiltration through doors and windows.
- After the home is weatherized, clients receive instructions on the proper use and maintenance of the installed measures.
- Missouri Goals
 - The goals of the Missouri Weatherization Assistance Program (WAP) are:
- To increase energy efficient housing
- To continue to reduce utility bills
- To provide comfortable and safe housing for program recipients
- To provide effective management of federal, state and local funds
- To continue the improvement of weatherization services

Energy Savings

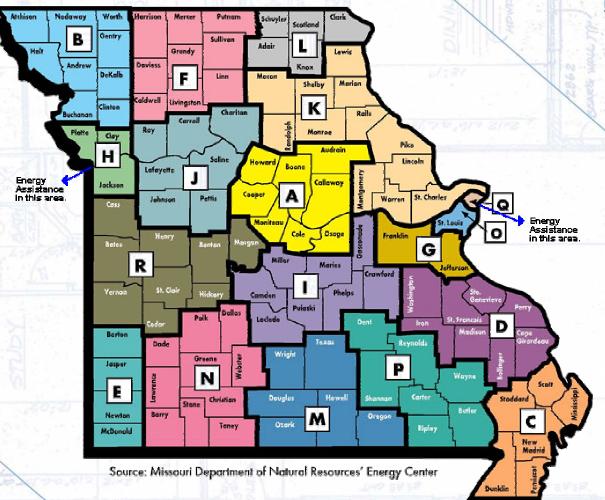
A home that has been weatherized can reduce average annual heat fuel usage per dwelling by about 23.4 percent, the figure for naturalgas heated homes here. Additional measures also reduce electricity bills by an average 12.2 percent. The lasting energy-efficient improvements installed in the home, result in lower utility bills year after year. Missouri Weatherization returns more than a dollar in savings for every federal dollar invested. In fact, for every dollar invested in the program, WAP returns \$2.79 in energy and non-energy impacts combined.

Reducing energy demand decreases the environmental impacts of energy production. WAP mitigates approximately .23 metric tons of carbon per year in a home heated primarily with natural gas. This translates into nearly one metric ton (.85) of carbon dioxide emissions avoided. For homes heated by electricity, the savings are even





Where is Weatherization ?







Low-Income Weatherization Assistance Program Service Areas

Nationay

В

Andaw

- Central Mo. A Counties' Human Development Corp. (573) 443-9706
- **Community Services** В of Narthwest Ma. (660) 582-3114
- Delta Area Economic C **Opportunity Corp.** [573] 379-5701
- East Mo. Action Agency, Inc. D (573) 431-5191
- Economic Security Corp. E of the Southwest Area (417) 781-0352
- Green Hills F **Community Action Agency** (660) 359-3907
- Jefferson-Franklin G **Community Action Corp.** (636) 789-2686
- Kansas City Neighborhood and H. **Community Services Department** [816] 513 3040
- The Me. Ozerks Community Action, Inc. [573] 765 3263
- Mo. Valley Community Action Agency J [660] 8857476
- North East Community Action Corp. к (573) 324-2231
- Northeast Ma. Community L Action Agency [660) 665-9855

O.



West Central Mo. Community Action Agency R (660) 476-2185

Missouri Department of Natural Resources

Outreach and Assistance Center Energy Center • 1-800-361-4827 • FAX (573) 751 6860 • www.car.mo.gov/esergy

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Allocation to Agencies

- Over 6.1 million dollars allocated to 12 agencies in the past 4 years.
- \$434,982 spent in Weatherization in the past 4 years.
- \$3,233,576.31 spent on Home Improvements.





Agency		2003		2004		2005		2006		Total
							\$	55,000.00	\$	55,000.00
Central MO Counties Human Development Corp.	\$	400.000.00	S	185,000.00	\$	60.000.00	S	282.000.00	s	927,000.00
Delta Area Economic Opportunity Corporation	4		8	210.000.00	s	150.000.00	ŝ	200,000.00	\$	900.000.000
East Missouri Action Agency	20	340,000.00	•				2	220,000.00	\$	640.000.00
Economic Security Of Southwest Missouri			\$	270,000.00	S	150,000.00	æ			
Green Hills Community Action	s	120,000.00	\$	60,000.00	s	50,000.00	\$	95.000.00	\$	325,000.00
MO Valley Human Resources Comm Action Agency	S	56,000.00			\$	60,000.00			\$	116,000.00
	4		S	100,000.00					s	100,000.00
Missouri Ozarks Community Action		000.000.00	_	200,000.00	a.	150,000.00	8	150,000.00	5	890,000.00
North East Community Action Corporation	\$	390,000.00	Ş		4	,	*	132,000.00	š	468,000.00
Ozark Action Inc.	\$	136,000.00	\$	100,000.00	s	100,000.00	\$			
Ozark Area Community Action Corp.			\$	90,000.00	-\$	80,000.00	\$	88,000.00	\$	258,000.00
West Central Missouri Community Action Agency	S	215,000.00	5	279,000.00	\$	150,000.00	\$	200,000.00	\$	844,000.00
West Central Wissouri Community Action Agency	s	290.000.00	5	100.000.00	\$	50.000.00	s	143.000.00	\$	583,000.00
Meramee Community Enhancement Corp.			Ĕ.	1,594,000.00	đ.	1,000,000.00	6	1,565,000.00	S	6,106,000.00
Totals	\$1	947,000.00	2	1,594,000.00	Φ	1,000,000.00		1,305,600.00		4,100,000100





MISSOURI HOUSING TRUST FUND HOME REPAIR GRANTS

	Agency	2004	2005	2006	Total
/	Adequate Housing for Missourians		\$35,000.00	\$35,000.00	\$70,000.00
	Catholic Charities Housing Resource Center			\$90,000.00	\$90,000.00
	Catholic Commission on Housing	\$85,000.00	\$80,000.00		\$165,000.00
	Council of Churches of the Ozarks			\$50,000.00	\$50,000.00
	Delta Area Economic Opportunity Corporation	\$103,000.00	\$140,000.00	\$100,000.00	\$343,000.00
	Green Hills Community Action Agency	\$60,000.00	\$60,000.00	\$80,000.00	\$200,000.00
	Habitat for Humanity - Kansas City	\$75,000.00			\$75,000.00
	Habitat for Humanity - St. Louis	\$75,000.00			\$75,000.00
	Home Services, Inc.			\$50,000.00	\$50,000.00
	Kansas City Neighborhood Alliance	\$34,099.03	\$100,000.00	\$200,000.00	\$334,099.03
	Lemay Housing Partnership, Inc.	\$40,000.00	\$40,000.00	\$30,000.00	\$110,000.00
	Missouri Ozarks Community Action, Inc.	\$50,000.00		\$25,000.00	\$75,000.00
	Missouri Valley Community Action Agency	\$50,000.00		\$60,000.00	\$110,000.00
	Northwest Communities Development Corporation	\$30,000.00			\$30,000.00
	Platte County Senior Citizens Service Fund	\$35,000.00	\$37,500.00	\$25,000.00	\$97,500.00
	Rebuilding Together - St. Louis	\$75,000.00	\$75,000.00	\$75,000.00	\$225,000.00
	Salvation Army - Columbia		\$5,000.00		\$5,000.00
	South Central Missouri Community Action Agency	\$100,000.00	\$91,000.00	\$90,000.00	\$281,000.00
	Vashon/Jeff-Vander-Lou Initiative	\$75,000.00			\$75,000.00
	West Central Missouri Community Action Agency	\$50,000.00			\$50,000.00
	Westside Housing Organization	\$100,000.00			\$100,000.00
	Totals	\$1,037,099.03	\$663,500.00	\$910,000.00	\$2,610,599.03





Missouri Weatherization Works!

Our mission is to reduce the energy burden on Lowincome residents by installing cost effective energy efficiency measures, while ensuring their health and safety

May 2006

Benefits to Missourians

- The Weatherization Program benefits low-income Missourians by:
- Reducing energy usage
- Increasing the energy efficiency of current housing
- > Alleviating substandard living conditions and reducing homelessness
- Helps to provide a safer, healthier living environment
- Extend the lifetime of affordable housing

Program Funding

U. S. DOE provides core Weatherization program funding through the Missouri Department of Natural Resources.

- Missouri could transfer up to 25% of LIHEAP funds directly to the Weatherization Program.
- Some regulated utilities provide funding to the Weatherization Program.
- Weatherization funds are used in partnership with other State and Federal housing programs to maximize benefits.
- Local agencies throughout Missouri leverage additional private resources.
- Local agencies solicit contributions from rental property owners serving low-income households.

Why Weatherization?

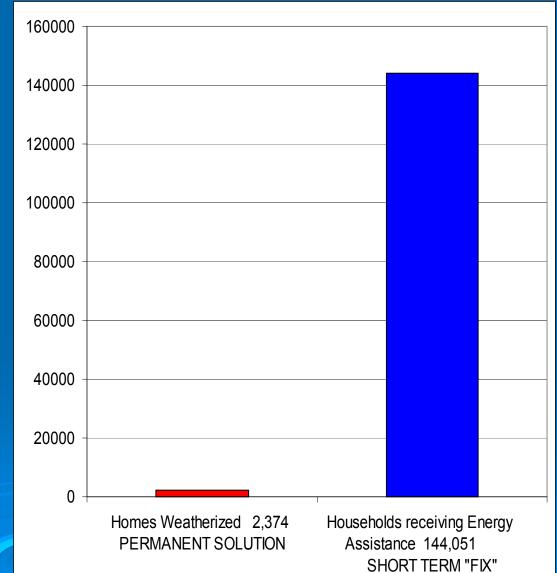
> Heavy energy burden on low-income

- Typically spend 16% of annual income on energy, compared with 5% for other households
- Higher incidence of arrearages and disconnects
- Higher utility deposits

Why Weatherization?

 Low-income families often choose between heat and other necessities

> 445,888 low income
households in
Missouri





AFFORDABLE HOUSING WITH

ENERGY STAR





AFFORDABILITY: UTILITY COSTS

Utility costs for low-income households are too high:

- FY 1999: 14% of annual income FY 2000: 19% of annual income source: FannieMae
- "Energy costs can exceed 30% of lowincome families' total income" source: DOE Affordable Housing Program



 HUD spends ~\$4 billion each year on utilities
source: HUD (\$1 billion potential savings w/efficiency over 5 years)

MISSOURI HOUSING

AFFORDABLE HOUSING WITH ENERGY STAR ENERGY STAR PRODUCTS FOR HOMES

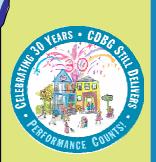


- Homes
- · Lighting
- Appliances
 - Clothes Washer
 - Refrigerator
 - Dishwasher
 - Windows (by Climate)

Ventilation Fans



DEVELOPMENT COMMISSION







ENERGY STAR

- You play an important role in the development of quality affordable housing in your community. You decide in large measure what gets built, as well as where, when, and how it happens.
- You represent the public interest in developing housing that is more durable, more comfortable, less expensive to operate, and more friendly to the environment...

all proven features of ...

the **ENERGY STAR** building performance standard

To Green or not to Green

The construction market is moving toward more and more sustainable designs.

Unlike other trends which have washed over the construction industry, the Green movement has numerous external forces pushing it into the mainstream.

Each of us in the construction industry must ask ourselves the question, "Where do we want to be positioned in this emerging market?"





Industry moves, mines, extracts, shovels, burns, wastes, pumps, and disposes of 4 million pounds of material in order to provide one average middle-class American family's needs for one year.



Benefits of Sustainable Design



Environmental benefits Reduce the impacts of natural resource consumption

Economic benefits Improve the bottom line

Community benefits

Minimize strain on local infrastructure and improve quality of life

Health and safety benefits



Enhance occupant comfort and health

Sustainable Design and Construction

People

Our employees enjoy a higher quality in their work environment. 99% of all building occupants enjoy views to the outdoors.

Green Building

Environment

Our building uses 60% less energy and 78% less water than a traditional building. Nearly 20% of the total energy needed to run our building is generated on-site from renewable sources.

Strength, Dignity: Quality of Life MISSOURI HOUSING DEVELOPMENT COMMISSION

Bottom Line

The reduction in operating costs of this building saves approximately \$78,000.00 per year.

Thank you!







MHDC Policy August 16, 2006

2006 International Energy Conservation Code.

"This comprehensive energy conservation code established minimum regulations for energy efficient buildings using prescriptive and performance related provisions. It is founded on broad-base principles that make possible the use of new materials and new energy efficient designs." [2006 IECC] The International Energy Conservation Code as adopted by the Missouri Housing Development Commission has and will continue to reduce energy usage up to 20% annually over those residential units constructed under conventional code approved methods. The inclusion of these items in MHDC funded projects will increase the initial cost of construction by less than 5%. In many cases, these guidelines have been incorporated in part or in whole into MHDC developments since FY2004 with very good results. The State of Missouri: currently the state is divided along the Missouri river into two climate zones. Minor differences in requirements are note below.

IECC 2006 rating: Zone 4 [south of the river] and Zone 5 [north of the river]. Foundation walls surrounding a crawl space:

IECC Zone 4: R-10 continuously or R-13 in cavity spaces [i.e. wood framed knee walls or treated wood framed foundations]

IECC Zone 5: R-10 continuously or R-13 in cavity spaces [i.e. wood framed knee walls or treated wood framed foundations]

Concrete slab on grade first floor:

IECC Zone 4: R-10. Starting at edge of slab and extending into the building horizontally 2'-0" under the slab.

IECC Zone 5: R-10. Starting at edge of slab and extending into the building horizontally 2'-0" under the slab.

Wood framed floor over a crawl space [below walking surface].

IECC Zone 4: R-19

IECC Zone 5: R-30 [or full depth of floor joist cavity]

Wood framed walls above walking surface[s].

IECC Zone 4: R-13

IECC Zone 5: R-19

Windows.

IECC Zone 4: U = 0.40IECC Zone 5: U = 0.35





Attic insulation.

IECC Zone 4: R-38

IECC Zone 5: R-38

Commercial type flat roof insulation.

IECC Zone 4: R-15. Continuous with no breaks

IECC Zone 5: R-20 Continuous with no breaks.

MHDC recommendation: R-30, assembly composite score. Unit entry door[s]:

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IECC Zone 4: U = 0.70
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IECC Zone 5: U = 0.70

Sealants:

Joints between different assemblies, planes and materials shall be sealed with the appropriate caulk or sealant.

Example: concrete to framed wall junction to be sealed. Window/door to wall junction to be sealed. Wall to soffet junction to be sealed. Wall to trim junction to be sealed. Walls at right angles including inside and outside corners to be sealed.

Note: "R" rated insulation is ascending to better performance. "U" rated insulation is descending to better performance.







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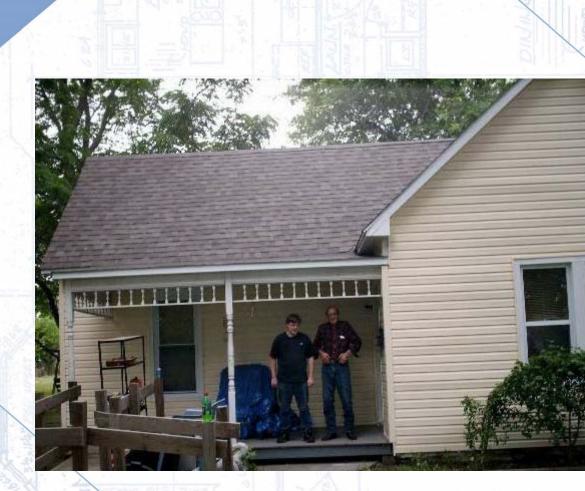
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