



nebraska energy office

**first quarter report
may 15, 1982**

Help Conserve the Good Life of Nebraska

CHARLES THONE
GOVERNOR



State of Nebraska
Nebraska Energy Office

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V.B. BALOK
DIRECTOR

May 15, 1982

The Honorable Charles Thone
Governor of Nebraska
State House
Lincoln, Nebraska 68509

Patrick J. O'Donnell
Clerk of the Legislature
Room 2018 State Capitol
Lincoln, Nebraska 68509

Dear Governor Thone and Clerk O'Donnell:

This Quarterly Report from the Nebraska Energy Office, for the period of January - March, 1982, is submitted in accordance with provisions of Section 81-1606 RSN (1980).

If you have any questions, please contact this office.

Sincerely,

NEBRASKA ENERGY OFFICE

A handwritten signature in cursive script, appearing to read 'V. B. Balok'.

V. B. Balok
Director

VBB:peg

Enc.

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EXECUTIVE SUMMARY

The Nebraska Energy Office (NEO) is required by statute authorized in Legislative Bill 954 to compile quarterly reports for the Legislature and the Governor.

The following is an executive summary of the major NEO activities during the first calendar quarter of 1982, as well as an overview of the energy situation at the national level during the same time period.

During the quarter, a second grant cycle was administered for the school weatherization program set up under Legislative Bill 257. In this cycle, 105 school districts applied for grants totaling \$5.5 million for 751 proposed projects. These projects were reviewed and awards of approximately \$1.6 million will be made early in the second calendar quarter of 1982. The \$1.6 million is the total available from Oil and Gas Severance tax revenues at the time of the awards.

During the quarter, gasoline consumption continued to fall. For the first three months of 1982 gasoline use dropped by 6.4 percent compared with the first three months of 1981. The continual downward trend is the result of several factors including price, more efficient vehicles, and energy conservation practiced by individual vehicle owners.

Gasohol use in the state of Nebraska continued to grow and the first three months of 1982 showed a 71.7% increase, compared with the same period in 1981. Combining gasoline and Gasohol data still shows a net reduction in liquid fuels consumption by the automotive public.

One of the major Energy Office activities during the first quarter was the awareness campaign known as "March Is Energy Conservation Month". The NEO was involved in participating in home shows, special conferences, disseminating information through the media as well as to individual home owners. In addition there were special workshops or conferences for boiler operators, community action agencies and others during March. The theme for 1982 was "Alternates Boost Conservation."

President Reagan's decontrolling of petroleum products in January, 1981 has finally had an impact, which is the decline in world petroleum prices. The primary cause of the decline is a supply surplus of petroleum products on the world market. Despite talk about this "glut", total production world wide was down in the first quarter of 1982 compared with the first quarter of 1981. One reason for the temporary surplus is that there is less petroleum being used throughout the free world.

This declining use of petroleum has forced OPEC (the Organization of Petroleum Exporting Countries) to cut official prices of crude products during the quarter. Spot market prices of petroleum have dropped significantly. However, in a recent meeting of OPEC oil ministers, the ministers agreed to reduce production, which will probably eliminate some of the softness in the market. Some apparent recent trends indicate that spot market prices for refined products are again on the increase.

Another reason for the temporary surplus on the world market is that many oil companies in this country are reducing their stocks. Therefore, in addition to excess production, they are flooding the market with excess stocks that they have acquired over the last year. This reduction of stocks occurred not only nationally, but also in PAD 2, which is the Petroleum Allocation for Defense District of which Nebraska is a part. Stocks at the regional level for gasoline and diesel are down 15 and 24 percent, respectively.

NEO Weatherization Program officials during the first quarter of 1981 reached an agreement with the Health Department to utilize low income energy assistance funds for weatherization. The contract has been signed and finalized to use some of this money to assist in weatherizing additional homes for the state of Nebraska.

Another major activity of the Energy Office during the first quarter was development of State plans for the Energy Extension Service, the State Energy Conservation Plan, federal Weatherization Program and the federal Institutional Conservation Program. Additional money was made available by an act of Congress in December, 1981.

Grants were written by the Energy Office requesting funds for the state of Nebraska in each of these areas to begin during fiscal year 1982-83. These applications for funding were all submitted to and approved by the U. S. Department of Energy.

The NEO Energy Extension Service received authorization for \$117,000 for outreach programs and technical assistance to the citizens of the state of Nebraska. EES requires that the state match at a 20% level, bringing the total EES program funds to \$140,400 for the 1982-83 grant cycle.

The State Energy Conservation Program received authorization for \$235,900 federal funds for use in carrying out the mandatory requirements of the Federal Energy Conservation Policy Act.

Approximately \$1,400,000 for weatherizing low-income homes under the federal weatherization program was authorized.

The Institutional Conservation Program received a grant of \$492,090 for schools, hospitals, public care facilities and local government buildings. The grant covers energy conservation projects and technical assistance analysis.

This crucial federal funding for the various programs will enable the NEO to continue providing services to Nebraskans, but reductions will have an impact on the level of those services.

The weatherization funding level dropped from the 1981 grant of \$2,600,000; EES was cut from the 1981 level of \$228,900; Conservation decreased from the 1981 award of \$364,300, and ICP dropped from \$1,700,000 in 1981.

NATIONAL POLICY

During the first quarter of 1982, three major energy activities occurred at the federal level. These were 1) development of legislation to dismantle the U.S. Department of Energy (DOE); 2) a decision not to press Congress during this fiscal year for legislation to accelerate decontrol of natural gas, and discussions on a decision to accelerate decontrol of natural gas through the regulatory process; and 3) passage by Congress of the Stand-By Emergency Petroleum Allocation Act, which was vetoed by President Reagan.

In addition, the administration is continuing its efforts to build the strategic petroleum reserve as a defense in case of a severe oil embargo or other shortfall. To support that, the policy of the Reagan administration relies on price as the mechanism to distribute refined petroleum products. As discussions continue on dismantling the U.S. Department of Energy, it now appears that the administration is wavering and it is uncertain whether legislation will be recommended by the President to dismantle DOE during this current fiscal year.

It appears that the Reagan administration has decided against recommending and pushing for legislation to accelerate decontrol of natural gas during 1982. That issue is being placed on the back burner and apparently it will wait until 1983, after the Congressional elections.

As a spin-off of that action, there has been considerable discussion within the administration and the Federal Energy Regulatory Commission (FERC) to step up decontrol through the regulatory process as constituted under the rules and regulations issued by FERC. It appears this is on hold and it will not take place during calendar 1982; however, the policy is subject to change. Part of this decision is awaiting a compromise budget which is being worked out between Congress and the President.

The third major activity of this calendar quarter at the federal level was passage of the Stand-By Petroleum Allocation Act, which would have given the President stand-by authority to declare an energy emergency for 90 days. This would have enabled him to set prices and to allocate petroleum throughout the United States if a severe petroleum shortfall occurred. The President vetoed the legislation in February, 1982. The Senate attempted an override of this veto, but failed by seven votes to muster the necessary two-thirds majority vote to pass the legislation over a Presidential veto. As a result, the primary measures to be instituted in case of a severe petroleum shortfall will be: 1) the release of crude oil from the strategic petroleum reserve (for which a plan has not yet been completed), and 2) utilization of price as the mechanism to determine how the product will be distributed throughout the United States.

As a result, in the event of an energy shortfall most of the front line activity will be the responsibility of state and local governments. The Nebraska Energy Office is revising its energy emergency plan significantly to reflect this change, which places the state in a leadership role in dealing with an energy emergency at the state and local level. These two activities represent a major departure from previous policy, instituted under the Nixon, Ford and Carter administrations, which utilized the federal government as the front line mechanism against any major petroleum shortfall.

WORLD OIL PRICING

The recent decrease in crude oil prices and demand has signalled to many OPEC (Organization of Petroleum Exporting Countries) members the distinct possibility of a financial bind. Saudi Arabia, with its large reserve of oil, desires to maximize its profits by selling more oil even though it means lower prices. Nigeria, Kuwait and Libya, with smaller reserves, were aggressive on the price, hoping to capitalize their position as quickly as possible.

While the price battle was taking place within OPEC, the U.S.A. cut its consumption 10% per year for three years. Europe has also sharply dropped consumption. The high prices spurred a world wide increase in wildcat drilling, thus increasing the oil supply. The current price drop in crude oil is because buyers can shop around. British North Sea Oil is \$4.50 per barrel below the comparable Nigerian oil. There have also been purchases of Iranian oil because of Iran's low price.

Many economists feel that this picture is a copy of the 1974-1976 price drop. Hopefully, the new price drop will not decrease conservation efforts. Evans Econometrics expects the price of crude oil to increase no faster than the consumer price index until 1990, assuming conservation efforts continue. The current crude oil price is \$33.28 per barrel and is expected to be \$45.00 per barrel in 1990 based on current conditions.

REGIONAL STOCK AND IMPORTS

Nebraska is in a fifteen state Petroleum Allocation for Defense District known as PAD 2, which ranges from Nebraska to Ohio. As of January 31, 1982, stocks of crude oil in PAD 2 were down 7.6 percent from the level of January, 1981. This year's stock is still viewed as in the normal range. Motor gasoline stocks in PAD 2 were 15 percent lower than last year, distillate fuel oil stocks were down 23.6 percent and residual fuel stocks 16.5 percent lower. In the four state district of Oklahoma, Kansas, Missouri and Nebraska, motor gasoline stocks were down 18.5 percent in January.

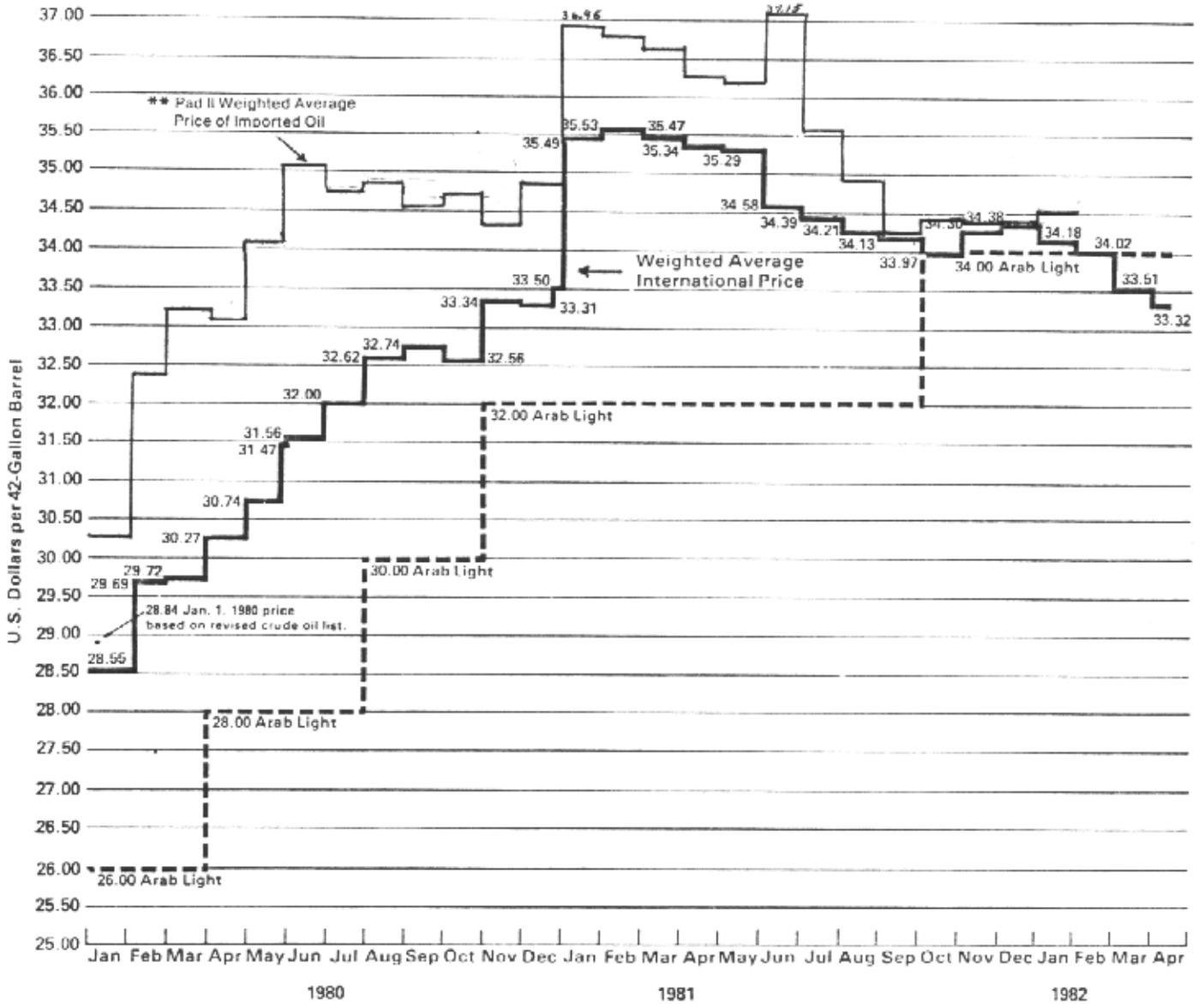
In 1980, there were 416,660,000 barrels of foreign crude oil imported into PAD 2. Six countries accounted for 79 percent; Nigeria, 16.5 percent; Mexico, 13.9 percent; Canada, 12.2 percent; Algeria, 11.4 percent, and Saudi Arabia, 7.7 percent.

The percentages changed in 1981. There were 264,838,000 barrels of foreign crude oil imported into PAD 2 from the six countries, which is a decrease of 19.7 percent. Canada led with 39.9 percent; Nigeria, 16.1 percent; Saudi Arabia, 13.7 percent; Mexico, 13.0 percent; Libya, 8.9 percent; and Algeria, 8.4 percent.

Sources: Weekly Petroleum Status Report, Monthly Petroleum Statement and Petroleum Supply Monthly.

Table A

World Crude Oil Prices¹
(Dollars per Barrel)



¹ Internationally traded oil only. Average price (FOB) weighted by estimated export volume.

Note: Beginning with the May 1, 1981 issue of the Weekly Petroleum Status Report, the world crude oil price is based on a revised crude list.

Additions: Saudi Arabia's Arabian Heavy, Dubai's Fateh, Egypt's Suez Blend, and Mexico's Maya.
Omissions: Canadian Heavy.

Replacements: Iraq's Kirkuk Blend for Iraq's Basrah Light.

The above graph shows an estimated world crude oil price based on this revised list beginning January 1, 1981. An asterisk shows the January 1, 1980 price based on the revised list. All other 1980 prices represent the old crude list before revisions.

** Does not include Canadian prices, which range from \$29.62 for low level crude to \$40.45 for high level crude.

NEBRASKA OIL PRODUCTION AND EXPLORATION

Table B presents data on oil production and exploration in Nebraska from reports of the Oil and Gas Conservation Commission. The oil production for the first two months of 1982 was 103 percent compared with the corresponding period of 1981. Table B shows that the number of drilling permits issued during the first three months of this year decreased for development wells and increased for exploratory wells.

TABLE B

Month	Oil Production in Barrels				Drilling Permits							
					Exploratory				Development			
	1980	1981	1982	**	1980	1981	1982	**	1980	1981	1982	**
January	502,703	554,180	560,334	107	45	27	26	96	21	27	23	85
February	480,512	503,868	532,073	106	21	22	22	100	27	29	15	52
March	516,836	565,799			20	16	27	169	25	22	17	77
April	486,000	559,925			19	23			30	56		
May	540,000	553,556			27	15			28	40		
June	509,397	548,195			17	50			32	30		
July	504,840	547,937			14	27			33	44		
August	547,833	578,214			13	39			16	20		
September	534,617	559,887			34	23			22	24		
October	539,889	580,388			41	34			32	24		
November	502,264	541,312			34	41			30	26		
December	529,079	571,699			24	37			27	32		
TOTALS	6,193,970	6,664,930	1,092,407	103	309	354	75	115	323	374	55	71
*Annual Summary	6,239,652	6,671,313			309	354			311	374		

Notes: *Annual summary data is compiled after corrections and is considered more reliable.

**Percent for corresponding period of previous year.

Table C
 Average Retail Price of Gasoline in Nebraska
 (Dollars per Gallon)

	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>Percent of Previous Year</u>
January	\$.63	\$.67	\$1.09*	\$1.21	\$1.27	105.0
February	.63	.68	1.15	1.28	1.26	98.4
March	.63	.71	1.18	1.35	1.22	90.4
April	.63	.74	1.21	1.35		
May	.63	.79	1.22	1.32		
June	.63	.87	1.22	1.31		
July	.64	.90	1.20	1.29		
August	.65	.94	1.18	1.29		
September	.66	.97	1.17	1.28		
October	.66	.97	1.16	1.28		
November	.66	1.00	1.19	1.28		
December	.67	1.02	1.19	1.28		
						<u>97.7%</u>

Source: Cornhusker Motor Club
 *Source: Weekly Petroleum Status Report

LIQUID FUEL CONSUMPTION

Nebraska liquid fuel consumption for the first quarter of 1982 is estimated at 290 million gallons. Seasonal patterns in liquid fuel consumption, compared with the third quarter of 1981, are clearly seen: residential and commercial sectors increased consumption from less than one million gallons to the levels shown in the table; agriculture significantly less fuel. The decrease in total consumption is attributable to the seasonal patterns, conservation and low level of business activity.

NEBRASKA PETROLEUM CONSUMPTION

Table D

Estimation for First Quarter of 1982

In Million Gallons

Fuel Type	Agriculture	Industry	Transportation	Residential	Commerce	Total
Diesel	10	4	34			48
Heating Oil		5		16	9	30
Gasoline	5		164			169
Aviation			7			7
Propane (LPG)	1	4		21	10	36
TOTAL	16	13	205	37	19	290

NEBRASKA ENERGY OFFICE, May 7, 1982

NEBRASKA PETROLEUM STATUS REPORT

Gasoline available for sale in Nebraska is defined as total gasoline, excluding Gasohol, imported into Nebraska minus the total exported. Since 1978, consumption has continued to drop. Consumption for the first quarter of 1982 was 6.4% below the same period in 1981.

Gasohol available for sale in Nebraska (which amounts to Gasohol sold and used) has increased its growth rate. In the first quarter of 1982, consumption of Gasohol was 171.7 percent of the same period in 1981 and 190.1 percent of the first quarter of 1980. Gasohol comprised 7.3 percent of Nebraska gasoline sales during the initial quarter of 1982.

Middle distillate imports for January, February and March of 1982 were 59.8 percent of the corresponding period of 1981, and 55.3 percent of the same period in 1979.

Gasoline sold to federal agencies in the initial three months of 1982 amounted to 146.2 percent of the level recorded during the same period in 1981.

Special fuels are any fuels other than gasoline that may be used in a motor vehicle fuel tank. These include diesel, propane, and natural gas.

Special fuels for highway use are fairly constant, reflecting the stability of the commercial transportation system. Consumption in 1982 is following the regular seasonal pattern.

Special fuels for non-highway use include agricultural, industrial, railroad and any other motor vehicle use not on Nebraska roads.

Table E

Gasoline Available for Sale in Nebraska* (Metered Thousands of Gallons)

	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>Percent of Previous Year</u>
January	69,334	69,166	69,602	63,763	60,917	53,354	87.6%
February	62,501	63,227	69,367	59,381	51,123	48,641	95.1
March	70,780	75,162	73,397	63,151	56,183	55,380	98.6
April	77,085	74,597	72,399	65,318	61,496		
May	79,039	84,422	77,631	72,440	65,221		
June	86,543	86,165	75,955	65,801	67,532		
July	92,844	88,253	80,054	73,498	71,619		
August	82,343	89,733	82,473	72,201	68,427		
September	79,853	79,202	72,609	79,754	65,075		
October	82,107	86,061	78,565	65,140	70,391		
November	76,506	78,351	76,555	60,261	61,239		
December	<u>75,453</u>	<u>76,887</u>	<u>74,824</u>	<u>68,169</u>	<u>62,216</u>		
TOTAL	934,388	951,226	903,431	808,877	761,439	157,375	93.6%

The last three months are preliminary.

*Gross imports into the state minus exports out of the state, excluding Gasohol.

Source: Department of Revenue Tax Form 81

May 4, 1982

NEBRASKA ENERGY OFFICE

Table F

NEBRASKA ENERGY OFFICE GASOLINE AVAILABLE FOR SALE

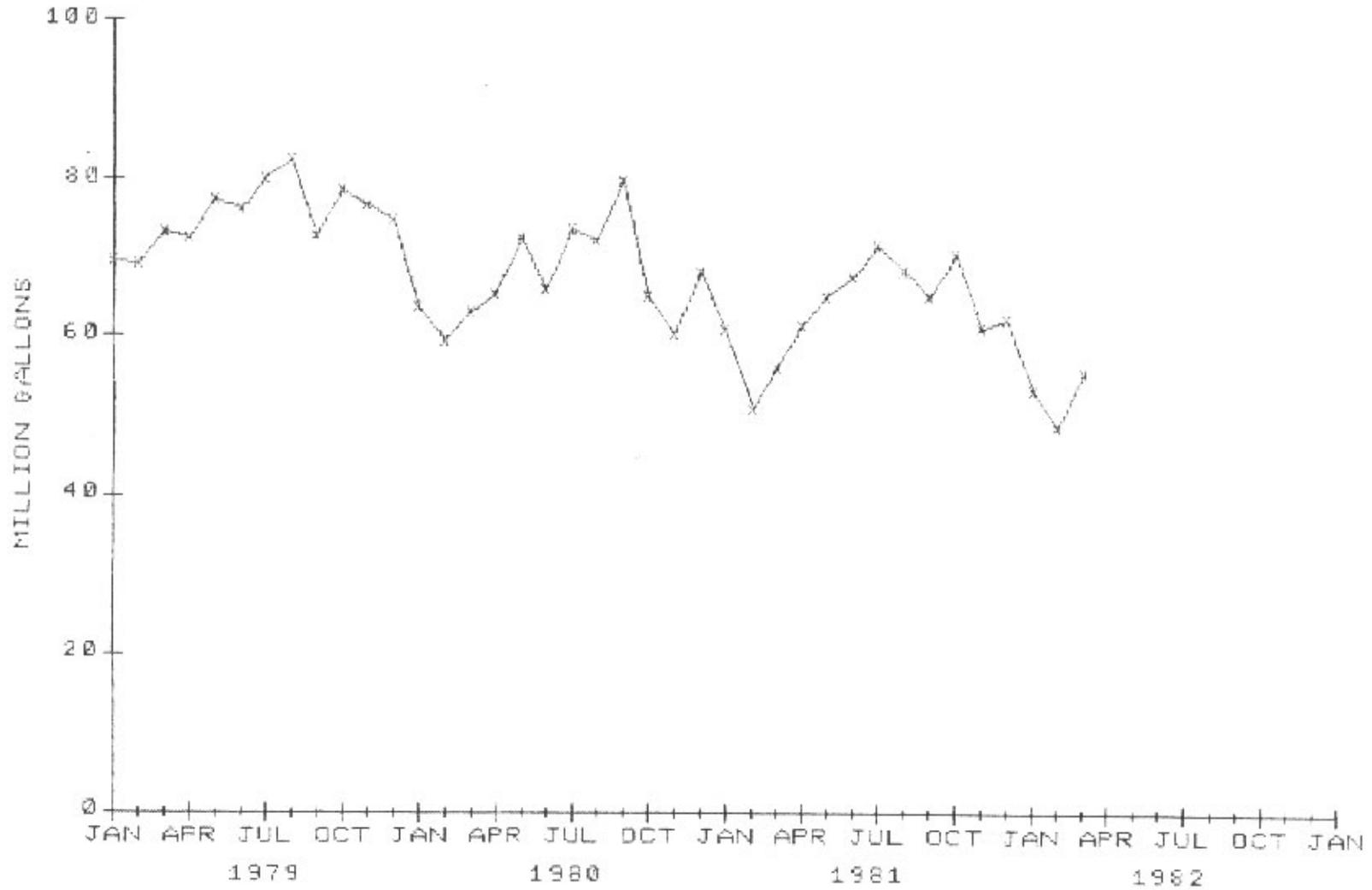


Table G

Gasohol Available for Consumption in Nebraska* (Thousands of Gallons)

	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>Percent of Previous Year</u>
January	280	1,729	2,514	3,637	144.7%
February	280	1,926	2,308	4,016	172.3
March	296	2,878	2,413	4,766	197.5
April	291	2,687	2,311		
May	313	2,915	2,392		
June	306	2,579	2,583		
July	320	2,749	2,616		
August	1,413	2,320	2,478		
September	823	2,761	2,548		
October	922	2,485	2,633		
November	802	2,284	2,713		
December	<u>844</u>	<u>2,825</u>	<u>3,667</u>	_____	_____
TOTAL	6,890	30,138	31,176	12,419	171.7%

The last three months are preliminary

*Gross imports into the state minus exports out of the state

Source: Department of Revenue Tax Form 81-1

May 4, 1982

NEBRASKA ENERGY OFFICE

Table H

NEBRASKA ENERGY OFFICE GASOHOL AVAILABLE IN NEBRASKA

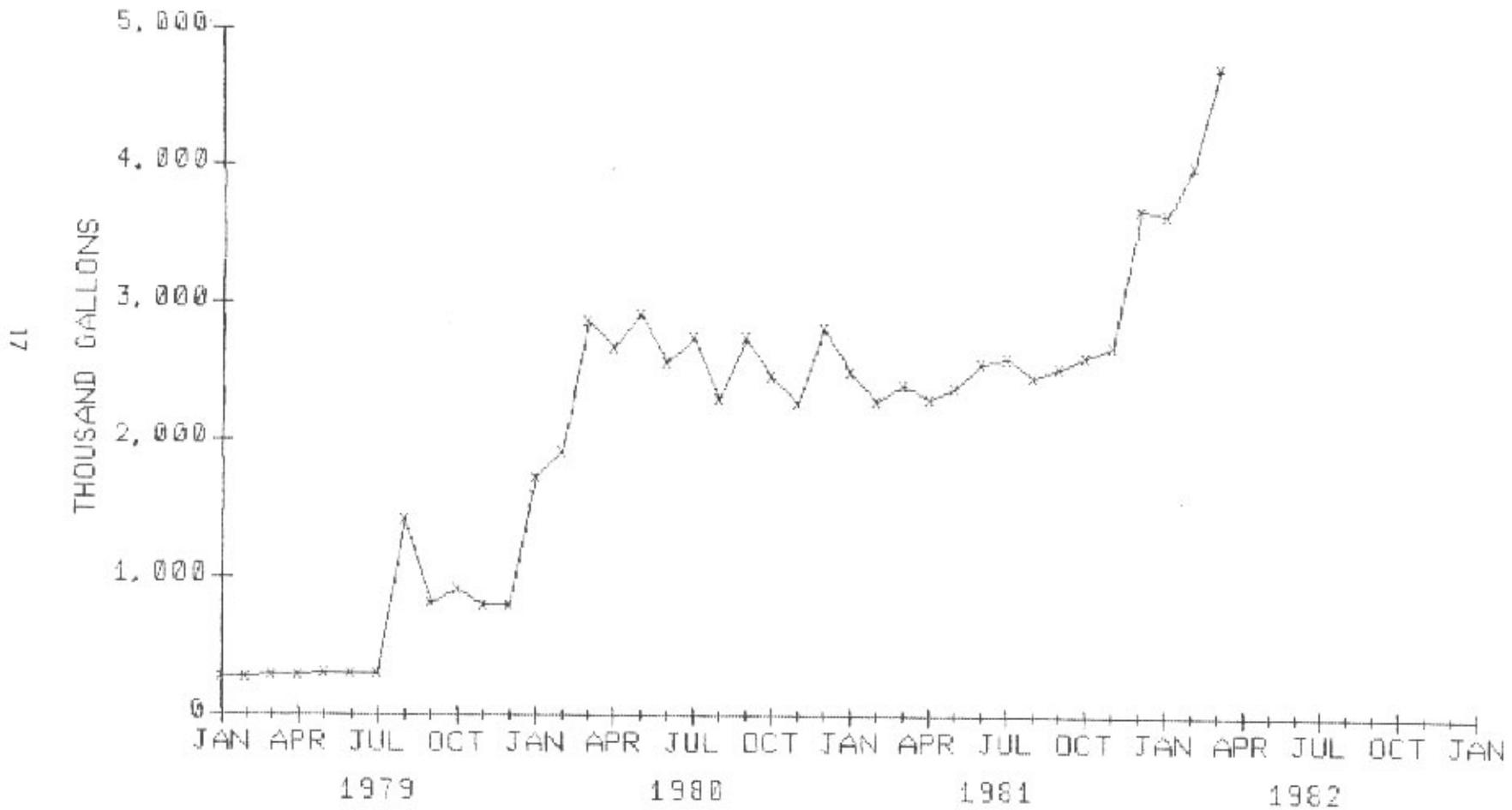


Table I

*Middle Distillates Imported Into Nebraska (Thousands of Gallons)

	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>Percent of Previous Year</u>
January	16,408	28,165	34,298	40,244	25,381	24,891	26,910	108.1%
February	14,081	18,169	29,735	34,600	26,157	59,280	19,021	32.1
March	19,222	24,028	37,886	48,150	23,102	29,450	22,066	74.9
April	23,495	24,833	32,942	40,745	32,255	24,922		
May	26,239	27,521	43,673	50,992	36,486	28,494		
June	28,744	28,267	42,739	38,258	31,247	36,640		
July	32,022	36,250	50,051	46,443	59,339	42,408		
18 August	29,857	36,183	46,934	43,635	35,548	28,817		
September	24,475	32,160	39,245	34,495	29,905	30,608		
October	24,160	32,295	34,802	38,383	31,691	31,908		
November	26,464	28,073	34,156	38,326	28,840	28,709		
December	<u>24,461</u>	<u>29,294</u>	<u>34,524</u>	<u>31,200</u>	<u>27,060</u>	<u>25,472</u>		
TOTALS	289,628	345,238	460,985	485,471	392,619	391,600	67,997	59.8%

*Diesel, home heating oil, kerosene and other middle distillates
 The last three months are preliminary
 Source: Unaudited Figures from Department of Revenue Tax Forms 81

May 4, 1982
 NEBRASKA ENERGY OFFICE

Table J
 NEBRASKA ENERGY OFFICE
 MIDDLE DISTILLATES IMPORTED

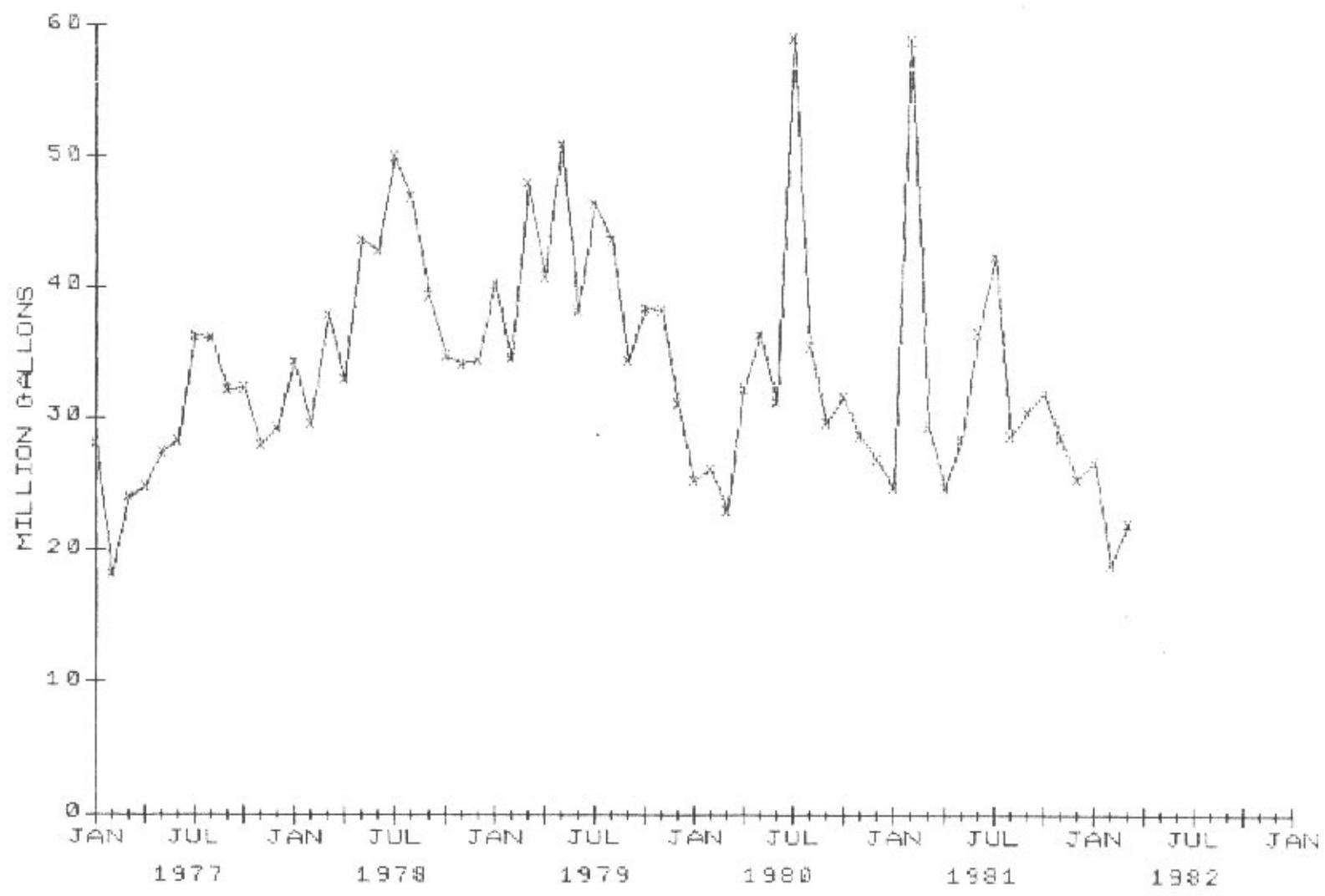


Table K

Special Fuels for Highway Use Delivered in Nebraska (Thousands of gallons)

	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>Percent of Previous Year</u>
January	8,828	10,123	10,200	11,482	11,840	10,593	10,871	102.6%
February	8,889	9,654	10,104	11,256	11,067	10,015	10,810	107.9
March	10,363	12,092	11,615	12,944	12,068	12,034	12,346	102.6
April	10,306	11,180	11,906	12,415	12,324	12,067		
May	10,059	10,901	12,114	13,035	11,895	11,701		
June	10,372	10,938	11,971	11,019	11,884	11,844		
July	9,698	10,336	11,121	11,637	11,714	11,547		
20 August	10,243	10,915	12,454	12,570	12,349	11,477		
September	10,491	10,937	12,476	12,686	13,439	12,174		
October	10,849	12,198	13,996	14,310	13,592	13,359		
November	10,660	10,774	11,894	12,412	11,823	11,672		
December	<u>10,027</u>	<u>10,116</u>	<u>11,114</u>	<u>12,047</u>	<u>11,224</u>	<u>11,114</u>		
TOTAL	121,785	130,161	140,965	147,813	145,219	139,597	34,027	104.2%

*Any fuels other than gasoline that are put in a motor vehicle fuel tank. These include diesel, propane and natural gas.

The last three months are preliminary.

Source: Department of Revenue Form 91

May 4, 1982

NEBRASKA ENERGY OFFICE

Table L

NEBRASKA ENERGY OFFICE HIGHWAY FUEL

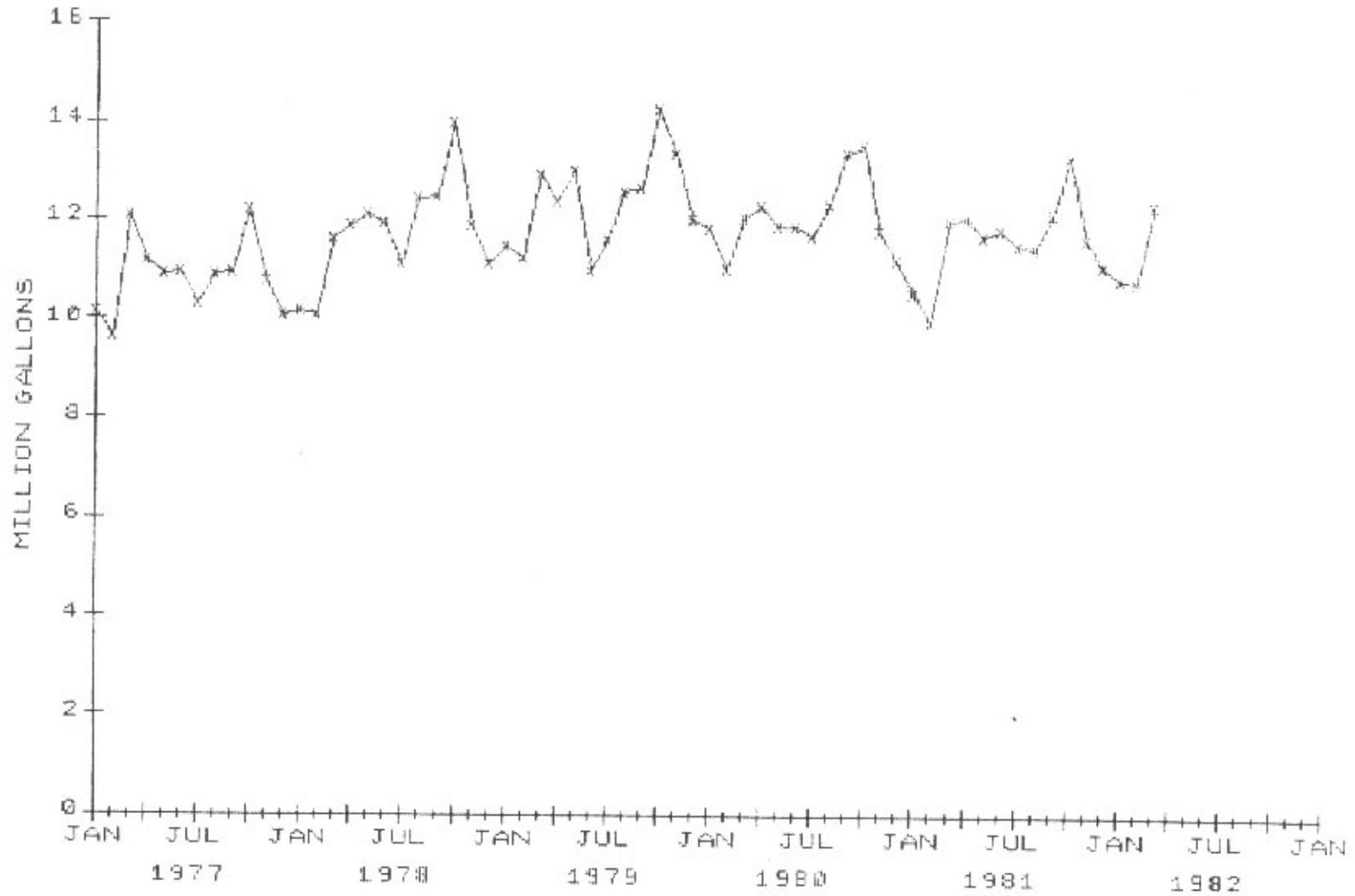


Table M

*Special Fuel (Non-Highway Use) Delivered in Nebraska (Thousands of Gallons)

	1980	<u>1981</u>	<u>1982</u>	<u>Percent of Previous Year</u>
January	13,800	12,942	11,898	91.9%
February	15,164	10,668	9,623	90.2
March	12,336	8,382	7,676	91.6
April	12,201	8,556		
May	13,619	10,701		
June	14,332	13,462		
July	24,485	18,138		
August	16,920	10,180		
September	14,990	10,416		
October	15,457	17,022		
November	12,488	13,915		
December	<u>13,913</u>	<u>11,016</u>		
TOTAL	179,695	145,398	29,197	91.3%

*Any fuels other than gasoline that are put in a motor vehicle fuel tank. These include diesel, propane and natural gas.

*Includes agricultural, industrial, railroad and any other motor vehicle use not on Nebraska roads.

The last three months are preliminary

Source: Department of Revenue Form 91

May 4, 1982

NEBRASKA ENERGY OFFICE

Table N

NEBRASKA ENERGY OFFICE NON-HIGHWAY FUEL

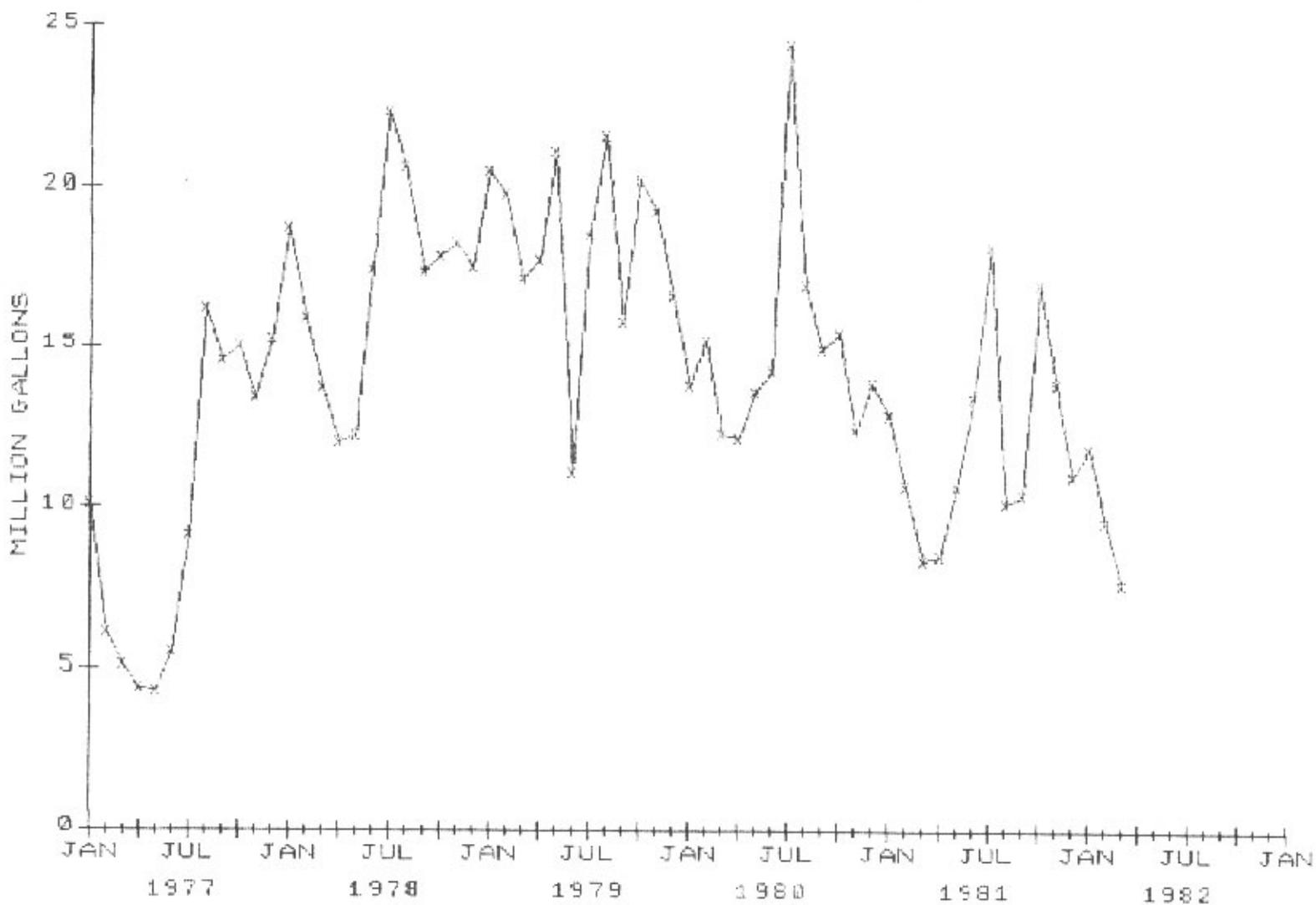


Table 0

Aviation Fuel (all types) Available for Sale* In Nebraska (Thousands of Gallons)

	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>Percent of Previous Year</u>
January	3,523	2,997	2,436	81.3%
February	2,883	2,591	2,360	91.1
March	3,011	2,997	2,588	86.4
April	3,099	2,710		
May	3,371	2,974		
June	3,220	3,220		
July	3,431	3,208		
August	3,746	2,700		
September	4,190	3,131		
October	4,444	2,728		
November	2,972	2,371		
December	<u>3,209</u>	<u>2,663</u>	_____	_____
TOTAL	41,099	34,290	7,384	86.0%

The last three months are preliminary

*Gross Gallons imported into Nebraska minus gallons exported out of state.

Source: Department of Revenue Form 85

May 4, 1982

NEBRASKA ENERGY OFFICE

Table P

NEBRASKA ENERGY OFFICE AVIATION FUEL

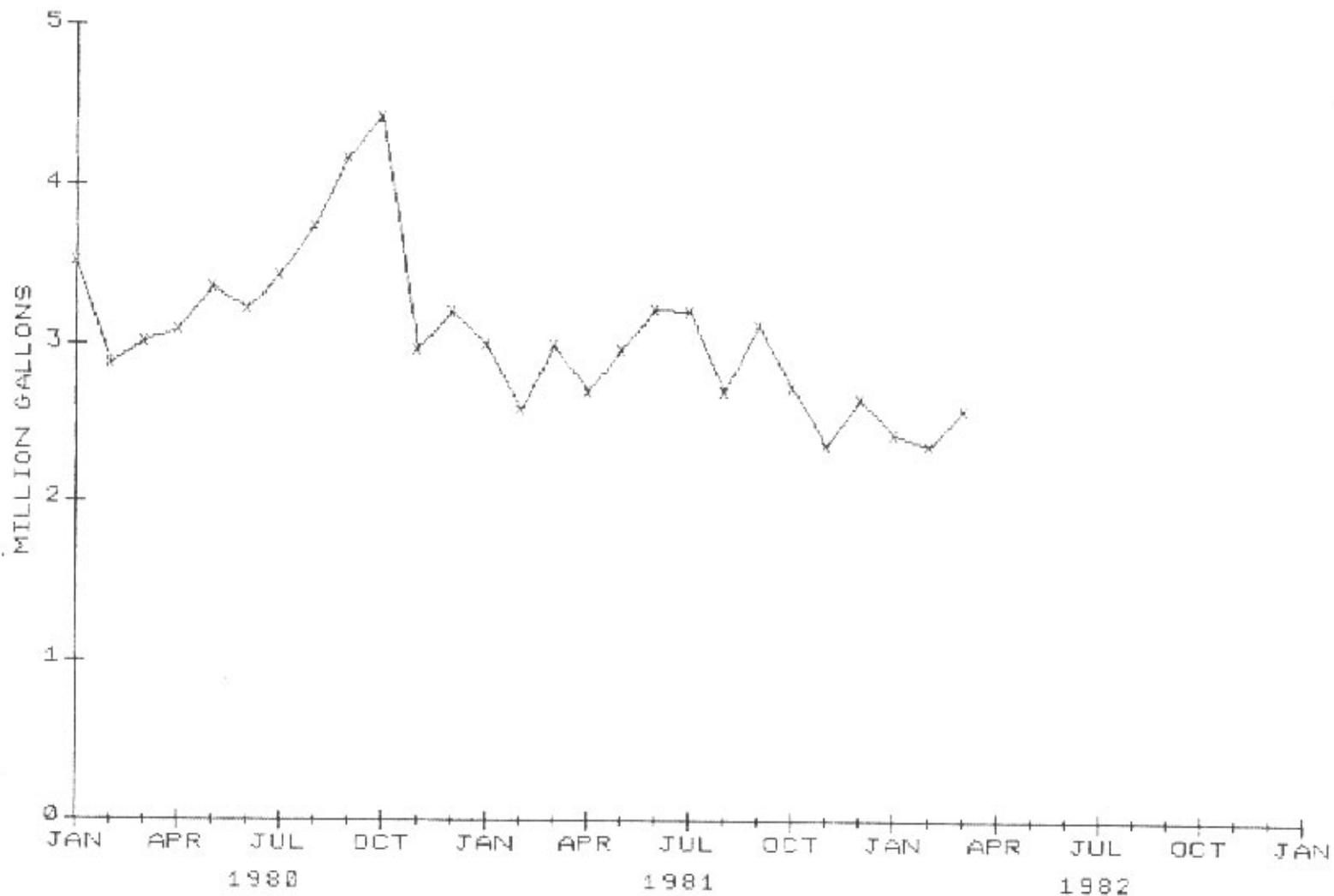


Table Q

Propane Delivered in Nebraska (Thousands of Gallons)

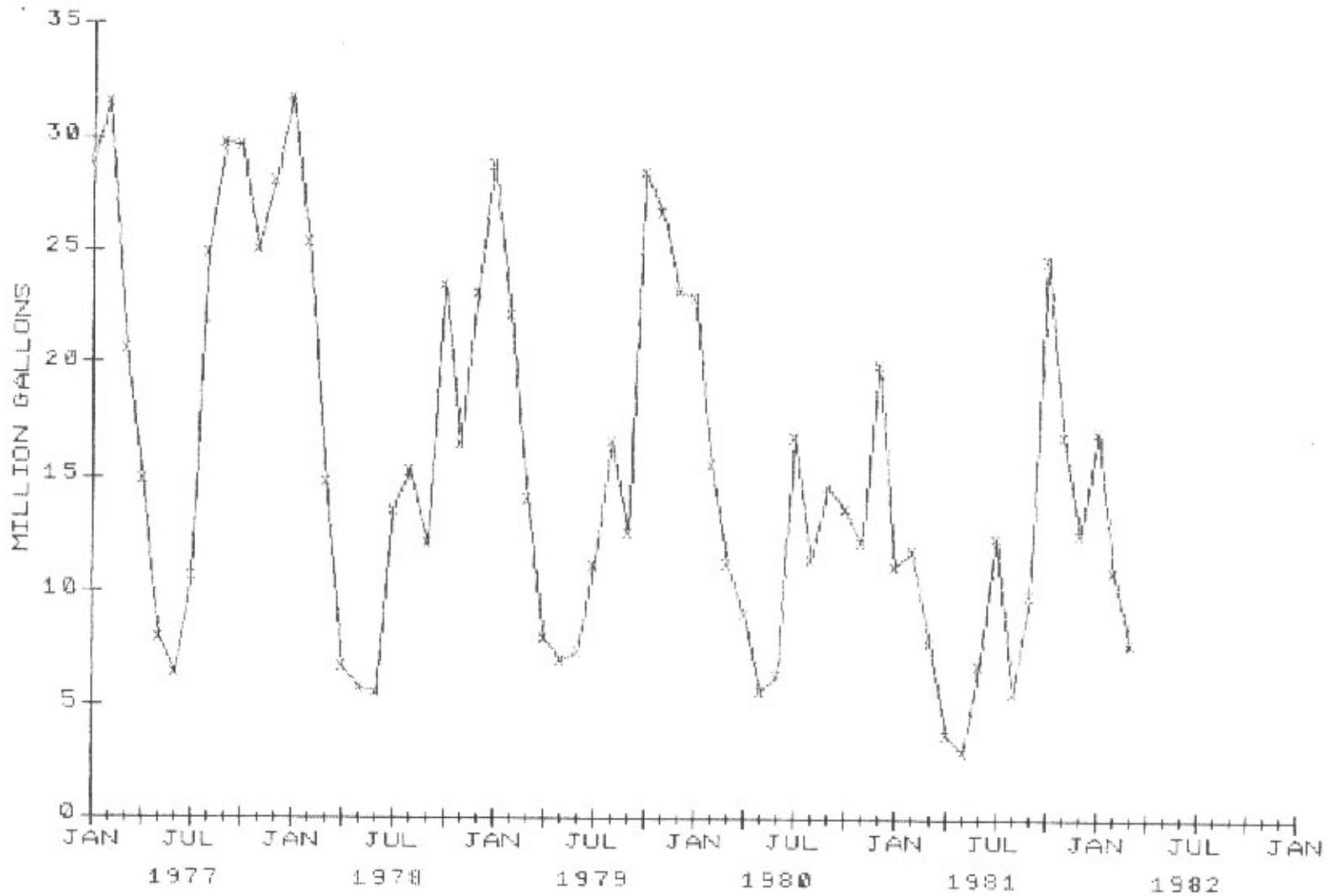
	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>Percent of Previous Year</u>
January	26,437	29,017	31,848	28,908	22,902	11,186	17,084	152.7%
February	25,163	31,505	25,331	22,164	15,673	11,841	11,045	93.3
March	16,844	20,609	14,839	14,142	11,331	7,822	7,812	99.9
April	16,500	14,952	6,717	8,008	9,115	3,731		
May	7,348	7,958	5,754	7,035	5,669	2,947		
June	6,456	6,494	5,611	7,447	6,402	6,864		
July	11,845	10,676	13,654	11,217	16,772	12,502		
August	24,855	24,895	15,328	16,671	11,447	5,631		
September	24,054	29,767	12,137	12,611	14,727	9,906		
October	16,624	29,735	23,492	28,577	13,767	24,673		
November	27,439	25,027	16,558	26,709	12,237	16,877		
December	<u>24,227</u>	<u>28,123</u>	<u>23,138</u>	<u>23,181</u>	<u>19,977</u>	<u>12,690</u>		
TOTAL	227,792	258,758	194,407	206,670	160,019	126,670	35,941	116.5%

The last month is preliminary
Source: EIA-25 Reporting Forms

May 4, 1982
NEBRASKA ENERGY OFFICE

Table R

NEBRASKA ENERGY OFFICE
PROPANE DELIVERED IN NEBRASKA



ENERGY DEMAND MODEL

The Nebraska Energy Office has been involved in design and creation of an energy demand model for the state in response to passage of Legislative Bill 954 of 1980. The model is used to identify emerging trends relating to energy supply, demand and conservation in these sectors: agricultural, commercial, residential, industrial, and transportation. It is a useful tool in evaluating policies on Nebraska's economy and energy status.

The three sections of the model listed in this report are agriculture, residential and transportation. The descriptions give a general idea of what can be evaluated with the models.

AGRICULTURAL MODEL

The agricultural model is designed to calculate and forecast energy usage and costs in Nebraska agriculture. Four major end uses (field operations, grain drying, irrigation and livestock operations) and five fuel types (natural gas, electricity, propane, diesel oil, gasoline) are accounted for in the model. The model uses state-specific data (crop acreage, crop yields, irrigated and non-irrigated acreage, fertilizer consumption, monthly precipitation and average temperatures, energy per acre of crop). It also uses national data (price indexes, crop export, domestic disappearance, production and stock). Any available state level data is used or checked first in preference to national data.

The model can answer the following questions:

- a. How much energy (in British thermal units, physical units and millions of current dollars) was used in state agriculture in previous years (1970-1980), using actual values of crop acres and yields?
- b. How much energy (in British thermal units, physical units and millions of current dollars for the five types of fuel) will be used in agriculture if any or all of the above mentioned variables will change to any specific level?
- c. How much energy is expected to be used and how much money paid by Nebraska agriculture in the near future (up to and including 1990) at normal/assumed weather conditions and assuming that the previous trend in acreages and yields will continue?

Trends in energy consumption, crop acreage and yield can be presented in table or graph form using the computer modeling program package.

Consideration was given to incorporating an econometric part of the model, including fuel and commodity prices. However, it is clear that fuel is not the major cost in total expenditures to produce crops.

According to University of Nebraska-Lincoln agricultural economist Mike Turner, the cost of fuel and lubrication for gravity irrigation of corn in central Nebraska was 14.7% of the total production cost in 1981. It was fourth after interest, machinery and fixed cost, 31.7%, taxes and land cost, 21.8% and fertilizer and chemicals, 17.9%. It is necessary to expand our data base by all these variables.

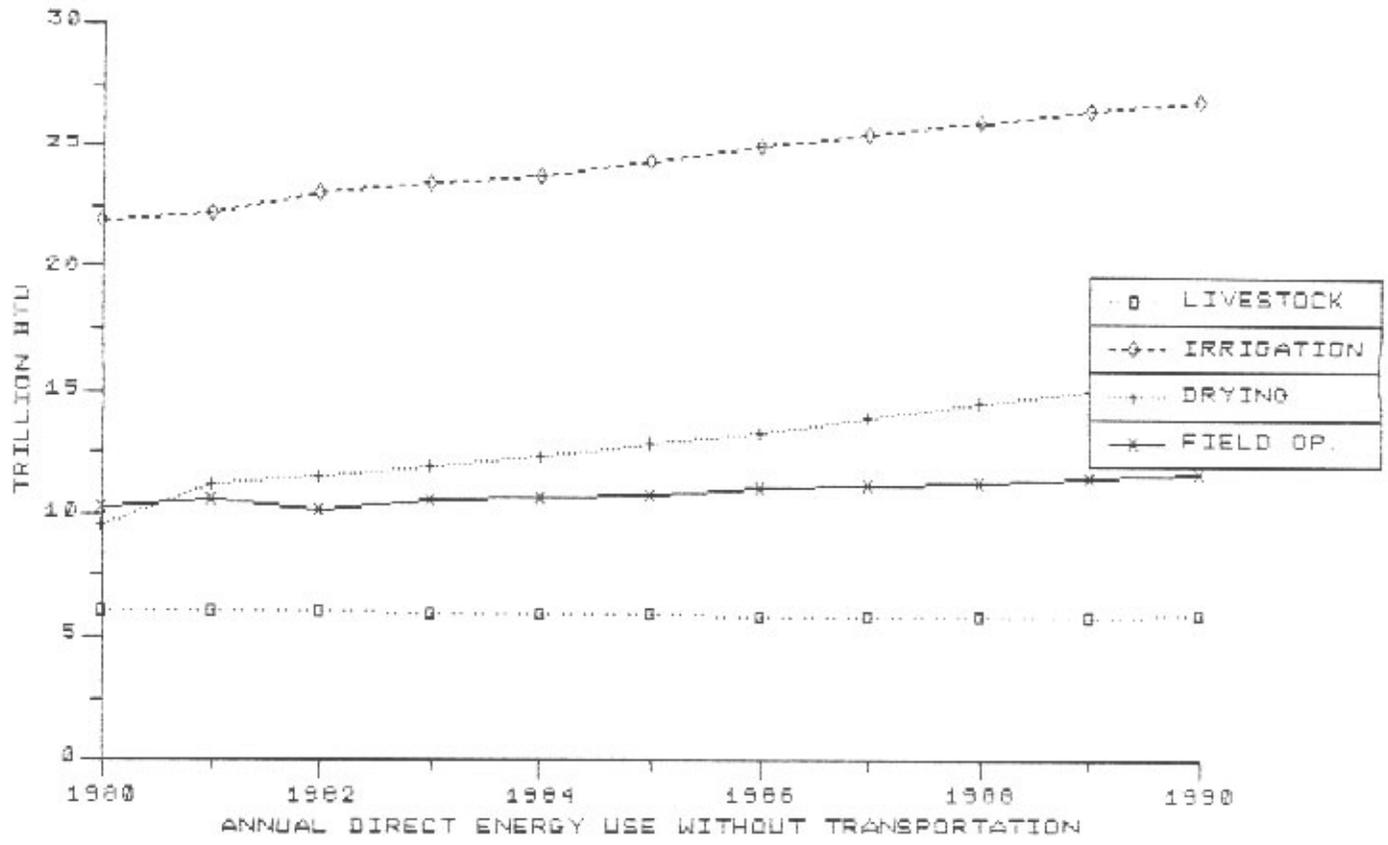
The graph on the following page presents agriculture energy use as predicted by the model for the period 1980-1990. Total energy use in Nebraska agriculture (without energy invested in chemicals or used by cars and trucks) is expected to increase from 48 to 61 trillion Btus. The average annual rate is expected to be 2.4 percent. The continuing increase in yield and acreage of corn, soybeans and sorghum is projected according to existing trends. Irrigation acreage is expected to increase, but the rate of increase will slow during the decade.

Among the four agricultural end uses, irrigation is the largest. It represents almost half of all energy used. Energy for livestock operations is the smallest of the agricultural end uses and is expected to stay fairly constant. Energy for field operations is expected to grow very slowly. Energy for crop drying and irrigation is expected to grow at a substantial rate. Energy for crop drying is assumed to be proportional to yield and acreage, both of which have an increasing trend.

The Nebraska Energy Office statistical section considers the agricultural model as a useful tool in policy research and planning.

Table S

NEBRASKA AGRICULTURAL ENERGY CONSUMPTION



RESIDENTIAL MODEL

The residential model is a useful tool for contingency planning and policy formulation. The model is strictly a tool and all results need to be interpreted. Almost all parts of the model can be changed with the implementation of a policy contingency plan. The following questions are examples of what might be studied using the model:

1. What is the cost to the average Nebraskan for each fuel if its price increases or decreases?
2. What will be the cost to heat water, heat space, cool space, or run general appliances at a particular fuel price?
3. What will be the effect on fuel consumption for space heating if the winter is severe? Mild?
4. What will be the effect on fuel consumption for space cooling if the summer is severe? Mild?
5. What will be the effect on consumption if appliance efficiencies are better or worse than what is forecast?
6. What will be the effect on consumption if certain appliances are banned or controlled in usage?
7. What is the effect on new housing starts if the current interest rates increase or decrease?
8. What is the effect on the distribution of single and multiple family dwellings at the current interest rates?
9. What is the effect on consumption, cost or fuel if appliance saturations shift at different rates?

The model calculates energy consumption by fuel-using appliances by single and multiple family dwellings. Single family dwellings are defined in the model as houses, town houses and mobile homes. Multiple family dwellings are defined as duplexes and apartments. The housing stock is constantly adjusted by new dwelling additions and old dwelling removals (demolition, fire, etc.).

In this model, an appliance is defined as a device that consumes fuel. With this definition gas furnaces and electric furnaces are two separate appliances. The model identifies twenty-two separate appliances by dwelling type. The term "saturation rate" is used to quantify the number of appliances used in an average dwelling. The saturation rates are given in percentages.

For example, the saturation rate for heat pumps for single family dwellings is 9.1. This means that 9.1 percent of the homes have heat pumps. Appliance saturation rates are forecast to the year 2000. The efficiency of appliances is a major consideration. New appliances are absorbed into the appliance efficiency rate from new dwellings, additions and old appliance replacements. The efficiency rates are based upon an Omaha Public Power District forecast and Air-Conditioning and Refrigerations Institute estimates.

Analysis of Forecast

There is a strong growth in electric heating, from 9.1 percent to 14.6 percent. This reflected only a 2.5 percent per year growth in residential electric heat. This is accounted for by the removal of inefficient resistance furnaces and the implementation of efficient heat pumps. The decrease in natural gas for heat usage stems from (1) the decrease in the saturation rate because of higher natural gas prices and (2) an increase in furnace efficiencies with only a slight increase in the housing stock. The overall housing stock is increasing at about three quarters of one percent per year with only an increase of a half percent per year of energy demanded. The number of residences with central air conditioning is increasing substantially. Some room units are being replaced. There is a decrease in the overall energy demand for the central air units. This is because of the average increased efficiency in the units beginning from 1975.

The future forecast inputs to the models are from Chase Econometrics Incorporated, Energy Economic Research Incorporated and Omaha Public Power District. Housing starts, by type, are related to national trends in housing starts and interest rates. A brief listing of some major results appears on the following page.

RESIDENTIAL MODEL TABLE

	Single Family		Multiple Family		Total		Compounded Five Year Growth Rate
	1985	1990	1985	1990	1985	1990	
Housing Stock	528,900	568,200	120,400	128,200	649,300	696,400	1.007
Saturation Rates (percent)							
heat pumps	9.1	14.6	22.5	31.1			
natural gas heat	78.9	75.3	66.2	57.4			
oil heat	5.0	4.8	2.5	2.2			
cent electric A.C.	71.5	83.4	69.2	75.4			
room electric A.C.	30.1	17.0	25.6	14.9			
cent nat gas A.C.	4.7	2.2	6.8	4.1			
All Fuel and Uses	81,400	85,900	10,000	10,100	91,400	96,000	1.005
Heating Demand							
heat pump and other electric	21.95	24.62	3.06	7.32	25.01	31.94	1.025
natural gas	37.62	36.63	4.26	3.82	36.63	40.45	.966
fuel oil	3.20	3.20	2.80	2.80	6.00	6.00	1.000
propane	3.40	3.40	2.50	2.60	5.90	6.00	1.000
Cooling Demand							
electric	3.09	3.01	4.78	4.73	7.87	7.74	.998
natural gas	1.49	1.20	.49	.40	1.98	1.60	.979
Water Heating							
electric	2.26	2.47	.25	.39	2.51	2.86	.987
natural gas	12.63	12.99	1.26	1.23	13.89	14.22	1.002
propane	.26	.19	.14	.12	.40	.31	.975
Fuel Prices	Physical unit prices				Dollars per million Btu		
		1985	1990		1985	1990	
electricity	(¢/kWh)	6.3	9.3		18.45	27.24	
natural gas	(\$/mcf)	7.48	12.28		7.43	12.35	
fuel oil	(\$/gal)	1.40	2.45		10.11	17.66	
propane	(\$/gal)	0.72	1.24		7.90	13.60	
Economic indicators	1985	1990					
consumer price index	369.1	513.3					
mortgage interest rates	12.5	10.2					

TRANSPORTATION MODEL

The transportation model is a conditional demand model using both an econometric approach and a stock adjustment approach. The model evaluates three transportation sectors: passenger vehicles (cars, pickup trucks and vans), motorcycles, and heavy trucks.

The model calculates vehicle miles traveled and fuel consumed by ten different vintages of passenger vehicles. This category deals exclusively with gasoline. Diesel vehicles currently account for an insignificant portion of the stock. When a definite pattern of diesel use is observed with reliable information, then this must be addressed by the model.

New passenger vehicle sales are forecast taking into account personal income, taxes, credit rationing, unemployment, price of gasoline, and inflation. The new passenger vehicles are added to the new passenger vehicle group. All other passenger vehicles are shifted down to the next year vintage, including removals (collision, junk, etc.). The average efficiency in terms of miles per gallon (mpg), by vintage, is also used. The new passenger vehicle average mpg for domestic passenger vehicles is assumed to meet exactly the federal Corporate Average Fuel Economy standards (CAFE). Foreign imports have a higher mpg than the standard (22.2 to 30.6 mpg). The mpg used for each vintage year is therefore a combination of these two numbers. The mpg for each vintage drops slightly with the passenger vehicle age, becoming less efficient.

Motorcycles must be accounted for separately. Studies by the U.S. Department of Transportation show the average motorcycle gets 50 mpg and is driven 4,500 miles per year. From this, motorcycle vehicle miles can be calculated.

The mpg for heavy trucks historically has not increased significantly. The observed mpg for gasoline and diesel trucks is about 5.7. Because trucking is not just isolated to trucks originating from Nebraska, the vehicle stock is not useful. The consumption of diesel fuel was forecast econometrically, using corporate profits before taxes and the price of diesel fuel. These variables were chosen to capture the increase in trucking demand from businesses and the dampening of consumption from increased fuel prices.

Transportation Model Table U

Category	Passenger		Motorcycle		Trucks	
	1985	1990	1985	1990	1985	1990
Vehicle miles (billion)	11.4	12.6	.3	.4	1.2	1.4
Gasoline (million gallons)	700	560	5.8	7.0	11.0	9.0
Diesel* (million gallons)					142	159
Average miles/gallon	16.3	22.5	50.0	50.0	7.8	8.3

*Conversion of passenger vehicles to diesel is not estimated.

NET ELECTRICITY GENERATION BY MAJOR NEBRASKA UTILITIES

Reporting figures for 1981 show that four major electric utilities generated 2.7 percent more electricity than in 1980. The two large utilities (Nebraska Public Power District and Omaha Public Power District) increased generation while the smaller ones (Grand Island and Fremont) decreased. NPPD had the largest increase at 5.3 percent.

During the first quarter of 1982 electricity generation jumped 13.9 percent compared with the first quarter of 1981. The main reason for the increase was cold weather; there were 26 percent more heating degree days in the first quarter of 1982 compared with the first quarter of 1981. NPPD increased generation 26.5 percent. At the same time, other utilities decreased production of electricity.

Table V

ELECTRIC SALES TO ULTIMATE CUSTOMERS
GIGAWATTHOURS (GWH) SOLD
(NPPD, OPPD & LES)

MONTH	RESIDENTIAL		COMMERCIAL		INDUSTRIAL		PUBLIC USE		TOTAL SALES		PCT
	1980	1981	1980	1981	1980	1981	1980	1981	1980	1981	
JAN	284	297	237	238	206	196	30	30	757	762	100.7
FEB	283	274	248	234	202	188	30	29	763	725	95.0
MAR	271	234	212	200	198	188	28	27	709	649	91.5
APR	223	199	195	197	190	197	26	27	633	620	97.9
MAY	188	190	193	202	199	197	27	26	607	614	101.1
JUN	229	239	218	229	204	220	28	27	679	714	105.2
JUL	379	360	263	273	211	227	30	31	883	892	101.0
AUG	398	319	281	257	214	209	34	30	928	817	88.0
SEP	327	245	255	234	210	215	32	31	824	724	87.9
OCT	205	198	214	210	194	200	30	31	642	639	99.5
NOV	205	211	201	213	190	193	28	29	624	647	103.7
DEC	255	269	221	234	189	172	29	30	694	704	101.5
TOTAL	3247	3034	2737	2722	2406	2402	353	349	8744	8507	97.3

MONTH	RESIDENTIAL		COMMERCIAL		INDUSTRIAL		PUBLIC USE		TOTAL SALES		PCT
	1981	1982	1981	1982	1981	1982	1981	1982	1981	1982	
JAN	297	336	238	265	196	185	30	32	762	817	107.1
FEB	274	309	234	239	188	185	29	30	725	763	105.2
MAR	234	255	200	224	188	183	27	29	649	691	106.5

NEBRASKA ENERGY OFFICE, APRIL 30, 1982

FUEL USED FOR ELECTRICITY GENERATION

Reported figures for 1981 show a continued decrease of use of natural gas and oil for electricity generation. Five major electric utilities cut natural gas use from 3.8 to 2.2 billion cubic feet. Those utilities are Omaha Public Power District (OPPD), Nebraska Public Power District (NPPD), Lincoln Electric System (LES), and Grand Island and Fremont. The amount of oil used by these utilities also decreased. Coal use decreased one percent compared with 1980 because of the increase in generation by nuclear stations.

During the first quarter of 1981, coal use for electricity generation again increased 9.1 percent compared with the corresponding quarter of the previous year. The prime reason for this was cold weather, which substantially increased electricity demand.

Use of natural gas for electricity generation by the major Nebraska utilities was cut by some 90 percent for the first quarter of 1982, compared with the corresponding period of the previous year. Comparing data on natural gas and oil use, one should keep in mind that small municipal power units use mostly natural gas and petroleum for electricity generation. The small stations don't present monthly reports and their fuel use and electricity production aren't included in the accompanying tables.

Table W

FUEL USED FOR ELECTRICITY GENERATION BY NEBRASKA MAJOR ELECTRIC UTILITIES

(NPPD, OPPD, LES, GRAND ISLAND AND FREMONT)

MONTH	COAL THOUSAND SHORT TON		NATURAL GAS MILLION CUBIC FEET		OIL BARREL		HYDRO TRILLION BTU		NUCLEAR TRILLION BTU		TOT ENERGY TRILLION BTU		PERCENT
	1980	1981	1980	1981	1980	1981	1980	1981	1980	1981	1980	1981	
January	405	442	245	186	36	4	0.2	0.2	7.1	7.4	16.6	17.7	106.9
February	469	352	293	136	20	11	0.3	0.2	5.2	7.6	16.3	15.9	97.4
March	574	398	365	156	6	2	0.3	0.3	0.1	7.1	13.7	16.5	120.3
April	469	462	217	164	12	7	0.3	0.2	-0.0	4.3	11.1	15.1	136.0
May	417	439	257	243	3	5	0.3	0.2	-0.0	1.7	9.9	12.0	121.4
June	355	387	298	338	6	6	0.1	0.2	5.0	5.1	13.4	14.4	107.4
July	974	477	605	501	19	8	0.2	0.2	7.8	8.3	30.6	19.8	64.7
August	426	365	521	265	3	6	0.2	0.3	7.6	8.2	18.0	16.9	94.2
September	208	438	393	165	3	2	0.2	0.2	7.6	3.5	12.8	13.8	107.1
October	149	440	252	22	1	1	0.2	0.2	7.2	-0.0	11.1	10.1	91.3
November	233	364	191	16	3	8	0.2	0.2	6.3	4.1	11.9	12.6	105.1
December	376	433	207	25	4	12	0.1	0.2	7.8	6.8	16.6	16.9	101.6
Total	5,055	4,996	3,845	2,217	117	71	2.5	2.5	61.6	64.2	182.0	181.6	99.8

MONTH	COAL THOUSAND SHORT TON		NATURAL GAS MILLION CUBIC FEET		OIL BARREL		HYDRO TRILLION BTU		NUCLEAR TRILLION BTU		TOT ENERGY TRILLION BTU		PERCENT
	1981	1982	1981	1982	1981	1982	1981	1982	1981	1982	1981	1982	
January	442	561	186	12	4	15	0.2	0.2	7.4	9.5	17.7	22.4	126.2
February	352	450	136	17	11	24	0.2	0.2	7.6	8.3	15.9	18.7	118.0
March	398	289	156	15	2	8	0.2	-0.0	7.1	9.0	16.5	15.5	94.5

NOTE: Sum of components may not equal total due to independent rounding

NUCLEAR POWER STATIONS

Both nuclear stations in Nebraska increased 1981 production compared with 1980 despite substantial time lost for modernization required by new safety regulations, introduced after the Three Mile Island incident. (See months with negative or zero generation of electricity).

The amount of electricity generated by Nebraska nuclear power stations during the first quarter of this year is the highest ever for any three consecutive months. During the first quarter, 52.8 percent of all electricity produced by major Nebraska utilities was generated from nuclear energy.

Table X

Net Electricity Generated by Nuclear and All Power Stations
Generated by Fort Calhoun, Cooper and other stations
Gigawatthours (GWh)

Month	Cooper		Fort Calhoun		Total nuclear		All generation		Nuclear % grand total	
	1980	1981	1980	1981	1980	1981	1980	1981	1980	1981
Jan	482	449	179	246	662	695	1427	1491	46.4	46.6
Feb	488	449	-2	264	485	713	1352	1340	35.9	53.2
Mar	11	436	-3	228	8	664	1042	1359	0.8	48.8
Apr	0	268	-3	139	-3	407	854	1210	-0.4	33.6
May	0	0	-3	156	-3	156	762	943	-0.4	16.5
Jun	316	256	152	226	468	482	1085	1193	43.2	40.4
Jul	420	457	316	324	736	781	1843	1627	39.9	48.0
Aug	395	448	323	319	718	767	1485	1412	48.3	54.3
Sep	423	164	289	167	712	331	1113	1097	64.0	30.2
Oct	453	0	226	-3	680	-3	1019	769	66.7	-0.4
Nov	333	389	256	-2	589	386	1048	1040	56.2	37.1
Dec	466	566	265	75	731	642	1434	1371	51.0	46.8
Total	3788	3883	1995	2137	5783	6020	14463	14854	40.0	40.5

Month	Cooper		Fort Calhoun		Total nuclear		All generation		Nuclear % grand total	
	1981	1982	1981	1982	1981	1982	1981	1982	1981	1982
Jan	449	539	246	355	695	893	1491	1841	46.6	48.5
Feb	449	500	264	283	713	783	1340	1558	53.2	50.3
Mar	436	489	228	356	664	844	1359	1375	48.8	61.4

Nebraska Energy Office

NATURAL GAS

The table and graph on the following two pages show the historic and anticipated patterns of natural gas consumption in peaks. All other uses are shown by the troughs. The solid line represents actual use and the broken (dashes) line represents a forecast of use. The information was obtained from federal reports, which must be completed by all natural gas companies.

TABLE Y

NEBRASKA NATURAL GAS DELIVERIES

(MMCF Millions of Cubic Feet)

	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>
January	20,531	19,291	17,783	21,864	18,056*
February	18,021	20,103	16,516	17,270	16,302*
March	15,912	16,209	12,328	13,826	13,425
April	11,313	11,330	8,407	9,726*	
May	9,737	8,895	8,259	7,685*	
June	8,790	8,715	7,854	6,602*	
July	9,526	11,377	9,842	8,771*	
August	11,005	12,136	8,296	9,261*	
September	9,498	9,245	7,868	7,625*	
October	11,404	9,507	9,943	8,569*	
November	16,013	13,608	13,003	12,813*	
December	<u>17,536</u>	<u>17,674</u>	<u>17,021</u>	<u>16,244*</u>	
TOTAL	159,286	158,090	137,120	140,256	47,783

*Forecasted natural gas deliveries

Source: Federal Energy Regulatory Commission Form 16

Actual and forecasted values are reported by the five natural gas companies supplying natural gas to Nebraska.

SCHOOL WEATHERIZATION

The Nebraska Energy Office awarded public school weatherization grants totaling more than \$1.6 million in the latest State School Weatherization Program grant cycle.

The \$1,624,413 available was targeted for 327 projects at 135 public school buildings in 79 local districts.

The grants, funded from State Oil and Gas Severance Tax revenues, represented 80 percent of the financing for the energy efficiency projects. School districts must provide 20 percent of the projects' costs in local matching money.

Applications for the second grant cycle were received from districts by the February 24-26 deadline and reviewed by the NEO Institutions Division staff for award decisions the end of March. Awards were announced and the funds were to be distributed early in the second quarter.

The NEO, which administers the program, estimated annual cost savings from the projects selected for funding would amount to \$516,424. Annual energy savings were estimated at the equivalent of 19,476 barrels of oil or 113,539 MCF (thousands of cubic feet) of natural gas.

The NEO estimated that these projects will pay for themselves in 4.18 years.

Awarding the grants marked the close of the second grant cycle under the Nebraska School Weatherization Program, which was set up in 1981 through Legislative Bill 257.

More than \$5.5 million had been sought by 105 school districts in 180 applications representing 751 projects. However, the more than \$1.6 million awarded was the amount available from the severance tax.

The initial grant cycle in late 1981 resulted in \$983,861 being awarded through grants to 17 districts for energy efficiency projects at 26 school buildings. The second cycle brought the total state severance tax money granted for school weatherization to \$2,608,274 for projects to conserve energy.

Projects involve such techniques as additional insulation, lighting retrofit, caulking, weatherstripping, temperature setback and energy management systems.

STATE BUILDING AUDITS

State building audits conducted by the Nebraska Energy Office (NEO) during the first quarter of 1982 covered 162 structures and would cut energy use in the buildings by one-third if all audit recommendations were implemented.

The total British thermal units (Btus) consumed annually by the buildings audited between January 1 and March 31 of this year amount to an estimated 150,657 million Btus. Energy savings from following audit recommendations would be an estimated 50,100 million Btus a year.

Those projected energy savings represent the equivalent of 361,736 gallons of fuel oil or 48,453 MCF (thousands of cubic feet) of natural gas. Projected financial savings from implementation of the audit recommendations would be \$282,279 annually.

The State Building Audits Program is administered by the NEO's Institutions Division and is being carried out under the mandate in Legislative Bill 158 of 1981.

The State Building Audit Program was established to help pinpoint potential energy savings in structures owned by the state of Nebraska.

Cost effective changes are recommended by NEO energy auditors in two forms: low cost or no cost items that require little or no capital outlay; and energy conservation measures, which require funding.

The 27-month program began in the autumn of 1981 and will run until the end of 1983, covering approximately 30 to 50 buildings per month.

ENERGY LEGISLATION

Responsibilities of the Nebraska Energy Office (NEO) will increase as a result of action by the Nebraska Legislature in the 1982 session.

Legislative Bill 799 provides for income tax credits to Nebraskans who install renewable energy systems on or after January 1, 1981, tax credits to builders of passive solar homes, and a geothermal energy grants program. LB 799 also amends several parts of existing energy law.

The NEO is required to administer the income tax credits, with the advice and assistance of the Nebraska Department of Revenue. Rules and regulations must be promulgated. They must contain a solar construction credit table and a table of insulation factors. These tables will enable builders of passive solar homes to determine how much income tax credit they may claim.

LB 799 repeals the sales tax refund and property tax exemption programs, which have been available to Nebraskans who purchase renewable energy systems. Nebraskans who purchase these systems before the effective date of LB 799 will be eligible for both incentives as well as for the income tax credits. The administrative apparatus for both the sales tax refund and property tax exemption programs must be maintained until about the first of next year.

Any political subdivision that derives a portion of its funds from property tax may apply to the NEO for a geothermal energy utilization grant. The Unicameral appropriated \$100,000 to the NEO for grant purposes in fiscal year 1982-83. The NEO is required to provide grant application forms, record and compile a list of all grant applications, process the applications and award grants to successful applicants.

The School Weatherization Program was extended through June of 1986. Grants to school districts must be divided among Nebraska's congressional districts as equally as possible. Commencing July 1, 1983, the NEO must divide grants between major and minor projects, and award 30% of available grant money to major projects (those with a simple payback of more than five years).

Legislative Bill 954 (1980) authorized Nebraska's electric utilities to create a loan program for their customers. Loans may be offered for insulation, storm doors and windows, and other conservation devices. LB 799 permits these utilities also to offer loans for renewable energy devices that have been identified by the NEO as energy conservation measures.

MARCH IS ENERGY CONSERVATION MONTH CAMPAIGN

The theme of the 1982 "March Is Energy Conservation Month" campaign, sponsored by the Nebraska Energy Office, was "ALTERNATES BOOST CONSERVATION". The purpose of the March campaign was to provide Nebraskans with helpful information on the efficient use of energy.

The month-long campaign featured a variety of activities designed to build on the "Alternates Boost Conservation" theme and help Nebraskans learn about energy conservation and cost-effective alternate resources.

Activities included "March Is Energy Conservation Month" proclamations by the Governor and several city officials, radio and television public service announcements, weekly media packets and press releases to newspapers, radio and television talk show interviews and four "E-Flag" award presentations.

Special education programs held across the state included workshops on irrigation, boiler efficiency, Driver Energy Conservation Awareness Training (DECAT), and commercial energy efficiency. A state college and several high schools organized special activities in conjunction with National Energy Education Day, March 19, and invited NEO representatives as guest speakers.

A special two-day conference, called "The Exchange" provided community action agencies and the Nebraska Energy Office with the first full-scale opportunity to exchange program information and plan for joint program activity in the future.

Additional information activities included a special energy edition of the "Statehouse Observer", energy information on the Department of Administrative Services (DAS) monthly calendar, and March feature stories in the "Nebraska Energy News" and numerous other publications of state-wide organizations.

Energy displays were provided at the Omaha Home Show, the Lumbermens' Convention, and local energy fairs in Lincoln and Polk. A variety of consumer publications and a special March theme poster were developed and distributed statewide to elementary and secondary schools, community colleges, state colleges, county extension agents, natural gas and electric utilities, associations, community organizations and individuals to promote conservation and the use of alternate energy resources.

Reproduced on the following page is a reduced version of the poster developed and utilized throughout the 1982 "March Is Energy Conservation Month" campaign.



ALTERNATES

BOOST

CONSERVATION



Remember your energy ABCs...

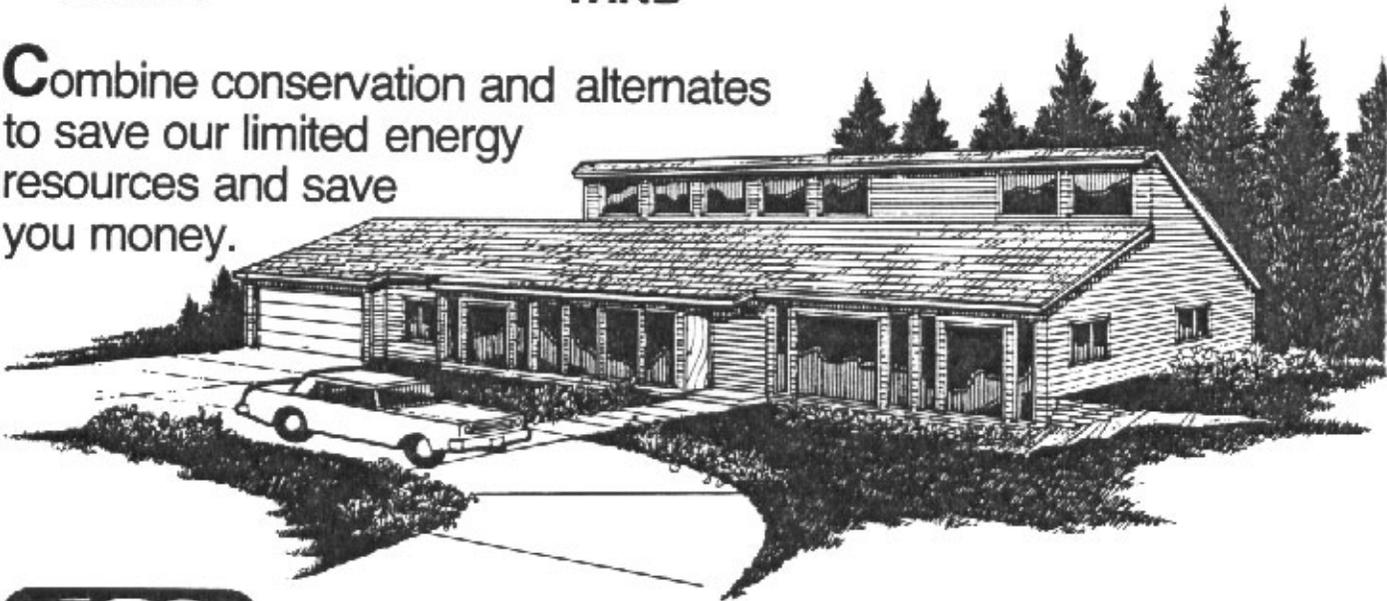
Achieve energy efficiency first. Weatherize your home and drive efficiently to save fuel.

Build on these conservation practices. Discover cost effective ways to use alternate resources such as...

**PASSIVE SOLAR
WOOD**

**ALCOHOL FUELS
WIND**

Combine conservation and alternates to save our limited energy resources and save you money.



March is Energy Conservation Month