Nebraska Public Buildings Energy Program

A comprehensive approach to energy conservation in public and institutional buildings

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PREFACE

The current availability of energy, combined with relatively low energy prices, has resulted in a nationwide tendency to use more energy less efficiently. In Nebraska, this trend is reflected in gradually rising operating costs in our public and institutional buildings. As a result, Nebraskans are paying higher taxes to support state and local governments and school districts, and higher medical costs to support hospitals and public care facilities.

Nebraska imports nearly 90% of its energy, at an annual cost of $2.6 billion. This creates a tremendous drain on the state's economy and places a burden on the public sector — which faces the added pressure of providing more services for less money.

In order to increase the efficient use of energy in Nebraska's public and institutional buildings, the Nebraska Energy Office, with a Tier 1 grant from the U.S. Department of Energy, has developed a series of program and financing options to encourage energy efficiency in our public and public-purpose institutions. These options reinforce the importance of merging sound energy management with adequate and available financing for energy improvement projects.

The programs developed under the Tier 1 grant reflect a comprehensive approach to addressing the energy needs in the public sector. Some of the program options can stand alone. Others rely heavily on the implementation of associated options. An individual option's dependency on other options is noted in this report.

Although the Nebraska Energy Office has developed and tested each of the program options, it has not yet implemented the entire comprehensive program. Instead, we have elected to implement selected options that best fit with our current operations. The decision to implement individual program options often was based on available funding. In some cases, the decision to fully implement options has not yet been made. However, for the purposes of this report, the options are discussed as a fully integrated and comprehensive program.

The Nebraska Public Buildings Energy Program was specifically designed for Nebraska's public sector, but it has a universal application for all public institutions. Greater energy efficiency in buildings supported by public dollars makes sense for everyone.

Gary Rex, Director
Nebraska Energy Office

INTRODUCTION

Efficiency has proven to be America's most abundant energy source. The oil price shocks of the 1970s sent Americans searching for efficient ways to decrease energy consumption and their efforts resulted in the energy surplus — and low prices — we now enjoy. The nation has saved more energy through efficiency and conservation than it has gained from all new energy sources. Energy saved is more valuable than energy produced because conservation has a cumulative effect and is likely to compound the savings year after year — a prediction that doesn't hold true for energy production in the U.S.

As a nation, we spent $37.6 billion for oil in 1986 — $14.8 billion less than we spent in 1985. Low prices, however, led to cuts in domestic oil production and curtailed development of new domestic energy resources. When oil prices dropped in 1986, the will to conserve gave way to a growing complacency about the availability of energy resources — and resulted in a steady increase in oil consumption. So, even though we are paying less for imported oil, we are using more of it. U.S. dependence on foreign oil rose from 27% of total consumption in 1985 to 34% in 1987.

The current availability of energy, however, is a double-edged sword. Energy markets work like those for any other commodity. Shortages produce surpluses and surpluses lead to shortages. It is only a matter of time before the United States feels the effects of the next shortage and its accompanying price increase. Some forecasters predict that in the 1990s, the U.S. will depend on foreign sources for as much as 55- 60% of its oil. If, by 1990, 1986 prices have doubled and 1986 imports have increased by 50%, the cost of imported oil would be triple what we paid in 1986. The economic implications of such a scenario cannot be ignored. Unfortunately, however, instead of using this interlude of relatively abundant energy resources and low energy prices to continue to improve energy efficiency, the United States has scaled back conservation efforts.

At its 1988 annual meeting, the National Governor's Association addressed the importance of developing programs that increase energy efficiency. The governors said, "Investing in energy efficiency reduces the amount of fuel needed to provide a given level of service and consequently reduces the impact of disruptions or rapid price escalation. Therefore, energy efficiency improvements have benefits beyond that of direct energy savings."

Efficiency is recognized as a legitimate economic development tool. According to a 1987 report of the International Energy Agency, "Investment in energy conservation... provides a better return than investment in energy supply." If, for example, the United States used energy as efficiently as Japan does (using only 4% of its gross national product to pay for energy, compared to U.S. energy expenditures of 10% of GNP), we could lower the nation's annual fuel bill by $200 billion — money that would be available to spend in other areas.

Nebraska spent $2.6 billion on energy in 1987 — and 80 cents out of every dollar went out of the state. While we may be driven by more altruistic concerns about the indiscriminate use of finite energy resources, the bottom line is economics. The more money that leaves the state to pay for energy, the fewer dollars remain to encourage economic expansion. Expenditures for energy in Nebraska's institutional and public buildings continue to rise — and represent a substantial portion of a building's operating budget. If the state made its public and institutional buildings more energy efficient, Nebraska would reap two kinds of economic benefits:

1) Money currently going out of the state would remain, encouraging economic expansion, and
2) The efficiency improvements would represent a solid economic investment, costing less than the energy supplies required to maintain buildings at their present levels of inefficiency.

Government's obligation to its citizens requires a careful assessment of how energy is used in public buildings and concerted efforts to reduce energy-related expenditures whenever and wherever possible. The Nebraska Public Buildings Energy Program is an avenue for meeting that obligation.

PURPOSE AND ORGANIZATION OF REPORT

In 1986, the Nebraska Energy Office received a Tier 1 planning grant through the Institutional Conservation Program of the U.S. Department of Energy to develop a comprehensive program to increase energy efficiency in institutional sector buildings. The Energy Office developed the Nebraska Public Buildings Energy Program, which addresses the energy needs of hospitals, schools, local government buildings, state buildings, public care facilities and nonprofit institutions.*

Purpose

This report summarizes the work of the Nebraska Energy Office. It has a threefold purpose:

- To present a comprehensive description of the program
- To serve as a model for developing similar programs in other states
- To underscore the message that energy efficiency is both necessary to efficient government operations and costs less than developing new resources to meet energy needs.

Organization

This introduction is followed by an overview of the Nebraska Public Buildings Energy Program, which includes a description of the program's history, primary objectives and major components. The body of the report consists of four major sections, corresponding to the four basic components of the Nebraska Public Buildings Energy Program:

- Resource Distribution
- Networking
- Financing Sources
- School Weatherization Program

Each section has three parts, beginning with an overview of the component and its place in the Nebraska Public Buildings Energy Program. In the sections on Resource Distribution and Networking, the general description is followed by a model scenario that demonstrates, through example, how the activities that make up those components operate. The sections on Financing Sources and School Weatherization omit the model scenario and include instead summaries of the reports of the consultants who helped the Energy Office develop those components.

The third part of each section deals with the individual activities of each component, explaining the needs addressed by each activity and describing how it contributes to the overall objectives of the Nebraska Public Buildings Energy Program. This part includes step-by-step explanations of the procedures the Nebraska Energy Office followed to develop the activities, in a form that makes the procedures easy to duplicate.

During the development of the Nebraska Public Buildings Energy Program, the Energy Office sometimes ran into problems, causing deviations from the original plan. In those cases when a better way of doing things was discovered, or an unanticipated stumbling block was encountered, a brief problem analysis and solution description are included. This report describes mistakes and program adjustments because they teach lessons as important as the ones learned when everything goes smoothly. The Nebraska Energy Office believes that others who use these programs as models will benefit from knowing what didn't work for Nebraska — as well as what did.

*Throughout this report, the phrase public or institutional sector buildings refers to all these sectors collectively. The terms institutional and public may be used interchangeably and should be interpreted only in this general sense, to distinguish tax-supported or public-purpose buildings from those in the commercial or private sectors.

DESCRIPTION OF THE NEBRASKA PUBLIC BUILDINGS ENERGY PROGRAM

History of Tier 1

In the spring of 1986, the U.S. Department of Energy (DOE) issued a solicitation for "Developmental State Programs For Institutional Conservation." DOE wanted to work with states to develop and implement innovative programs that would increase energy efficiency in the institutional building sector. To achieve this goal, the DOE chose the Institutional Conservation Program (ICP) "to serve as a catalyst by providing seed money for expanded assistance and investment in institutional energy efficiency by non-Federal entities."

ICP began in 1978 as part of the National Energy Conservation Policy Act (Public Law 95-619) and provides assistance to hospitals, schools, local government buildings and public care facilities. Since 1979, ICP has awarded $650 million in matching grants to institutions.

Changes have occurred, however, in the past ten years, causing DOE to look for other ways to address energy efficiency needs in institutional buildings. More institutions, companies and governments have become involved in energy efficiency at the institutional level. In addition, federal appropriations for ICP have steadily leveled off. DOE also has found that only about six to nine percent of the institutional building stock has been served by ICP and that, at current funding levels, only fifteen percent of the buildings can be served by the program in the foreseeable future.

Therefore, in 1984, DOE initiated a strategy to "identify ways of compounding the impact of the ICP grant program by systematically incorporating more non-Federal resources and expertise in institutional energy efficiency." One component of this strategy was Tier 1 — seed money for states to conduct innovative development projects. Through a competitive process, twelve states, including Nebraska, were selected for funding in 1986.

Nebraska's Program Plans

Originally, Nebraska had hoped to establish an Institutional Energy Bank — a revolving loan fund capitalized by ICP funds and integrated with state-funded programs. The program would have resulted in an "entirely state-funded, self-supporting Institutional Energy Bank serving all programmatic constituents and functions." The Energy Office anticipated that after 1991 Nebraska would not need federal funding to maintain its ICP.

In August 1987, Nebraska modified its Tier 1 proposal to accommodate an unanticipated complication. After reviewing federal statutes, DOE determined that Nebraska could not use ICP funds to capitalize a revolving loan fund. Nebraska's modified proposal called for the development of a comprehensive program to assist and encourage energy efficiency measures in institutional buildings.

Program Objectives

Nebraska is participating in the U.S. Department of Energy Tier 1 Project for two reasons. First, Nebraska is interested in helping DOE achieve its goal of expanding the capability and influence of the Institutional Conservation Program. ICP is responsible for generating annual savings of 50 trillion BTUs of energy. It is a successful program that deserves to be expanded and continued.

Second, Nebraska's ICP reaches approximately five percent of the buildings in the state's institutional sectors, while a much broader need for energy efficiency exists throughout the sectors. High energy costs in these buildings result in higher taxes and higher medical care costs for Nebraskans. Nebraska hopes to relieve the economic burden of energy inefficiency by reducing energy consumption in public buildings at a faster rate than is currently being achieved.

Program Components

The Nebraska Public Buildings Energy Program is made up of four basic components:

1. Resource Distribution

Activities in this area focus on identifying resources for developing and disseminating information to the institutional sectors about energy technologies and financing strategies. Work in this area concentrated on four separate activities:

- Development of a Resource Library and Computerized Index to catalog pertinent information and to make that information easily accessible.
- Creation of a Counseling Service to provide institutions across the state with technical assistance with both innovative energy technologies and financing options.
- Publication of an Energy Calculation Handbook and Software for building operators to use in calculating potential energy savings due to basic

energy improvements, and to help institutions determine the cost-effectiveness of energy efficiency improvements they might make in their buildings.

- Development of Marketing Strategies to help make facilities managers in the institutional sector aware of — and encourage them to use — the services available through the Nebraska Energy Office.

2. Networking

Activities of this component focus on establishing a sound working relationship between the Nebraska Energy Office and institutional sector representatives across the state. Networking efforts make the Energy Office more aware of the energy efficiency needs and the potential for energy improvements in institutional sector buildings. In addition, networking encourages institutions to use the services available through the Energy Office to help them make their buildings more energy efficient. Networking involved three activities:

- Creation of a Data Bank of Buildings to record information about energy projects in public buildings.
- Presentation of Recognition Awards to honor outstanding achievements in energy conservation in various institutional sectors.
- Association Outreach to inform staff members of various trade associations about the resources and programs the NEO has developed and to provide a standard format for reporting to the trade associations about energy efficiency improvement projects.

3. Financing Sources

This component has involved the most time-consuming, and perhaps the most important, work of the Nebraska Public Buildings Energy Program. Activities in this area focused on identification of financing options to fund energy improvement projects. Through the efforts of a 23-member task force, representing a cross-section of interests and areas of expertise, and coordinated by consultants from Technical Development Corporation of Boston and Pacific Energy Associates of Portland, workable designs for financing options have evolved.

4. School Weatherization Program

Work on this component of the Nebraska Public Buildings Energy Program resulted in a thorough evaluation of Nebraska's School Weatherization Program, as well as a computerized data base management system for running it. More importantly, the Energy Office is using its understanding of the strengths and weaknesses of the School Weatherization Program's revolving loan fund to formulate more workable programs for financing and marketing energy improvement projects in the institutional sector.

Program Results

Each component of the Nebraska Public Buildings Energy Program is essential to the comprehensive nature of the Program — and each component's contribution to the Program is ongoing. For example, the information gathered in the evaluation of the School Weatherization Program contributes to the continuing development of both Resource Distribution and Financing Sources. Interaction between the Networking and Resource Distribution components generates a body of users for the Financing Sources and the School Weatherization Program. Each component complements the others — and their successful interaction has enabled the Energy Office to meet the ultimate objective for the Nebraska Public Buildings Energy Program: development of a comprehensive, dynamic energy efficiency improvement program in Nebraska's institutional and public buildings.

As a result of its work, the Energy Office can provide, according to individual needs, varying degrees of technical assistance to institutional building owners and operators wishing to improve energy management and save money by making energy efficiency improvements in their buildings.

In addition, the Public Buildings Energy Program Task Force has developed and forwarded to Governor Kay Orr recommendations for program and financing options. These options address both the energy management skill level in public institutions and potential financing sources. They work in conjunction with the technical assistance programs that have evolved from the Task Force's work, to provide a comprehensive program for energy improvements.

RESOURCE DISTRIBUTION

Services that educate as well as assist facilities managers in the institutional sector are the cornerstone of the Nebraska Public Buildings Energy Program. Activities in the area of Resource Distribution address the overriding need to get the right information about energy efficiency and financing sources to the proper individuals in the public sectors, in a form that they can use and will take advantage of.

Officials in the institutional sector often are unaware of the economic value of improving their buildings' energy efficiency. For them, energy management may have a low priority, given the scope of their other administrative obligations. And because of a lack of information about energy efficiency and its benefits, they simply may not understand the integral role energy efficiency plays in controlling operating costs.

Even when building operators do understand that energy efficiency can lower their operating costs, they may not know 1) the best methods for achieving satisfactory results, 2) the appropriate channels to go through to get information about methods for increasing energy efficiency, or 3) the most cost-effective strategies for financing energy efficiency improvements.

In order to address the needs of public officials on several levels — from simple awareness of the value of energy efficiency, to comprehensive assistance in developing energy management programs — the Nebraska Energy Office must reach out through channels that the institutional sectors know and trust and provide information services that are reliable and easy to use.

Through the Nebraska Public Buildings Energy Program's Resource Distribution services — which include a Resource Library and Computerized Index, Counseling Service, Energy Calculation Handbook and Software, and Marketing Strategies — the Nebraska Energy Office provides the education and assistance that public officials need to make informed decisions about energy management in their buildings.

HOW RESOURCE DISTRIBUTION WORKS: THE CASE OF THE HARRIED HOSPITAL SUPERVISOR

Barnard Barnes, Springvale Community Hospital administrator, is reviewing Dr. Frank Forward's request to update most of the hospital's radiology equipment. Barnard recognizes the importance of keeping the hospital in line with state-of-the-art developments in the industry and he knows that improvements in the radiology lab would let the hospital provide more comprehensive services to the citizens of the community and the surrounding area. However, as he scrutinizes the computer screen showing the hospital's rising operating costs, he doesn't see any room in his budget to accommodate Dr. Forward's request.

Barnard meets with Frank to explain that the costs of operating the hospital keep going up and consequently there is no money to update the radiology equipment this year. Frank is disappointed, but he encourages Barnard to explore low-cost ways of decreasing operating expenses. He explains that the local public power district recently completed an energy audit on his home and that by implementing the measures the auditor suggested, Frank was able to reduce his monthly energy consumption and save money. "If energy efficiency works to reduce my home utility costs," remarks Frank, "why wouldn't it work for the hospital too?"

Barnard follows up on Frank's suggestion and calls the local public power district. They offer to do an energy audit at the hospital and also recommend that Barnard call the Nebraska Energy Office for further information and advice about the benefits of energy efficiency improvements. He does.

Barnard's call is directed to the Coordinator of the Nebraska Public Buildings Energy Program. Barnard explains that he is interested in reducing his operating expenses, but he can't undertake a big energy improvement project without some outside financial assistance. The Coordinator uses the Resource Library and Index to locate information on energy improvements in hospitals and financing mechanisms that other hospitals have used. She locates a hospital in nearby Fall River that recently made energy improvements through the Institutional Conservation Program. The Coordinator gives Barnard the name and address of the Fall River Hospital administrator and promises to send him information about the ICP.

But Barnard wants some more specific advice about how to make energy improvements in his hospital. The Program Coordinator searches the index for the name of a specialist who works with hospitals and locates the name of an engineering

firm in Summerset, a nearby town, which has worked with two hospitals on energy projects.

Still Barnard has a question: "How will I know if what worked well for someone else will work well for me?" The Coordinator tells Barnard about the Energy Calculation Handbook, which will take him through a series of steps to determine which energy improvement projects would benefit Springvale Hospital the most. She also mentions that the Handbook is available in computerized format. Barnard asks her to send him the software.

Through the services provided through the Resource Distribution component of the Nebraska Public Buildings Energy Program, Springvale Community Hospital has taken the first steps toward a more energy efficient future. And with the money the hospital saves in operating costs, Dr. Forward may see his new radiology equipment sooner than either he or Barnard had expected.

RESOURCE LIBRARY

Opportunities for making energy improvements in institutional sector buildings have increased rapidly in recent years, ranging from technological advances to new methods of financing energy improvement projects. The Energy Office recognizes the need for easy access to information about these new opportunities and for a means to convey it to a variety of institutional building owners and operators. To answer that need, the Energy Office has developed a Resource Library and a Computerized Index to track, catalog and disseminate information.

The Library itself consists of documents and other materials on file in the Energy Office or available from other sources. The Computerized Index catalogs these materials along with the names of individuals, businesses and agencies who can help with energy improvements and financing. The system is designed to search a database for key words that represent different categories of information, so the computer can scan the contents of the entire library in response to a request. The computer then pulls up either the NEO library number or displays a name and contact information for the appropriate expert or publication.

Rationale

Several problems exist with information delivery in the areas of innovative energy technologies and financing mechanisms. The information does exist — but its sources are often diverse or unmanageable. Institutional officials, who are unsure of what kind of information they need, face great difficulties obtaining it from these diverse sources. Centralization of the information satisfies a variety of needs — for both agencies like the Nebraska Energy Office as well as people who come to the agency for help.

The process of finding and retrieving information — especially information about innovative programs that have been implemented on a limited basis in only one or two states — can be time-consuming. For example, the Energy Office discovered instances in which other states were working in the area of alternative financing options, but because there was no centralized system of information retrieval, it was difficult to track down the agency or individual responsible for the work. The Resource Library/ Index system serves as a comprehensive reference service. It keeps track of information and saves researchers time, allowing them to quickly cross-reference and locate related programs.

Information on newly-developed programs often does not exist in finished form, making it difficult to track information and keep up-to-date on the progress of innovative programs. The Resource Library cannot solve this problem completely, but early identification of programs means Energy Office per-

sonnel can inquire about the program's status as part of the Library updating process.

Often, one document may address more than one issue, or a large number of documents may contain information on the same subject. By means of document file codes and a computerized data base, the Energy Office can cross-index materials in several categories and keep track of large amounts of information in a single subject area.

Role of Library/Index in the Nebraska Public Buildings Energy Program

Information in the Resource Library serves a variety of users — facilities managers, agency heads, trade associations, other state energy departments — and can provide specific answers to questions about projects in a particular institutional sector.

The Resource Library is available to institutions through direct contact with the Energy Office or through the institution's trade association. Often the first step in launching a successful energy project is access to clear, useful information. The Library allows the Energy Office to provide quick and thorough responses to inquiries about energy projects or specific financing mechanisms. The Library saves time, effort and money, and — because it contains information not readily available elsewhere — serves specific needs reliably and thoroughly.

The Library is an integral part of the Nebraska Public Buildings Energy Program. It serves as a tool for Energy Office staff and is a readily available avenue for Resource Distribution. The Resource Library feeds into other components of the Program by filing and cataloging information gathered in the course of the Task Force's work on Financing Sources. The Library facilitates Networking efforts by providing an informational tool that trade associations can use to help their members explore financing opportunities and new energy technologies for implementing energy improvements.

The Energy Office expects that the Resource Library will often be the first point of contact between the Energy Office and institutional building officials interested in pursuing energy-related activities. Information they receive from their Library inquiry will direct them to other components of the Nebraska Public Buildings Energy Program.

Procedures For Creating A Resource Library and Computerized Index

Easy access to pertinent information is essential to develop and manage effective energy improvement projects in public buildings. Knowing what others have done saves time and paves the way for smooth implementation of energy efficiency plans. The Resource Library provides that information and the Computerized Index makes it easy to find, retrieve and use.

These are the procedures the Nebraska Energy Office followed, to build a library of resource materials on energy technologies and project financing mechanisms, as well as a computerized index for cataloging and tracking library materials.

Summary of Tasks

	ACTION	RESPONSIBILITY
TASK 1	Identify information sources	Program coordinator, staff interns
TASK 2	Classify resources	Staff interns
TASK 3	Number and file materials	Staff interns
TASK 4	Create computerized index	Data processing applications analyst
TASK 5	Test library and index	Program coordinator, staff interns and data processing applications analyst

Resources Needed

PERSONNEL	EQUIPMENT
Existing staff members:	Personal computer (e.g., NCR-PC)
• Nebraska Public Buildings Energy Program Coordinator	Printer
• Staff Interns	Data Base Management Software (e.g., dBase III Plus)
• Data Processing Applications Analyst	

Task 1: Identify information sources

Introduction: Identifying information sources is an ongoing process. Sources include printed materials, slides, audio tapes, videotapes, etc. They also include people or organizations who have the expertise to serve as resources for energy projects.

Responsibility: Energy Office staff members identify information sources in the course of their day-to-day work.

Procedure:

STEP 1 Require staff members to watch materials that come through the office daily for items relevant to energy projects in public buildings. Designate one person as the "librarian" to funnel the information through.

STEP 2 Periodically contact sources that have yielded useful information in the past. Follow up on programs in progress.

STEP 3 Create a list of names and documents from sources such as:

- People and agencies in other states that have developed energy improvement programs for public buildings
- Federal agencies
- Private sector firms specializing in energy technology and management
- Financial institutions
- Energy service companies
- Public and University libraries.

STEP 4 One source often leads to another. Follow all leads as they develop.

Task 2: Classify resources

Introduction: Determining the appropriate kinds of information to catalog and classifying them by type makes the process of building a resource library more manageable. Resources fall into two general classifications: Materials (print materials or resources in other formats) and People (individuals, groups, agencies, firms or organizations).

Responsibility: Energy Office staff members direct resource materials to the librarian for classification and entry into the system.

Procedure:

STEP 1 Classify as **Materials:**

- Articles from newspapers, magazines, journals, other periodicals
- Research papers
- Resumes from energy service companies
- Legislation
- Documents relating to energy improvement projects that already have been completed, including:
  - Requests for proposals
  - Procurement documents
  - Lease agreements
  - Contracts
- Video tapes, audio tapes, slides, etc.

(See Task 3 for methods of numbering and filing Materials)

STEP 2 Classify as **People:**

- Federal agencies
- State agencies
- Local agencies
- Energy service companies
- Energy management consulting firms
- Investment bankers
- Engineering firms
- Government information facilities, such as the National Appropriate Technology Assistance Service (NATAS)

(See procedures for establishing a Counseling Service [page 15], for methods of locating appropriate people to include in the data base.)

Task 3: Number and file library materials

Introduction: Sorting and labeling "hard" copies of documents and other materials makes access and retrieval faster.

Responsibility: The librarian numbers, labels and files resource materials and creates lists of names.

Procedure:

STEP 1 Establish major divisions by type of document and give each division an alphabetical label, or document code:

- A - Article from newspaper, magazine or periodical
- B - Report
- C - Request for Proposals
- D - Procurement Document
- E - Lease Agreement
- F - Legislation
- G - Resume
- H - Other
- I - State Programs
- J - Nebraska Program

STEP 2 Label files using an alpha-numeric character combination. Begin with the document code, followed by publication date or the date materials were received in the office.

- Indicate year, month and day, using two digits for each part of the date code.

Example 1: B 880201 labels a report received in the Nebraska Energy Office on February 1, 1988.

- If two or more documents share the same date but are to be filed separately, add two optional digits at the end of the date.

Example 2: B 88020110 labels the tenth report received in the Nebraska Energy Office on February 1, 1988.

STEP 3 Follow these guidelines for Special Categories:

- Articles (Document Code A)
- Use a two-character alpha prefix for article document codes:
  - AN • Newspaper article
  - AM • Magazine article
  - AP • Periodical article

  (Label the entire periodical and file it by date. The file number makes no direct reference to the periodical title.)

Example 3: AN 880101 labels a newspaper article dated January 1, 1988.

Resumes (Document Code G)

Use an alpha code for the entire label, by following the document code with the initials of the company name.

Example 4: G CCI labels a resume from Carson Concepts, Inc.

State Programs (Document Code I)

Place the appropriate state postal code abbreviation after the document code but before the date.

Example 5: I CA880101 labels a state program report from California, received in the Nebraska Energy Office on January 1, 1988.

STEP 4 Place materials in a filing cabinet alphabetically by document code. Within document code groups, file by date, most recent information at the front of the file, oldest at the back.

Example 6:

back

B 870000	1987 Reports
B 880101	Oldest 1988 report
B 881231	Most recent 1988 report
B 880000	1988 Reports

front

Task 4: Create Computerized index

Introduction: A computerized index is the logical vehicle for quickly searching the Resource Library for needed information. Because the library serves a variety of users who have different needs, the computer program that runs the index is capable of searching for information in several categories and identifying relevant information sources in all those categories.

Responsibility: The data processing applications analyst designs and creates a data file program for indexing library materials and names of resource persons.

Procedure:

STEP 1 Develop forms for recording information received from each resource.

Information about **Materials** should include:

- Document's title and author
- Name of the publication
- Publisher's name and address
- Publication date
- Library file number
- Type of publication
- Description of contents

Information about **People** should include:

- Contact person's name
- Name of the business or agency
- Address and phone number
- Type of resource
- Description of services or activities

The form also should include two checklists of category codes to indicate the type of technological and/or financing information available from the source.

Technological categories include:

BNV - Building Envelope
COG - Cogeneration
D/W - Doors and Windows
EMS - Energy Management Systems
H/C - Heating/cooling
LHT - Lighting
WAT - Water Heating Systems
OTH - Other

Finance categories include:

CH - Chauffage
EX - Exxon Oil Overcharge Funds
GO - General Obligation Bonds
IN - Internal Financing
IC - Institutional Conservation Program
LP - Lease Purchase
RB - Revenue Bonds
SS - Shared Savings
SW - School Weatherization Loan Program
TE - Tax-Exempt Financing
VE - Vendor Financing
OT - Other

(See the Tier 1 Library Record Form (Figure 1) on page 12, for an illustration of the form devised by the Nebraska Energy Office.)

STEP 2 Develop a data file program for use on a Personal Computer.

STEP 3 Create a data base by transferring information from the Tier 1 Library Record Form to the computer. Figures 2 A & B on page 13 show the computer screens for data entry. Continue to upgrade the data base as more information is added to Library.

Tier I Library Record

PERSON, GROUP, AGENCY, OR FIRM

1. Contact Person Name

2. Business or Agency

3. Street or P.O. Box

4. City, State, Zipcode

5. Telephone Number
Area Code

FAX Number

6. Type (Check One)

- ☐ A. Individual
- ☐ B. Government Agency
- ☐ C. Energy Science Company, Engineering Firm, Energy Management Consultant
- ☐ D. Financial or Investment Banker
- ☐ E Other

7. Brief Description of Activities

MATERIALS REQUESTED (ARTICLES, DOCUMENTS, OR CONTRACTS)

1. Title

2. Author

3. Publication Name

4. Publisher

5. Street Address or P.O. Box

6. City, State, Zipcode

7. Date Published

8. NEO Library Number

9. Type (check one)

- ☐ A. Article from Newspaper, Magazine or Periodical
- ☐ B. Report
- ☐ C. Request for Proposal
- ☐ D. Procurement Document
- ☐ E. Lease Agreement
- ☐ F. Other
- ☐ G. Resume
- ☐ H. Legislation

10. Brief Description of Information

ECM Categories ☐ BNV ☐ COG ☐ D/W ☐ EMS ☐ H/C ☐ LHT ☐ WAT ☐ OTH

Finance Categories ☐ CH ☐ EX ☐ GO ☐ IN ☐ IC ☐ LP ☐ RB ☐ SS ☐ SW ☐ TE ☐ VE ☐ OT

NEO 02-23-88

Computer Screens For Entering Library Data

Figure 2A

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                    Tier I Library Recording Form
              PERSON: (individual, group, agency, firm, etc.)

                Name: _____________________________________________
Business / Agency: _____________________________________________
             Address: _____________________________________
                      _____________________
                      _____________________
                City: _____________________ State:__        Zip:_____
           Telephone: _____________

Enter Type Letter: _     A. Individual              D. Financial / Investment
     (other):            B. Government Agency       E. Other
     _____________       C. Energy Service company, Engineering Firm,
                            Energy Management Consultant

Description:  _____________________________________________________
              _____________________________________________________
              _____________________________________________________
              _____________________________________________________

ƒ
ÜDELETE:Ctrl-U  MOVE:PgUp/PgDn  SAVE:Ctrl-End  QUIT:Esc  PRINT:Shift-PrtSc     Ü
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Figure 2B

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                    Tier 1 Library Recording Form
                THING: (articles, documents, contracts, etc.)  #264
               Title: _____________________________________________
              Author: _____________________________________________
Publication Name: _____________________________________________
           Publisher: _____________________________________________
             Address: _____________________________________
                      _____________________________
                      _____________________________
                City: _____________________ State: __        Zip: _____
                Date: 11/11/11       NEO Library #: __ _______

Enter Category Letters: _____ H.other: _____ I.other: _____ J.other: _____
      [A=art B=rpt C=rfp D=Proc E=cntr F=legs G=rsum H/I/J=oth K=state N=Nebr]
      ECM Categories: BNV? COG? D/W? EMS? H/C? LHT? WAT? OTH_____________
   Finance Categories: CH  EX  GO  IN  IC  LP  RB  SS  SW  TE  VE  OT

Description:  _____________________________________________________
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ÜDELETE:Ctrl-U  MOVE:PgUp/PgDn  SAVE:Ctrl-End  QUIT:Esc  PRINT:shift-PrtSc     Ü
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Task 5: Test library and index

Introduction: Testing the Library/Index system determines whether it works well enough to be made available to its intended users. Testing also discloses ways to improve the system.

Responsibility: The Project coordinator works with the data processing applications analyst and other Energy Office staff members to simulate situations in which the Library would be used and to test the system's capabilities.

Procedure:

STEP 1 Staff members identify scenarios in which they would need to use the Resource Library. At least ten scenarios make a good test. Vary the scenarios enough to test the system's search capabilities.

STEP 2 The Program coordinator and data processing applications analyst run the system for each scenario and take notes about the system's performance.

STEP 3 Evaluate the system at the end of the test

STEP 4 Make any changes necessary to improve system performance.

COUNSELING SERVICE

In some cases, written information alone cannot completely serve the needs of people in institutional sectors who want to know more about energy technologies and financing strategies. To supplement the information in the Resource Library, the Nebraska Energy Office developed a Counseling Service to refer callers to specialists in the areas of energy technology and financing, who can give them advice tailored to their specific needs.

Energy Office personnel who staff the Counseling Service use the Resource Library and Computerized Index to locate the names of appropriate specialists — within the Energy Office, other state government offices, and/or private sector firms — and then refer callers to those individuals or agencies.

Rationale

Because the energy management needs of public buildings vary widely from sector to sector — and even within individual sectors — it is not easy to identify one information delivery system that is consistently appropriate for all of them. The centralized Counseling Service accommodates a variety of needs, by providing a means of delivering information on a case-by-case basis, and by insuring that resources are available to answer specific questions about an individual building's energy efficiency problems.

In the past, officials in the institutional sector have not had easy access to a centralized pool of experts in the areas of energy technology and project financing. Although the expertise exists, it has not been efficiently organized. The Counseling Service coordinates available resources through the Resource Library's index of individuals, firms, groups, agencies, etc., who are willing to share their expertise about developing and/or financing energy efficiency improvement projects.

Role of Counseling Service in the Nebraska Public Buildings Energy Program

The Counseling Service is not intended to stand alone — it depends on and serves other components of the Program, especially in the areas of Resource Distribution and Networking. The Service complements the information services available through the Resource Library by referring callers who need more in-depth advice to experts listed in the Computerized Index. It enhances Association Outreach efforts by providing advisory services to trade associations and organizations interested in getting information for their members. Finally, the

Counseling Service addresses a need identified by the Nebraska Public Buildings Energy Program Task Force, to provide technical assistance to institutional building owners and operators.

Using the Counseling Service saves institutional building owners and operators time and effort, thus contributing to faster implementation of energy projects. In addition, the Counseling Service increases awareness of the benefits of energy efficiency, and provides educational and other assistance services. Contact with the Counseling Service leads to other resources available through the Nebraska Public Buildings Energy Program. Finally, those who use the Program's resources become a link in the information chain that may prompt others in their sector to undertake energy improvement projects.

Procedures For Developing a Counseling Service

Supplementing print resources with access to individualized counseling enhances Resource Distribution efforts. It allows building owners and operators to ask specific questions and receive responses tailored to their individual needs. The Counseling Service complements the Resource Library as an information delivery system by directing users to experts who can inform and advise them about energy technology and project financing.

These are the procedures the Nebraska Energy Office followed to develop a Counseling Service.

Summary of Tasks

	ACTION	RESPONSIBILITY
TASK 1	Identify specialists	Program coordinator, staff interns
TASK 2	Add data to computerized index	Staff interns

Resources Needed

PERSONNEL	EQUIPMENT
Existing staff members: • Nebraska Public Buildings Energy Program Coordinator • Staff Interns	Personal computer (e.g., NCR-PC) Printer Data Base Management Software (e.g., dBase III Plus)

Task 1: Identify specialists

Introduction: The Counseling Service pools the names of individuals, from within government and in the private sector, who can provide expert advice regarding energy technology and project financing. Identifying those individuals and the agencies they represent is a key step in organizing a workable counseling service.

Responsibility: The Program coordinator and staff interns develop a list of names of people and agencies to make up the counseling pool.

Procedure:

STEP 1 Identify specialists within the Energy Office and classify them by their areas of expertise.

STEP 2 Identify specialists (and areas of expertise) in other state government agencies.

STEP 3 Identify private sector individuals and firms that already provide similar counseling services, such as:

- Private sector firms specializing in energy technology and management
- Financial institutions
- Energy service companies
- Engineering firms
- Investment bankers

STEP 4 Identify government and private sector specialists outside of the state.

STEP 5 One source often leads to another. Follow all leads as they develop.

Task 2: Add names to the Computerized Index

Introduction: The counseling resources identified in Task 1 feed into the computerized index system that serves the Resource Library.

Responsibility: Staff interns enter Counseling Service data into the Resource Library's data base.

Procedure:

STEP 1 Record relevant information about each source (individual, firm or agency) in the "People" section of the Library Record Form. See Procedures for Creating a Resource Library and Computerized Index, Task 4, Step 1 (p. 11), for specific information to include on form.

STEP 2 Transfer information from Library Record Form to the computer.

STEP 3 Continue to upgrade the data base as more counseling resources are identified.

ENERGY CALCULATION HANDBOOK & SOFTWARE

The Public Buildings Energy Program supplements the short-term assistance offered through the Counseling Service with educational tools institutions can use on their own to calculate the savings generated by energy efficiency improvements. To help institutional building managers answer their own questions about cost-effectiveness and to increase their awareness of the benefits of making their buildings more energy efficient, the Energy Office developed an Energy Calculation Handbook in written and computerized formats.

Based on a Handbook the Energy Office created in the early 1980s for use in the School Weatherization Program, the Energy Calculation Handbook/Software serves building managers in all sectors who want an initial indication of a project's cost-effectiveness. It helps them calculate annual energy and cost savings stemming from projects involving insulation, weatherstripping, windows and lighting.

Rationale

Many facilities managers in Nebraska's institutional sectors are at least curious about how much they could save — in terms of both dollars spent and energy consumed — by making specific energy efficiency improvements in their buildings. The question of cost-effectiveness is an overriding concern and, for most decision-makers, savings potential outweighs all other criteria in determining a project's feasibility. Building managers also may wish to compare different types of energy improvement plans on the basis of cost and reduced energy consumption.

Most facilities managers do not have the expertise to make energy savings calculations on their own. In general, they must rely on the estimates of engineers, energy service companies or local utility companies to determine the cost-effectiveness of a particular energy improvement project. However, if the estimates conflict or seem to be inaccurate, facilities managers tend to quickly lose interest in the project.

The Energy Calculation Handbook, in either printed or computerized format, is a valuable tool for facilities managers who are interested in long-range energy management. The Handbook first helps them calculate current energy use and cost. It then provides instructions for calculating the energy savings generated by a variety of building improvements, as well as for conducting a step-by-step cost analysis. The computer software is much more sophisticated and comprehensive than the printed Energy Calculation Handbook. In addition to computing simple energy savings, it also is capable of using

data entered only once to identify and compare the cost-effectiveness of a range of options for improving energy efficiency.

Facilities managers who use the Energy Calculation Handbook can quickly and confidently assess the benefits of implementing energy improvement projects. They also can compare the benefits of different projects, or can determine the value of doing the work now or later. The ability to perform calculations without relying on outside expertise allows building managers to experiment at their own pace and lets them feel confident about the information they come up with. In addition, the Handbook is a tool that won't become outdated, so it can be used again and again, whenever the need to assess the benefits of an energy-related building improvement arises.

Role of Energy Calculation Handbook in the Nebraska Public Buildings Energy Program

The Energy Calculation Handbook/Software is one of the most useful tools developed in the course of the Nebraska Public Buildings Energy Program and has applications on several levels. Available through either the Energy Office or the various trade associations, the Handbook is an important vehicle for delivering technical and financial information to key people in the institutional sector. The Energy Office uses the Handbook as part of the Counseling Service to answer questions about the savings potential of specific energy improvement projects. In addition, it is available through Association Outreach to trade organizations of various institutional sectors, who use it to advise members about energy matters. But its greatest value lies in its direct use by institutional building owners and managers who make the decisions to implement energy efficiency projects.

The Handbook is an important facet of the Resource Distribution component of the Nebraska Public Buildings Program and is included in the Resource Library and Index. It also contributes to the Program's Networking component by serving as a tool that trade associations can use to help their members. It continues to be an integral part of the School Weatherization Program and, in its revised format, can help building owners and operators compute the basic information they need to identify appropriate Financing Sources.

Procedures for Developing an Energy Calculation Handbook and Software

Resource Distribution includes the development of tools that make it easy to evaluate present energy usage and cost and to determine potential savings generated by energy efficiency improvements. The Energy Calculation Handbook and Software are direct-access tools that facilities managers can use to determine the best approach to their particular energy management needs.

These are the procedures the Nebraska Energy Office followed to produce its Energy Calculation Handbook and Software.

Summary of Tasks

	ACTION	RESPONSIBILTY
TASK 1	Create a profile of a "typical" building	Engineer
TASK 2	Identify types of energy efficiency improvements to include in the Handbook	Program coordinator, engineer
TASK 3	Simplify heat loss formulas	Engineer
TASK 4	Develop format for printed Handbook	Program coordinator, engineer, artist
TASK 5	Draft and print Handbook	Program coordinator, engineer, other staff
TASK 6	Create computerized version of Handbook	Engineer, programmer

Resources Needed

PERSONNEL	EQUIPMENT
Existing staff members: • Nebraska Public Buildings Energy Program Coordinator • Engineer • Artist • Other Energy Office personnel	IBM-compatible personal computer (e.g., NCR-PC) Macintosh computer Laser printer Word processing software (e.g., Microsoft Word) Graphics/publishing software (e.g., Aldus Pagemaker) Programming software (e.g., Turbo Pascal, 4.0)

Task 1: Create a profile of a "typical" building

Introduction: The objective of the Energy Calculation Handbook is to allow its users to quickly and easily compute potential energy and dollar savings without having to perform a series of tedious calculations. In order to make the Handbook as "user-friendly" as possible, several simplifying assumptions must be made, about the type of building the Handbook is likely to be used for and its typical energy needs. Those assumptions result in a target building profile upon which the Handbook is based.

Responsibility: The Engineer creates the target building profile.

Procedure:

STEP 1 Identify the age and structural type of a typical building. In Nebraska, the target building is 20 to 60 years old and is considered "thermally light" (heating load strongly dependent on outside temperature).

STEP 2 Identify the average climate. The typical Nebraska building is located in a climate of 6400 heating degree days.

STEP 3 Identify the primary energy use. The typical Nebraska building uses most of its energy for heating.

STEP 4 Identify the typical mechanical system. Nebraska's typical building is uncooled or minimally cooled, with a heating system that is 70% efficient.

STEP 5 Identify the average thermostat control pattern. In the typical Nebraska building, the temperature is set back to 60 degrees for 50 hours per week.

Task 2: Identify types of energy efficiency improvements to include

Introduction: Identifying the most common types of energy efficiency improvements made in institutional buildings ensures that the Handbook includes useful information that is clearly oriented to its intended audience.

Responsibility: The Program coordinator works with the Engineer to determine the most appropriate types of energy efficiency improvements to include in the Handbook.

Procedure:

STEP 1 Use the typical building profile to identify the most appropriate types of energy efficiency projects for the state's institutional sectors. Because the typical Nebraska building uses most of its energy for heating, the Energy Calculation Handbook concentrates on projects that reduce heating requirements in the building.

STEP 2 Review projects recorded in the Data Bank of Buildings, as well as ICP and School Weatherization records, to determine the general types of energy efficiency improvement projects that already have been implemented in institutional sectors.

STEP 3 Break down types of projects into smaller categories. Nebraska's Energy Calculation Handbook addresses these types and categories of energy improvements:

- Insulation - - - - - - - - Roof or ceiling, walls
- Weatherstripping - - - Windows, doors
- Window Projects - - - Adding storm windows
  Replacing windows
  Eliminating windows
- Lighting Projects - - - Replacing fluorescent tubes
  Replacing incandescent with fluorescent lights
  Replacing incandescent with metal halide lights
- Control Projects - - - Thermostat setback
  Reducing exhaust fan use

Task 3: Simplify heat loss formulas

Introduction: The critical formulas for calculating energy use and projecting energy savings must be simple and uncomplicated. To save users the time and tedium of extensive mathematical calculation, the Handbook allows users to choose values from tables based on existing conditions in their buildings and types of improvements they wish to make. Only in a few instances (for example, when the area of the floor or roof is required) must users supply actual variables.

Responsibility: The Engineer tabulates typical values and devises heat loss calculation formulas.

Procedure:

STEP 1 Prepare preliminary formulas for:

A) Calculating present energy consumption
- Determine the heating value of various heating fuels.
- Devise formulas for calculating the energy use index (mBTU/Sq. Ft./Year) and for comparing it to the average based on the typical building profile.

B) Compute a "heating correction factor." Multiplying by this factor after computing the energy savings resulting from various efficiency improvements will refine the savings estimate, based on a building's actual climate, control schedule and mechanical system. Include these three elements:
- Climate factor by county. This factor is the ratio of a geographic area's actual heating degree day to the heating degree days of a "typical" building. Climate information is available from the Weather Service via the National Oceanic and Atmosperic Administration.
- Setback factor. This figure is the ratio of the standard correction for thermostat setback (derived from a standard DOE formula) to the control schedule of the "typical" building.
- Efficiency factor. This factor is the ratio of an actual mechnical system's efficiency to the efficiency of the heating system used in the "typical" building.

STEP 2 Prepare formulas for computing energy savings for each category and type of improvement.

A) Base formulas on ASHRAE (American Society of Heating, Refrigeration and Air Conditioning Engineers) heat loss formula — the "Modified Degree Day Procedure" found in Chapter 43 of the ASHRAE Systems Handbook.

B) Construct tables that show energy conservation values for various types of possible improvements based on various possible existing conditions.

- Begin by computing energy conservation values for all possible existing conditions and possible improvements, using the typical building profile as a basis.
- Condense all physical possibilities into a more manageable form by "clustering" values that are equal to within 5% of each other. This step narrows the number of choices to the fewest possible, while ensuring that the resulting calculation falls within an accuracy range of plus or minus 5%.
- Create table using clustered values. Users then may choose the value for the existing condition and desired improvement that comes closest to their situation. (Multiplying the ultimate result by the Heating Correction Factor will further refine the savings estimate.)

Figure 3 illustrates a table of clustered energy conservation values included in the Energy Conservation Handbook. The energy conservation values in the example are in units of million BTUs per square foot. Multiplying the tabulated value by the area in square feet yields a rough estimate of the project's savings in units of million BTUs per year. This result is then refined by multiplying it by the Heating Correction Factor.

Task 4: Develop a format for the printed Handbook.

Introduction: It is essential that the Handbook — which is intended for use in a variety of institutional sectors and by people of varying degrees of technical expertise — be designed and formatted clearly, so the information it contains is easy to find and use. In addition, it must contain easy-to-use worksheets that "walk" the user step-by-step through the necessary calculations.

Responsibility: The Program coordinator works with the staff engineer and a staff artist to design a usable visual format for the Handbook.

Procedure:

STEP 1 Determine the structure and specifications for the finished Handbook. The Energy Calculation Handbook published by the Nebraska Energy Office has these specifications:

- 8-1/2" x 11" finished size
- saddle-stitched binding, cardstock cover
- 70 lb. offset paper
- Bookman typeface, plain for text and bold for headings
- camera-ready copy prepared on Macintosh Plus with Aldus Pagemaker and Cricket Draw and Apple Laserwriter printer
- conventional offset printing
- separate pages for text and worksheets
- text pages, printed two sides
- worksheet pages, printed one side only

STEP 2 Design a format for text pages. The Nebraska Energy Office chose a two-column format for all text pages in the Handbook. Columns are separated by a vertical hairline. Major section headings run across the top, the full width of the page, and are set off with a horizontal hairline. Pages are numbered at the bottom center. (See Appendix D for an example of a text page from Nebraska's Energy Calculation Handbook.)

STEP 3 Design a format for worksheets. Single-sided single page worksheets allow users to easily remove or duplicate them. Worksheets are numbered. Each type of energy efficiency project has its own separate worksheet. Worksheets provide space at the top for:

- the name and location building and its area in square feet
- the name of the person performing the calculation
- the date of the calculation

Tables from Energy Conservation Handbook Showing "Clustered" Energy Conservation Values

Figure 3

Table 5: Energy Conservation Values for Built Up Roofs

Roof/Ceiling Construction	Currently No Insulation; Add ... 1"	2"	3"	4"
Wood Deck No Ceiling	.0497	.0575	.0608	.0625
Wood Deck With Ceiling or Concrete Deck With-out Ceiling	.0239	.0297	.0324	.0340
Concrete Deck With Ceiling	.0143	.0190	.0212	.0226

Roof/Ceiling Construction	Currently 1" of Fiberboard Insulation; Add Another ... 1"	2"	3"
Wood Deck No Ceiling	.0139	.0185	.0207
Wood Deck With Ceiling or Concrete Deck With-out Ceiling	.0094	.0130	.0150
Concrete Deck With Ceiling	.0069	.0098	.0114

Roof/Ceiling Construction	Currently 1" of Fiberboard Insulation; Replace With New ... 2"	3"	4"
Wood Deck No Ceiling	.0163	.0197	.0212
Wood Deck With Ceiling or Concrete Deck With-out Ceiling	.0113	.0139	.0155
Concrete Deck With Ceiling	.0084	.0106	.0120

Table 6: Energy Conservation Values for Metal Roofs

Currently Uninsulated; Add ...						
Batt Insulation			Spray-on Insulation			
3 1/2"	6 1/2"	8 1/2"	1"	2"	3"	4'
.1372	.1427	.1456	.1200	.1337	.1390	.1418

Currently 1" Spray-on Insulation; Add Another...		
1"	2"	3"
.0137	.0190	.0218

Table 7: Energy Conservation Values for Ceiling Insulation

Ceiling Construction	Currently Uninsulated; Add ... Batt Insulation 3 1/2"	6 1/2"	8 1/2"
Plaster or Drywall	.0677	.0717	.0739
Accoustic Tile	.0378	.0413	.0434

Ceiling Construction	Currently Uninsulated; Add ... Loose-fill Insulation 4"	8"	10"
Plaster or Drywall	.0692	.0734	.0743
Accoustic Tile	.0391	.0429	.0437

Ceiling Construction	Currently 1"- 2" Insulation; Add ... Batt Insulation		Loose-fill Insulation	
	3 1/2"	6 1/2"	4"	8"
Plaster or Drywall	.0153	.0179	.0163	.0181
Accoustic Tile	.0121	.0144	.0129	.0145

- a brief description of the project
- the proposed location of the energy efficiency project (In some cases, worksheets provide a grid area for sketching the location and size of elements of the project.)

STEP 4 Design graphics (tables and other illustrations). The Engineer determines which illustrations are needed and works with the staff artist to create them. Illustrations are placed in the text, close to the point of reference. (See Figure 4 on page 23 for an example of the types of graphics used in Nebraska's Energy Calculation Handbook.)

Task 5: Draft and print written version of Handbook

Introduction: Clear, well-written comments about the energy efficiency improvement projects and a coherent explanation of how to use the worksheets are essential to a comprehensive, usable Handbook.

Responsibility: The Engineer works with other Energy Office personnel to produce a clear written version of the Energy Calculation Handbook.

Procedure:

STEP 1 Draft instructions for using the worksheets.

STEP 2 Draft additional comments about each project. These may include:

1) a description of the project and why it should be considered,
2) variation of the project which might make it more suitable for a particular building, and
3) potential problems that the user needs to be aware of.

STEP 3 Draft introductory comments about economic analysis and general instructions on how to use the Handbook.

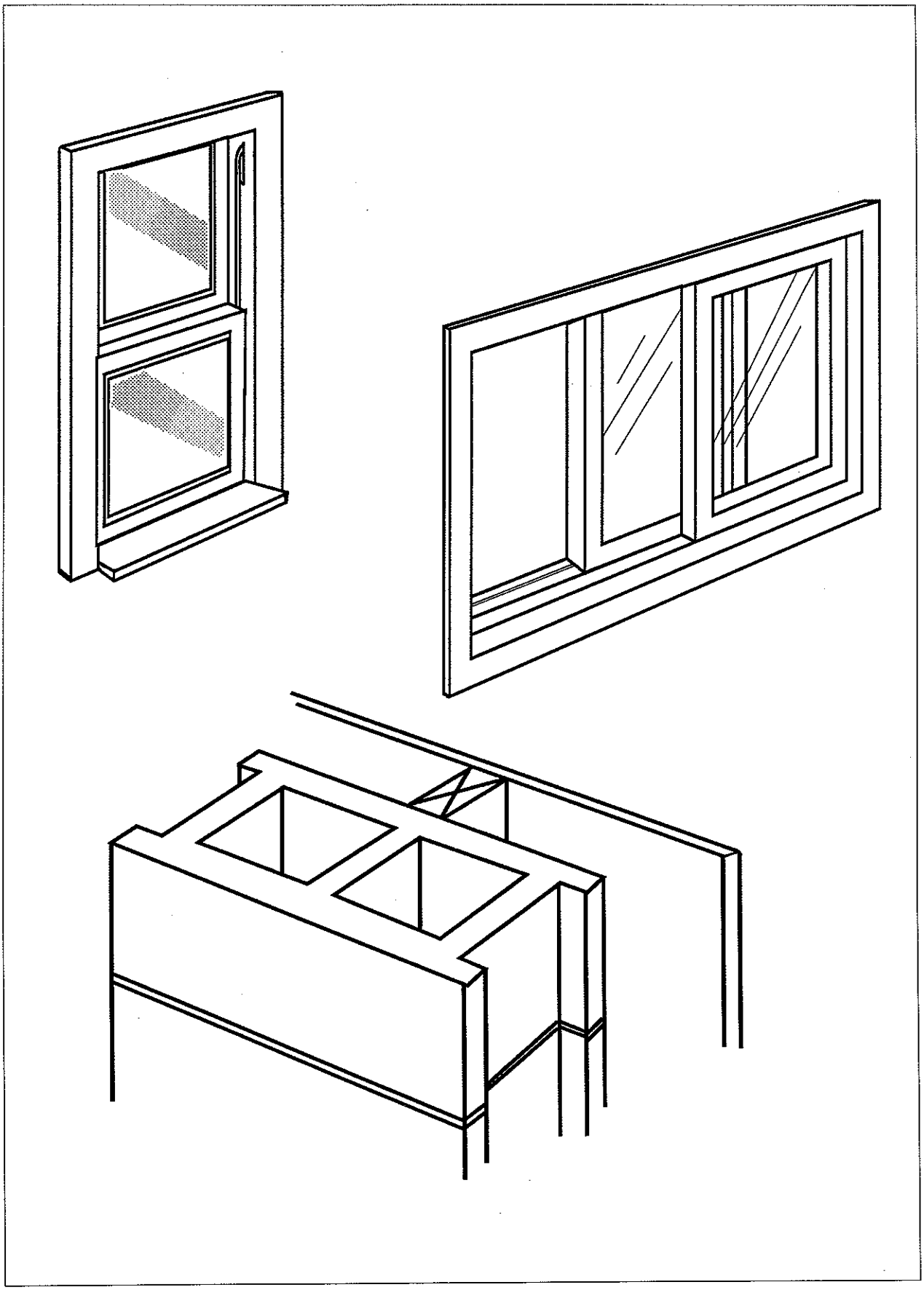
STEP 4 Draft concluding comments about how to figure total project cost and whom to contact for additional help.

STEP 5 Edit and refine drafts as necessary.

STEP 6 Incorporate visuals and tables and print final version.

Typical Graphics from Energy Conservation Handbook

Figure 4



Task 6: Create a computerized version of Handbook

Introduction: Computerizing the Energy Calculation Handbook makes it a much more comprehensive tool for determining the cost-effectiveness of various energy efficiency improvement projects. First, the software eliminates the need for the user to perform the calculations to compute current energy use and projected savings. Second, the software provides more accurate calculation because it is sophisticated enough to allow for a greater variety of mechanical systems and building conditions. Finally, the software uses numbers entered only once to compute potential savings from several possible energy efficiency improvements, then generates a comparison of different options, thus enabling building operators to make a much more informed decision about which energy efficiency project(s) to implement.

Responsibility: The Engineer creates a computerized version of the Energy Calculation Handbook.

Procedure:

STEP 1 Using Turbo Pascal (or some other programming language), create a computer program for performing all calculations included in the Energy Calculation Handbook.

STEP 2 Devise an easy-to-use structure. The Energy Office has developed software in an interactive, menu-driven, question-and-answer format that moves the user through a series of questions about the building's present condition and the type of improvements desired. The program performs all calculations to determine energy and cost savings resulting from projects involving:

1) Ceiling and roof insulation
2) Wall insulation
3) Windows
4) Lighting
5) Thermostat control
6) Heating

MARKETING STRATEGIES

A well-developed marketing strategy is essential to planning, promoting and distributing the services of the Nebraska Public Buildings Energy Program to its present and potential users. No matter how much promise a program has, its real effectiveness can be measured only after people have used it and achieved results. In order to devise strategies for "selling" the Nebraska Public Buildings Energy Program's services — and for gauging its effectiveness — the Energy Office has made marketing a significant element of the Program's Resource Distribution component.

Marketing is the most interactive part of the Nebraska Public Buildings Energy Program. The development of better and more effective marketing strategies depends on input from the target audiences to determine what they want and on feedback from users of the program to determine how well it meets their needs. In turn, more refined marketing strategies identify and attract more users, thus ensuring the Program's continuation.

Rationale

A comprehensive and strategic marketing plan is essential to selling the idea of energy efficiency in general, as well as specific programs for improving energy efficiency. Marketing efforts are directed primarily to those who do not understand the economic value of energy efficiency, who resist the implementation of energy efficiency projects, or who are not aware of the technological and financial assistance available for completing such projects. One purpose of developing marketing strategies is to identify those "areas of resistance" and determine the best methods of dealing with them. Marketing also involves continuing promotion of the program to its present users, by identifying and reinforcing appropriate distribution channels and developing and refining communication systems.

Role of Marketing in the Nebraska Public Buildings Energy Program

Marketing involves almost every other aspect of the Nebraska Public Buildings Energy Program. Assessment of market segments can take place through networking with the trade associations of target institutional sectors and through evaluation of responses to existing programs like the School Weatherization Program. Analysis of the information in the Data Bank of Buildings reveals the degree of effectiveness of existing and new energy improvement programs. The findings of the Nebraska Public Buildings Energy Program Task Force

pinpoint financing needs in various sectors. The Energy Office uses all these sources to create a composite picture of the markets it hopes to reach through the Nebraska Public Buildings Energy Program and to identify specific needs to address within each one.

Once markets are identified and analyzed, marketing efforts turn to promotion of the Program in the institutional sector. Promotional activities include the Recognition Award series and the standard reports that go out through Association Outreach. In addition, the Energy Calculation Handbook is a significant promotional tool, and the Energy Office has devised appropriate marketing strategies for making it available to the institutional sectors.

The Energy Office's marketing plans involve promotional activity outside of the components of the Nebraska Public Buildings Energy Program. Through contact with utility companies, energy management firms, local contractors, state legislators — anyone who advocates energy efficiency — the Energy Office creates increased awareness of its programs. These people and groups also can promote the Nebraska Public Buildings Energy Program in their dealings with institutional building owners and operators.

Procedures for Designing a Marketing Plan

Marketing the programs developed under Tier 1 is essential to "selling" the idea of energy efficiency in the institutional sector. Marketing efforts are directed at those who do not understand the economic value of energy efficiency or who are not aware of the technological and financial assistance available for completing such projects. Marketing also involves identifying target markets and assessing those markets' reactions to proposed programs.

These are the procedures the Energy Office followed to develop a marketing plan for the Public Buildings Energy Program.

Summary of Tasks

	ACTION	RESPONSIBILITY
TASK 1	Identify goals and procedures for marketing activity	Program coordinator
TASK 2	Identify products or programs	Program coordinator
TASK 3	Select marketing consultant	Program coordinator, Public information officer Other staff
TASK 4	Determine focus of marketing work	Program coordinator, Public information officer

Resources Needed

PERSONNEL	EQUIPMENT
Existing staff members: • Nebraska Public Buildings Energy Program Coordinator • Public information Officer • Other Energy Office personnel Other: • Marketing consultant	None

Task 1: Identify goals and procedures for marketing activity

Introduction: The first step in the marketing campaign is to identify the purpose of marketing in general and the goals of the Nebraska Public Buildings Energy Program marketing component in particular.

Responsibility: The Program coordinator outlines the goals and procedures for the marketing work.

Procedure:

STEP 1 Research marketing for nonprofits and identify basic structure of marketing plans.

STEP 2 Identify specific goals of marketing work in relation to the Nebraska Public Buildings Energy Program.

STEP 3 Present findings to the Energy Office director and other personnel for final decision on marketing direction.

(See Figure 5 on pages 27-28 for presentation materials of preliminary research.)

Task 2: Identification of products or programs

Introduction: Not all products or programs developed under the Tier 1 grant need to be marketed. The objective of this task is to identify those requiring marketing or market research.

Responsibility: The Program coordinator assesses the need for marketing activity with each product or program.

Procedure:

STEP 1 Identify all programs or products produced or developed under the Nebraska Public Buildings Energy Program.

STEP 2 Select those products or programs which need market research and the development of market channels.

TIER 1 MARKETING PRESENTATION

"The Need To Market The Programs of The
Nebraska Public Buildings Energy Program"

March 15, 1988

We all have a general impression of what is marketing. However, that impression is usually based on how marketing works in a profit-oriented organization. That is, how to make your product as noticeable and appealing as possible to the consumer so it sells well.

Marketing in a non-profit, tax-supported organization is slightly different, but it is still based on the same principals. Initial research shows that marketing is a managerial process. A good definition of marketing says that marketing is the analysis, planning, implementation and control of carefully formulated programs designed to bring about the voluntary exchanges of values.

If we were a business, our value is our product. The value we want to exchange it for represents our costs and profits. But since we are a state agency, our values are guided by policy decisions. It is our policy that we should encourage energy conservation in public buildings.

We are still selling a product. To sell this product, we must set up our marketing as a business would set up their marketing. This includes six basic steps.

1. concept development and testing
2. market strategy
3. business analysis
4. product development
5. market testing
6. commercialization

Concept development and testing is occurring now. Using the best possible information available to the Energy Office, we are developing "products." At the end of the Tier 1 project we should have no less that ten to twelve products.

With the first eight "products," we are developing something we believe there is a market for. With number nine, the financing options, we will develop between two and three programs which will require marketing. Under number ten, the actual marketing work, we are not only developing and marketing are other products, we are also demonstrating how to develop a marketing plan for government programs. This, in essence, is another product by itself.

Once our concept development and testing is complete, we must look at step two--the market strategy. This involves assessing our intended goals and then assessing the size, structure, and behavior of our target market. This will take research. The focus groups for the school weatherization program are doing some of that research. But they are only covering a small segment of what needs to be accomplished. Our next steps in market strategy is to look at our cost, the price of the product for the consumer, distribution strategies, promotion, and the budget.

At the same time we are assessing our market strategy, we need to address the third step, the business analysis. This is the time when a company decides if this product fits their budget, and their goals and objectives. As a government agency, our business analysis is even more complicated. We do not have control over our financial opportunities to implement these programs. So for a tax-supported institution, the business analysis is in reality a political analysis.

The fourth step in a marketing plan is the product development. With the target market's wants, needs, and attitudes identified, and our political analysis done, we must fine tune those products and set reasonable expectations of what these products and programs can achieve.

The fifth step involves market testing. We need to take these products and programs developed and find out if the target audience has any interest in participating. How would they like to see the programs changed to better fit their needs? This also helps us to identify potential "early adopters." Someone or some institution that likes trying new programs.

When the marketing work is completed, we will have ten or eleven products and programs that we could chose to implement or to take to that final step of commercialization.

If we do decide to "commercialize," we know the programs will be successful. Not because we had all the answers, but because we asked the right questions in an orderly fashion following a proven business technique of marketing. This will give us the best product for our public institutions and we will know their response to it.

Task 3: Select marketing consultant

Introduction: Leaving the actual market research and development of marketing strategies to an outside consultant relieves Energy Office personnel of the time-consuming tasks involved in market research. In addition, professionals qualified in market research can provide insights and recommendations of marketing strategies. Finally, keeping the Energy Office once removed from the actual marketing work will ensure objectivity.

Responsibility: The public information officer works with the Program coordinator and other Energy Office personnel to select consultants to perform the marketing work.

Procedure:

STEP 1 Issue a Request for Proposals at least two months before the evaluation work is to begin. On February 4, 1988, the Nebraska Energy Office mailed RFPs to 150 Nebraska-based advertising and market research firms. In addition, RFP notices were placed in six Nebraska newspapers. Responses were due in the Energy Office on March 4.

(See pages 30-35 for the RFP the Nebraska Energy Office issued. The RFP also includes solicitation for consultants to develop the evaluation of the School Weatherization Program, since the same types of firms could do both projects. See pages 84-90 for discussion of the evaluation of the School Weatherization Program.)

STEP 2 Review proposals received and select candidates for interviews. The Energy Office received only two proposals, which were reviewed by a team of Energy Office staff. NOTE: More proposals would probably have been received if more time had been allowed for potential consultants to develop proposals.

STEP 3 Interview candidates. The Nebraska Energy Office omitted this step. Review of the proposals submitted was sufficient to select a contractor.

STEP 4 Select a consultant. On April 2, 1988, the Nebraska Energy Office selected the Technical Development Corporation of Boston to conduct the necessary marketing work.

STEP 5 Sign a contract with the consultant.

Task 4: Determine focus of marketing work

Introduction: Identifying the focus or direction of the marketing work is important to ensure the contractor understands what is expected and will meet the expectations of the Energy Office under the terms of the contract.

Responsibility: The public information officer and the program coordinator (and the consultants, if appropriate) work together to determine the focus of the marketing work.

Procedure:

STEP 1 Identify the products and programs to be included in the market work. The Nebraska Energy Office decided to focus on the financing options identified by the Nebraska Public Buildings Energy Program Task Force. (See Appendix E for the full text of the recommendations of the task force.)

STEP 2 Determine the basic format of the market research and the target audiences.

STEP 3 Write a scope of work to be included in the consultant's contract which identifies the programs and products, the target audiences and the form the research will take.

(See Figure 7, pages 36-39 for the scope of work from the consultant's contract.)

Marketing and Focus Group Evaluation Request for Proposals Figure 6

REQUEST FOR PROPOSAL

Purpose

The Nebraska Energy Office is soliciting proposals to (1) conduct market research through focus groups of an existing state-operated program, the Nebraska Energy Efficiency School Loan Program, and (2) to design a marketing plan for a comprehensive energy efficiency building improvement program in public sector buildings. The expected result of this work is a marketing plan which could be implemented by the Nebraska Energy Office or any other state energy office.

Background

Millions of dollars are spent for energy in Nebraska's public buildings. Since Nebraska imports nearly 90% of its energy needs, this represents a substantial drain on the state's economy. To reduce this flow of dollars out of the state, the Energy Office is designing alternative financing options to fund energy-related building improvements in public buildings.

The Energy Office is using a federal planning grant through the Institutional Conservation Program of the U.S. Department of Energy as a basis for designing an energy-related building improvements program for public buildings. This program will address marketing, technology, networking, recognition and financing energy improvements in hospitals, schools, local governmental buildings, state buildings, public care facilities and nonprofit institutions.

The Energy Office will use a task force specially created for the purpose of assisting in the program development. Task force members will include:

1. representatives from the institutional sectors (hospitals, schools, local government, state government, and public care facilities),

2. representatives from the private sectors (professional engineers, energy service companies, investment bankers or other financial advisors), and

3. representatives from both the executive and legislative branches of government.

It is expected the task force will have approximately twenty members.

Division of Proposal

The Energy Office will consider proposals that encompass both projects or either one of the two identified above under "Purpose".

Qualifications

The Energy Office is seeking a contractor or contractors who have experience in conducting focus group marketing research and/or experience in designing marketing plans for products in development. Applicants should have a broad range of experience and expertise in marketing research and development of marketing plans for the public sector. The applicant must demonstrate experience in working with governmental agencies and other contractors.

Scope of Work

PART I

Focus Group Market Research of Nebraska Energy Efficiency School Loan Program

The applicant selected will work with the agency's project officer and other agency personnel in (1) becoming familiar with the Nebraska Energy Efficiency School Loan Program, (2) selecting the focus group participants, and (3) identifying the topic areas to be covered in the focus group sessions. The agency has planned on three to five focus groups including both program participants and nonparticipants. The Energy Office expects the applicant to provide a written summary of the focus group sessions, any recommendations resulting from the sessions and tape recordings of the actual sessions.

Proposals must provide the following information in the outlined format:

Summary

The applicant will provide a one-page executive summary of the proposed activities for the project.

Section One

The applicant will outline the approaches to be used in conducting the focus group sessions, providing specific details in terms of room type, setting and recording facilities. The methods used for selection and standard types of reimbursement of the focus group members will also be identified.

Section Two

The applicant will identify typical topic areas covered during focus group sessions. If available, the applicant may submit a copy of topic areas covered during a prior focus group session. Applicant should identify methods the facilitator will use to prompt participation by group members.

Section Three

The applicant will include the following information concerning:

1. Identification of the project manager, focus group facilitator (if not the project manager) and any other personnel involved in the project;

2. Qualifications of the project manager and focus group facilitator (if not the project manager); and

3. Writing samples of the person assigned to write the summary of the focus group sessions.

Section Four

The applicant shall provide detailed information on his or her experience in marketing research in general and focus groups in particular.

Section Five

The applicant shall submit a timeline or work schedule for the completion of the project. Under no circumstances should the schedule extend beyond April 30, 1988.

Section Six

The applicant shall submit an itemized budget necessary for completion of the project.

Section Seven

The applicant shall provide references for the project manager and focus group facilitator (if not the project manager) from public entities with which the applicant had previous experience or contracts.

Selection

Applicants will be selected according to the following criteria:

1. Demonstrated ability to complete work in the proposed time period,

2. Experience of the applicant,

3. Thoroughness of the proposal, and

4. Cost.

Deadlines

Proposals are due in the Nebraska Energy Office by the close of the business day (5:00 pm CST) Friday, February 26, 1988. The Energy

Office will review proposals and select applicants for interview during the week of March 7, 1988. Applicants will be expected to travel to Lincoln for the interview at their own expense. A final decision will be announced on or before March 15, 1988. A contract will be negotiated immediately following the selection. The contract period will end April 30, 1988. The Nebraska Energy Office reserves the right to reject any or all of the proposals received.

For further information, contact:

Jerry Loos
Public Information Officer
Nebraska Energy Office
Ninth Floor
State Capitol
Lincoln, NE 68509-5085
(402) 471-2867

Scope of Work

PART II

Marketing Plan Design for a Comprehensive Energy Efficiency Building Improvement Program

The applicant selected will work with the agency's project officer, other agency personnel and other contractors in developing an operational marketing plan for a comprehensive energy efficiency building improvement program for hospitals, schools, local governmental buildings, state buildings, public care facilities and nonprofit institutions. The agency expects the final plan to address: product(s), price(s), channels of distribution and promotion. Another contractor with the assistance of a task force and others are developing key components which may effect both product and price considerations. It is possible that different marketing plans may be required for each target if the product(s) are sufficiently dissimilar. The marketing plan for the product(s) must be designed for implementation by both the state of Nebraska or any other state.

Summary

The applicant will provide a two page executive summary of the proposed activities for the project.

Section One

The applicant will outline the approaches used in working with the project officer, other agency personnel, other contractors, task force members and potential users of the product(s). If this approach differs from how the applicant traditionally creates marketing plans, the applicant should explain in what ways it is different.

Section Two

The applicant will outline the approach(es) used in (1) defining the product(s) and issues related to its (their) development, (2) assuring that there is sufficient demand for the product(s) at the price being offered, (3) selecting the best channels of distribution for the target audience and (4) recommending appropriate promotional strategies for a public entity.

Section Three

The applicant will identify any proposed marketing research contained in the proposal be it primary or secondary in nature.

Section Four

The applicant will include the following information:

1. Identification of the project manager and any other personnel involved in the project.

2. Qualifications of the project manager and any other key personnel assigned to the project.

3. Writing samples of the person assigned to write the marketing plan.

Section Five

The applicant shall provide detailed information on their experience in creating marketing plans. If the applicant has written a marketing plan for another public entity, please include it in the proposal. If the applicant has not written a marketing plan for a public entity, a marketing plan for a private concern may be substituted.

Section Six

The applicant shall provide a timeline or work schedule for the completion of the project. Under no circumstances shall the schedule extend beyond June 15, 1988.

Section Seven

The applicant shall submit an itemized budget necessary for the completion of the project.

Section Eight

The applicant shall provide references for the project manager and any other key personnel identified from public entities with which the applicant had previous experience or contracts.

Selection

Applicants will be selected according to the following criteria:

1. Demonstrated ability to complete work in the proposed time period,

2. Experience of the applicant,

3. Thoroughness and appropriateness of the proposal, and

4. Cost.

Deadlines

Proposals are due in the Nebraska Energy Office by the close of the business day (5:00 pm CST) Friday, March 4, 1988. The Energy Office will review proposals and select applicants for interview during the week of March 14, 1988. Applicants will be expected to travel to Lincoln for the interview at their own expense. A final decision will be announced on or before March 25, 1988. A contract will be negotiated immediately following the selection. The contract period will end June 15, 1988. The Nebraska Energy Office reserves the right to reject any or all of the proposals received.

For further information, contact:

Jerry Loos
Public Information Officer
Nebraska Energy Office
Ninth Floor
State Capitol
Lincoln, NE 68509-5085
(402) 471-2867

Scope of Work from Marketing Contract

Figure 7

SPECIFIC CONDITIONS

Article I Identification of Parties

This contract is entered into by Technical Development Corporation of Boston, Massachusetts, (Contractor), and the Nebraska State Energy Office, (Energy Office).

Article II Statement of Purpose

The purpose of this contract is to assist the Energy Office in researching the marketability of programs to implement energy improvements in Nebraska's public buildings. The Contractor's work under this contract shall be done in close collaboration with the staff of the Energy Office and shall result basic market research on programs developed by the Task Force. The Energy Office will use the market research to support decisions regarding program design, marketing channels, and promotion.

Article III Definitions

For this contract, the following definitions apply:

a. Task Force is the Nebraska Public Buildings Energy Program Task Force appointed by the Director of the Energy Office and approved by the Governor.

b. Public Building is a hospital, school, college, local or state government building, or a public care facility.

c. Public Building Sector is a grouping of public buildings established on the basis of their use and laws relating to their construction and alteration.

d. Project Coordinator is the Energy Office staff person designated to coordinate activities between the Task Force and the Contractor.

Article IV Scope of Work

The purpose of this contract is to undertake market research for the programs proposed by the Task Force with the targeted users in the Public Building Sectors of local government, hospitals, private colleges, and community colleges.

Up to twenty people in each of the four targeted Public Building Sectors shall be interviewed. Those interviewed shall include potential users of the programs, contractors who will market to the sectors, regulators involved in capital improvement decisions and representatives of potential marketing channels. The Contractor shall develop the list of persons to be interviewed in collaboration with the Energy Office.

The Contractor shall prepare the questionnaires for all interviews. Interviews with potential users, contractors, and regulators shall be used to describe the capital improvement decision-making process, assess the reception for the proposed programs, and assess the potential effectiveness of alternative marketing channels and promotional strategies. Interviews with representatives of potential marketing channels shall explore their interest and capability in fulfilling this function.

Staff of the Energy Office will be responsible for conducting interviews with municipal officials. The Contractor shall conduct interviews with officials of the counties, community colleges, private colleges, and hospitals.

During the interviews conducted by the Contractor and the Energy Office, the following questions shall be addressed to each group:

Potential Users

1. What are the steps in capital improvement decision-making?
2. What is the level of responsiveness to the proposed programs?
3. What would be effective marketing channels?
4. What would be effective promotional activities?

Contractors

1. What are the contractors assessments of the potential users capital improvement decision-making process?
2. What is the reaction to the proposed programs?

Regulators

1. What are the regulators' assessments of the capital improvement decision-making process in organizations they regulate?
2. Identify any restrictions or prohibitions to the proposed programs.
3. What is the general regulatory process followed by the regulators when dealing with the targeted audiences?

Potential Marketing Channels

1. What is their interest in working on the programs?
2. What is their track record in similar activities?
3. What resources would be required to participate in the proposed programs?

The Contractor shall submit a Marketing Research Report which will describe the Contractor's research process and contain the market findings.

Article V Reports

The Contractor shall deliver to the Energy Office a market research report reflecting the work accomplished by August 30, 1988.

Article VI Designation of Officials

The Director of the Policy Research and Energy Office or the Assistant Director for Operations of the Energy Office are the officials authorized to execute any changes in this contract.

Mitchell Rosenberg, Vice President of Technical Development Corporation, is the Contractor official authorized to execute any changes in this contract.

Article VII Time of Performance

The Contractor will commence work under this contract on June 1, 1988 and will complete it no later than August 31, 1988.

Article VIII Budget

The budget for this contract is as follows:

1.	Personnel	$ 8,860.00
2.	Airfare	1,115.00
3.	Lodging	200.00
4.	Meals	40.00
5.	Express Mail	66.00
TOTAL		$10,281.00

The Contractor shall receive from the Energy Office prior written approval for any line item budget modification exceeding $100.00.

Article IX Payment

The Energy Office agrees to reimburse the Contractor up to $10,281.00 for satisfactory completion of the duties set out in Article IV (Scope of Work) of this contract. Expenses for travel are included in the maximum budget amount of this contract.

The Energy Office shall withhold ten percent of the total budget amount pending receipt and acceptance by the Energy Office of the report identified in Article V (Reports) of this contract.

Article X Selection of Contractor

In February of 1988 the Energy Office mailed Requests for Proposals for market research to 150 marketing firms. In addition, the Energy Office ran ads in several Nebraska newspapers, advertising the need for market research.

By the March 4, 1988 deadline, two (2) proposals had been received. On May 15, 1988, The Technical Development Corporation was selected because of their knowledge of the programs to be researched and their experience in market research of energy projects.

Article XI Disclaimer Statement

The Contractor agrees that any materials produced under this contract shall include the following:

> "This material was prepared with the support of funds from the U.S. Department of Energy (DOE) Grant Number DE-FG01-86E64614. However, any opinions, findings, conclusions or recommendations expressed herein are those of the author(s) and do not necessarily reflect the views of DOE or the Nebraska Energy Office."

Article XII Review

For all materials developed under this contract, the Contractor agrees to obtain approval from the Energy Office before going to final productions.

Marketing of the Nebraska Public Buildings Energy Program: Summary of Consultant's Report and Recommendations:

The Technical Development Corporation (TDC) of Boston conducted research on the market for the program options developed by the Nebraska Public Buildings Energy Program Task Force. Their findings and recommendations are summarized here. The full text of TDC's report appears in Appendix A.

Methodology and Objectives

Information was collected through in-depth interviews with 4-5 individuals from each group deemed to have a key role in the program options. The groups included elected and appointed officials of the target audiences (cities, counties, school districts, and health care facilities), contractors that serve the target audiences, officials of trade associations of the targeted institutions and officials of the organizations that could potentially deliver the programs.

The marketing work addressed these three objectives:

1. To determine if the proposed program designs meet the needs of local jurisdictions and to recommend program design changes if necessary;
2. To identify marketing strategies and channels for the programs;
3. To evaluate the proposed delivery mechanisms and suggest others if necessary.

Description of Program Options

The task force recommended two programs for local jurisdictions. The Energy Circuit Rider Program, a technical assistance program, would make the services of an energy expert available on a contractual basis to local jurisdictions. The Circuit Rider would be based at a local technical community college and would help local jurisdictions set up an energy use and cost accounting system and identify both low cost and capital intensive energy improvement projects. The Circuit Rider would offer training to facilities managers and operators in energy efficient operation of buildings and would also help local jurisdictions apply for financing energy projects.

The financing program consists of a zero-interest revolving loan fund which would be made available to local jurisdictions for funding energy improvement projects.

Findings

TDC surveyed the target audiences in the areas of capital improvement priorities, methods of financing capital improvements, and their reactions to the proposed programs. The findings in these areas are summarized below:

Capital Improvement Priorities

Cities: The downward trend in the rural economy and the reliance on a narrowing tax base forces cities to concentrate on capital improvement priorities that center on emergency maintenance and improvements required by regulation. These generally involve the water supply, wastewater treatment facilities, streets, and roof repairs.

Counties: Counties are also facing serious economic constraints. Although they generally have fewer buildings to operate, they also focus on emergency repairs. Counties, more than cities, are generally unaware of the kinds of energy improvements which would be cost effective.

Schools: The capital improvement priorities of school districts are generally to replace aging facilities and asbestos abatement.

Hospitals: Hospitals and other health care facilities place their priorities on renovations to expand and provide new services, and the replacement and maintenance of medical equipment.

Methods of Financing Capital Improvements

Cities, counties and school districts generally rely on capital budgets, sinking funds, or currently available funding for capital improvement projects. If necessary, they have the legal ability to issue General Obligation bonds but this requires approval of voters and is a time consuming and often expensive method of financing. Health care facilities rely on retained revenues and private fundraising. Private hospitals often have parent organizations which can provide financing.

Reaction to Proposed Programs

Cities: Municipal officials saw a strong need for the services of the Energy Circuit Rider. However, they refrained from total acceptance because of the unknown quantity of the fees which would be assessed. Many were concerned that the fees would outweigh any potential benefits. They also expressed interest in the no-interest loan fund and indicated they would look favorably at it as a source of funding for energy improvements.

Counties: Although the counties thought the Circuit Rider would be useful, many could not justify actually spending money for the services. This most likely relates back to their uncertainty of what kinds of energy projects are needed in their facilities. Counties are reluctant to incur debt, however, a great deal of interest was shown in a recent grant program to do energy improvements in county courthouses offered through the Energy Office.

Schools: School officials interviewed also felt the Circuit Rider's services would be of benefit in helping them reduce their energy costs. However, they gave a mixed response to the availability of loan monies moving energy projects up on their capital improvement priority list.

Hospitals: Overall, the hospital and health care administrators saw little value in the Circuit Rider or the availability of loan funds. Neither would be enough impetuous given the minor impact energy expenditures make on their budgets.

Implementation

All of the target audiences reacted positively to the technical community colleges administering the Energy Circuit Rider program. All but the hospitals had actual experience with the community colleges and the hospitals were aware of the colleges' activities and value to the area they serve.

The target audiences also favored the Energy Office as the administering agency of a no-interest loan fund. Although the target audiences were given other choices, such as local banks, the cities, counties, school districts, and hospitals did not indicate a preference over the Energy Office.

Another potential service delivery group was mentioned by the target audiences. Regional economic development districts currently offer similar services to cities and counties. Given the development districts experience, they could be a delivery mechanism; however, many of those interviewed indicated the development districts do not all perform equally well. Some development districts have excellent reputations while others have experienced problems with staffing and funding levels.

Marketing Channels

Along with the technical community colleges, the Energy Office, and the economic development districts, TDC interviewed two other groups with the potential of marketing or assisting in marketing the programs. They are the trade associations of the target audiences and the contractual service providers such as engineers and architects.

These groups have marketed or currently market similar services to their clients. Their channels are well established through newsletters, magazines, regional and statewide meetings and regular contacts.

Recurrent Themes

TDC found recurrent themes in their interviews with the members of the target audiences. These themes were confirmed with the interviews of the trade associations and service providers. TDC found that the target audiences were:

1. largely unaware of potential benefits of energy efficiency improvements;
2. unclear as to how to go about designing and implementing such improvements; and,
3. skeptical of claims of financial benefits and very conservative about incurring costs speculatively.

Recommendations

TDC made five recommendations for the marketing and implementation of the programs identified by the Nebraska Public Buildings Energy Program Task Force.

1. The program focus should concentrate on services to cities and counties. They demonstrated the greatest need and interest in the program options. Also, schools and hospitals already seemed well served through state and federal grant and loan programs.

2. The Energy Circuit Rider program should be offered without fees during the pilot project. The fees would be an unnecessary obstacle in gaining acceptance of the concept with the target audiences. Fees could be gradually implemented after the program had demonstrated its usefulness and cost effectiveness.

3. No-interest loans should offer a flexible retirement schedule. The loan funds should have the capability of being rolled into other forms of financing to fund projects with a broader scope than just energy savings.

4. The Circuit Rider program should be administered by the technical community colleges and the no-interest loan fund should be administered by the Energy Office. Assistance in marketing should come from the target audiences' trade associations and contractual service providers.

5. The marketing of the programs should involve the development of case studies of highly successful local projects. If necessary, the Energy Office should fund technical studies to encourage the completion of such projects. The marketing should also include highly visible and vigorous support from the governor and highest levels of state government.

NETWORKING

Information delivery travels a two-way street. The simple availability of information and advisory services does not always ensure that those who need them will use them or even know about them. Networking allows the Energy Office to reach out to the target audiences of the Nebraska Public Buildings Energy Program — to actively let them know what the Program offers, rather than passively waiting for them to ask about it.

Institutional building owners and operators may not recognize a need to seek assistance or advice about energy efficiency for several reasons. Recent mild winters and low energy prices in Nebraska have combined to diminish concerns about the costs of heating public facilities. Energy consumption and its attendant costs are not high priority issues in the institutional sectors right now — and people are not likely to ask for help in an area that poses few problems for them. In addition, the Nebraska Energy Office does not have the same funding levels available through the Institutional Conservation Program (ICP) as it once did. As a result, fewer buildings are applying for ICP assistance, thus reducing the Energy Office's contact with target groups — and perhaps leaving the erroneous impression that other forms of assistance do not exist.

Through the Networking component of the Nebraska Public Buildings Energy Program, the Nebraska Energy Office can reach out and get the attention of those who will benefit from the Program. Once contact has been established, the Energy Office can offer facilities managers substantial tools for making buildings more energy efficient — like comprehensive technological information or cost-effective financing options.

Networking covers three basic areas:

- development of a Data Bank of Buildings to hold energy statistics on Nebraska's public buildings
- Association Outreach strategies for sharing information with and understanding the energy needs of various institutional sectors and
- Recognition Awards to honor outstanding accomplishments in the area of energy conservation.

Networking establishes two-way communication between the Nebraska Energy Office and the institutional sectors it serves. It increases awareness within target groups of the need for and benefits of making buildings more energy efficient — and reveals a variety of sources of help for implementing energy efficiency projects. In turn, Networking allows the Energy Office to build a body of information about energy needs and successes in the institutional sectors and to attract more participants to the Nebraska Public Buildings Energy Program.

How Networking Works — What's Good for the Apple is Good for the Orange

Joe Pepper, executive director of the Nebraska Association for Cities and Counties, has been receiving a series of standardized reports from the Nebraska Energy Office recounting the "energy success stories" of a variety of local government buildings. A recent report dealt with energy measures undertaken at the Apple County Courthouse — a perfect story for the Association's monthly magazine. It was easy to adapt the standardized report to the magazine's format, and the result was an attractive, easy-to-read, highly informative article.

Soon after the issue was distributed, Joe began receiving responses to the article. One call came from Rosemary Basil, Orange County Clerk. She told Joe she was highly impressed with what Apple County had done and asked him for more information on the Apple County project and energy efficiency in general. He told her he'd put her in touch with the right people.

Because the Nebraska Energy Office had been consistently promoting its Public Buildings Energy Program through regular contact with his Association, Joe knew they could help Rosemary. So he called the Program Coordinator at the Energy Office and explained Rosemary's request for information on the project Apple County had completed. The Program Coordinator searched the Data Bank of Buildings for Apple County data and called Rosemary, giving her specific information about the Apple County project, the name of the Apple County clerk who managed the project, and the names of three other counties that had undertaken similar energy improvements.

Rosemary pursued these leads and, by taking advantage of other components of the Nebraska Public Buildings Energy Program, identified specific technologies to improve the energy efficiency of the Orange County Courthouse, as well as a financing source for the project. Orange County relamped the courthouse, added insulation and caulking, and weatherstripped windows and doors. After the first year, the courthouse had reduced its energy consumption by 20%. The County Commissioners were so pleased with the results that they instructed Rosemary to pursue other energy efficiency measures. Orange County was on its way to a more energy-efficient future.

The Nebraska Energy Office was also impressed with the savings Orange County had achieved — so impressed that they gave the County an Energy Conservation Award. Rosemary was invited to Lincoln to accept the award certificate from the Governor. The Energy Office sent a story about the ceremony, along with photos, to the Orange County Gazette, which ran the story on page one.

Bill Parsley, a village board member in Cherrydale, located in northwest Orange County, saw the story and photos in the Gazette. His village was facing the prospect of a property tax increase to offset the rising costs of operating a large, inefficient city hall. The story about Orange County's accomplishments in energy efficiency showed Bill that there are alternatives to raising taxes to keep operating costs in line. He contacted the State Energy Office and, with the help of the Nebraska Public Buildings Energy Program, Cherrydale embarked on an energy management project as a first step in reducing energy consumption and cost.

This month, the Energy Office's standardized energy success story highlights Cherrydale, showing how cities can enjoy the economic benefits of making municipal buildings more energy efficient. Joe Pepper at the Nebraska Association of Cities and Counties has just received the story and he plans to run it in the next issue of the Association's monthly magazine. Another networking cycle is underway.

DATA BANK OF BUILDINGS

Through the Institutional Conservation Program and the School Weatherization Program, the Nebraska Energy Office has accumulated a great deal of energy-related data about public buildings. To centralize information about various energy efficiency improvement projects, the Energy Office has created a computerized Data Bank of Buildings, which:

- organizes and manages information
- provides a means of using it to promote energy efficiency in all institutional sectors
- provides a format for accumulating more information as it becomes available.

The Data Bank is used by NEO staff to document the effectiveness of completed energy efficiency projects and to compare data from different projects. The NEO also uses information from the Data Bank to develop strategies to promote energy efficiency in other institutional sector buildings. In addition, representatives of various institutional sectors may use information from the Data Bank to help them identify appropriate technologies and financing mechanisms when planning projects for their own buildings.

Rationale

As the Energy Office collected more and more information about buildings that have participated in energy-related projects, a need to centralize the data became apparent. In addition, because different programs employ different record-keeping methods, a consistent format for the data was also required. A centralized, computerized Data Bank makes it easy to quickly analyze or compare data that cross project lines. Specific requests for information are easier to handle because the Data Bank eliminates the need to search several files, and simplifies manipulation of data to produce the comparison requested.

The Data Bank of Buildings also allows the Energy Office to collect and store data about public sector buildings that have completed energy efficiency projects on their own. Adding this information to the Data Bank improves the comprehensiveness of the Energy Office's records and increases the range of information available for assessing and documenting types and effectiveness of energy efficiency improvements throughout all institutional sectors.

Market research indicates that facilities managers often want to know the results of projects completed in their geographic area before they undertake projects of their own. They are interested in knowing what similar institutions did to solve similar problems — and the savings those efforts produced. The Data Bank provides the information building managers want — when they want it, and in the form they need it —

making it easier for the Energy Office to promote new projects. In addition, it helps managers avoid duplication of effort in the planning stages of an energy improvement project, by identifying appropriate technologies and financing mechanisms and determining potential energy savings.

Role of the Data Bank of Buildings in the Nebraska Public Buildings Energy Program

The Data Bank of Buildings is an important strategy in the Nebraska Energy Office's efforts to share information about successful energy efficiency projects in the institutional sector. It complements other networking tools by:

- serving as a base of information from which to select Recognition Award winners
- providing many forms of clearly organized and easy-to-use data for Standardized Reporting about completed projects
- providing information to trade associations through the Nebraska Public Buildings Energy Program's Association Outreach activities.

The Data Bank relates in some way to every other part of the Nebraska Public Buildings Energy Program. It complements the Program's Resource Distribution component, supplementing the Library's information services, enriching the advisory capacity of the Counseling Service and enhancing Marketing efforts to promote energy efficiency improvements in institutional sector buildings. It relies, of course, on the continued influx of data from the School Weatherization Program, ICP and other sources, and is a useful tool for keeping track of the need for and effectiveness of School Weatherization. Finally, the Data Bank helps the Energy Office identify the need for specific mechanisms for financing energy programs — thus incorporating strategies identified through the Financing Sources component.

Procedures For Creating A Data Bank of Buildings

Introduction: A centralized file of energy-related data about Nebraska's public buildings is essential for maintaining the efficiency of the Nebraska Public Buildings Energy Program and for providing relevant information to building owners and operators. The Data Bank of Buildings centralizes available information, files it in a consistent format and makes it easy to locate and use.

These are the procedures the Nebraska Energy Office followed to create a Data Bank of Buildings.

Summary of Tasks

	ACTION	RESPONSIBILITY
TASK 1	Identify information sources and gather building statistics	Program coordinator, staff interns
TASK 2	Create a Data Base and information retrieval system	Staff interns, data processing applications analyst
TASK 3	Test Data Bank	Program coordinator, staff interns, data processing applications analyst

Resources Needed

PERSONNEL	EQUIPMENT
Existing staff members • Nebraska Public Buildings Energy Program Coordinator • Staff Interns • Data Processing Applications Analyst	Personal computer (e.g., NCR-PC) Printer Data Base Management Software (e.g., dBase III Plus)

Task 1: Identify information sources and gather building statistics

Introduction: Identifying information sources and gathering statistics to stock the Data Bank is an ongoing process. Ideally, the Data Bank will eventually hold energy data on all public buildings in the state. Sources of building data include records of existing energy conservation programs and direct contact with institutional building owners, operators and managers throughout the state.

Responsibility: Energy office personnel identify information sources in the course of their day-to-day work.

Procedure:

STEP 1 Appoint a "Data Bank Manager" to receive and handle relevant information.

STEP 2 Identify appropriate sources of information for the Data Bank:

- Review records currently on file with the Energy Office dealing with hospitals and schools participating in the Institutional Conservation Program and schools participating in the School Weatherization Program.
- Identify and contact hospitals and schools which have not yet participated in ICP or the School Weatherization Program. Determine which have done energy improvements, audits, etc., on their own and ask them to share the data with the Energy Office.
- Review Energy Office records to find information about state buildings that have either implemented energy improvement projects or had energy audits done.
- Identify public/institutional buildings (e.g., cities and counties) that have not been offered energy efficiency programs. This is likely to be a time-consuming, ongoing process, and discovering the best method of contact and interaction may take some time. The Nebraska Energy Office found that mailed surveys were effective, but received a limited response. On the other hand, telephone contacts didn't produce comprehensive data because they caught people unaware. A combination of the two methods — a letter/questionnaire followed by a phone call — is producing the best results.

STEP 3 Automatically add statistics to the Data Bank as they come to the Energy Office.

Task 2: Create a data base and information retrieval system

Introduction: A comprehensive data base ensures that all relevant building information — from a variety of sources — resides in one centralized file, enabling users of the data bank to quickly and easily find and compare data for diverse applications.

Responsibility: The data processing applications analyst develops a data file program for the Data Bank. This data file system can be created in conjunction with the data file for indexing library materials. Staff interns help enter data once the data file system is in place.

Procedure:

STEP 1 Develop forms for recording energy information about public buildings in the state, including data about the institution itself and data about its energy improvement projects.

Data about the institution should include:

- Type of institution or business (hospital, school, public care facility, state building, local government building, commercial building, industrial building)
- Institution's name
- Contact person and title
- Address and telephone number
- Congressional and legislative district numbers

Data about energy improvement projects should include:

- Number and size of buildings
- Project description, including:
  - energy efficiency item and cost
  - total project cost
  - funding source
  - projected savings in BTUs and dollars
- Fuel consumption patterns after project implementation, including for each year:
  - amount and cost of primary and secondary fuel used
  - amount and cost of electricity used
  - actual energy savings in BTUs
  - actual dollar savings

(See the Tier 1 Data Bank Record on page 47, for an illustration of the form devised by the Nebraska Energy Office.)

STEP 2 The data processing applications analyst creates a data file program for use on a personal computer.

STEP 3 The Data Bank manager creates a data base by transferring information from Data Bank Record forms to the computer. Illustrations on page 48-49 show the computer screens for data entry.

STEP 4 Continue to upgrade the data base as more information about institutional buildings accumulates.

Data Bank Record

Figure 8

Tier I Data Bank Record

1. Institution Type (check one)

- ☐ A. Hospital
- ☐ B. School
  - ☐ K-12 Public
  - ☐ K-12 Private
  - ☐ Post Secondary Public
  - ☐ Post Seconary Private
- ☐ C. Public Care Facility
- ☐ D. State Building
- ☐ E. Local Government Building
- ☐ F. Commercial
- ☐ G. Industrial

2. Name of Facility

3. Contact Person

4. Title

5. Street Address or P.O. Box

6. City

7. County

8. Telephone Number
Area Code

9. Date

10. Congressional District Number

11. Legislative District Number

PROJECT

1. Number of Buildings

2. Square Footage of Building(s)

3. Project Description

Item	Energy Saving Item Cost	Total Project Cost	Projected Energy Savings (BTUs)	Projected/Actual Dollar Savings
	$	$		$
	$	$		$

4. Consumption Pattern

Year	Primary Fuel _____	Secondary Fuel _____	Electricity	Dollar Savings	Energy Savings (BTUs)
				$	
				$	

NEO 01-19-88

Computer Data Entry Screens for Data Bank

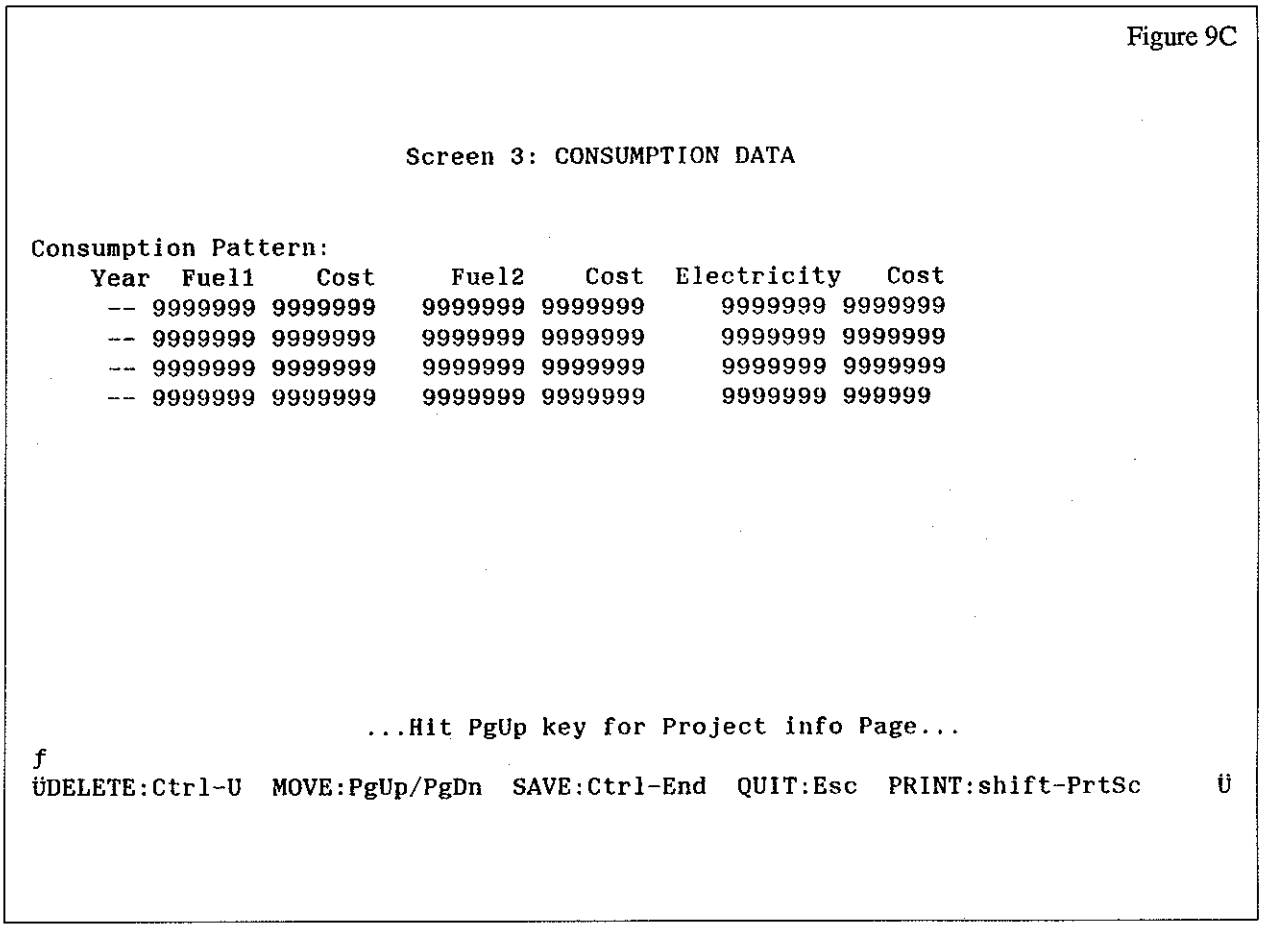
Figure 9A

```
                    Tier 1 Data Bank Recording Form

Institution _   A. Hospital                          G. State Building
      Type      B. School: K-12 public               H. Local Govt: Municipality
                C. School: K-12 private              I. Local Govt: County
                D. School: post-secondary public     J. Local Govt: Regional
                E. School: post-secondary priv.      K. Commercial
                F. Public Care Facility              L. Industrial

Facilty Name: _____________________ Contact:_____________________Title:____
     Address: _____________________                      Cong. Distr:_
              _____________________                       Leg. Distr:__
              _____________________          ID:_________
        City: _____________________       County:____________________
       State: _____________           Zip:_____
       Phone: _____________           Date:11/11/11

       Notes:_____________________________________________________

            ... hit PgDn key for Project Data Screen ...
ƒ
ÜDELETE:Ctrl-U  MOVE:PgUp/PgDn  SAVE:Ctrl-End  QUIT:Esc  PRINT:shift-PrtSc     Ü
```

Figure 9B

```
                    Tier 1 Data Bank Recording Form
                     Page 2:  Project Information
PROJECT                                                  Engineer:___
  Number of Buildings:99                  _____________________________
  Square Feet:   9999999                  _____________________________
Project Description:                              --Projected--Savings--
 Item                            Categ     Cost   Energy(10**6) Dollar  Finan
 _____________________________   ___    9999999     9999999    9999999    --
 -----------------------------   ---    9999999     9999999    9999999    --
 -----------------------------   ---    9999999     9999999    9999999    --
 -----------------------------   ---    9999999     9999999    9999999    --
 -----------------------------   ---    9999999     9999999    9999999    --
 -----------------------------   ---    9999999     9999999    9999999    --
 -----------------------------   ---    9999999     9999999    9999999    --
 -----------------------------   ---    9999999     9999999    9999999    --
 -----------------------------   ---    9999999     9999999    9999999    --
 -----------------------------   ---    9999999     9999999    9999999    --
                                        =======     =======    =======
                               TOTALS999999999  999999999  999999999
          ...PgUp for Institution info .. PgDn for Consumption ..
ƒ
ÜDELETE:Ctrl-U  MOVE:PgUp/PgDn  SAVE:Ctrl-End  QUIT:Esc  PRINT:shift-PrtSc     Ü
```

Figure 9C


Screen 3: CONSUMPTION DATA
Consumption Pattern:
Year Fuel1 Cost Fuel2 Cost Electricity Cost
-- 9999999 9999999 9999999 9999999 9999999 9999999
-- 9999999 9999999 9999999 9999999 9999999 9999999
-- 9999999 9999999 9999999 9999999 9999999 9999999
-- 9999999 9999999 9999999 9999999 9999999 999999
...Hit PgUp key for Project info Page...
ÜDELETE:Ctrl-U MOVE:PgUp/PgDn SAVE:Ctrl-End QUIT:Esc PRINT:shift-PrtSc Ü

Task 3: Test the data bank

Introduction: Testing the Data Bank determines whether it works well enough to be used as an information storage and retrieval system. It also discloses ways to improve the system.

Responsibility: The Nebraska Public Buildings Energy Program Coordinator works with the data processing applications analyst and other Energy Office staff to simulate situations in which the Data Bank would be used and to test the system's capabilities.

Procedure:

STEP 1 Staff members create scenarios that would require use of the Data Bank of Buildings. At least ten scenarios make a good test. Vary the scenarios enough so the system can compare and sort data about buildings from a variety of projects and in several different sectors, to thoroughly test the system's usefulness both within and outside the Energy Office.

STEP 2 Program coordinator and data processing applications analyst run the system for each scenario, taking notes about the system's performance.

STEP 3 Evaluate the system at the end of the test.

STEP 4 Make any changes necessary to improve or refine the system's performance.

Other Considerations in Setting Up a Data Bank

One difficulty in accumulating information from diverse sources into one centralized data bank is a lack of uniformity in the type of information that is available. In its present form, the Data Bank of Buildings exhibits a minor drawback: the energy conservation data from buildings participating in the Institutional Conservation Program are recorded mostly as engineering estimates and not actual savings. This could result in less than accurate comparisons of data, especially comparisons between an ICP program and a non-ICP program, because one involves actual savings while the other involves only projected savings.

However, as the Nebraska Public Buildings Energy Program continues, the Data Bank will gradually become more comprehensive. As buildings begin to realize actual savings, they will report that data to the Energy Office — or Energy Office personnel will find the data — and Data Bank records will eventually become updated. Meanwhile, the Energy Office is aware that some kinds of comparisons may be inaccurate, given the present inconsistencies in the Data Bank.

RECOGNITION AWARDS

"Heroes" recognition is a natural extension of the Nebraska Energy Office's work to promote energy efficiency in public and institutional sector buildings. Market research indicates that public institutions are more likely to proceed with energy improvement projects if they are aware of what institutions in their geographic area have done to conserve energy and reduce operating costs. By singling out and honoring institutions that have reduced their operating costs through increased energy efficiency, the Nebraska Energy Office heightens the visibility of successful projects and encourages others to imitate them.

Rationale

A growing number of institutional sector buildings in Nebraska are implementing projects to increase energy efficiency and reduce operating costs. Their efforts, however, are rarely visible. Successful energy-related projects in public buildings seldom merit media attention and usually take a back seat to more immediate news. Recognition Awards call media attention to successful energy efficiency programs, and to energy efficiency in general. They also publicize the benefits of energy programs to the users of the institutions and the contributions they make to the state's economy.

Although Recognition Awards do not yield a product as tangible as other components of the Nebraska Public Buildings Energy Program, the effect they generate is just as meaningful. Recognition Awards serve as a valuable — and inexpensive — public relations instrument for emphasizing the importance of energy efficiency projects in public buildings. In addition, the awards provide visible evidence of successful projects in other buildings, thus giving the impetus some facilities managers need to go ahead with improvements of their own.

Role of Recognition Awards in the Nebraska Public Buildings Energy Program

The Recognition Awards grow out of and feed into other key components of the Nebraska Public Buildings Energy Program. Suggestions for award selection come from the Data Bank of Buildings, from trade associations, from other state agencies and from the staff of programs such as the ICP. As more buildings implement energy conservation projects, the pool of potential award winners increases. Through Association Outreach, information about award winners is passed in standardized form to trade associations and, from them, to member institutions. Finally, the awards complement the Marketing element of the Program, by publicizing the efforts of the Nebraska Energy Office to help with the implementation of energy improvement projects — through vehicles such as the School Weatherization Program, as well as advisory services like the Resource Library, Counseling Service and Association Outreach.

Procedures for Developing a Recognition Award Series

Recognition Awards go a long way toward promoting the benefits of energy efficiency. To be most effective, they must highlight accomplishments in a variety of sectors and must illustrate the economic advantages of energy efficiency.

These are the procedures the Nebraska Energy Office followed to establish its Recognition Award series.

Summary of Tasks

	ACTION	RESPONSIBILITY
TASK 1	Identify sectors and months in which to honor institutional sectors	Program coordinator, other Energy Office staff
TASK 2	Select award winners	Program coordinator, Energy Office director, Governor's office
TASK 3	Prepare awards, information and speeches for Governor's office	Program coordinator, staff
TASK 4	Coordinate award presentation with Governor's office	Program coordinator, staff
TASK 5	Notify media of awards	Program coordinator, staff

Resources Needed

PERSONNEL	EQUIPMENT
Existing staff members: • Energy Office Director • Nebraska Public Buildings Energy Program Coordinator • Other staff members • Photographer • Staff of the Governor's office	Printed and framed award certificates

Task 1: Identify sectors and months in which to honor them

Introduction: Dividing the state's institutional sectors into groups for recognition and honoring representatives from each group at regular intervals throughout the year ensures that all sectors receive recognition for energy efficiency efforts.

Responsibility: The Program coordinator works with the Energy Office director and other staff members to identify and group sectors and set up an award schedule.

Procedure:

STEP 1 Identify institutional sectors within the state. The Nebraska Energy Office identified nine sectors:

- hospitals
- K-12 schools
- state colleges
- private schools
- University system
- state buildings/agencies
- public care facilities
- county buildings
- city buildings

STEP 2 Divide sectors into three groups and assign months for making recognition awards. The Nebraska Energy Office established this schedule:

February:	Private schools, state colleges, hospitals
April:	City buildings, state buildings, K-12 schools
June:	Public care facilities, county buildings, University system

Task 2: Select award winners

Introduction: Award selection is a comprehensive process. Suggestions for award winners should come from people in a position to evaluate the effectiveness of energy efficiency projects undertaken in different sectors. Final selection is shared by the Energy Office and the Governor's office.

Responsibility: The Program coordinator and other staff members solicit nominations for the award, while the Energy Office director, in consultation with the Governor's office, selects the award winners.

Procedure:

STEP 1 Solicit award nominations for each eligible sector from a variety of sources:

- Data Bank of Buildings
- Personnel from existing programs (e.g., ICP, School Weatherization)
- Trade associations representing sectors
- Other state agencies

STEP 2 Prepare a list of nominees by sector, including summaries of energy efficiency projects.

STEP 3 Forward nominees to Energy Office director, who consults with the Governor's office and selects one from each sector.

Task 3: Prepare award information for Governor's office

Introduction: The official source of the award is the Governor's office. It is important to coordinate the presentation date with the Governor's staff well in advance. They will expect information about each award recipient and the rationale for their selection. The Governor also will expect help preparing remarks for the presentation ceremony.

Responsibility: The Program coordinator works with other Energy Office personnel to prepare necessary memos for the Governor and her staff.

Procedure:

STEP 1 Coordinate selection of a presentation date with the Governor's office. Nebraska chose to present the Energy Conservation Awards at the Governor's regularly scheduled Proclamation and Presentation ceremony held once a month.

STEP 2 Draft a memo for the Energy Office director's signature and addressed to the Governor that:

1) states the date and occasion of the Energy Conservation Award presentation
2) lists the award winners and brief descriptions of the energy improvements they made.

STEP 3 Draft copy of the Governor's introductory remarks at the presentation ceremony. Deliver the draft to Governor's office well in advance of the presentation date.

STEP 4 Draft copy for the Energy Office director's remarks at the presentation ceremony.

(See pages 54-58 for documents used by the Nebraska Energy Office for Nebraska's February 1988 Recognition Awards.)

Task 4: Coordinate the award presentation

Introduction: The Energy Office should plan and coordinate the award presentation, to ensure that everything goes smoothly.

Responsibility: The Program coordinator works with other Energy Office personnel to make preparations for the award ceremony.

Procedure:

STEP 1 Notify winning institutions as soon after award selection as possible and invite appropriate representatives to the awards ceremony.

STEP 2 Keep in touch with the Governor's staff, to ensure that the award presentation is part of the Governor's schedule.

STEP 3 Arrange for design, printing and inscription of award certificates and for delivery to the Energy Office prior to the presentation ceremony. [NOTE: Design and printing of the certificates is a one-time task. However, inscription, the signatures of the Governor and the Energy Office director, the Governor's seal and framing must be arranged for each time.]

(See page 59 for the certificate presented to Nebraska's Energy Conservation Award winners.)

STEP 4 Arrange for an Energy Office representative to meet winning sector representatives on the day of the ceremony and explain the award acceptance process.

STEP 5 Arrange for a staff photographer to be present to take pictures of institutional representatives accepting their awards.

Memo to Governor about Energy Conservation Awards

Figure 10

TO: Governor Kay Orr
Kent Folsom

FROM: Gary L. Rex, Director
Nebraska Energy Office

SUBJECT: Energy Conservation Awards

DATE: February 2, 1988

On February 9, 1988, during the regularly scheduled Proclamation and Presentation ceremony, you will present 3 Energy Conservation Awards to public buildings for their outstanding accomplishments to reduce their operating costs and energy consumption. The 3 buildings represent hospitals, state colleges, and private schools. The award winners are:

Columbus Community Hospital

Chadron State College

St. Francis Schools of Humphrey

These awards are part of our work to encourage and support energy conservation in tax-supported institutions. Below is described the energy improvements each institution made, the total cost, and the anticipated annual savings.

Columbus Community Hospital: Heat recovery system from laundry dryers, centralized energy management control system, and additional energy management systems

Cost: $101,300
Annual Savings: $38,425

Chadron State College: Chiller replacements, insulation, energy management systems

Cost: $622,000
Annual Savings: $148,635

St. Francis Schools: Insulation, motorized dampers, storm windows, weatherstripping, thermostats, classroom and gymnasium lighting

Cost: $27,078
Annual Savings: $4,126

GLR:asm

cc: Bonnie Ziemann, Larry Pearce

Governor's Intoductory Remarks at Award Presentation

Figure 11

ENERGY CONSERVATION RECOGNITION AWARDS

Today we are recognizing three institutions in Nebraska which have implemented energy improvements to reduce their energy consumption and consequently, their operating costs.

Our recognition of these institutions is part of a multi-faceted project by the Energy Office to assist other institutions achieve the same kinds of results.

We are proud to recognize our leaders in this area, Columbus Community Hospital, Chadron State College, and St. Francis Schools of Humphrey.

Your dedication and initiative is an inspiration to all Nebraskans. I hope others will follow your energy saving examples and realize for themselves the economic benefits of energy efficiency.

Now it is my pleasure to turn these proceedings over to Gary Rex, Director of the Policy Research and Energy Office.

Director's Remarks at Award Presentation

Figure 12

ENERGY CONSERVATION RECOGNITION AWARDS

The Governor and I are very proud to recognize these three institutions for their outstanding accomplishments in energy conservation.

The energy conservation measures undertaken by these award winners reduce the cost of energy to these institutions and, consequently, reduce their operating budgets. This frees money to do the more important work of our hospitals and schools.

COLUMBUS COMMUNITY HOSPITAL

The Columbus Hospital has installed a heat recovery system from their laundry dryers, centralized their energy management control system as well as installing additional energy management systems. The total cost of the projects were $101,300 which produces an annual energy savings of $38,425.

CHADRON STATE COLLEGE

Chadron State's energy improvements include insulation, an energy management system and the replacement of chillers in the campus center and the library. The cost of these improvements total $622,000 and provide annual energy savings of $148,635.

ST. FRANCIS SCHOOLS OF HUMPHREY

St. Francis made energy improvements in both their high school and their grade school. Those improvements include insulation, storm windows, motorized dampers, weatherstripping, thermostats, and classroom and gymnasium lighting. St. Francis spent $27,078 for their improvements and realize $4,126 in annual energy savings.

Congratulations to our award winners. You are sterling examples of Hildreth Meiere's (MAY-EAR) "Genius of Creative Energy" which is pictured on your certificates and is also found in the north foyer of our beautiful capitol building.

Energy Conservation Award Certificate

Figure 13

"Genius of Creative Energy" Mosaic by Hildreth Meiere, Foyer of the Nebraska State Capitol Rotunda in Lincoln

The Nebraska Energy Office
recognizes the outstanding achievements of

in the area of energy conservation
this day of

Director, Nebraska Energy Office

Governor

Task 5: Notify media of awards winners

Introduction: The Recognition Awards are most effective if they are publicized throughout the state, with particular emphasis in the local press in the areas of the institutions being honored.

Responsibility: The Program coordinator works with other staff members to prepare press releases about the awards.

Procedure:

STEP 1 Prepare a general press release about the award presentation. Include specific information about the winners in each of the three sectors. Releases also should allude to the Public Buildings Energy Program.

(See pages 61-62 for the press release the Energy Office prepared about the February 1988 award winners.)

STEP 2 Get photographs of award winners.

STEP 3 Send releases to the usual media outlets. In addition, send releases and photos to local newspapers and other media in the geographic area of the institutions being honored. Also send photos to the institutions.

Other Considerations in the Awards Process

The first awards were presented in February 1988 to a private school, a state college and a hospital. The entire process went smoothly. Nominees in each sector were identified through suggestions from the Institutional Conservation Program staff and through the Data Bank of Buildings. The Energy Office director then selected one winner from each sector — St. Frances Schools in Humphrey, Chadron State College in Chadron and Columbus Community Hospital in Columbus.

Each winner received a framed certificate from Governor Orr at her regular Proclamation and Presentation Ceremony on February 9. The Energy Office sent press releases and photos to the major newspapers and to local media in Humphrey, Chadron and Columbus. Feedback was almost immediate. Other hospitals and colleges contacted the Energy Office to determine whether the awards would be ongoing and to ask how to become nominated for energy projects they had undertaken.

The Energy Office then developed a list of the April award nominees from the group comprised of cities, state agencies and K-12 schools. Nominations for cities came from the Municipal Power Pool and the League of Municipalities; for state agencies from the Task Force for Building Renewal; and for K-12 schools from the Data Bank of Buildings.

While the awards had been instituted primarily to highlight and compliment energy conservation efforts in the institutional sectors, the Energy Office did not clearly convey this intent to others involved in the awards selection process. Consequently, there was some discomfort about recognizing state agencies (who, after all, should set the pace in developing programs to increase energy efficiency). In addition, even though the cities nominated had undertaken successful energy efficiency projects, they hadn't demonstrated verifiable energy savings (in both dollars and BTUs). Because the Energy Office hadn't clearly distinguished between program "success" and "savings," confusion about the award criteria persisted. No selection had been made by the April presentation date, so the April group was combined with the June group, which included public care facilities, counties and the University.

Problems with the June group took another form. The Energy Office was unable to identify any outstanding projects in the counties. Most counties had not undertaken energy projects — and those that had didn't track their savings (one county couldn't remember the year the improvement project took place). Only two nursing homes qualified for awards in

Press Release about Award Presentation

Figure 14

STATE OF NEBRASKA

NEBRASKA ENERGY OFFICE

KAY A. ORR
GOVERNOR

GARY L. REX
DIRECTOR

News Release
February 29, 1988
For Immediate Release

For Further Information Contact
Jerry Loos
(402) 471-2867

GOVERNOR KAY ORR PRESENTS ENERGY CONSERVATION AWARDS TO THREE INSTITUTIONS

Governor Kay A. Orr presented Energy Conservation Awards for achieving outstanding energy and cost savings from building improvements to Columbus Community Hospital, Chadron State College and St. Francis Schools in Humphrey.

"I have asked the Nebraska Energy Office to find examples of hospitals, institutions of higher education and private schools which have attained the benefits of installing dollar and energy saving building improvements," said Orr. "By cutting energy costs, these institutions are not only benefitting their users by holding down costs, but the economy of the state as well since we import over 80% of our energy needs annually."

According to Energy Office records, the Columbus Community Hospital installed a heat recovery system from the laundry dryers and added a centralized energy management control system at a cost of $101,300 which generates annual savings of $38,425. In Chadron State College, a chiller was replaced and insulation and energy management systems were added at a cost of $622,000 with annual savings of $148,635. At St. Francis Schools

P.O. BOX 95085, LINCOLN, NEBRASKA 68509-5085, PHONE (402) 471-2867

in Humphrey, insulation, motorized dampers, storm windows, weatherstripping and thermostats were added and lighting modifications were made throughout the building at a cost of $27,078 with annual savings reaching $4,126.

Accepting the awards from the Governor, on behalf of the institution, were Douglas Sebranek from Columbus Community Hospital, Don Duncan from Chadron State College and Tom Walding and Gene Labenz from St. Francis Schools.

"The Energy Office is conducting this awards program as part of a $225,000 grant received from the U.S. Department of Energy to design a program to finance energy saving building improvements in hospitals, schools, governmental and public care buildings," said Gary Rex, Director of Policy Research and Energy Office. "We expect to present awards for the governmental building category in April."

# # # #

the public care facilities sector. However, the first was affiliated with the hospital that received an award in February, and the second, which had done a solar project about five years ago, hadn't kept track of energy savings.

The University sector required special handling. Even though it has a large building inventory on three campuses, the University itself is considered one institution. So the Energy Office solicited nominations of individuals in the University community who had played a major role in implementing energy efficiency measures. Four people were nominated, but concerns were raised about presenting the award to a single individual.

Again, no nominees were selected and the Nebraska Energy Office has presented no more Recognition Awards. Even though the Energy Office has clarified the purpose of the awards and communicated their intent to others involved in the selection process, the wisest course appears to be postponement of the award presentation. An appropriate solution is to wait a few months until the Data Bank of Buildings becomes more substantial and the Energy Office's interaction with the trade associations becomes better established. Cultivating those sources may reveal more qualified projects in each of the sectors, thus making award selection less difficult.

The Energy Office also is considering some changes in the timing of the Recognition Award presentation. There are significant advantages to presenting all the awards at a special time — such as during Energy Awareness Month in October. The awards would be much more visible at that time and the emphasis on energy conservation would be reinforced. Concentrating the award presentations at one time, rather than spreading them out over the year, may strengthen their effectiveness as a public relations and networking tool.

ASSOCIATION OUTREACH

The Nebraska Energy Office recognizes the value of establishing strong networking relationships with the trade associations of the institutional sectors it hopes to reach with its Public Buildings Energy Program. The associations are eager to help their members explore innovative methods for improving energy efficiency and strategies for financing energy improvements. Because the trade associations are strongly motivated, they can serve as an extension of the Energy Office in providing counseling and information services to their members. In addition, the trade associations can serve as channels of communication between the sectors they represent and the Energy Office.

In its efforts to identify natural constituencies, lead groups and trade associations of various institutional sectors, the Energy Office has targeted these eight groups as the focus for its Association Outreach efforts:

1. League of Nebraska Municipalities
2. Nebraska County Officials Association
3. Nebraska State School Board Association
4. Nebraska Hospital Association
5. Nebraska Health Care Association
6. Nebraska Association of Independent Colleges and Universities
7. Nebraska Technical Community College Association
8. Nebraska State College Board

The Energy Office, through its work with the Nebraska Public Buildings Energy Program Task Force, also has identified particular individuals within these groups with whom to share information. Task Force representatives from various institutional sectors have become natural contacts within their respective associations, because they have developed both an interest in energy efficiency and a good working relationship with the Energy Office.

Rationale

In order to increase the visibility and promote the availability of the Nebraska Public Buildings Energy Program, the Energy Office is establishing stronger networking ties with the trade associations of various institutional sectors. By giving the trade associations information they can pass on to help their members decrease operating costs and manage their facilities more efficiently, the Nebraska Energy Office generates support for and awareness of energy efficiency in the institutional sectors — both in general and for specific programs. And through regular communication with the trade associations, the Energy Office can assess individual needs in particular sectors and modify programs and services accordingly.

Association Outreach efforts include development and design of a standard reporting format to highlight successful projects in institutional buildings and to provide informative articles on energy saving techniques. Such consistent, well-organized information delivery ensures that trade associations recognize pertinent information about successful energy projects and understand how their members can use it.

The standardized report format incorporates both graphics and text to convey information. The Energy Office coordinates this format with the trade associations so they can effectively use the information in monthly newsletters and other correspondence with their members.

Role of Association Outreach in the Nebraska Public Buildings Energy Program

Association Outreach is a pro-active method of promoting the objectives of the Nebraska Public Buildings Energy Program. The Energy Office synthesizes data from the Data Bank of Buildings and passes the information on to the trade associations who make sure it receives attention in the sectors they represent. It also increases the visibility of all the Resource Distribution services available from the Energy Office and helps bring more users to the Nebraska Public Buildings Energy Program.

Association Outreach complements the Energy Office's Marketing Strategies because it is a ready-made instrument for promoting energy efficiency in all institutional sectors. In addition, it publicizes the Financing Sources developed by the Nebraska Public Buildings Energy Program Task Force, thus removing the economic obstacles that may stand in the way of energy improvements in some buildings.

Procedures for Developing Association Outreach Strategies

The various trade associations representing the institutional sectors are excellent vehicles for disseminating information about energy efficiency. By establishing strong networking ties with these groups, the Energy Office promotes its energy efficiency programs and financing options and identifies specific needs that arise within the institutional sectors it serves.

These are the procedures the Nebraska Energy Office followed to develop Association Outreach strategies in Nebraska.

Summary of Tasks

	ACTION	RESPONSIBILITY
TASK 1	Identify trade associations and specific contact persons within them	Program coordinator, staff interns
TASK 2	Develop a standardized reporting system	Program coordinator, public information officer, staff interns
TASK 3	Establish a regular schedule for communicating with the trade associations	Program coordinator, public information officer

Resources Needed

PERSONNEL	EQUIPMENT
Existing staff members:	Macintosh computer
• Nebraska Public Buildings Energy Program Coordinator	Apple Laserwriter printer
• Public Information Officer	Software:
• Staff interns	Microsoft Word
	MacDraw
	Cricket Draw

Task 1: Identify trade associations and contact persons

Introduction: Targeting appropriate trade associations for outreach efforts ensures contact with those associations that represent the institutional sectors the Energy Office wants to reach. In addition, identifying a single contact person within each association strengthens the relationship.

Responsibility: The Program coordinator and staff interns develop a list of appropriate associations and contact persons.

Procedure:

STEP 1 Working from a list of the Program's target sectors, identify existing groups or trade associations that serve those sectors. The Nebraska Energy Office identified these eight groups:

- League of Nebraska Municipalities
- Nebraska County Officials Association
- Nebraska State School Board Association
- Nebraska Hospital Association
- Nebraska Health Care Association
- Nebraska Association of Independent Colleges and Universities
- Nebraska Technical Community College Association
- State College Board

STEP 2 Identify at least one individual within each group, to serve as a liaison with the Energy Office and to whom to direct reports and other information related to energy efficiency projects. Nebraska Public Buildings Energy Program Task Force representatives from participating trade associations have emerged as the most appropriate contact persons for the groups they are affiliated with. However, as the Energy Office works more closely with the associations, secondary contacts also are identified, particularly people responsible for the associations newsletters and monthly magazines.

Task 2: Develop a standardized reporting system

Introduction: Delivering information to the trade associations in a consistent, standardized format ensures that important information about energy efficiency is recognized and passed on to the association's members.

Responsibility: The Program coordinator and the public information officer work together to develop a format that is appropriate for summarizing and reporting essential information about energy efficiency projects and energy saving techniques in various public sectors.

Procedure:

STEP 1 Design a format for conveying specific information about projects undertaken in a single institutional sector.

- Maximum length, one 8 1/2" x 11" page
- Large, centered headline, to identify WHAT (project, service, etc.) and WHY (purpose of project, focus of service, etc.)
- Photograph or drawing of institution/ building, if possible
- Graph or table showing return on investment
- Narrative section describing project
- Name of person or agency to contact for more information

STEP 2 Design a format for consumption data reports, intended for specific institutions whose project funding comes from the Energy Office. The Energy Office uses this format for projects funded through the School Weatherization Program or from Exxon oil overcharge funds.

- Maximum length, one 8 1/2" x 11" page
- Large, centered headline, to identify institution and energy project
- Graphics showing the benefits the institution is deriving from the energy project, in terms of:
  - Energy savings
  - Dollar savings
  - Rate of return on investment
- Narrative section summarizing the project
- Name of person to contact for more information

STEP 3 Design a format for conveying general information about energy efficiency and the services available through the Public Buildings Energy Program.

- Maximum length, one 8 1/2" x 11" page
- Large, centered headline, to identify the Energy Office and its services
- Narrative section describing the Public Buildings Energy Program or specific service
- Name of person to contact for more information

(See pages 67-70 for the three report formats designed by the Nebraska Energy Office.)

Task 3: Establish a regular schedule for communicating with trade associations

Introduction: In addition to providing information in a standardized form, it is essential that the Energy Office provide information according to a regular schedule, to keep the channels of communication open and to ensure a relatively constant flow of information.

Responsibility: The Program coordinator and the public information officer determine appropriate intervals for reporting to various trade associations.

Procedure:

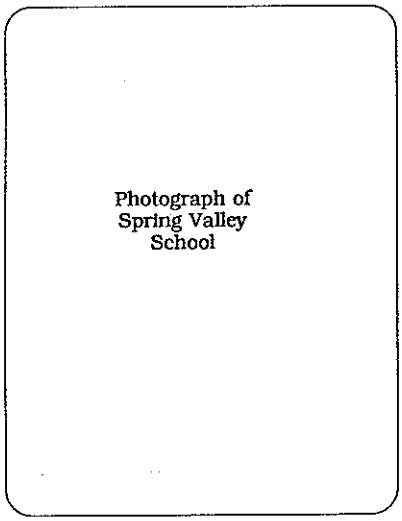
STEP 1 Break down reporting needs of each trade association, based on number of projects occurring in the sector it represents, frequency of publication of association's newsletter or magazine and contact person's assessment of need for information within the sector.

STEP 2 Plan regular mailings of general information to all trade associations — at least quarterly — to publicize the Energy Office and its programs and to announce new programs, new ideas, etc.

STEP 3 Schedule preparation and distribution of specific reports for individual associations, based on needs identified in step 1.

Reporting Format for Individual Projects

Figure 15



T. A. Grants Available

The Nebraska Energy Office announced Technical Assistance grants are still available for school districts wishing to have engineering anlaysis done on buildings to determine cost effective energy improvements.

Schools may recieve up to $2,500 per building for a engineering analyis. "This is usually the intital step a school district takes before deciding to use the loan funds available to do energy conserving building improvements," commented John Osterman, program administrator. "Spring Valley's analysis provided them with information that allowed them to make the improvements which will benefit them for years to come. The analysis also identified projects which they could do on their own without the need for financing through the loan program. Their work makes good sense for the taxpayers in the Spring Valley school district."

SPRING VALLEY SCHOOLS REPORT ENERGY SAVINGS

Spring Valley Public Schools achieved a 10% reduction in energy use, saving tax payers $4,308 during the first year. The energy saving building improvements were financed with a no-interest loan from the Nebraska Energy Efficiency School Loan Program operated by the Nebraska Energy Office.

According to the Energy Office, lighting fixtures were replaced, weatherstripping was added to the shop room overhead doors and other doorways, a damper was replaced and a time clock was installed on the thermostat.

"The improvements were very basic," commented Duncan Hailey, Spring Valley Superintendent. "Nothing fancy or difficult to operate. I'm surprised and pleased they made such a difference in our utility bill."

The improvements cost $8,292 and are expected to last at least 15 years which means if energy prices stay at current levels, the school district will save a total of $64,620. After the loan is repaid, the school district will have a net savings of $56,328.

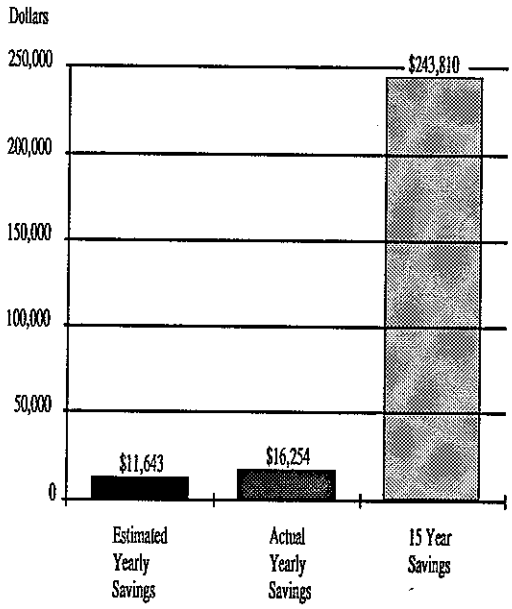
For more information on the Energy Efficiency Loan Program contact John Osterman in the Energy Office at 402-471-2867.

Reporting Format for Consumption Data Reports

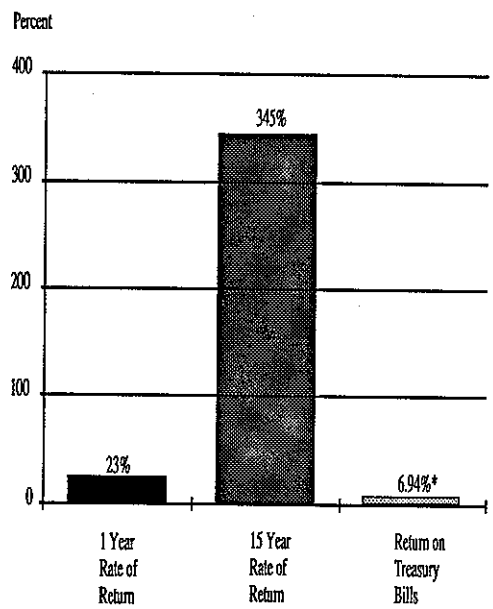
Figure 16

Savings and Return on Investment
for building improvements made in
Mission Jr. High School
in Bellevue
under the Nebraska School Weatherization Program

Dollar Savings



Return on Total Investment



* as of 8/30/88

Improvements made to your building were:

- *steam trap replacement*
- *low leak dampers*
- *roof insulation*
- *lighting modification*
- *gym lighting modification*
- *new overhead door*
- *door weatherstripping*
- *oxygen trim system*

Improvement costs were:

- *Your cost — $13,551*
- *State cost — $57,089*
- *Total cost — $70,640*

68

Reporting Format for General Information

Figure 17

Grants and No-Interest Loans for Rural Schools and Hospitals

After personnel costs, one of the largest expenses in rural institutional facilities is operating expenses. Both state and federal governments have programs to finance building improvements which save dollars and energy. The **Institutional Conservation Program**, a 50-50 federal-local matching grant program is available for public and private schools and hospitals. The state program, the **Nebraska School Weatherization Loan and Grant Program** is a no-interest loan program available to public schools only. Under the state program, a $2,500 grant per building is available to identify the most cost effective building improvements.

Illustrations of actual dollar savings under the **Institutional Conservation Program** are:

In Lincoln . . .

Bryan Memorial Hospital matched a $53,981 award under the Institutional Conservation Program to undertake the following energy and dollar-saving project:

- Building exhaust heat recovery
- Boiler exhaust heat recovery

Project Summary

Project Cost	
ICP Grant	$53,981
Local Match	$ 53,981
Total	$107,962
Annual Savings	**$42,503**
15-Year Savings	**$637,545**

In Peru . . .

Peru State College, located in southeastern Nebraska, matched a $5,170 award under the Institutional Conservation Program to make building improvements at the T. J. Majors Education Building:

- Temperature setback
- Steam pipe insulation
- Attic insulation
- Installation of high intensity discharge lamps

Project Summary

Project Cost	
ICP Grant	$5,170
Local Match	5,170
Total	10,341
Annual savings	**$1,968**
15-Year Savings	**$29,520**

In Holdredge . . .

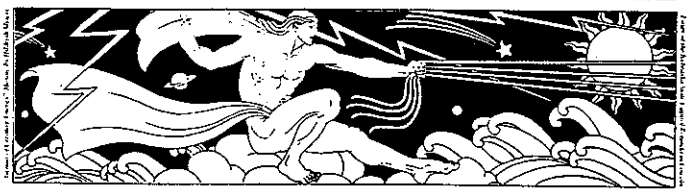
A $3,750 Institutional Conservation Program grant was matched to install storm windows at the Phelps Memorial Health Center in the south central Nebraska community of Holdredge.

Project Summary

Project Cost	
ICP Grant	$3,750
Local Match	3,750
Total	7,500
Annual Savings	**$1,437**
15-Year Savings	**$21,555**

For more information, contact John Osterman at

E • N • E • R • G • Y



STATE OF NEBRASKA

Nebraska Energy Office, State Capitol, Box 95085, Lincoln, NE 68509-5085, Phone (402) 471-2867

The predecessor to the **Nebraska Energy Efficiency School Loan Program**, the **Nebraska School Weatherization Program** offered 80/20 matching grants to local school districts to make energy and dollar saving building improvements. Several of the schools' actual savings are identified below. They are illustrative of the amount of dollar and energy savings you might realize in your school's buildings.

In Laurel . . .

The Laurel-Concord Public School District, located in rural northeastern Nebraska, has made a number of energy and dollar saving building improvements at the Laurel School under the Nebraska School Weatherization Program:

- •Damper replacement
- •Steam trap replacement
- •Temperature setback system
- •New radiator valves

Project Summary

Project Cost	
State	$22,533
Local	$5,255
Total	27,533
Actual Yearly Savings	**$6,270**
15-Year Savings	**$94,050**
Return on Investment	
1-Year	**22%**
15-Year	**330%**

In Omaha . . .

Paddock Road Elementary School is one of a number of Omaha schools participating in the Nebraska School Weatherization Program. The school received $18,149 under the School Weatherization Program and made the following improvements:

- •Gym lighting modification
- •Analog controls for the heating, ventilation, and air conditioning system

Project Summary

Project Cost	
State	$18,149
Local	$5,111
Total	$23,260
Actual Yearly Savings	**$4,338**
15-Year Savings	**$65,070**
Return on Investment	
1-Year	**18%**
15-Year	**270%**

In Alliance . . .

A number of energy and dollar saving improvements were made at Alliance's Grandview Elementary School with help from the Nebraska School Weatherization Program:

- *Radiator valves
- *Low leak damper replacement
- *Gym lighting modification
- *Classroom lighting modification
- *Weatherstripping

Project Summary

Project Cost	
State	$14,828
Local	$3,455
Total	$18,283
Actual Yearly Savings	**$4,451**
15-Year Savings	**$66,765**
Return on Investment	
1-Year	**24%**
15-Year	**360%**

Change in Emphasis in Association Outreach

The Nebraska Energy Office originally intended for Association Outreach to include training of trade association staff members in the direct use of various tools developed through the Nebraska Public Buildings Energy Program, especially the Resource Library and the Data Bank of Buildings. A major stumbling block developed, however, causing the Energy Office to change directions. Trade association staff members proved to be burdened enough with the ordinary obligations of their positions. Even though the trade associations are interested in programs and financing options that their members can take advantage of, their staff members simply don't have the time (or the inclination) to develop an expertise in the area of energy.

After considering the apparent "problem," however, Energy Office personnel realized that it wasn't essential to train trade association staff members to actually use the tools available through the Nebraska Public Buildings Energy Program. The ultimate goal, after all, is simply to get the Program's services to as many institutional sectors as possible. That can be accomplished through networking with the trade associations, which keeps the Energy Office in contact with the institutional sectors the Program is intended for. The Energy Office keeps the associations apprised of programs being offered — both old and new — and of services that are readily available through the Energy Office. The standardized report formats have proven to be a natural vehicle for conveying that information.

In the long run, it is better for the trade associations to refer their members to the Nebraska Energy Office than it is for the Energy Office to train association staff to provide services. Control remains with the Energy Office, reducing the chance of error and increasing the opportunity for direct contact between Nebraska Public Buildings Energy Program staff and building owners and operators.

FINANCING SOURCES

From its highest funding level in 1981 until its lowest level in 1988, federal assistance for conservation activities in institutional sector buildings in Nebraska has decreased by 85%. These funding levels may continue to decrease, due to the assumption at the federal level that states will make up the difference with oil overcharge funds. In addition, federal funding priorities are slowly shifting from conservation programs to research and projects involving development of domestic energy resources.

Rationale

Nebraska finds itself in a quandary in regard to making its public buildings more energy efficient. Inefficient use of energy contributes to higher operating costs in public buildings, which means Nebraskans pay higher taxes to offset rising energy costs, leaving less money available to pay for other services. Money to fund projects to improve energy efficiency is not available, thus leading to continued unnecessary energy consumption and spiraling operating costs, making even fewer dollars available to finance projects to increase efficiency.

To address this dilemma, the Nebraska Energy Office created the Nebraska Public Buildings Energy Program Task Force, to identify Financing Sources institutional sectors can use to pay for energy improvement projects in their buildings and to take advantage of the savings energy efficiency will generate. The Task Force represented potential program users and administrators as well as potential advocates for program implementation. It consisted of representatives from:

- Trade associations of the Nebraska Public Buildings Energy Program's target sectors
- Utility companies
- Legal, financial and engineering firms
- Regulatory agencies
- Legislative and executive branches of government

The diverse nature of the Task Force's membership ensured a comprehensive study of the financing needs, capabilities and limitations in all institutional sectors.

Role of Financing Sources in the Nebraska Public Buildings Energy Program

Work in the area of Financing Sources is crucial to the success of the Nebraska Public Buildings Energy Program and has accounted for the largest portion of the planning and research time in the Program's development. The options that the Task Force has identified provide a solid foundation for allowing institutional building owners and operators to pursue energy-related projects independent of public funding.

The Task Force developed and forwarded to Governor Kay Orr several specific recommendations for programs and financing options for state government, state colleges and the University, local government jurisdictions and private, non-profit organizations. Those programs and financing options are briefly described in the following summary of the Task Force's report. The full text of the report appears in Appendix E.

Procedures for Creating a Task Force to Identify Financing Options

The work of identifying financing options should be a collective effort of experts in several areas, including representatives of targeted institutional sectors and utility companies; legal, engineering and financial experts; and state policymakers. The Task Force is important both in developing program options and in generating political support for them. The diverse membership broadens the perspective of the work and injects a sense of reality into program development. The role of the Energy Office in Task Force development is primarily supportive — to ensure that the Task Force membership is representative, to provide background information as needed and to see that the Task Force process operates smoothly.

These are the procedures the Nebraska Energy Office followed to develop the Nebraska Public Buildings Energy Program Task Force.

Summary of Tasks

	ACTION	RESPONSIBILITY
TASK 1	Research and prepare accurate background materials	Program coordinator, other personnel
TASK 2	Determine the goals and structure of the Task Force	Program coordinator, Energy Office director, Governor
TASK 3	Select consultant(s) to direct Task Force work	Program coordinator, Energy Office director, other personnel
TASK 4	Schedule Task Force meetings	Program coordinator
TASK 5	Follow Task Force work carefully	Program coordinator, Energy Office director, other personnel
TASK 6	Submit final Task Force report to the Governor	Program coordinator, Energy Office director, other personnel, Task Force consultants

Resources Needed

PERSONNEL	EQUIPMENT
Existing staff members: • Nebraska Public Buildings Energy Program Coordinator • Energy Office Director • Other Energy Office personnel Other: • Hired consultants	None

Task 1: Research and prepare background materials

Introduction: Thorough research establishes a definite direction for Task Force discussions. A clear understanding of strategies that have worked in nearby states, with similar energy needs and resources, forms the groundwork for developing options for financing energy improvements in institutional sectors.

Responsibility: The Program coordinator and other staff members research work done in other states to develop options for financing energy efficiency improvements.

Procedure:

STEP 1 Research other programs seeking to make energy improvements in public buildings with private or innovative financing. The Nebraska Energy Office investigated the State of Iowa Facilities Improvement Corporation (SIFIC), in response to a directive from the Legislature's Government, Military and Veterans Affairs Committee in conjunction with Legislative Resolution 205 (see Appendix CA in Appendix C).

STEP 2 Draft a report(s) summarizing research into other state programs. The Nebraska Energy Office's report on the SIFIC included a description of the program, legislation enacted to support the program, a summary of the types of energy improvements planned in Iowa's public buildings, as well as a thorough analysis of various methods of financing the improvements (see Appendix C).

STEP 3 Use research findings to determine the focus of the Task Force's work in developing financing options for institutional sectors.

Task 2: Determine goals and structure of the Task Force

Introduction: Determining in advance the Task Force's objectives and structure ensures that the working goals are well-defined, that the Task Force is clearly representative and that the Task Force makes the best use of all available expertise in devising financing options.

Responsibility: The Program coordinator works with other Energy Office personnel and the Governor's office to identify goals and to select and appoint the Task Force.

Procedure:

STEP 1 Identify goals the Task Force is to achieve. The Nebraska Energy Office identified these general objectives for the Nebraska Public Buildings Energy Program Task Force:

1. Develop basic strategies for broad action plans.
2. Set priorities for program development.
3. Develop detailed action plans for presentation to Governor Kay Orr for approval and implementation.

STEP 2 Establish general guidelines and answer questions dealing with Task Force organization. The Nebraska Energy Office considered such details as:

1. Should Task Force members be paid?
2. Should members' expenses be reimbursed?
3. Is it legal to reimburse them for expenses?
4. Do they have to submit a form to the Political Accountability and Disclosure Commission?
5. What, if any, statutes govern the formation of task forces?

STEP 3 Identify groups that should be represented on the Task Force. The Nebraska Energy Office determined that these types of groups should be represented:

- Trade associations of the Nebraska Public Buildings Energy Program's target sectors
- Engineering, legal and financial firms with experience dealing with public buildings or public financing
- Utility companies
- Regulatory agencies
- Policy-makers from the legislative and executive branches

STEP 4 Develop a "long list" of potential Task Force members — emphasizing the groups they represent — and submit it for the Governor's approval. The Nebraska Energy Office identified two or three people in each group or category. The first list contained approximately 50 names, but was pared down to 30 before it went to the Governor.

STEP 5 Clear the list of names through the Governor's office. This step may have to be repeated several times, until the entire Task Force membership is approved by the Governor. In Nebraska's case, the list was adjusted several times before it received the Governor's approval. The Energy Office was not so much concerned with the people whose names appeared on the list as it was with ensuring that each category or group had at least one representative on the Task Force. (The process took about a month and a half longer than originally anticipated.)

STEP 6 Obtain the Governor's approval of the final "short list." Nebraska's Task Force consultants recommended restricting the size of the group to between 12 and 15 members. However, it was impossible to reduce the number of members to less than 20, without sacrificing representation of one or more key groups. Rather than compromise the Task Force's effectiveness, the Energy Office went ahead with 21 members and decided to divide the Task Force into smaller working committees. After the Task Force began its work, two more members were added, to ensure representation of two key groups within institutional sectors.

STEP 7 Send letters to all those whose names appear on the final "approved" list, asking them to participate in the Task Force and announcing the first meeting date. Follow up with a phone call to explain the mission of the Task Force and to find out whether they agree to serve. (A list of the Nebraska Public Buildings Energy Program Task Force members and the groups they represent appears in the Task Force report in Appendix E.)

Task 3: Select consultants to direct the Task Force work

Introduction: Contracting with an independent consultant to help the Task Force develop financing options contributes in several ways to the success of the Public Buildings Energy Program:

1) It relieves Energy Office personnel of the time-consuming task of conducting meetings and research and synthesizing results.
2) It ensures the highest degree of experienced leadership in the areas of energy management.
3) It brings in points of view from other states that the consultants have worked with.
4) It ensures that the Task Force (especially a large one) stays on track.
5) It allows the Energy Office to remain fairly neutral in the course of the Task Force's deliberations.

Consultant selection occurs simultaneously with Task Force organization.

Responsibility: The Program coordinator works with other Energy Office personnel to select a consultant(s) to work with the Task Force.

Procedure:

STEP 1 Issue a Request for Proposals at least 2 to 3 months before Task Force work is scheduled to begin. On December 8, 1987, the Nebraska Energy Office sent RFPs to 16 energy management consultant firms, identified either through efforts of the Energy Office to locate qualified firms in Nebraska, or through recommendations from people in other states. An RFP notice also was published in four of the state's newspapers. Responses were due in the Energy Office by December 30, 1987.

(See pages 76-79 for the RFP the Nebraska Energy Office issued. It was based on a format the Energy Office has used in the past and on advice from David Wolcott of the New York State Energy Research and Development Authority and Patti Donahue of the Illinois State Energy Office. Ms. Donahue also reviewed a draft of the RFP and recommended changes.)

STEP 2 Review the proposals received and select three or four candidates for interviews. The Nebraska Energy Office received eleven proposals which were reviewed by a selection team consisting of members of the Energy Office and an attorney experienced in public financing. Four proposals were selected for further consideration. (Three of the four were joint proposals from more than one firm.) The review process took only three days and interviews were scheduled for January 14th and 15th.

STEP 3 Interview representatives of the firms selected. The Nebraska Energy Office interviewed these four groups:

1) Lane and Edson, Washington, D.C.
2) Resource Development Institute, St. Louis; John Nuveen and Company, Chicago
3) Cardinal Concepts, Arlington, VA.; Weitz Resources, Washington, D.C.; Oppenheimer Company, Inc., Boston
4) Technical Development Corporation, Boston; Pacific Energy Associates, Portland, OR.

STEP 4 Based on interviews and background checks of references, select a consultant and other subcontractors. Two days after the interviews were completed, the Nebraska Energy Office selected Technical Development Corporation (TDC) and Pacific Energy Associates, which subcontracted with Maniktala Associates, a Lincoln engineering firm, and Nelson and Harding, a Lincoln legal firm.

STEP 5 Sign a contract with consultant.

NOTE: Because the Nebraska Energy Office was operating within such a tight time frame, the entire consultant selection process took less than two months. This put considerable demands on the time of all Energy Office personnel who were involved with the selection. However, all the candidates involved indicated they appreciated the quick turn-around.

Financing Options Request for Proposals

Figure 18

REQUEST FOR PROPOSAL

Purpose

The Nebraska Energy Office (NEO) is soliciting proposals to design a creative and comprehensive program for financing energy improvements in public sector buildings. The expected result of the design work is a complete financial and technical operating model for implementing energy improvement projects.

Background

Millions of dollars are spent for energy in Nebraska's public buildings. Since Nebraska imports nearly 90% of its energy needs, this represents a substantial drain on the State's economy. To reduce this flow of dollars out of the state, the Nebraska Energy Office is designing alternative financing options to fund energy improvements in public buildings.

NEO is using a federal planning grant through the Institutional conservation Program of the U.S. Department of Energy as a basis for designing energy improvements for public buildings. This program will address marketing, technology, networking, recognition, and financing energy improvements in hospitals, schools, local government buildings, state buildings, public care facilities, and non-profit institutions.

NEO will use a task force specially created for the purpose of assisting in the program development. Task force members will include:

1. representatives from the institutional sectors (hospitals, schools, local government, state government, and public care facilities),

2. representatives from the private sectors (professional engineers, energy service companies, investment bankers or other financial advisors),

3. representatives from both the executive and legislative branches of government.

It is expected the task force will have approximately twenty members and will be a working group as opposed to an advisory group.

Qualifications

NEO is seeking a contractor who has an established track record in the development of alternative financing techniques. Applicants should have a broad range of experience and expertise in the technical, legal, and financial areas of energy management in the public sector. The applicant must have substantial experience directing and facilitating group work. The applicant must be aware of current developments in alternative approaches to public financing and must have a thorough understanding of performance-based contracting.

Scope of Work

The applicant selected will provide on-site technical assistance to the NEO staff in the development of the financial and technical aspects of this long-term, comprehensive program. The successful applicant will facilitate input from a variety of public and private sources and synthesize the information into a workable energy improvement program. The development of the program will focus on implementation strategies and options for administration of the program.

Proposals must provide the following information in the outlined format:

Section One

In Section One, applicants will outline approaches to develop strategies to finance and implement energy improvement programs. NEO will entertain a range of financing and implementation strategies for the different institutional sectors. Applicants may submit a sample work plan of a similar project. The project does not necessarily need to be energy related but must demonstrate the applicant's flexibility and creativity.

Section Two

In Section Two, applicants will list specific actions steps for facilitating the participation of the task force. The applicant should demonstrate successful experience in working with groups.

Section Three

Section Three will include the following information concerning the applicant:

1. identification of the project manager and members of the project team,
2. qualifications and experience of the project manager and the project team,
3. writing samples of each project team member that will participate in composing written material,
4. identification and qualifications of any known sub-contractor(s); and,
5. identification of all resources (individuals or groups) that the applicant will access during the course of the project.

Section Four

In Section Four, the applicant shall provide detailed information on the experience in the areas of performance-based contracting, alternative financing techniques, and energy management in the public sector.

Section Five

In Section Five, the applicant shall describe a timeline or work schedule for the completion of the project. Under no circumstances should the schedule extend past June 30, 1988.

Section Six

In Section Six, the applicant shall submit an itemized budget necessary for completion of the project.

Section Seven

In Section Seven, the applicant shall provide references for the project team members from public entities which the applicant had previous experience or contracts.

Summary

The applicant will provide a two-page executive summary of the proposed activities for this project.

Selection

Applicants will be selected according to the following criteria:

1. a broad range of experience in the technical, financial, and legal areas of financing energy improvements in public facilities,
2. composition and experience of project team,
3. demonstrated ability to facilitate group work from a diverse variety of public and private interests,
4. an innovative approach to developing the project,
5. on-site accessibility during the contract period,
6. demonstrated ability to complete work in the proposed time period; and,
7. cost.

Time Frame

Proposals are due in the Nebraska Energy Office by the close of the business day (5:00 p.m. CST) on December 30, 1987. NEO will review proposals and select applicants for interview during the week of January 11, 1988. Applicants will be expected to travel to Lincoln for the interview at their own expense. A final decision will be announced on or before January 19, 1988. A contract will be negotiated immediately following the selection. The contract period will end June 30, 1988. The Nebraska Energy Office reserves the right to reject any or all of the proposals received.

For further information contact:

Allison S. Meyer
Project Coordinator
Nebraska Energy Office
P.O. Box 95085
Lincoln, NE 68509
(402) 471-2867

Task 4: Schedule Task Force meetings

Introduction: The size of the Task Force and the diversity of its membership requires careful coordination of scheduling, to ensure that as many Task Force participants as possible attend each meeting.

Responsibility: The Program coordinator and other Energy Office personnel make all physical arrangements for Task Force meetings. (NOTE: Because Nebraska's Task Force consultants were from out-of-state, it was important for the Energy Office to be responsible for this task. In other instances, it may be appropriate for the contractor to handle it.)

Procedure:

STEP 1 Working with the consultants, determine a date and time for the first Task Force meeting. The Nebraska Public Buildings Energy Program Task Force first met on March 10, 1988. Early morning meetings, scheduled for no more than two hours, worked well for almost all Task Force members.

STEP 2 Make all physical arrangements for the meeting — room, refreshments, name tags or cards, printed materials, three-ring binders, etc.

STEP 3 Notify all Task Force participants of the date, place and time of the first meeting. Deliver any preliminary printed materials one-two weeks in advance of the meeting date. TDC prepared an orientation package that included an overview of the task force process, issues in program design and implementation and profiles of existing project financing for Nebraska public and institutional sector buildings.

STEP 4 Assign an Energy Office representative to greet Task Force members and ensure that all arrangements are in order.

Task 5: Carefully monitor Task Force work

Introduction: The Energy Office serves as liaison between the Task Force and the consultants who direct its work. It is essential that the Energy Office follow the progress of the Task Force and remain available to help the consultants locate and interpret background materials, interview Task Force members and prepare minutes and reports.

Responsibility: The Program coordinator and other Energy Office personnel monitor Task Force work and assist consultants.

Procedure:

STEP 1 Hold the first meeting of the full Task Force. At the first meeting of the Nebraska Public Buildings Energy Program Task Force, orientation materials were discussed and the Task Force was divided into four working committees representing:

1) state government;
2) the University and college system;
3) local government and K-12 schools; and
4) hospitals, public care facilities and other non-profits.

After the meeting, consultants met individually with many of the Task Force members to determine their interests and expertise and to identify additional sources of information and logistical support. Consultants interviewed remaining Task Force members by telephone. During these interviews, several Task Force members suggested formation of a financing committee to identify financing opportunities and to consider broad strategies that might cross over institutional lines. A financing committee was formed of Task Force members with experience in public financing.

STEP 2 Hold committee meetings. The financing committee met on March 29, 1988, to review the full range of public and private financing vehicles available and to analyze the implications of each financing mechanism in program planning. The committee discussed the borrowing capabilities of each sector as well as potential investors, users and administering agencies. In addition, each member of the financing committee was assigned to one of the four working committees.

The working committees met April 14th and 15th. Prior to the meetings, the consultants sent all committee members a Basic Plan which profiled the sector covered (describing technical aspects, such as building inventory and kind of energy used, capital and operating budget issues, financing capability and purchasing procedures) and outlined possible program options or approaches. Working committees discussed three fundamental questions:

1) Do the plans provide an accurate and fair description of conditions in the relevant institutional sectors? Which areas require correction or further research?
2) What are the implications of these conditions for program planning? Do the proposed programs address these implications?
3) What are the next steps in research and program planning?

STEP 3 Hold the second meeting of the full Task Force. Nebraska's Task Force consultants assimilated the comments and advice of working committee members to prepare background materials for the second full Task Force meeting, held May 13, 1988. The Task Force identified a range of feasible program options for each sector which would be submitted to the Governor. The background materials then outlined a number of program options.

At the second meeting, the Task Force discussed these options, recommended changes, deletions, and/or additions and considered the specific needs of each sector, such as the development of energy management capabilities.

STEP 4 Conduct post-meeting interviews with all Task Force members. The Nebraska Public Buildings Energy Program Coordinator met individually with each member of the Task Force. These one-on-one meetings had two objectives:

1) to identify any concerns that might not have been voiced at the Task Force meetings; and,
2) to go over program options in more detail and get specific reactions to each option. Most Task Force members seemed impressed with the options which had been developed and expected all of them to produce good results.

STEP 5 Hold the final Task Force meeting. The Nebraska Public Buildings Energy Program Task Force met for the last time on June 23, 1988. The consultants presented the final draft of the report describing the program options developed for individual institutional sector groups. The Task Force reviewed the plans and recommended minor changes.

Task 6: Submit final Task Force report to the Governor

Introduction: Implementation of the Task Force's recommendations depends on the Governor's review and approval. Presentation of a thorough report of the Task Force's conclusions and recommendations is the definitive last step in the Task Force process.

Responsibility: The Program coordinator and other Energy Office personnel work with the Task Force consultants to prepare a clearly written, persuasive document for the Governor's consideration.

Procedure:

STEP 1 Review final report prepared by Task Force consultants and help draft an executive summary directed to the Governor.

STEP 2 Deliver report to the Governor. The final report of the Nebraska Public Buildings Energy Program Task Force was delivered in mid-July 1988 to Governor Kay Orr. Several financing options recommended in the report involved using oil overcharge funds; others recommended use of general fund appropriations. Since neither the plan for disbursement of oil overcharge funds nor the Governor's budget is ready, the Energy Office does not expect the Governor to make a decision about any of the program options before the end of the summer or early fall 1988. (See Appendix E for the full text of the report.)

THE NEBRASKA PUBLIC BUILDINGS ENERGY PROGRAM TASK FORCE: SUMMARY OF CONSULTANTS' REPORT AND RECOMMENDATIONS

The Task Force divided the state's institutional sectors into three groups and examined within each:

- the building inventory
- energy consumption and cost patterns
- energy conservation opportunities
- currently available financing resources
- barriers to implementing energy improvements

For each group, the Task Force recommended an energy management program as well as various financing options.

State Government

This group includes state agencies, state colleges and the University system. The task force recommended formation of an Energy Team consisting of two or three professionals who would help managers in state agencies and colleges manage energy use and cost. Administered by the 309 Task Force (a statutorily authorized agency to allocate funds for state-owned building maintenance and construction) and funded through oil overcharge funds, the Energy Team would cost approximately $150,000 and would generate annual savings of $400,000. The Energy Team's objectives would be to standardize energy consumption and cost monitoring, to set up training programs for facilities managers, to perform energy audits and to help establish budgetary procedures.

Financing options include a Revolving Loan Fund and the Nebraska Energy Corporation. The Revolving Loan Fund would be administered by the 309 Task Force and funded from General Fund appropriations. The fund would cost $5.5 million and would generate savings of $13.7 million over ten years. It would advance five-year, no-interest loans to finance energy improvements in 60-75 large facilities. The energy improvements financed would have an average payback of 4.5 years, so repayment would come from energy savings. The Loan Fund would operate for five years, after which agencies would make repayments directly to the General Fund.

The Nebraska Energy Corporation would be administered by the 309 Task Force and a Board of Directors and funded through proceeds from a bond issue. Its initial cost would be $13.02 million and would generate savings of $1.6 million

annually after six years. The Nebraska Energy Corporation would be a nonprofit corporation for financing energy improvements through revenue bonds, repaid through lease purchase agreements between the Corporation and the state agencies. Lease payment funds would come from annual appropriations; however, energy savings generated from the projects would cover the cost of lease payments. A $13.02 million bond issue could finance $8 million worth of projects. Legislative approval would be required.

Local Jurisdictions

This group includes cities, counties, K-12 schools and technical community colleges. The Task Force recommended an Energy Circuit Rider program to be administered by the community colleges and funded through oil overcharge funds. A two-year pilot project would cost $400,000. Two energy experts would help local jurisdictions with energy management, training, and audits and would provide technical assistance in financing and developing energy projects. The cost of the Circuit Riders's services would be split between the local jurisdiction and oil overcharge funds during the pilot project phase.

The Task Force identified three financing options: a Revolving Loan Fund, a Bonding Authority, and increased funding of the Institutional Conservation Program. The Revolving Loan Fund would be funded through oil overcharge funds and would be modeled after the Nebraska Energy Efficiency School Loan Program. A Bonding Authority for local jurisdictions could be patterned after the Nebraska Energy Corporation recommended for state agencies, or local jurisdictions could pool together and issue bonds for a specific purpose. The Institutional Conservation Program (ICP) can be used to finance energy improvements in local government buildings. Although this portion of the program was never funded by the federal government, the state could increase the amount of funds it contributes to ICP and invite municipal and county governments to apply for loans.

Private Nonprofits

This group includes hospitals, nursing homes and private colleges. The task force recommended including these institutions in the Energy Circuit Rider program. They also could participate in a revolving loan fund or the increased ICP funding. In addition, the Nebraska Educational Facilities Authority (NEFA) could issue bonds to finance energy projects in private colleges.

SCHOOL WEATHERIZATION PROGRAM

In 1981, the Nebraska Legislature created the School Weatherization Program — the first on-going state-supported program to weatherize K-12 public schools. The program, administered by the Nebraska Energy Office, originally awarded grants to participating schools. In 1986, the program became the Nebraska Energy Efficiency School Loan Program, and its format changed from grants to no-interest loans. The agency began making loans in December of that year. The program also offers Technical Assistance grants of $2500 per building to help school districts pay for the initial engineering analysis.

The program is funded through the state severance tax on natural gas and oil. The loan pool currently contains approximately $7 million and $4.5 million of this amount is available for new loans. From its beginning to the end of 1987, the School Weatherization Program has given grants or loans to 680 school buildings in 337 school districts across Nebraska.

This program has accomplished — on a limited scale — what the Nebraska Energy Office hopes to achieve through the Nebraska Public Buildings Energy Program in many of the state's public and institutional buildings. Because the objectives of the two programs match so closely, an evaluation and upgrading of the School Weatherization Program is an essential part of the Nebraska Public Buildings Energy Program.

The Nebraska Energy Office divided work on the School Weatherization Program into two parts: evaluation and computerization. Evaluation centered on focus group discussions, to help the Nebraska Energy Office understand how schools perceive the program and to increase the program's attractiveness to school districts. Computerization involved creating a data base management system for tracking School Weatherization applications, loans and loan repayments, and for monitoring the progress of energy improvement projects.

PROGRAM EVALUATION

The Energy Office estimates that nearly $20 million worth of energy projects remain to be done in the state's public schools. However, the rate of participation in the Nebraska Energy Efficiency School Loan Program is far below that expected for the identified level of need. Some school personnel contacted by the Energy Office said they were confused about and/or didn't know about the program. They also indicated they were unaware of energy efficiency improvements that could be done in their buildings.

To address these problems and others that affect the success of the School Weatherization Program, the Energy Office conducted focus group evaluations with representatives of school districts across the state. These evaluations considered all aspects of the program, with particular emphasis on identifying marketing strategies for better promoting the program.

Rationale

In addition to dealing with the obvious problems caused by lack of program awareness among school representatives, the School Weatherization Program in Nebraska faced another challenge: to maintain and develop the political support necessary to ensure the program's continuation until its legislatively mandated sunset date in 1996. A thorough evaluation of the program gives the Energy Office a clearer understanding of how the program is currently perceived. This has led to the development of strategies for marketing the program to ensure its continuation. Evaluation also allowed the Energy Office to identify needed changes in the program and revealed opportunities to improve the program's acceptability among school districts across the state.

The Nebraska Energy Office designed the evaluation process to answer the following questions:

1. Do school districts believe they have done everything they can to reduce energy use in their school buildings?
2. Why do schools apply or not apply for Technical Assistance grants?
3. Why do schools that receive Technical Assistance grants not apply for building improvement loans? Is there a recurring reason for non-participation in the building improvement loan program?
4. How do school board members react to the findings of the Technical Analysis report? Are they aware of the no-interest loan program which is available to help finance building improvements?

5. What improvements do program participants recommend? What do they like or dislike about the program?

Role of the School Weatherization Program Evaluation in the Nebraska Public Buildings Energy Program

Evaluation of the School Weatherization Program has contributed in several ways to the objectives of the Nebraska Public Buildings Energy Program. Assessment of the program's shared savings financing structure and revolving loan fund has contributed to the Task Force's work on identifying financing options for other institutional sector energy projects. The results of the evaluation have helped the Energy Office identify useful marketing strategies for promoting the School Weatherization program in particular and the Nebraska Public Buildings Energy Program in general.

A complete understanding of the school's program has enhanced the Energy Office's ability to develop new programs for other institutional sectors — as well as identifying those parts of the program which should or should not serve as patterns for other programs. Finally, experience gained from running the School Weatherization Program, combined with information gathered during the evaluation, allows the Nebraska Energy Office to make recommendations to other states about instituting similar programs.

Procedures for Evaluating the School Weatherization Program

Evaluation of an existing program serves several purposes:

1) it leads to a more complete understanding of how users perceive the program;
2) it allows the sponsoring agency to modify and adjust the program to better meet the needs of program participants;
3) it reveals strategies for marketing the program, to ensure its continuation; and,
4) it indicates ways in which the program can serve as a model for similar programs, both within the state and in other states.

These are the procedures the Nebraska Energy Office followed to evaluate the Nebraska Energy Efficiency School Loan Program. However, the general procedural guidelines are appropriate for evaluating various types of programs — not just programs involving school weatherization.

Summary of Tasks

	ACTION	RESPONSIBILITY
TASK 1	Identify goals and approach of Program evaluation	Program coordinator, School Weatherization staff, Public information officer
TASK 2	Select consultants to conduct focus group sessions	Program coordinator, other staff
TASK 3	Determine structure and focus of evaluation groups	Program coordinator, other staff
TASK 4	Monitor evaluation sessions, assist consultants	Program coordinator, other staff

Resources Needed

PERSONNEL	EQUIPMENT
Existing staff:	Two-way mirror viewing facility or room-to room audio system
• Nebraska Public Buildings Energy Program Coordinator	Cassette recorder
• Nebraska Energy Efficiency School Loan Program Staff	
• Public Information Officer	
• Other Energy Office Personnel	
Other:	
• Hired consultant(s)	

Task 1: Identify goals and approach of program evaluation

Introduction: The effectiveness of program evaluation depends on a clear sense of direction and a well-defined understanding of what the evaluation is to accomplish. Stating goals and identifying the evaluation format ensures that the evaluation is thorough and that it results in information and ideas that lead to program improvements.

Responsibility: The Program coordinator works with School Weatherization staff and the public information officer to identify goals of the program evaluation.

Procedure:

STEP 1 Identify specific goals for the evaluation. The Nebraska Energy Office devised five questions that the evaluation was intended to answer:

1. Do schools believe they have done everything they can to reduce energy use in their buildings?
2. Why do schools apply or not apply for Technical Assistance grants?
3. Why do schools that receive Technical Assistance grants not apply for building improvement loans? Is there a recurring reason for non-participation in the building improvement loan program?
4. How do school board members react to the findings of the Technical Analysis report? Are they aware of the no-interest loan program which is available to help finance building improvement?
5. What do program participants like or dislike about the program? What improvements do they recommend?

STEP 2 Determine an approach for the evaluation process. The Nebraska Energy Office decided to conduct focus group evaluations, based on recommendations from the marketing track of the 1987 All-States Conference in Vermont. The focus group format is appropriate not only for evaluating current programs, but for developing new programs as well.

Task 2: Select consultants to conduct focus group sessions

Introduction: Leaving the actual development and moderation of focus group sessions to an outside consultant relieves Energy Office personnel of the time-consuming task of screening and recruiting individuals for focus group participation. In addition, professionals who are qualified in facilitating group discussions can prepare pertinent discussion guidelines and keep group discussions on track. Finally, keeping the Energy Office in an "observer-only" role ensures objectivity in the information-gathering process.

Consultant selection may occur simultaneously with identification of goals (Task 1) and determination of the structure of focus group sessions (Task 3).

Responsibility: The Public information officer works with School Weatherization staff and other Energy Office personnel to select consultants to conduct the evaluation.

Procedure:

STEP 1 Issue a Request for Proposals (RFP) at least two months before the evaluation work is to begin. On February 4, 1988, the Nebraska Energy Office mailed RFPs to 150 Nebraska-based advertising and marketing research firms. In addition, RFP notices were placed in six Nebraska newspapers. Responses were due in the Energy Office on February 26.

(See pages 30-35 for the RFP the Nebraska Energy Office issued. The RFP also includes solicitation for consultants to develop a marketing plan for the Nebraska Public Buildings Energy Program, since the same types of firms could do both projects. See pages 24-41 of this report for discussion of the Marketing component of the Nebraska Public Buildings Energy Program.)

STEP 2 Review proposals received and select candidates for interviews. The Energy Office received only two proposals, which were reviewed by a seven-member team of Energy Office staff familiar with the School Weatherization Program.

STEP 3 Interview candidates. The Nebraska Energy Office omitted this step. Review of the proposals submitted was sufficient to select a contractor.

STEP 4 Select a consultant. On March 25, 1988, the Nebraska Energy Office selected ABC — Aiding Better Communications of Lincoln to conduct the focus group evaluations. ABC subcontracted with Wiese Research Associates.

STEP 5 Sign a contract with the consultant.

Task 3: Determine structure and format of focus groups

Introduction: Identifying ahead of time the general make-up of the focus groups ensures representation of all appropriate school personnel from various geographic areas. In addition, determining the focus of discussion ensures that all pertinent issues are considered in the evaluation process.

Responsibility: The public information officer works with School Weatherization staff (and with consultants, if appropriate) to determine the structure and format of the evaluation groups.

Procedure:

STEP 1 Identify groups to be represented in focus group discussions. In Nebraska, the focus groups provided a cross-section of views in three general categories:

1) Program Participation (about half of each focus group was made up of past participants in the School Weatherization Program; the other half were potential participants who may or may not have been aware of the program);
2) School District Role (each focus group was equally representative of administrators/ superintendents, maintenance/engineering staff, and school board members); and
3) Geographic Location (no more than two people from any one school district participated in a single focus group session and no more than two school districts from the same geographic area were represented at a single session).

STEP 2 Provide consultants with lists of potential participants. The lists provided by the Nebraska Energy Office included recipients of Technical Assistance grants, recipients of building improvement grants and loans, a directory of all school districts in the state and a list of all school board members in the state. Consultants selected the actual focus group members. Groups were limited to 15 members.

STEP 3 Approve consultant's selection. Before the focus group sessions took place, the consultants supplied the Nebraska Energy Office with a list of individuals who had agreed to participate.

STEP 4 Determine the basic format and schedule for focus group sessions. Evaluation of the Nebraska Energy Efficiency School Loan Program took place in four focus group sessions in Lincoln (April 30), Norfolk (May 16), Kearney (May 18), and Scottsbluff (May 19). Discussions were led by a moderator selected by the consultant and were based on a flexible discussion guide that the consultants prepared in conjunction with Energy Office personnel. All arrangements for meetings were handled by the consultants.

Task 4: Monitor evaluation sessions, assist consultants

Introduction: By observing all the focus group sessions the Energy Office ensures the group moderator solicits enough response from the participants to allow the Energy Office to adequately assess their answers.

Responsibility: At least two members of the Energy Office staff attended each of the focus group sessions.

Procedure:

STEP 1 Arrange for two staff members to attend each focus group session.

STEP 2 Consultants make listening/viewing arrangements for Energy Office staff. The first of the four focus group sessions in Nebraska was conducted with two-way mirror viewing facilities. Energy Office representatives observed the discussion through the mirror. Energy Office representatives monitored the remaining three focus group sessions via an audio room-to-room speaker. In all cases, the focus group moderator told participants that Energy Office personnel were listening to the discussion.

STEP 3 Energy Office staff members confer with focus group moderator during the mid-session break, to either refine the topics identified in the discussion guide or add new topics.

Evaluation of the Nebraska Energy Efficiency School Loan Program: Summary of Consultants' Report and Recommendations:

Wiese Research Associates, (WRA), of Lincoln, conducted four focus group discussion sessions with participants and non-participants in the Nebraska Energy Efficiency School Loan Program. Their findings and recommendations are summarized here. The text of WRA's full report appears in Appendix G.

Objectives

The evaluation sessions addressed these five informational objectives:

1. Why do schools apply or not apply for Technical Assistance grants?
2. Is there a recurring reason why some schools that receive Technical Assistance do not apply for building improvement loans?
3. Do focus group participants believe their schools have done everything possible to reduce energy consumption?
4. What do program participants dislike about the program? How can it be improved?
5. How do school board members react to the results of the Technical Analysis? Are they aware of the no-interest Nebraska Energy Efficiency School Loan Program, which could finance energy improvements?

Findings

Focus group responses to these informational objectives fall into six divisions.

1. Program Awareness. Of those who said they were aware of the Nebraska Energy Efficiency School Loan Program, many found the implications of the term "loan" a deterrent to program participation. In addition to preferring grants to loans, they were confused about the distinctions between loan money, grant money, Technical Assistance grants, and ICP grants.

Several respondents also indicated that they were not aware that the program's format had changed from grants to state-funded no-interest loans. Consequently their perceptions about the program's application requirements are outdated.

Most respondents said they learned about the Program primarily through the Energy Office or via newspaper articles about other schools in their area that had qualified for the Program. Non-participants indicated that a key reason they had not applied for loans or grants in the past was the amount of paperwork the application process required.

Some non-participants expressed lack of interest in the Program because:

1) they felt their schools had adequately met their energy needs, or
2) other needs took priority over energy efficiency, or
3) the potential savings did not justify the time and administrative work involved.

2. General Awareness of Current Energy Use. Approximately half of the focus group participants were aware of past energy analyses or audits done in their schools. (However, only one-third were "definitely sure" an analysis had been done in the last three years.) The other half were unsure whether an energy analysis had ever been done in their schools. Many school districts did not see a need to update their energy management practices. Those that had completed energy analyses in the past were skeptical about the audit process that was required when the grant program was still in effect. Even though their complaints are no longer valid under the Program's present format, focus groups questioned the fees charged by private consulting firms to conduct the analysis and make the energy improvements.

Most respondents also indicated that they were either not aware of or confused about the Technical Assistance grant program which offers up to $2500 to pay for an energy audit. Further concern seemed to center on the criteria for funding grants or loans, once the technical analysis had been conducted.

Some respondents suggested that the Energy Office prepare an up-to-date, one-page letter explaining the Technical Assistance grant and its basic requirements. They also suggested that the Energy Office direct such materials to a greater number of people, besides administrators and superintendents.

Finally, respondents had mixed feelings about the Energy Office's "energy scorecard" program. Although they disliked the hassle of submitting energy consumption data to the Energy Office every year, many felt the information was useful and said they used it to communicate with the community and the school board about energy savings.

3. Program Specifics. Focus groups responded more favorably to a "shared savings" concept than to a "loan" concept. They understood that the program was the same, but found the shared savings idea more palatable than a loan. Discussion also revealed that many respondents felt the asbestos issue took priority over energy conservation.

4. Program Intent. Discussion revealed that schools tend to apply for loans for "big projects" but prefer to "do it themselves" on smaller improvements, to avoid the rigors of paperwork.

5. Program Promotion. Respondents suggested several vehicles for disseminating Program information to school districts. Direct mail to superintendents is effective on one level. However, people, especially those in the western part of the state, suggested that the Energy Office send a representative to meetings and conventions of school administrators and custodians. One suggestion that received general support was the production of a videotape to promote the Program.

6. The Decision-Making Process. As a rule, superintendents and administrators make the final decisions about applying for grants or loans. However, they sometimes feel overburdened and frustrated with the obligation to set priorities. In addition, school board members expressed an interest in learning more about the Nebraska Energy Efficiency School Loan Program and becoming more involved in the decision-making process.

Recommendations

WRA suggests that the Nebraska Energy Office consider these five recommendations, which emerged from the evaluation process:

1. Simplify the Program's regulations and the required paperwork.
2. Change the Program description to promote "shared savings" rather than "no-interest loans."
3. Produce a videotape to explain and promote the program.
4. Shift promotional emphasis from energy savings to other, higher priority issues, such as asbestos removal.
5. Increase Program promotion through all available channels, including presentations at conventions of engineers, school custodians, school board members, etc., and mailings of one-page brochures to superintendents, principals, custodians and school boards.

COMPUTERIZATION OF SCHOOL WEATHERIZATION RECORDS

Computerization of the School Weatherization Program complements the evaluation process and contributes to the overall success of the Nebraska Public Buildings Energy Program. Computerization contributes to the successful operation of the School Weatherization Program and, in turn, serves as a model for similar programs in other institutional sectors. The data base management system improves the efficiency of the Program and makes it easier to duplicate in other states. In addition, computerization allows the Energy Office to periodically scan the Program records to identify schools that haven't applied for loans and to target those institutions for more intensive marketing. It also helps the Energy Office keep track of loan repayment schedules and improves the efficiency of other accounting-related tasks.

Rationale

As more schools participate in the School Weatherization Program, its administration becomes more complex and less efficient. The Energy Office handles applications for Technical Assistance grants and Building Improvement Loans. It also creates repayment schedules and monitors repayment. Periodically, the Energy Office follows up on Technical Assistance grants to encourage schools to apply for improvement loans. In some cases, the Energy Office may wish to compare activity in the School Weatherization Program with other energy efficiency projects in different institutional sectors. Or, the Energy Office may need to cross-reference records from the old grant program, which had a different structure than the present no-interest loan program.

Any of these tasks is more time-consuming and less efficient when a researcher must sift through individual files looking for completed applications, loan repayment records, etc. Paper shuffling often can result in lost or inaccurate records. And because of the time required to manage program information by hand, less time is available to follow-up inquiries and technical assistance grant requests.

Computerization eliminates most of these dilemmas by improving record-keeping efficiency, and making it easy to track both loan applications and inquiries. The data base management system also enables the Energy Office to develop a tested, workable format on which to model other programs.

Role of Computerization of the School Weatherization Program in the Nebraska Public Buildings Energy Program

Computerization of the School Weatherization has improved record-keeping and data management and provided a working model for other programs. Data from the School Weatherization Program feeds into the Data Bank of Buildings, and is available to institutional sectors through Association Outreach. Computerization also enables the Energy Office to continually evaluate the Program's use and effectiveness and allows other states to easily duplicate it.

Procedures For Computerizing the School Weatherization Program

A computerized system of information about all schools participating in the School Weatherization Loan Program improves the program's efficiency. The computerized data management system centralizes information about the School Weatherization Program, files it in a consistent format, and makes it easy to locate and use.

These are the procedures the Nebraska Energy Office followed to computerize the School Weatherization Program.

Summary of Tasks

	ACTION	RESPONSIBILITY
TASK 1	Collect and record program data	Program coordinator, School Weatherization staff
TASK 2	Create a Data Base and information retrieval system	Staff interns, data processing applications analyst
TASK 3	Test data base	Program coordinator, School Weatherization staff, data processing applications analyst

Resources Needed

PERSONNEL	EQUIPMENT
Existing staff members: • Nebraska Public Buildings Energy Program Coordinator • School Weatherization Program staff • Staff Interns • Data Processing Applications Analyst	Personal computer (e.g., NCR-PC) Printer Data Base Management Software (e.g., dBase III Plus)

Task 1: Collect and record program data

Introduction: Collecting and recording Program information is an ongoing process. All schools participating in the School Weatherization Program — in both its previous grant format and present loan format — are included in the program's data base. In addition, any schools that have inquired about the program or have applied for Technical Assistance grants are also included. Eventually all schools will be included in the data base, regardless of the level of their participation in the Program.

Responsibility: Data processing applications analyst designs data entry forms. School Weatherization Program staff provide the appropriate Program information for inclusion in the data base.

Procedure:

STEP 1 Develop forms for recording energy information about schools that have participated in or expressed an interest in the School Weatherization Program.

STEP 2 Divide forms into four parts:

1. Directory Information. Include space here for:
   - School District name, address, and phone
   - Name of the school representative and a contact person
   - School building and address and building life expectancy
   - School I.D. number (The Nebraska Energy Office uses the Nebraska Department of Education's identification system — a nine digit number in which the first two digits identify the county, the next four the school district, and the last three the building.)
   - Congressional and legislative districts and the school's class
2. Inquiry and Application Data. This section is divided into two parts and records information about a) program inquiries and b) actual loan applications. In each part, include space for:
   - Inquiry or application number (the Nebraska Energy Office uses the date the inquiry or application was received in the Energy Office)
   - Amount requested and actual project cost
   - Engineer's estimate of energy savings (in dollars)
   - Loan payback period
   - Date loan application is due (if inquiry) or date loan completion is due (if application)
3. Worksheet to compute preparation and supervision costs for both inquiries and applications. Include space for:
   - Actual cost and amount requested for:
     - Energy Analysis
     - Project inquiry
     - Bid documents
     - Loan application
     - Management/Supervisor
     - Other
   - Description of energy improvement measures
4. Loan Repayment Information. Include space for:
   - Dates project was completed, Energy Office was notified and final inspection was performed
   - Number of requests for payment, total spent, and loan amount
   - Date promissory note was signed, number and amount(s) of payments, months due, and date payments begin
   - Date consumption report(s) due
   - Date loan was repaid

(See Figure 19, the Nebraska School Loan Program Computer Entry Form, for an illustration of the form devised by the Energy Office.)

STEP 3 Fill out a form for each participating school district and for each project already completed or partially completed. Also complete forms for schools that have inquired about the program but have not yet participated.

Nebraska School Loan Program Computer Entry Form

Figure 19

Nebraska School Loan Program
Computer Entry Form

As Submitted
District Name: SID:

Address:
City: County: Zip:

School Rep:
Contact: Phone: - -
Class: Taxpayer ID:

Building:
CDist: LDist:

Location:

City: B/F/C: Owned/Leased: Bldg Life Expect:

Inquiry Data - Inquiry Number: - - Date Received: / /
Request: 1/2 Savings: Loan Payback:
Cost: Energy Savings: Simple Payback:
If Rejected, By (School or NEO: S/N): Loan Application Due: / /

Application Data - Application Number - - Date Received: / /
Request: 1/2 Savings: Loan Payback:
Cost: Energy Savings: Simple Payback:
If Denied, By (School or NEO: S/N): Completion Due Date: / /

Energy Analyst: Phone: - -

Consumption:	Type	Units MCF - Gal - Tons	Dollars
Primary:			
Secondary:			
Electricity :			

Reporting Period
From: To:

Worksheet	INQUIRY		APPLICATION	
Preparation/Supervision	Cost	Request	Cost	Request
Energy Analysis				
Project Inquiry				
Bid Documents				
Loan Application				
Management/Supervisor				
Other:				

	Number of Measures:	Number of Measures:
1		
2		
3		
4		
5		
6		
7		
8		

Loan Repayment Information

Project Completion Date: / /
NEO Notified: / /
Final Inspection Performed: / /

No. of Request For Payment::
Total Spent: $ Total Loan Amount: $.
Final Projected Savings: $

Promissory Note Signed: / /
Semi-Annual Payments: $. Final Payment Amount: $.
Number of Payments: Months Due: _____ and _____
Begin: / /

Consumption Report Due: Number:
Begin: / /

Date Loan Repaid: / /

Task 2: Create a data base and information retrieval system

Introduction: A comprehensive data base ensures that all relevant information about the School Weatherization Program resides in one centralized file, enabling Program staff to quickly and easily find and compare data about participating schools and to track loan repayments.

Responsibility: The data processing applications analyst develops a data file program. This data file system can be created in conjunction with the data files for the library index and the data bank of buildings. Staff interns help enter data once the data file system is in place.

Procedure:

STEP 1 The data processing applications analyst uses dBase IIIPlus to create a data file program for use on a Personal Computer. The resulting data base management system lets users select from several activities:

- Add new records
- View or edit existing files
- Access Technical Assistance grant files
- Print School Loan files and reports and monthly loan payment notices
- View or edit school I.D. files.

(Figure 20A shows the opening menu of Nebraska's School Loan Program Data Base Management System. The data file program developed by the Nebraska Energy Office requires that a programmer have some knowledge of dBase III Plus. However, a program for computerizing similar School Weatherization Programs could be developed using other data base management programs.)

STEP 2 Enter information from the Computer Entry Form into the computer. Illustrations on pages 95-97 show the computer screens for data entry.

STEP 3 Continue to upgrade the data base as more schools become active in the Program.

Task 3: Test the data bank

Introduction: Testing the School Weatherization data base determines whether it works well enough to be used as an information storage and retrieval system. It also discloses ways to improve the system.

Responsibility: The Nebraska Public Buildings Energy Program Coordinator works with the data processing applications analyst and other Energy Office staff to simulate situations in which the data base would be used and to test the system's capabilities.

Procedure:

STEP 1 Staff members create scenarios that would require use of the School Weatherization Program data base. At least ten scenarios make a good test. Vary the scenarios enough so the system can compare and sort data from different school districts, as well as identify non-participating schools that have already inquired about the Program, and track loan repayment information.

STEP 2 Program coordinator and data processing applications analyst run the system for each scenario, taking notes about the system's performance.

STEP 3 Evaluate the system at the end of the test.

STEP 4 Make any changes necessary to improve or refine the system's performance.

Data Entry Screens for Nebraska School Loan Program Data Base Management System

Figure 20A

```
                    School Loan Program
                  Data Base Management System

          Select one of the following activities:

                A.  Add new Records to School Loan files
                B.  View / Edit School Loan files

                C.  Access TA grant files...

                D.  Print School Loan files
                E.  Print School Loan Reports...
                F.  Print Monthly Loan Payment Notices...

                G.  View/Edit School ID file

                Q.  Quit dbase: go to DOS


        Enter selection:
```

Figure 20B

```
            NEBRASKA SCHOOL LOAN PROGRAM

                                                  ID:  000000000

DISTRICT NAME:  ------------------------------
      ADDRESS:  ------------------------
         CITY:  --------------------    COUNTY: ----------   ZIP:  -----

    SCHOOL REP  ------------------------
       CONTACT  ------------------------    PHONE: ----------

        CLASS:  -  TAXPAYER ID: ---------

     BUILDING:  ------------------------              Cdist: -  Ldist : --
     LOCATION:  ------------------------
         CITY:  --------------------          B/F/C: -     Owned/Leased : -
                                                          Bldg Life Exp: -


                    PgDn for Inquiry/Application Data...

f
ÜDELETE:Ctrl-U  MOVE:PgUp/PgDn  SAVE:Ctrl-End  QUIT:Esc  PRINT:shift-PrtSc     Ü
```

Figure 20C

```
INQUIRY DATA: -------------------------
    INQUIRY NUMBER:   --------            DATE RECEIVED:  11/11/11
    REQUEST:        0    1/2 SAVINGS:     0.0 LOAN PAYBACK:  0.0
    COST:           0 ENERGY SAVINGS:     0.0 SIMPLE PAYBK:  0.0
IF REJCTED, BY (School or NEO: S/N) -     APPLICATN DUE:  11/11/11
APPLICATION DATA:
    APPLICATION NUM:  --------            DATE RECEIVED:  11/11/11
    REQUEST:        0    1/2 SAVINGS:     0.0 LOAN PAYBACK:  0.0
    COST:           0 ENERGY SAVINGS:     0.0 SIMPLE PAYBK:  0.0
IF DENIED, BY (School or NEO: S/N) :-     COMPLETN DATE:  11/11/11
ENERGY ANALYST:  --------------------                PHONE: ------------

CONSUMPTION:        TYPE      UNITS     DOLLARS
       PRIMARY:     ----          0           0
       SECONDARY:   ----          0           0
       ELECTRICITY:               0           0

       REPORTING PERIOD   from: ----  to: ---

          PgUp for Directory Data...   PgDn for Worksheet Data...
ƒ
ÜDELETE:Ctrl-U  MOVE:PgUp/PgDn  SAVE:Ctrl-End  QUIT:Esc  PRINT:shift-PrtSc     Ü
```

Figure 20D

```
INQUIRY WORKSHEET: -------------------------
                                INQUIRY            APPLICATION
  PREPARATION /SUPERVISION      COST    REQUEST    COST    REQUEST
    Energy Analysis                0          0       0          0
    Project Inquiry                0          0       0          0
    Bid Documents                  0          0       0          0
    Loan Application               0          0       0          0
    Management / Supervisor        0          0       0          0
    Other   -----------            0          0       0          0
  Number of Measures:   0                Number of Measures:   0
    INQUIRY                          APPLICATION                IMPLEMENTED?
 1  -------------------------        -------------------------
 2  -------------------------        -------------------------          Y
 3  -------------------------        -------------------------          Y
 4  -------------------------        -------------------------          Y
 5  -------------------------        -------------------------          Y
 6  -------------------------        -------------------------          Y
 7  -------------------------        -------------------------          Y
 8  -------------------------        -------------------------
        PgUp for Inquiry/Application Data...PgDn for Loan Payment Data
ƒ
ÜDELETE:Ctrl-U  MOVE:PgUp/PgDn  SAVE:Ctrl-End  QUIT:Esc  PRINT:shift-PrtSc     Ü
```

Figure 20E

```
LOAN REPAYMENT INFORMATION: -------------------------

Project Completion Date:      11/11/11
NEO Notified:                 11/11/11
Final Inspection Performed:   11/11/11

No. of Request for Payment:   --
Total Amount Spent:      0.00   Total Loan Amount:          0.00
Final Projected Savings:      0.00
Promissory Note Signed:       11/11/11
Semi-Annual Payments:     0.00  Final Payment Amount:      0.00
Number of Payments:  0  Months Due: -- and --
Begin:               11/11/11

Consumption Report Due: --        Number:  0
Begin: 11/11/11  (use the first day of the month)

Date Loan Repaid:   11/11/1

                    PgUp for Worksheet Data...
ƒ
ÜDELETE:Ctrl-U  MOVE:PgUp/PgDn  SAVE:Ctrl-End  QUIT:Esc  PRINT:shift-PrtSc     Ü
```

Figure 20F

```
                        TA GRANT RECORD
                  School Weatheriztion Loan Program

BID          ---------          class: -

DNAME     ------------------------------------      Congressional Distr:  -
BNAME     ------------------------------------     Legislative District  --
CITY      ---------------

APPLIED  11/11/11      Awarded:  11/11/11
AMOUNT       0
         Payment Due: 11/11/11   Extension?(y/n) Y
         Extension Payment Due:  11/11/11

PAYMENT Received:  11/11/11                    Application Denied? (y/n) Y

AMOUNT SPENT:      1111
ENGINEER ID Code:  ---

Fiscal Year:     --       SQFT/OpHrs:        0        Application Rank: --

ƒ
Ü DELETE: Ctrl-U     PgUp/PgDn to MOVE    SAVE:Ctrl-End   ESC:quit/don't save  Ü
```