

VERDIGRE SHARED ENERGY SAVINGS PROGRAM

APPENDIX H

JANUARY 29/30, 1987

JUNE 18, 19, & 20, 1987

OUTLINE

- I. Introduction
 - Training Session Goals
- II. Infiltration/Thermal Envelope
 - a. Building as a balloon
 - b. Infiltration Handout
 - c. Maintain Thermal Envelope
 1. Insulation where temperature difference greatest
 2. Double the R-value and half the heat loss
- III. Thermostat/Temperature Operation
 - a. Handout - examples of potential savings
 - b. Why setbacks work
 - c. Best times for lowering and raising the temperature
- IV. Lighting
 - a. Why throw out 40 watt bulbs that work
 - b. Savings from eliminating or shutting off lights
 - c. Use of timers
- V. Maintenance and operation
 - Handout; general and specific
- VI. Energy Consumptions Reports
- VII. Question and answer period

TRAINING SESSION GOALS

1. Provide information that maximizes the benefits from the energy improvements installed.
2. Provide guidance for proper maintenance and operation of energy related equipment to ensure that energy savings continue.
3. Provide information that assists the business to continue to reduce energy consumption further without sacrificing the comfort of employees or clients.
4. Provide guidance in recording energy consumption using the forms provided by the Nebraska Energy Office.

THERMOSTAT SETBACK

A one degree setback for 24 hours during the heating season can save about 3% of your heating bill.

A one degree setback for 8 hours during the heating season can save about 1% of your heating bill.

	SAVINGS on annual heating bills of			
	\$750	\$1,000	\$1,250	\$1,500
8 hour setback of				
1 degree	7.50	10.00	12.50	15.00
3 degrees	22.50	30.00	37.50	45.00
5 degrees	37.50	50.00	62.50	75.00
10 degrees	75.00	100.00	125.00	150.00
24 hour setback of				
1 degree	22.50	30.00	37.50	45.00
3 degrees	67.50	90.00	112.50	135.00
5 degrees	112.50	150.00	187.50	225.00

A 78 degree setting during the cooling season will save 15% or more on your cooling bill over a 72 degree setting.

LIGHTING

WHY REPLACE 40W FLOURESCENTS THAT STILL WORK

<u>old lamp</u>	<u>new lamp</u>
40 watts	34 watts
x 8 hours/day	x 8 hours/day
320 watt hrs/day	272 watt hrs/day
= 0.32 KWH/day	= 0.27 KWH/day
0.32 KWH/day	0.27 KWH/day
x 260 days/yr	x 260 days/yr
83.2 KWH/yr	70.2 KWH/yr
x 5 years	x 5 years
416 KWH	351 KWH
x .05/KWH	x .05/KWH
\$20.80	\$17.55

ELECTRICAL SAVINGS* = \$3.25

less 1/2 cost
of new bulb** - 1.25

Net Savings \$2.00

* assumes lights used 8 hours a day, 5 days a week year round. Savings will be greater if lights are used more often.

** a 34 watt bulb costs approximately \$2.50 and lasts approximately 10 years. Since the savings are calculated for five years, half of the bulb's life is used in the example.

LIGHTING

SAVINGS BY REMOVING OR TURNING OFF LIGHTS

KWH Saved	500	1,000*	2,000
\$ Saved at \$.05/KWH	25	50	100

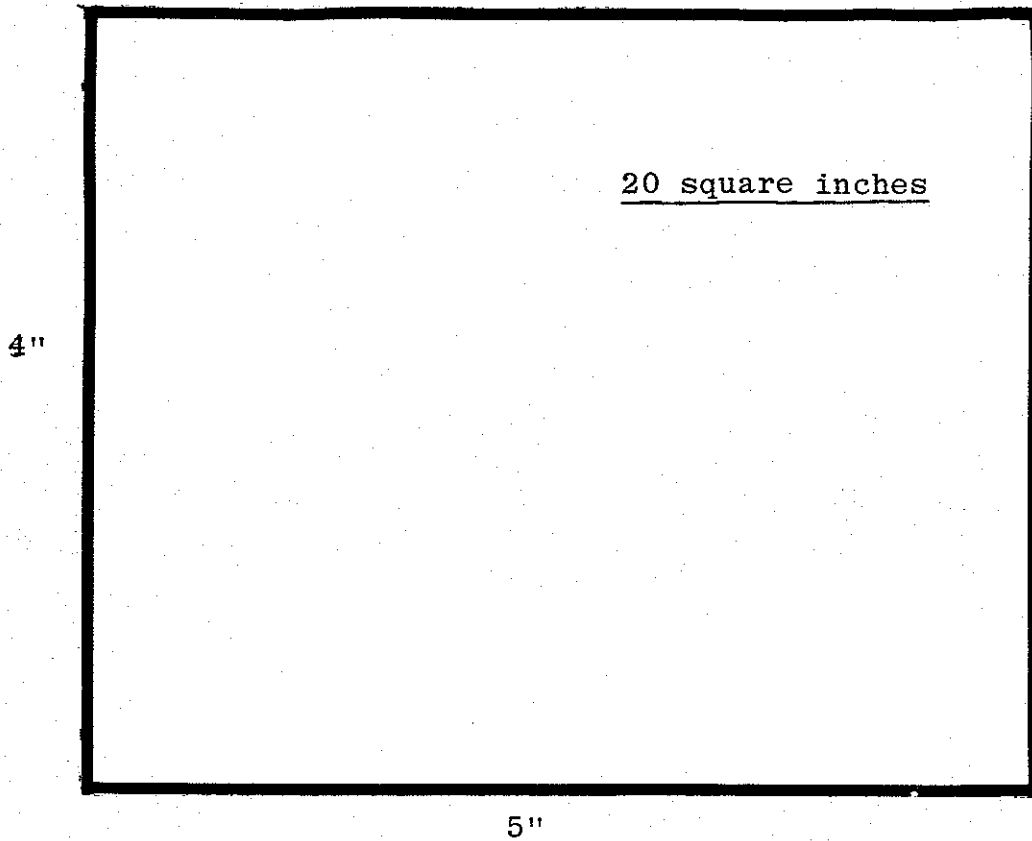
* 1,000 KWH can be saved by turning off five 100 watt bulbs for 8 hours a day, 5 days a week year round or by removing five 100 watt bulbs that are normally on for the same length of time.

SAVINGS FROM REMOVING 40-WATT FLOURESCENT BULBS

Number of Bulbs Removed	2	8	16
Annual Savings*	\$10	\$42	\$83

*assumes bulbs were used about 50 hours a week all year and that electricity was .05/KWH.

INFILTRATION



The above diagram is equivalent to a 1/4 inch gap along one edge of a 6'8" door. If you had a hole this size in your wall you certainly would plug it. Likewise, cracks around windows and doors must be plugged (caulked or weatherstripped).

MAINTENANCE

At the beginning of the heating season:

CHECK FOR	ACTION NEEDED
Leaks in duct work	Seal with duct tape or caulk
Missing or cracked caulk	Replace with new caulk
Gaps in windows or doors	Adjust for proper fit and then weatherstrip remaining gap
All storm windows in place	Closed with complete seal around all edges
Missing or loose window putty	Remove loose putty and replace with new putty

The furnace should be checked for these items at the following intervals:

ACTION	WHEN
Light pilot or turn off pilot	At the beginning of the heating season and the end, respectively
Clean and lubricate fan and motor	At the beginning of the heating season and once in the middle of the heating season
Replace fan belt	If belt is worn
Replace or clean furnace filter	Once a month during the heating season
Cleaned and serviced professionally	Every two years

The water heater should be checked for these items at the following intervals:

ACTION	WHEN
Drain water heater to clear sediment	Every three months
Set temperature to lowest appropriate level	At all times
Water heater blanket fastened securely to keep it away from vents	At all times

Other general items that need attention:

- Adjust the thermostat to the lowest comfortable level for the season and adjust setback times as appropriate to your business operations.
- Fix all dripping faucets immediately as one drop per second equals 60 gallons of hot water a week or about \$35 a year.
- Keep all lamps, globes and light panels clean to obtain maximum lighting.

MAINTENANCE SCHEDULE

JUNE 1	JULY 15	SEPTEMBER 15	NOVEMBER 1	APRIL 30
<p>Clean air conditioner coils & radiator</p> <p>Adjust clock thermostat for cooling</p> <p>Check for proper fit & adjust:</p> <ul style="list-style-type: none"> --storm windows (if cooling) --water heater insulation --belts on all motors --doors on all cooling units 	<p>Clean air conditioner coils & radiator</p> <p>Clean coils, compressor & radiator of all refrigeration units</p>	<p>Cover and seal air conditioning unit</p> <p>Check for & correct:</p> <ul style="list-style-type: none"> --missing or cracked caulking --gaps in windows, doors & overhead doors --missing or loose putty --leaks in duct work 	<p>Adjust clock thermostat for heating</p> <p>Light furnace pilot</p> <p>Check for proper fit & adjust:</p> <ul style="list-style-type: none"> --storm windows --water heater insulation --belts on all motors --doors on all cooling units <p>Clean coils, compressor & radiator of all refrigeration units</p>	<p>Turn off furnace pilot</p> <p>Clean coils, compressor & radiator of all refrigeration units</p>

CHANGE AIR CONDITIONER FILTER MONTHLY

CHANGE FURNACE FILTER MONTHLY

VERDIGRE VISIT REPORT - JAN. 29 & 30

The training session went well. Nine people attended. Two of the businesses that told Maryann McElhose that they would attend failed to show. Next session a letter should be sent that emphasizes the requirement of attending the training session. Enclosed is a copy of those attending.

Evaluation of the training session by the participants were positive. They felt that the topics discussed and the extent or detail of the discussion was appropriate and useful. Copies of the evaluations are attached.

Also attached are the evaluations which I completed. Since some program rules were changed, businesses that did not express a continued interest once the audit was presented are being contacted again. Consequently, no non-participant surveys were conducted at this time.

I originally used 20 minute intervals for meeting with the business owners but the discussions always went beyond the evaluation to other energy related aspects of their business. On my next visit, I'll use half hour intervals.

I discussed some general program questions with the commercial weatherization staff. I also explained how the forms that I delivered should be used. Enclosed is a copy of the instructions I gave them regarding form use.

The significant differences that we noted between estimated costs and bid cost were explained in writing on the bid sheets recieved by the staff. Ron Vonderohe is the one that made the notes. The reason for the differences were that some additions were made to the project, the project was more involved than first expected and aspects connected to the project had to be brought up to code. For example, an addition of a photocell required that the sign be rewired to met the state electrical code.

Interest in the program remains high, as more businesses are applying and some of the original participants are reapplying to fund projects that weren't implemented due to the \$1.30 per square foot limitation or the 5 year payback limit.

June 21, 1987

VERDIGRE TRIP REPORT - JUNE 18, 19, & 20

The business training sessions went well and were well attended. Those attending are shown on the attached sign up sheets for the afternoon and evening sessions. I held a mini-session for two people who were a half hour late to the afternoon session. The only business which did not attend any of the sessions was Pat's Mini-mart. When I spoke to him about his participation in the program, I also gave him the training session handouts and briefly explained each one.

Also, attached are two handouts on lighting that replaced the original lighting handouts for the training session. I also created an additional handout relating to operation and maintenance on a calendar basis as you suggested.

The evaluations of the training sessions were positive and are attached. I don't think I would modify the content of the training session due to the positive response.

I was able to administer the Participant and Non-Participant Survey to almost all the businesses. The results and the times that I met with the business are attached. I was unable to contact the owners of McElhose Trucking and the Verdigre Mortuary; non-participants. I did not survey Toni's Tavern, which is closed but still acting as though they may participate; Neat Repeat, which wants to participate but has to work things out with the building owner; and Walt's Implement who is considering making some improvements. These three didn't seem to fit either category of the survey. I did talk to Neat Repeat and Walt's Implement about the program and their building. Both businesses did attend the training session just in case they do participate.

Judging by the comments of Maryann and Ron on the Administrators Survey, they were pleased with the program, with NEO's assistance and the way the program was structured.

Maryann will be finishing the Pre-Improvement Consumption reports during the last week of June. Then she will be working on the Quarterly Consumption Reports. To fill out the reports she is using information directly from the fuel supplier rather than the business. When she is no longer administering the program, it will be important to enter the date the business is to report from on the form before it is sent to the business. That way they will know what months to report. The form should be changed from "Billing Date" in the "Months" column to "Billing Period". The Annual Consumption Report form has "Billing Period" listed correctly.

I encouraged those businesses that still had some improvements that they could make in their building to contact Ron or Maryann. I also told Ron of the businesses that I thought could participate further. I also suggested to the Mayor and other business owners that they press DED to allow them to use the loan repayments for additional weatherization measures on residences or buildings of their choice.

I think they will come close to using most of the grant before they have to return any money. They have done well!

COMMENTS ON THE VERDIGRE COMMERCIAL WEATERIZATION PROGRAM

Friday as I said goodbye to Ron and Martann and again on Saturday as I was leaving Verdigre, I felt a sadness. I was saddened by the fact that I may not work with the people of Verdigre again. But, I also had a great feeling of warmth inside and a big smile. A lot had been accomplished in Verdigre in the last two years.

From Verdigre's perspective, the program was a smashing success. I heard it over and over again.

"This program is one of the best things that ever happened to Verdigre. It has created a lot of business and work for a lot of people."

Phil Schrier, Schrier's Lumber

"This is the first time we worked all winter. We didn't even get a chance to play cards until after January. Usually by December we've already wore a deck out." Virgil Miller, Mayor, Schrier Lumber Employee

"this program has really boosted the community. People's attitudes are much more positive than they were two years ago." Ken Sonders, Sonders Well

"...the businessmen and women were very excited and pleased for this opportunity to improve the renewed look of hope and determination in their faces... They leave my office with a new dream of holding on to their business in Verdigre." Maryann McElhose, Program Administrator

Time will tell whether the large investment in Verdigre will have a positive or negative rate of return in dollars and cents. Overall though, what value is the renewed hopes, dreams and determination that Maryann described and that I saw when I spoke to the business community? In my opinion, it is doubtful that the strictly monetary rate of return will be negative. If it is, the return would have to be substantially dismal to even question whether the State's intervention and investment was worth it. As I left Verdigre, there was no doubt in my mind that despite all the numerous frustrations and obstacles I encountered while helping establish the program, it was more than worth it.

The business owners said that they've seen and felt quite a difference or expect to see a difference. Ironically though, while responding to the question about the grant versus loan at various interest rates, I sensed that even though they believed the improvements were a good investment, many would be very hesitant to pay full price for the improvements at the going market rate. I feel that it is partly related to years of putting investments into their building only when absolutely necessary. Investing in their building didn't make sense when they wondered if they would be in business next year. Consequently, depending on the business and size of community, it may be difficult to get businesses to look beyond the short range return. I feel the program's grant and no interest where such a good deal that they couldn't afford not to participate especially when some of the more aggressive business people were using the program.

As a rule, the businesses made no comment on how they thought the program should be changed. Most of them said they wouldn't change anything. One person said, "It couldn't be much easier". I was unable to tell if businesses would have participated if the procedures were more difficult. Thus, I'm not sure what effect reducing administrative time by requiring the business person to perform more of the administrative work would have. It should be considered if program costs are to be reduced. Additionally, the audits could be modified to just identify what typical improvements could be made to a building if the payments aren't going to be based on the savings. We have learned from this experience that certain items are good investments for businesses that have fuel bills over \$800 a year. Consequently, the key is convince the owner that the improvements are a good investment. The audit may be able to be replaced by a person the business community respects and trusts.

VERDIGRE SHARED ENERGY SAVINGS PROGRAM
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building name	kWh	RRM DATA: fuel units before retrofits										kWh	RRM DATA: f	
		electric cost	gals.	propane cost	#2 oil gals.	cost	cost	cost	cost	cost	cost		electric cost	gals.
Alpine Village	304,755	15,023	21,460	8,794	0	0	0	0	0	0	0	319,205	16,212	23,345
Bohemian Lounge	55,220	2,761	2,125	1,241	0	0	0	0	0	0	53,880	2,694	2,005	
Country Creations	1,690	133	1,445	902	0	0	0	0	0	0	5,750	494	935	
Hair Designs	8,112	641	745	354	0	0	0	0	0	0	8,973	666	515	
Heaton's Food Center	128,595	7,163	0	0	1,415	1,079	0	0	0	0	127,295	7,270	701	
Herbert Feed & Grain #1	64,653	5,369	894	500	0	0	0	0	0	0	42,804	4,039	750	
Herbert Feed & Grain #2	2,750	268	0	0	2,123	1,364	0	0	0	0	4,190	407	1,370	
Hotel 1898	0	0	0	0	0	0	0	0	0	0	0	0	0	
Jedlicka's Hardware Hank	23,370	1,389	1,345	647	0	0	0	18	810	0	27,518	1,566	1,645	
Karen's Cafe	38,560	2,035	2,010	973	0	0	0	0	0	0	39,900	2,101	2,305	
Malu's Corner Store	130,720	7,350	430	207	0	0	0	0	0	0	132,160	7,434	635	
Misty's Place	32,510	1,777	1,455	827	0	0	0	0	0	0	35,249	1,972	1,023	
N & B Gas Co.	2,535	300	940	415	0	0	0	0	0	0	3,099	337	810	
Meat Repeat	3,790	327	700	315	0	0	0	5	350	0	4,900	304	570	
Pat's Mini Mart	1,970	255	0	0	0	6	6	0	0	0	45,990	2,326	0	
Sandy's Service	3,856	385	0	0	1,508	971	0	0	0	0	5,519	493	0	
Schreier's Lumber Co.	3,140	432	0	0	380	216	0	0	0	0	2,970	428	0	
Sonder's Sundries	8,501	676	180	84	0	0	0	9	425	0	7,658	626	705	
Sonder's Well Co.	3,760	379	364	170	0	0	0	1	40	0	3,830	405	375	
Kenneth R. Tusha, DDS	7,950	648	555	254	0	0	0	0	0	0	9,350	723	495	
Verdigre Bakery	26,243	1,514	590	279	962	660	0	0	0	0	20,872	1,289	515	
Verdigre Body Shop	6,490	583	365	182	0	0	0	31	1,395	0	5,440	481	275	
Verdigre Eagle	14,880	1,218	1,165	539	0	0	0	2	80	0	10,800	977	1,160	
Verdigre Greenhouse	3,752	376	1,750	1,163	805	525	0	0	0	0	12,883	891	2,910	
Verdigre Implement Co.	76,720	5,887	1,675	805	0	0	0	0	0	0	27,429	2,055	1,485	
Verdigre Medical Clinic	9,102	681	0	0	558	345	0	0	0	0	6,781	561	425	
Verdigre Sand & Gravel	613	257	800	346	0	0	0	0	0	0	660	261	1,060	
Malton Farm & Feed Supply	7,659	630	0	0	360	36	0	5	225	0	8,407	679	1,380	
Malt's Implement	1,339	223	1,250	583	0	0	0	0	0	0	1,335	222	970	
Mash House	3,654	372	3,615	1,753	0	0	0	0	0	0	2,934	326	2,615	

Village Totals 976,889 59,052 45,858 21,333 8,118 5,202 71 3,325 977,781 58,239 50,979

(13) (14) (15) (16) (17) (18) (19) (20) (21) (22) (23) (24) (25) (26) (27) (28)

fuel units after retrofits ----- wood -----

cost gals. #2 oil cost cords cost

	9,479	889	420	230	320	406	816	0	738	1,008	286	472	349	255	0	0	317	169	222	223	116	518	1,606	651	191	451	611	432	1,049	22,224	
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	478	0	0	1,000	0	0	2,688	1,000	0	0	0	0	0	5,973	
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	319	0	0	783	0	0	1,779	100	0	0	0	0	0	3,514	
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	4	0	0	0	0	0	0	0	41	
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	720	160	0	0	0	0	0	0	0	1,525	
	23,817	4,002	1,035	995	8,242	5,869	1,632	0	2,846	3,008	7,557	2,604	715	992	261	1,356	648	1,185	589	902	2,453	2,160	1,837	2,064	6,692	1,026	603	891	806	88,912	
	25,691	3,583	914	896	7,590	4,445	1,223	0	2,754	3,109	7,720	2,444	686	559	2,326	2,295	747	943	724	945	2,317	1,655	4,276	2,806	752	712	1,385	654	1,375	85,502	
	-1874	419	121	99	652	1424	409	0	92	-101	-163	160	29	433	-2065	158	-99	242	-135	-43	843	182	-2212	3886	274	-109	-494	152	750	3410	
	-8%	10%	12%	10%	8%	24%	25%	0%	3%	-3%	-2%	6%	4%	44%	-791%	6%	-15%	20%	-23%	-5%	6%	39%	10%	-107%	58%	27%	-18%	-55%	19%	35%	4%
	2,748	1,213	2,642	505	1,775	345	2,606	3,625	2,495	200	1,265	537	435	462	7,174	658	374	640	259	558	788	550	1,362	4,795	490	1,178	1,249	226	994	42,926	
	NR	35%	5%	20%	37%	413%	16%	NR	4%	NR	NR	30%	7%	94%	NR	24%	NR	38%	NR	NR	107%	33%	NR	81%	56%	NR	NR	67%	75%	8%	
	76%	109%	0%	100%	100%	100%	107%	0%	145%	100%	109%	159%	100%	100%	100%	100%	100%	100%	100%	148%	100%	100%	100%	127%	100%	50%	0%	100%	100%	8%	
	4292	97	0	99	652	1424	323	0	-1147	-101	-858	-1282	29	433	0	380	-99	242	-135	-497	843	182	-2212	3128	274	247	0	152	750	7,374	
	18%	2%	NR	10%	8%	24%	20%	NR	-40%	-3%	-11%	-49%	4%	44%	NR	28%	-15%	20%	-23%	-55%	6%	39%	10%	-107%	47%	27%	41%	19%	35%	9%	
	156%	8%	NR	20%	37%	413%	12%	NR	NR	NR	NR	NR	7%	94%	NR	49%	NR	38%	NR	NR	107%	33%	NR	65%	56%	21%	NR	67%	75%	26%	
	14,563	5,395	11,188	4,374	9,106	2,851	19,070	20,856	11,701	1,789	12,557	2,946	5,319	4,717	5,242	6,166	2,675	6,131	2,584	4,009	3,907	3,434	4,868	7,989	9,750	4,673	11,696	11,595	1,459	5,402	218,012

COST SAVINGS ANALYSIS:

before actual energy costs after saved % save estimated save % est adj % saved adjusted % save % est. project cost

	88,912	85,502	3410	4%	42,926	8%	7,374	9%	26%	218,012
	23,817	25,691	-1874	-8%	2,748	NR	4292	18%	156%	14,563
	4,002	3,583	419	10%	1,213	35%	97	2%	8%	5,395
	1,035	914	121	12%	2,642	5%	0	NR	NR	11,188
	995	896	99	10%	505	20%	99	10%	20%	4,374
	8,242	7,590	652	8%	1,775	37%	652	8%	37%	9,106
	5,869	4,445	1424	24%	345	413%	1424	24%	413%	2,851
	1,632	1,223	409	25%	2,606	16%	323	20%	12%	19,070
	0	0	0	0%	3,625	NR	0	NR	NR	20,856
	2,846	2,754	92	3%	2,495	4%	-1147	-40%	NR	11,701
	3,008	3,109	-101	-3%	200	NR	-101	-3%	NR	1,789
	7,557	7,720	-163	-2%	1,265	NR	-858	-11%	NR	12,557
	2,604	2,444	160	6%	537	30%	-1282	-49%	NR	2,946
	715	686	29	4%	435	7%	29	4%	7%	5,319
	992	559	433	44%	462	94%	433	44%	94%	4,717
	261	2,326	-2065	-791%	7,174	NR	0	NR	NR	5,242
	1,356	976	380	28%	778	49%	380	28%	49%	6,166
	648	747	-99	-15%	374	NR	-99	-15%	NR	2,675
	1,185	943	242	20%	640	38%	242	20%	38%	6,131
	589	724	-135	-23%	259	NR	-135	-23%	NR	2,584
	902	945	-43	-5%	558	NR	-497	-55%	NR	4,009
	2,453	2,295	158	6%	658	24%	158	6%	24%	3,907
	2,160	1,317	843	39%	788	107%	843	39%	107%	3,434
	1,837	1,655	182	10%	550	33%	182	10%	33%	4,868
	2,064	4,276	-2212	-107%	1,362	NR	-2212	-107%	NR	7,989
	6,692	2,806	3886	58%	4,795	81%	3128	47%	65%	9,750
	1,026	752	274	27%	490	56%	274	27%	56%	4,673
	603	712	-109	-18%	1,178	NR	247	41%	21%	11,696
	891	1,385	-494	-55%	1,249	NR	0	NR	NR	11,595
	806	654	152	19%	226	67%	152	19%	67%	1,459
	2,125	1,375	750	35%	994	75%	750	35%	75%	5,402

(29) (20) (31) ENERGY SAVINGS ANALYSIS: (32) (33) (34) (35) (36) (37) (38) (39) (40) (41) (42) (43) (44)

est. payback act. adj. + energy use before retrofits (MBtu) elec LPG #2_oil wood TOTAL + energy use after retrofits (MBtu) elec LPG #2_oil wood TOTAL + energy saved by elec LPG #2_oil

5.3	NR	3.4	1040.1	2038.7	0.0	0.0	0.0	3078.8	1089.4	2217.8	0.0	0.0	0.0	3307.2	-49.3	-179.1	0.0
4.4	12.9	55.9	188.5	201.9	0.0	0.0	0.0	390.3	183.9	190.5	0.0	0.0	0.0	374.4	4.6	11.4	0.0
4.2	92.5	NR	5.8	137.3	0.0	0.0	0.0	143.0	19.6	88.8	0.0	0.0	108.4	-13.9	48.5	0.0	
8.7	44.2	44.2	27.7	70.8	0.0	0.0	0.0	98.5	30.6	48.9	0.0	0.0	79.5	-2.9	21.9	0.0	
5.1	14.0	14.0	438.9	0.0	198.1	0.0	0.0	637.0	434.5	66.6	0.0	0.0	501.1	4.4	-66.6	198.1	
8.3	2.0	2.0	220.7	84.9	0.0	0.0	0.0	305.6	146.1	71.3	0.0	0.0	217.3	74.6	13.7	0.0	
7.3	46.6	59.0	9.4	0.0	297.2	0.0	0.0	306.6	14.3	130.2	0.0	0.0	144.5	-4.9	-130.2	297.2	
5.8	NR	NR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
4.7	127.2	NR	79.8	127.8	0.0	0.0	504.0	711.5	93.9	156.3	0.0	140.0	390.2	-14.2	-28.5	0.0	
8.9	NR	NR	191.6	191.0	0.0	0.0	0.0	322.6	136.2	219.0	0.0	0.0	355.2	-4.6	-28.0	0.0	
9.9	NR	NR	446.1	40.9	0.0	0.0	0.0	487.0	451.1	60.3	0.0	0.0	511.4	-4.9	-19.5	0.0	
5.5	18.4	NR	111.0	138.2	0.0	0.0	0.0	249.2	120.3	97.2	0.0	0.0	217.5	-9.3	41.0	0.0	
12.2	183.4	183.4	8.7	89.3	0.0	0.0	0.0	98.0	10.6	77.0	0.0	0.0	87.5	-1.9	12.3	0.0	
10.2	10.9	10.9	12.9	66.5	0.0	140.0	219.4	7.6	16.7	54.2	0.0	0.0	70.9	-3.8	12.4	0.0	
0.7	NR	NR	6.7	0.0	0.8	0.0	0.0	7.6	157.0	0.0	0.0	0.0	157.0	-150.2	0.0	0.8	
7.9	16.2	16.2	13.2	0.0	211.1	0.0	0.0	224.3	18.8	0.0	106.0	0.0	124.8	-5.7	0.0	105.1	
7.2	NR	NR	10.7	0.0	53.2	0.0	0.0	63.9	10.1	0.0	66.9	0.0	77.1	0.6	0.0	-13.7	
9.6	25.3	25.3	29.0	17.1	0.0	238.0	284.1	75.4	26.1	67.0	0.0	0.0	93.1	2.9	-49.9	0.0	
10.0	NR	NR	12.8	34.6	0.0	28.0	79.9	79.9	13.1	35.6	0.0	84.0	132.7	-0.2	-1.0	0.0	
7.2	NR	NR	27.1	52.7	0.0	0.0	0.0	79.9	31.9	47.0	0.0	0.0	78.9	-4.8	5.7	0.0	
5.9	24.7	24.7	89.6	56.1	134.7	0.0	0.0	280.3	71.2	48.9	140.0	0.0	260.2	18.3	7.1	-5.3	
4.4	4.1	4.1	22.2	34.7	0.0	868.0	924.8	18.6	18.6	26.1	0.0	784.0	828.7	3.6	8.5	0.0	
8.9	26.7	26.7	50.8	110.7	0.0	56.0	217.5	36.9	36.9	110.2	0.0	112.0	259.1	13.9	0.5	0.0	
5.9	NR	NR	12.8	166.3	112.8	0.0	291.9	421.0	44.0	276.5	376.3	0.0	696.7	-31.2	-110.2	-263.5	
2.0	2.5	3.1	261.8	159.1	0.0	0.0	421.0	93.6	93.6	141.1	140.0	0.0	374.7	168.2	18.1	-140.0	
9.5	17.1	17.1	31.1	0.0	78.1	0.0	109.2	23.1	23.1	40.4	0.0	0.0	63.5	7.9	-40.4	78.1	
9.9	NR	47.4	2.1	76.0	0.0	0.0	78.1	2.3	2.3	100.7	0.0	0.0	103.0	-0.2	-24.7	0.0	
9.3	NR	NR	26.1	0.0	50.4	140.0	216.5	28.7	28.7	131.1	7.0	28.0	194.8	-2.6	-131.1	43.4	
6.5	9.6	9.6	4.6	118.8	0.0	0.0	123.3	4.6	4.6	92.2	0.0	0.0	96.7	.0	26.6	0.0	
5.4	7.2	7.2	12.5	343.4	0.0	0.0	355.9	10.0	10.0	248.4	0.0	0.0	258.4	2.5	95.0	0.0	
5.1	63.9	22.9	3334.1	4356.5	1136.5	1974.0	10801.2	3337.2	4843.0	836.2	1148.0	10164.4	-3.0	-486.5	300.3	€	

	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)
	retrofits (MBtu)			estimated		energy saved by retrofits (MBtu)		adjusted		retrofits (MBtu)		
wood	TOTAL	%_saved	+	MBtu	%_est	elec	LPG	#2_oil	wood	TOTAL	%_sav	%_est
0.0	-228.4	-7%	+	173.3	6%	212.1	353.2	0.0	0.0	565.3	18%	326%
0.0	16.0	4%	+	344.9	88%	-12.0	-5.7	0.0	0.0	-17.7	-5%	NR
0.0	34.6	24%	+	399.6	279%	0.0	0.0	0.0	0.0	0.0	NR	NR
0.0	18.9	19%	+	63.0	64%	-2.9	21.9	0.0	0.0	18.9	19%	30%
0.0	135.9	21%	+	264.2	41%	4.4	-66.6	198.1	0.0	135.9	21%	51%
0.0	88.3	29%	+	39.9	13%	74.6	13.7	0.0	0.0	88.3	29%	221%
0.0	162.2	53%	+	634.5	207%	-5.9	-139.3	297.2	0.0	152.0	50%	24%
0.0	0.0	NR	+	579.4	NR	0.0	0.0	0.0	0.0	0.0	NR	NR
0.0	321.3	45%	+	424.1	60%	-56.4	-98.8	0.0	301.0	145.8	20%	34%
0.0	-32.6	-10%	+	32.0	10%	-4.6	-28.0	0.0	0.0	-32.6	-10%	NR
0.0	-24.4	-5%	+	175.3	36%	-45.5	-24.9	0.0	0.0	-70.4	-14%	NR
0.0	31.7	13%	+	80.0	32%	-80.3	-16.3	0.0	0.0	-96.6	-39%	NR
0.0	10.4	11%	+	76.3	78%	-1.9	12.3	0.0	0.0	10.4	11%	14%
0.0	148.6	68%	+	116.1	53%	-3.8	12.4	0.0	140.0	148.6	68%	128%
0.0	-149.4	-197%	+	29.6	391%	0.0	0.0	0.0	0.0	0.0	NR	NR
0.0	99.5	44%	+	181.8	81%	-5.7	0.0	105.1	0.0	99.5	44%	55%
0.0	-13.1	-21%	+	79.0	124%	0.6	0.0	-13.7	0.0	-13.1	-21%	NR
0.0	191.0	67%	+	161.9	57%	2.9	-49.9	0.0	238.0	191.0	67%	118%
0.0	-57.3	-76%	+	92.5	123%	-0.2	-1.0	0.0	-56.0	-57.3	-76%	NR
0.0	0.9	1%	+	80.7	101%	-20.1	-16.9	0.0	0.0	-37.0	-46%	NR
0.0	20.1	7%	+	61.8	22%	18.3	7.1	-5.3	0.0	20.1	7%	33%
0.0	34.0	10%	+	192.4	21%	3.6	8.5	0.0	84.0	96.1	10%	50%
0.0	-41.6	-19%	+	85.9	40%	13.9	0.5	0.0	-56.0	-41.6	-19%	NR
0.0	-404.8	-139%	+	225.9	77%	-31.2	-110.2	-263.5	0.0	-404.8	-139%	NR
0.0	46.3	11%	+	102.2	24%	143.0	-20.0	-177.8	0.0	-54.9	-13%	NR
0.0	45.7	42%	+	89.0	76%	7.9	-40.4	78.1	0.0	45.7	42%	55%
0.0	-24.9	-32%	+	206.9	265%	1.0	25.7	0.0	0.0	26.6	34%	13%
0.0	21.7	10%	+	285.0	132%	0.0	0.0	0.0	0.0	0.0	NR	NR
0.0	26.6	22%	+	48.1	39%	.0	26.6	0.0	0.0	26.6	22%	55%
0.0	97.5	27%	+	164.3	46%	2.5	95.0	0.0	0.0	97.5	27%	59%
636.0	636.8	6%	+	5483.6	51%	214.2	-41.2	218.3	651.0	1042.2	10%	25%

Verdigre coming back strong after 1980s farm crisis

VERDIGRE (AP) — This small northeast Nebraska community, hit hard by the farm crisis of the 1980s that contributed to the loss of the town's only bank in 1984, is coming back strong.

"Working Together and Winning" reads a sticker fastened to the front door of Sonder Well Co. on Main Street. The slogan might describe the Knox County community on the mend.

When food and grain pantries were formed in late 1984 to assist some families unable to feed themselves and their livestock, Verdigre became the focus of national publicity about the farm crisis.

As 1982 nears, things are changing in the community of 607, located about 50 miles northwest of Norfolk. In 1991 alone, Verdigre residents

raised \$60,000 to purchase a new rescue unit, opened a recycling center, continued communitywide involvement in the renovation of St. Wenceslaus Catholic Church and conducted Drug Abuse Resistance Education sessions over a 17-week period for fifth- and sixth-graders.

Work also continued on the Timber Lake Dam and Resort project, a proposed 3-mile lake and 500-plus-acre dam on Verdigre Creek three miles southwest of Verdigre, according to Kirk Cisler, president of the Verdigre Development Corp.

The idea for the project arose from a town hall meeting conducted by the Nebraska Department of Economic Development in 1985 to explore diversification possibilities for the agriculturally dependent community. Included in the proposed project

are a 100-room lodge, cabins, a marina, Czech-style village, an 18-hole golf course and equestrian center.

Cisler said a firm in North Carolina, interested in constructing the dam, is working on cost estimates.

Among other projects on the drawing board are additions to the town's museum and public library, housing for the elderly and restoration of the town's historic hotel.

A number of Verdigre area residents are responsible for the community's successful revitalization efforts.

One of the supporters is Ken Sonder, owner of Sonder Well Co. He describes himself simply as a concerned citizen.

In recent years, Sonder has written letters and made numerous phone calls to politicians and other key offi-

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cials regarding projects in Verdigre. He also has captured his hometown's various revitalization projects on film and videotape.

"Verdigre is a community worth fighting for," he said.

"We've come up against a brick wall and we've persisted. We're in remission (after past setbacks). We're not going to give up now," he said.

Verdigre's varied accomplishments earned the community third place overall in the 1991 Nebraska Community Improvement Program in the division for towns with a population of 500-799.

In the health and safety area, Verdigre claimed first for its successful community fund-raising efforts targeted toward purchase of a new rescue unit.