Energy/Environmental Planning for Minnesota State Government

Prepared for the Minnesota Environmental Quality Board by the Energy/Environmental Planning Work Group

July 19, 1990

Printed on recycled paper to save energy

Energy/Environmental Planning for Minnesota State Government

Prepared for the Minnesota Environmental Quality Board
by the Energy/Environmental Planning Work Group
July 19, 1990

I would like to thank those, who in dedication to preserving the environment through conserving energy, contributed time and effort to accomplish the Energy/Environmental Planning Work Group's task and recommendations.

Commissioner Tony Perpich
Minnesota Department of Public Service

TABLE OF CONTENTS

Executive Summary

The State of Minnesota (State) is the largest employer in Minnesota, with 40,000 employees utilizing more than 3,500 state operated buildings and thousands of motorized vehicles. State government uses energy in many ways by heating and cooling facilities, transportation, highway maintenance, forestry operations, agriculture and more, making it one of the largest energy customers in Minnesota.

Most of the energy used by the State is derived from the production and use of fossil fuels. Fossil fuel consumption is a major contributor to the problems of acid rain and global warming.

The Environmental Policy Act compels Minnesota state government to "practice thrift in the use of energy and to maximize the use of energy efficient systems and thereby minimize the environmental impact from energy production and use." Much has been accomplished since this Act was adopted in 1973, but a more concerted effort is needed to make state government a leader in energy conservation.

On February 15, 1990, the Minnesota Environmental Quality Board (EQB) at the request of the Department of Public Service, appointed an Energy/Environmental Planning Work Group (Work Group) to study how state agencies use energy and to recommend policies to improve energy conservation in state government. (see Appendix I.) The Work Group was initially comprised of the state agencies and boards represented on the EQB; i.e., the Departments of Agriculture, Board of Water and Soil Resources, Health, Natural Resources, Office of Waste Management, Pollution Control Agency, Public Service (DPS), State Planning Agency and Transportation. Representatives of the Department of Administration (Administration) the Attorney General's Office, the Public Utilities Commission and the University of Minnesota were added to complement the Work Group planning efforts.

Given the time frame for completing its report, the Work Group could not conduct an exhaustive study of potential energy conservation initiatives in state government but, rather, sought to raise the key policy issues necessary for elevating energy conservation to a priority level. Therefore, this report can be viewed as a blueprint for creating a system to accomplish the objectives set forth by the Environmental Quality Board. (see Appendix II.)

The Work Group began its task by identifying energy conservation activities for each participating agency. This research showed the need for better communication among agencies about ways to conserve energy. Although many agencies do some of the same energy conservation activities, such as waste reduction/recycling, many had original ideas which could be shared.

The research also pointed to the need for expanded energy conservation practices by state agencies. The State is not taking full advantage of available technologies for saving energy. Energy conservation technologies have grown at a very rapid rate and state government, like society at large, has not kept pace. The State should begin to use the potential of these new technologies.

To improve energy conservation in the State, four things must be accomplished:

First, a coordinated system must be established for focusing, monitoring and expediting energy conservation measures.

The directive for saving energy must come from senior management by creating an executive-level Energy/Environmental Planning Management Team to act on recommendations provided by a technical Work Group comprised of all appropriate state agencies. State policy can then be formed by direct executive orders or legislation.

Every state agency should have at least one person who is directly responsible for coordinating energy conservation.

Second, current and projected energy usage in the State must be analyzed to maximize the energy conservation potential.

An analysis of energy usage in state-owned facilities was conducted from 1976 to 1984, largely in response to the 1970s energy crisis, and needs updating. Also, the analysis did not include state-leased facilities. In order to incorporate new conservation technologies with maximum effectiveness, it is important to renew our understanding of current energy use and discover new opportunities for conservation measures.

Where appropriate, State owned/leased facilities should be periodically analyzed to determine where energy can be conserved and state-of-the-art energy efficiency methods should be incorporated into the design of new buildings. State lease agreements also should be examined to determine the extent that energy efficiency measures could be required as a term of the leases.

Also, the DPS should conduct a comprehensive study of the potential for energy conservation in Minnesota state government to provide guidance for developing and implementing energy conservation measures.

Regular tracking of energy use should be another priority of the state. Considering the high cost of inefficient use of energy, it is imperative to have reliable data to determine the progress of energy conservation practices and indicate areas of weakness. Currently, some agencies provide total energy use information to Administration on an annual or monthly basis. However, this does not give a complete picture of State energy use for several reasons, i.e., it does not include leased buildings, the reporting is not always focused on individual buildings and annual reporting in many cases is too infrequent. State agencies should be required to report energy usage on a monthly basis and every effort should be made to develop information about energy use on a building-by-building basis.

In addition, agencies operating their own fleets should be required to report transportation energy use information to Administration.

The Administration Travel Management Division manages and tracks the energy use of about one-third of the vehicles in state government. Tracking the energy use of all vehicles will give a clearer picture of the total energy used by state government for transportation.

Third, agencies and their employees should be role models in energy conservation.

Minnesotans looking to state government for leadership in energy conservation should see a model for energy conservation within the State itself. State employees, located throughout Minnesota, also can have an impact on individual neighborhoods and communities through a "practice what you preach" demeanor.

A major handicap facing the advancement of energy conservation is a lack of education and understanding about the environmental and economic benefits of saving energy. The biggest secret is the plethora of new energy saving products and technologies on the market. In other words, there are very effective means of dealing with the problems of energy use and the environment if only we would use them. The State must move to increase awareness within state government about the benefits of saving energy. Waste reduction/recycling is a good example of an idea that caught on through education of the public. Similar education programs should be developed for energy conservation. In addition, state agencies should share information about energy conservation through various means, including an inter-agency energy conservation newsletter and the State Energy Library.

State government should consider methods to utilize the dollars from rebates to enhance the conservation effort. The Management Team also should explore and search for ways to take away the disincentives state agencies currently have to do energy conservation measures. The State system should reward agencies for conserving energy.

Also, the State should develop incentives, recognition and award programs for agencies and employees who make exemplary efforts to save energy.

More emphasis must be placed on developing strategies to reduce employee dependence on single-person automobile travel both on and off the job. At work, agencies should emphasize efficient travel plans. For commuters, the State should strive to make alternative travel at least as affordable as parking in state lots.

Waste recovery and recycling should be emphasized as an energy saving measure in addition to stressing the benefits of reducing solid waste. The Waste Recovery and Recycling Program should be an active participant in the State's energy conservation planning effort.

Fourth, Minnesota state government should make every effort to educate the public about energy conservation.

Minnesota statutes direct the DPS to develop educational initiatives to improve energy efficiency in all sectors of the Minnesota economy. This effort should extend to all agencies when they interact with the public. For example, when a state agency utilizes energy conservation in a public area, a sign could be placed telling about the energy saved and benefits to the environment. Agencies should also work to coordinate their respective energy education initiatives to achieve consistency and the greatest impact.

On the following two pages is a complete list of the recommendations developed by the Work Group. The balance of the report will provide more detail on each recommendation.

Recommendations

1. Create a Governor's commission, chaired by the commissioners of the Departments of Public Service and Administration, to oversee and manage the state's entire energy conservation effort. The commission would be named the Governor's Energy/Environmental Planning Management Team.

2. Continue and expand the Energy/Environmental Planning Work Group to include all appropriate state agencies.

3. Appoint an energy conservation coordinator within each state agency to expedite and monitor energy conservation activities. This individual would serve as the liaison for energy conservation and where appropriate would serve on the Work Group.

4. Conduct periodic energy efficiency analyses of existing state owned/leased buildings and incorporate state-of-the-art energy efficiency methods into the design of new state buildings.

5. Require state agencies to report energy usage to the Department of Administration on a monthly basis to increase development of an energy data base and programs. Administration should annually report to the Work Group on state government conservation efforts.

6. Conduct a comprehensive study of the potential for energy conservation in state government and report findings to the Work Group. The study, conducted by the DPS, would assist the Work Group in making recommendations for improving energy efficiency.
7. Establish energy efficiency goals for all state government owned/leased buildings.

8. Establish energy efficiency goals for all state government owned/leased vehicles.

9. Increase awareness of state agency energy conservation activities by sharing information among agencies and participating in programs recognizing conservation activities. Educate state employees about energy conservation as well as waste reduction.

10. Develop and implement incentives to promote conservation among state agencies by allowing agencies to retain rebates. Develop incentives to promote conservation among state employees by developing recognition and award programs.

11. Identify and implement strategies that will reduce state employee dependence on single-person automobile travel. State agencies should provide employee transportation programs that promote energy efficient trips to, from and during work.

12. State agencies should work closely with the Administration Resource Recovery Program (RRP) to implement or improve waste recovery and recycling programs that save energy. The director of the RRP should be represented on the Work Group.

13. Coordinate state agencies' energy conservation public education efforts.

14. Energy conservation policy set by the Management Team should be implemented by executive order or legislation where necessary.

Energy/Environmental Planning for Minnesota State Government

CHAPTER ONE

Focusing State Conservation Efforts

Introduction

The energy crisis of the 1970s made three facts abundantly clear: energy supplies were not infinite, the United States is dependent on foreign countries for oil and the cost of energy would never be the same. Minnesota reacted much like the rest of the nation by implementing strategies such as energy conservation and the development of alternative fuels. State government led the charge by establishing the Minnesota Energy Agency to develop public initiatives to improve energy efficiency in all sectors of the Minnesota economy and by creating an Energy Conservation Division within the Department of Administration to help make State facilities more energy efficient.

In the early 1980s, the nation and Minnesota became complacent as energy supplies seemed more abundant and the cost of oil temporarily stabilized. The federal government eased gasoline mileage standards for vehicles.

But as the '80s gave way to the 1990s, new scientific evidence on acid rain and global warming suggests we are ruining the environment by misusing energy. This evidence calls for a renewed emphasis on conserving energy. Fortunately, there is an explosion of new energy saving technologies, e.g., light bulbs that use two-thirds less electricity, refrigeration systems designed to use half the energy of conventional systems, state of the art insulation capable of substantially reducing the demand for heating and cooling and vehicles that can get up to 80 miles per gallon.

Minnesota state government and society at large have not kept pace with this rapid advance in technology, though the Department of Administration, Energy Conservation Division, has developed strategies for conserving energy and has made noteworthy progress. The division is responsible for carrying out energy conservation projects in state-owned buildings based on a return of investment of 20% or greater. It administers fuel purchase contracts for state institutions each month and promotes the use of alternative fuels found in Minnesota, such as wood, peat, sawdust and wood chips, wherever it is economically advantageous. The division maintains a computerized inventory of all state-owned buildings and installations. Other activities conducted by this division include the following: a computerized preventive maintenance program for selected state institutions, a computerized database of past energy use for all state institutions, a structured steam trap testing program, and a replacement/repair program to help physical plant engineers maintain operating efficiency.

State government made progress saving energy in the years following the energy crisis of the 1970s, but that progress has slowed and some energy use was increasing as the 1980s waned. According to figures from Administration, from 1973 to 1984 state-owned building energy use per square foot/heating degree day decreased by about 26 percent. Since 1984, overall energy use has remained relatively constant, however, electrical energy use has begun to increase both in percentage of total energy and in use per square foot. (see Appendix V.)

The technologies now available could cut energy use in state facilities dramatically. However, with more than 3,500 buildings, it is essential that energy conservation be a major priority shared by every agency in the State. The six-person Energy Conservation Division in Administration needs cooperation from all sectors of state government.

A good example of an energy conservation initiative within the state system can be found at the University of Minnesota.

The University Building Energy Efficiency Project (UBEEP) is a major effort by the University to cut energy use and improve comfort in its buildings through an energy conservation program, which addresses both its new and existing buildings. Supported by the central administration and staffed by the Minnesota Building Research Center, UBEEP has three parts: The Fast Payback Path concentrates on quick improvements in two areas: lighting and steam heat. The Detailed Analysis Path focuses on indepth analysis of existing buildings, its uses and more comprehensive measures to improve energy efficiency and comfort. The Design Assistance Team helps building designers make decisions which lower the energy use in new buildings. The goal of UBEEP is to increase the efficiency of University buildings by 30 percent by 1995.

Energy/Environmental Planning Management Team

The centerpiece of an energy conservation initiative in state government should be an executive-level Energy/Environmental Planning Management Team (Management Team), appointed by the Governor and co-chaired by the commissioners of DPS and Administration. The Management Team would serve as a policy-making body for energy conservation in state government.

The Management Team would expedite energy conservation initiatives in state agencies by asking for voluntary compliance or requesting executive orders or legislation.

The Management Team would rely on an Energy/Environmental Planning Work Group (as defined below) for recommended courses of action.

Energy/Environmental Planning Work Group

The Work Group, appointed by the Management Team, would include representatives of several state agencies.

The Management Team may wish to expand and/or modify the Work Group in its present form. The Work Group should include at least those agencies which: a.) represent the largest energy consumers in state government or, b.) are involved in environmental programs.

The Work Group should meet monthly or as often as required, under the direction of the Management Team. The Work Group should gather information on energy conservation activities within state government, keep abreast of new energy conservation technologies, coordinate energy awareness activities in the State and recommend energy saving initiatives to the Management Team.

The Work Group may wish to form sub-committees to deal with specific issues as directed by the Management Team.

Energy Conservation Coordinator

Every state agency should appoint an Energy Conservation Coordinator, who would be a liaison for energy conservation activities. The coordinator should be responsible for implementing energy conservation initiatives as directed by the Management Team, monitoring the progress of energy conservation within the agency and, where appropriate, serve on the Work Group.

CHAPTER TWO

Assessing the Energy Conservation Potential of State Government

Introduction

The state itself is a very large consumer of energy. While some efforts to reduce energy have been implemented, a more thorough evaluation of energy use is needed if the state is to achieve maximum energy conservation results. This evaluation must not only consider the costs of implementing conservation measures, but also the life cycle savings in energy consumption and the environmental benefits derived from lower energy use.

While the benefits of energy conservation are widely known, the Work Group did not have sufficient time or resources to conduct a full evaluation of how the state uses and conserves energy.

Energy Design/Usage Analysis

Buildings constitute a major source of energy consumption for state government. The last building-by-building analysis of energy use in state-owned buildings was conducted from 1976 to 1984. However, constant changes in the infrastructure of state government and the advancement of new technologies have made this analysis obsolete. In addition, the State has not required energy analyses for more than 500 state-leased buildings. Where practicable, every state-owned/leased building should be periodically analyzed to determine where energy is being wasted and to identify energy conservation measures that could be utilized.

The State should develop a building design assistance program that would incorporate state-of-the-art energy efficiency measures at the design stage for new state buildings, for major rehabilitations and built to order leased buildings. Currently, new buildings must comply with building codes for energy efficiency but no program is in place to assure building designs will achieve the maximum lifetime energy efficiency that is both achievable and economically practical.

Monthly Energy Reporting

To provide a clearer picture of energy consumption, energy information about individual buildings should be developed and made available to Administration. The current system for tracking energy consumption does not provide a full picture of energy use. Many state agencies report energy use on a monthly or annual basis to the Department of Administration. Currently, energy usage is tracked at state universities, community colleges, regional treatment centers, correctional institutions, veterans homes, armories, the Departments of Transportation and Natural Resources, the Minnesota Zoo, and the Capitol Complex. The reports track, with reasonable accuracy, total energy use for state-owned buildings, but due to a lack of meters at many institutions, most energy records consist of a total for a group of buildings. Energy use data for state-leased buildings is lacking because agencies leasing facilities are not required to report energy consumption to the Department of Administration.

The State should require agencies to submit monthly energy data to Administration for all state-owned buildings and explore the feasibility of requiring monthly energy data for leased buildings. This information should be regularly transmitted to the Work Group. Leasing provisions should be reviewed to determine under what conditions energy efficiency measures could be specified in leases.

In addition, agencies operating their own fleets should be required to report transportation energy use information to Administration.

The Administration Travel Management Division manages and tracks the energy use of about one-third of the vehicles in state government. Tracking the energy use of all vehicles will give a clearer picture of the total energy used by state government for transportation.

Comprehensive Energy Study

A study on the potential for energy conservation in state government would be beneficial in planning the State's energy conservation effort. In 1988, an economic study[1] of the electric conservation potential in Minnesota found a substantial percentage of the electricity currently consumed in Minnesota could be saved without any reduction in convenience or standard of living. Moreover, the cost of these energy saving measures would soon be recovered through lower electric bills. The report found Minnesotans could theoretically save 52 percent of the energy currently used for lighting, refrigeration and other major end uses.

A new study, conducted by DPS, would provide valuable guidance to the Work Group and Management Team for recommending and setting energy conservation goals. The study would identify specific programs and provide a cost/benefit analysis of potential energy saving measures for state government.

Energy Efficiency Goals for Buildings and Transportation

The State has a major part in Minnesota's effort to conserve energy. For example, Northern States Power Company (NSP) is looking to Minnesota state government, its largest customer, for a 20 to 30 megawatt reduction in electric use by 1994. Administration is working with NSP to begin to identify areas where electricity can be saved.

---

[1] Conservation Potential in the State of Minnesota, PLC, Inc., June 1988

Doing so will help prevent the construction of costly, new power plants and, in turn, help save ratepayers money and protect the environment. Agencies, working together, can help the State meet or exceed NSP's request.

After current and potential energy use by state government has been analyzed, the Work Group should recommend energy efficiency goals in the areas of facilities and transportation. The Work Group may want to form subcommittees to work on these projects.

CHAPTER THREE

State Agencies/Employees as Role Models for Energy Conservation

Introduction

More than 40,000 strong, State of Minnesota employees are postured to make a meaningful contribution to Minnesota's energy conservation effort. Minnesotans look to state government for leadership in many areas and the wise use of energy should be no exception. To have the most impact, every state agency and employee must be involved in the energy conservation effort. This will require better communication, both within and among state agencies, incentives and new energy saving strategies.

Energy Conservation Awareness in State Government

More than twenty years ago when the Surgeon General proclaimed that "smoking is bad for your health," very few people dreamed that smoking would some day be banned on airlines and in public and government buildings. Ten years ago, even fewer people thought they would be sorting garbage to aid in the waste reduction/recycling effort. Those things have happened largely because of public education.

A major commitment to energy conservation will happen only when everyone finds out how good it is—when they learn it is a win-win situation for themselves, the environment and the economy.

Most state agencies now have some kind of education program for waste reduction/recycling. A similar effort should be made to educate employees about saving energy and provide activities for promoting conservation. Some ideas include:

- An annual inter-agency conference on energy topics.
- Full agency participation in the annual Energy Week observance.
- An energy/environmental planning inter-agency newsletter.
- Energy conservation suggestion boxes.
- Promoting the state Energy Library for use by all agencies.
- A computer bulletin board for energy saving ideas.
- Educational inserts in employee paychecks.
- In-house working groups to plan conservation activities within agencies.

Incentives for Agencies and Employees

Rebates offered to commercial and industrial customers who install energy-efficient equipment are the most popular energy saving measures sponsored by utilities, according to a survey by the Oak Ridge National Laboratory.[1] Rebate programs focus on lighting and thermal energy storage, and most often direct payments per kilowatt saved or per energy efficient equipment purchased. Minnesota public utilities are required to participate in Conservation Improvement Programs which, among other things, provide rebates for investments in energy efficient equipment, lighting and new energy efficient construction. State government should consider methods to utilize the dollars from rebates to enhance the conservation effort.

The Management Team also should explore and search for ways to take away the disincentives state agencies currently have to do energy conservation measures. The State system should reward agencies for conserving energy.

The State also should recognize agencies and employees for exemplary efforts to save energy. Special award and recognition programs can be created to encourage participation in energy conservation.

---

[1] DPS Energy Options Report, December, 1988

Transportation

Transportation is the largest energy consumption sector in Minnesota, accounting for 39 percent of the energy used in the state, more than twice the amount used by either the industrial or commercial sectors.[1] With thousands of vehicles in Minnesota state government and 40,000 people commuting to work, saving energy in transportation should be a major concern in the State's energy conservation effort.

Strategies should be identified and implemented to reduce state employee dependence on single-person automobile travel, including:

- Make transit passes as economically attractive as parking fees in state lots.
- Improve transportation planning within agencies to encourage more efficient use of state vehicles on the job.
- Promote Minnesota Ride Share within agencies.
- Expand van routes to include more locations in state government.
- Encourage car pooling.
- Encourage home work programs.
- Promote bicycle travel.
- Support improved bus routes for employees not well served by public transportation.
- Support effort on light rail transit.

Waste Reduction/Recycling

In September of 1988, Governor Rudy Perpich issued an executive order mandating that state government agencies shall take an aggressive approach to develop waste reduction and recycling programs and to purchase, when practicable, recycled materials.

---

[1] DPS Energy Options Report, December 1988

In 1989, solid waste reduction and recycling legislation was enacted and the Resource Recovery Program in Administration was created to oversee the state's waste reduction and recycling effort.

In the spring of 1990, eighty percent of all state agencies reported they were recycling newspaper, office paper and metal beverage cans at some or all agency locations.

Recycling results in significant energy savings in addition to reducing waste. For example, it takes ninety percent less energy to produce an aluminum can from recycled materials than it does from raw materials. Unfortunately, most people are not aware of the energy saving benefits of recycling. State employees should be educated about the energy link to recycling.

The State should make every effort to link the waste reduction/recycling initiative to the energy conservation effort. One suggestion is to use phrases such as "printed on recycled paper to save energy" on printed documents.

The waste reduction/recycling linkage also can be emphasized having the director of the Resource Recovery Program represented on the Work Group.

Public Education

State statutes direct the Minnesota Department of Public Service to develop educational initiatives to improve energy efficiency in all sectors of the Minnesota economy. Activities include information and technical assistance to Minnesota schools, institutions, businesses and local governments; the collection of state-wide energy supply and use data; administration of financing for energy efficiency projects in tax-supported institutions; and development of indigenous energy resource production and use.

State agencies should coordinate energy/environmental education initiatives to achieve consistency and the best impact. For example, the Department of Transportation and DPS cooperated to produce a transportation manual to help communities develop public transportation systems. By sharing information through the Work Group, state agencies can identify potential new cooperative projects and avoid overlapping programs.

Agencies also can be effective in promoting energy conservation when they interact with the public. Some suggestions are:

- Emphasize energy education in the public schools.
- Educate low-income clients about energy conservation.
- Stress energy conservation through the Environmental Education Board.
- Support sustainable agriculture.
- Organize adult extension classes on energy efficiency.
- Promote energy efficiency at the state fair and other exhibits.
- Post signs in State buildings pointing out energy efficiency improvements.
- Post signs in state parks and forests pointing out effects of acid rain and global warming suggesting that pollution can be reduced by conserving energy.
- Promote state government's energy saving campaign through public service announcements, news releases and other forms of public education.

A PROMISE FOR THE FUTURE

Until a safe, reliable substitute for fossil fuels is found we will continue to depend on oil and coal to produce most of the energy needed to run state government. Energy conservation and the efficient use of resources remains the best hope for saving non-renewable energy supplies and mitigating environmental damage. Through a concerted effort to save energy, state government can save precious energy resources, keep tons of pollutants out of the atmosphere, help prevent building more expensive power plants and contribute to keeping energy rates down.

The State of Minnesota is known as a leader in environmental protection. We have taken a leadership role on several national initiatives including the Environmental Compact of the States, the Alliance for Acid Rain Control and clean air legislation.

We must also recognize our role as a major energy consumer and become a leader in energy efficiency.

Appendices

APPENDIX I.

Energy/Environmental Planning Work Group

Members:

Burl Haar, Chair, Department of Public Service

Dennis Asmussen, Department of Natural Resources

Jim Berkholz, Board of Water and Soil Resources

Paul Burns, Department of Agriculture

Bill Grant, Department of Public Service

Bob Hiller, Department of Health

John Hynes, State Planning Agency

Jonette Kreidewels, Department of Transportation

Richard Lancaster, Public Utilities Commission

Pam Lauer, Office of Waste Management

Rodney Oberg, Department of Administration

Lee Paddock, Office of the Attorney General

Paul Schmeichen, Pollution Control Agency

Mary Vogel, University of Minnesota

Staff support for the Work Group was provided by the Minnesota Department of Public Service, in cooperation with the Environmental Quality Board.

Marice Rosenberg, DPS, Project Coordinator
David Cook, DPS, Writer
John Hynes, EQB, Technical Support

APPENDIX II.

Energy/Environmental Planning Work Group

Mission Statement

The production and use of fossil fuels as an energy source is a major contributor to environmental degradation. Because Minnesota state government is a major user of energy, agencies should make every effort to use energy wisely and promote energy conservation through public policy. To coordinate and improve energy conservation, the Environmental Quality Board (EQB) has created this Work Group to accomplish the following:

1. Identify state agency internal and external activities, programs and policies associated with energy usage and conservation.

2. Promote energy conservation efforts within state agencies.

3. Recommend public policies for increased energy conservation.

4. Recommend ways state government can help educate the public about the importance of using energy wisely.

5. Report findings and recommendations to the EQB by June 30, 1990.

6. Serve as a resource for the Governor's Commission on Global Warming.

APPENDIX III.

Statutory Authority

Department of Administration

Statutes

1. 216C.21: Energy Conservation in state-owned buildings.

   Survey and detect areas where energy consumption in state-owned buildings could be reduced.

2. 16B.16: Installment Payments for Projects Improving Energy Efficiency.

   Activity involves installing projects that reduce energy use and paying for it through savings generated.

3. 16B.32: Alternative Energy Sources

   Research alternative fuels for use in state buildings.

4. Chapter 334, Article 1, Section 15 Subd. 4: Energy Conservation projects funded by Oil Overcharge Grants.

Department of Agriculture

Statutes

1. 18B, 18D: Pesticide Use

   Pesticide management plan, pesticide use monitoring, determination of water quality impacts of pesticide use, pesticide and enforcement, and waste pesticide on container collection.

2. 18C, 18D: Fertilizer Use

   Regulations on fertilizer standards, certain handling activities, soil testing laboratories, chemigation, labeling, storage, and related activities.

3. 18: Plant Pest Control Oversight of state local government activities in pest control.

4. 17.114-17.116: Farm Energy and Sustainable Agriculture Program.

   Investigate, demonstrate, report on, and make recommendations on current future sustainability of agriculture in the state.

5. 40A: Agricultural Land Preservation Program.

   Assistance to counties to develop plans and ordinances to protect agricultural lands from competing land uses.

Department of Natural Resources

Rules

1. Operating Order #59: Pest control practices on NDR - administered lands and in public waters will employ integrated pest management techniques. The use of pesticides [...] will be limited and regulated with priority given to non-chemical alternatives.

Department of Public Service

Statutes

1. 216C.11-12 Energy Information and Analysis:
   216C.17-18
   216B.241

   Collect and analyze energy use and supply in Minnesota.

2. 216C.261: Alternative Energy

   Promote cost-effective and environmentally safe indigenous energy resources.

3. 216C.32
   325F.20: Energy Efficiency Education

   Develop educational initiatives to improve energy efficiency in Minnesota.

4. 216C.36-37: Municipal Finance

   Promote low interest loans and/or federal grants for purposes of improving energy efficiency in public institutions.

5. 216C.14: Community Energy

   Provide technical assistance to communities to develop and implement local energy programs. Also provides competitive matching grants to support local efforts.

Department of Transportation

Statutes

1. 161.1231: Vehicle Occupany

Authorizes DOT to construct and operate parking facilities.

2. 174.21 - 174.255: Transit

   Specifies DOT's role in directing state public transit assistance and transportation management problems, including alleviating traffic congestion and energy consumption.

3. 174.257: Rideshare

   Outlines DOT's ridesharing activities.

4. 174.256: Park and Ride Facilities

   Outlines DOT's responsibilities concerning park and ride programs.

5. 160.265: Bikeway Planning and Coordination

6. 169.41: Fuel Conservation

   Establishes procedures for Governor to reduce highway speeds to conserve fuel.

7. 160.22:
   160.232: Highway Maintenance Activities

   Permits DOT to plant trees along the roadside. Also establishes late moving requirements for highway ditches outside the cities.

8. 174.03: Transportation Planning

   Outlines duties of Commissioner, including authority to develop statewide transportation plan.

Rules

1. US. Department of Transportation, Federal Highway Administration, FHWA Notice N 5160.1: Fuel Conservation

   Provides instructions for implementing section 2 of the "Emergency Highway Energy Conservation Act." The Act established the 55 mph speed limit.

2. CFR Section 1502.16: Environmental

   Outlines factors to be considered in federal environmental impact statements.

3. U.S. Department of Transportation, Federal Highway Administration, Technical Advisory T 6640.8: Environmental Planning
   Provides guidance for preparing environmental documents.

Office of Waste Management

Statutes

1. 115A.46: County Solid Waste Assistance

   Aid counties in planning Solid Waste management programs.

2. 115A.557
   115A.551: Payments to Counties to develop waste reduction and recycling programs.

3. 115A.55 Waste Reduction Technical Assistance and Grants

   Identify and promote solid waste reductions practices.

4. 115A.072: Waste Education

5. 115A.49-115A.54: Capital Assistance Grants for Waste-to-Energy Incineration Composting Facilities, Recycling Facilities, and Transfer Stations.

6. 155A.9162: Used Oil Storage Tank Grants

7. 115A.48: Market Development Programs for Recyclable and Reusable Materials.

Pollution Control Agency

Statutes

1. 116.78, Subdivision 1. Specific transportation requirements set for treatment of Infectious Wastes.

2. 115A.95: PCA authorized to require certain landfill construction techniques that could affect energy use.

3. 116.41 - PCA authorized to certify landfill operators and provide training and testing to assure that sites are managed properly.

4. PL 94-580 (Federal): Resource Conservation and Recovery Act.

   Hazardous Waste Program operates under this act as amended in 1984.

   (a) 42 USC 6901: section 1002, subpart d. Act states solid waste is a potential source of energy and a need to develop alternative energy sources exists.

   (b) Section 1003 of act: Promote demonstration and construction of systems to recover and conserve resources.

Rules

1. 7001.1200: Air Emission Facility Permits.

   Development of State Implementation plans designed to produce compliance with national ambient air quality Standards.

2. 7001.1200-1229 Eases permit restrictions for small aluminum recovery facility.

3. 7001.1250 Indirect source permit required for projects involving vehicles concentrated in limited area; e.g. parking ramps, etc.

4. 7002.0010-0110 - Fees based on capacity for pollutant emissions.

5. 7005.0010-0080 - Ambient air quality standards

   Requires additional pollutant reductions if ambient air problem occur near the facility.

6. 7005.0300-0400
   7005.2750.2790: Standards of Performance For Indirect/Direct Heating Fossil Fuels.

7. 7005.1250 Standards of Performance for Liquid Petroleum Storage vessels. - Limits evaporative loss of petroleum products such as gasoline.

8. 7005.3010 - 3060: Offset Rule sets Pollution Control requirements on a proposed new or modified stationary source located in area not attaining air quality standards.

9. 7001.1000: NPDES Permits

   A permit is required for discharge of pollutants to surface waters.

10. 7001.1400: 401 Certification

    Certifies projects in compliance with Federal Clean Water Act.

11. 7040.1500: Sewage Sludge Management

    Land Application Sites

12. 7001.3000
    7035.1000
    7035.1900: Permits required for Solid Waste management facilities.

13. 7035.1700
    7035.0800 Maintenance and operation of Landfills: Collection and storage of Solid Waste

14. 7060.0500 Nondegradation Policy for Ground Water.

15. 7035.2400 - Exemption for Solid Waste Disposal Facilities Located in Sparsely Populated Areas.

16. 7001.0500: Hazardous Waste Facility Permits.

    Permit required for construction, operation, and closure of hazardous waste disposal facilities.

17. 7005.0450: Acid Deposition Control.

18. 7005.0450: Standards of Performance for Industrial Process Equipment.

19. 7005.0600: Standards of Performance for Incinerators.

20. 7005.1150: Standards of Performance for Motor Vehicles and Stationary Internal Combustion Engines.

21. 7005.2100: Standard of Performance for Petroleum Refineries.

Public Utilities Commission

Statutes

1. 216B.03-17: Rate Design and Conservation Plans

2. 216B.243: Certificate of Need

    Certificate of need required before anyone can construct a large energy facility in Minnesota.

3. 216B.164: Cogeneration and Small Power Production.

    Authorize Commission to set prices and terms of service for contracts between utilities and cogenerators and small power producers.

4. 216B.241: Energy Conservation Programs

5. 216B.24
   216B.33
   216C.05 Resource Planning Rules.

    These statutes, in conjunction with 216B.03, 216B.09, 216B.13, 216B.164, and 216B.241, provide Commission with authority to develop rules governing resource plans prepared by electric utilities.

State Planning Agency

Statutes

1. 116B: Environmental Rights Act.
   116D: Environmental Policy Act.

   Set forth environmental rights and responsibilities of all citizens and agencies of the state.

APPENDIX IV.

Presentations to the Energy/Environmental Planning Work Group

Regional Transit Board
Judy Hollander

Northern States Power Company
Keith Wietecki

Waste Management Board
Pam Lauer

Minnesota Department of Administration
Travel Management - Bob McNeil
Rodney Oberg - Energy Conservation Division

Minnesota Department of Transportation
Metro Freeway Operations - Dean Larson
New Emerging Technologies - Glen Carlson

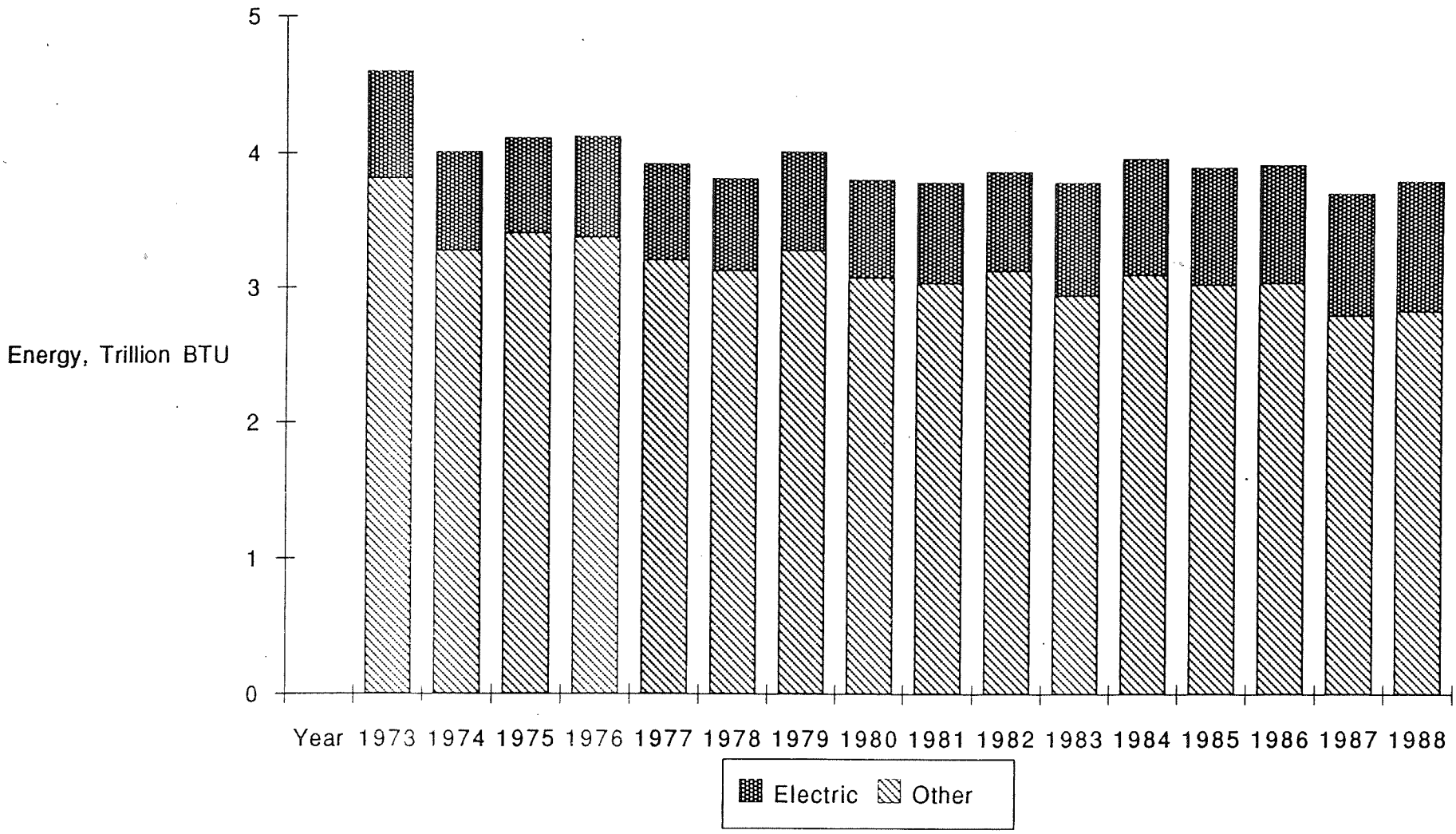
Minnesota Department of Public Service
Least-cost Planning/Conservation Task Force - Marice Rosenberg
Electric Energy Conservation Potential - Bill Grant
Community Energy Council Program - Mark Schoenbaum

A special thanks to the Department of Administration, Energy Conservation Division, for providing information and data on owned/leased state buildings.

APPENDIX V.

State Government Energy Use Data

STATE OWNED BUILDING TOTAL ENERGY USE

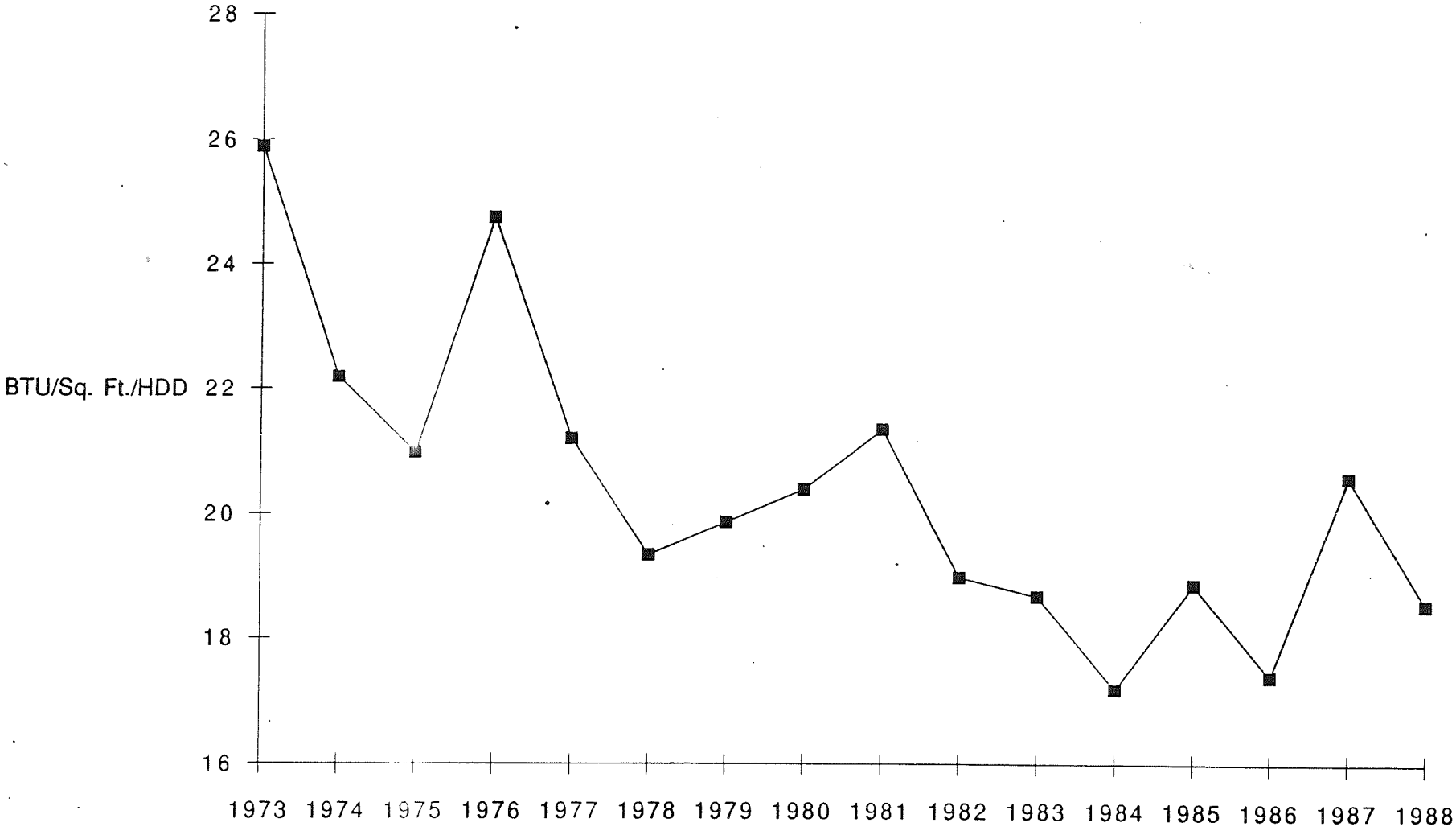


Minnesota Department of Administration/Energy Conservation Division

Figure 2

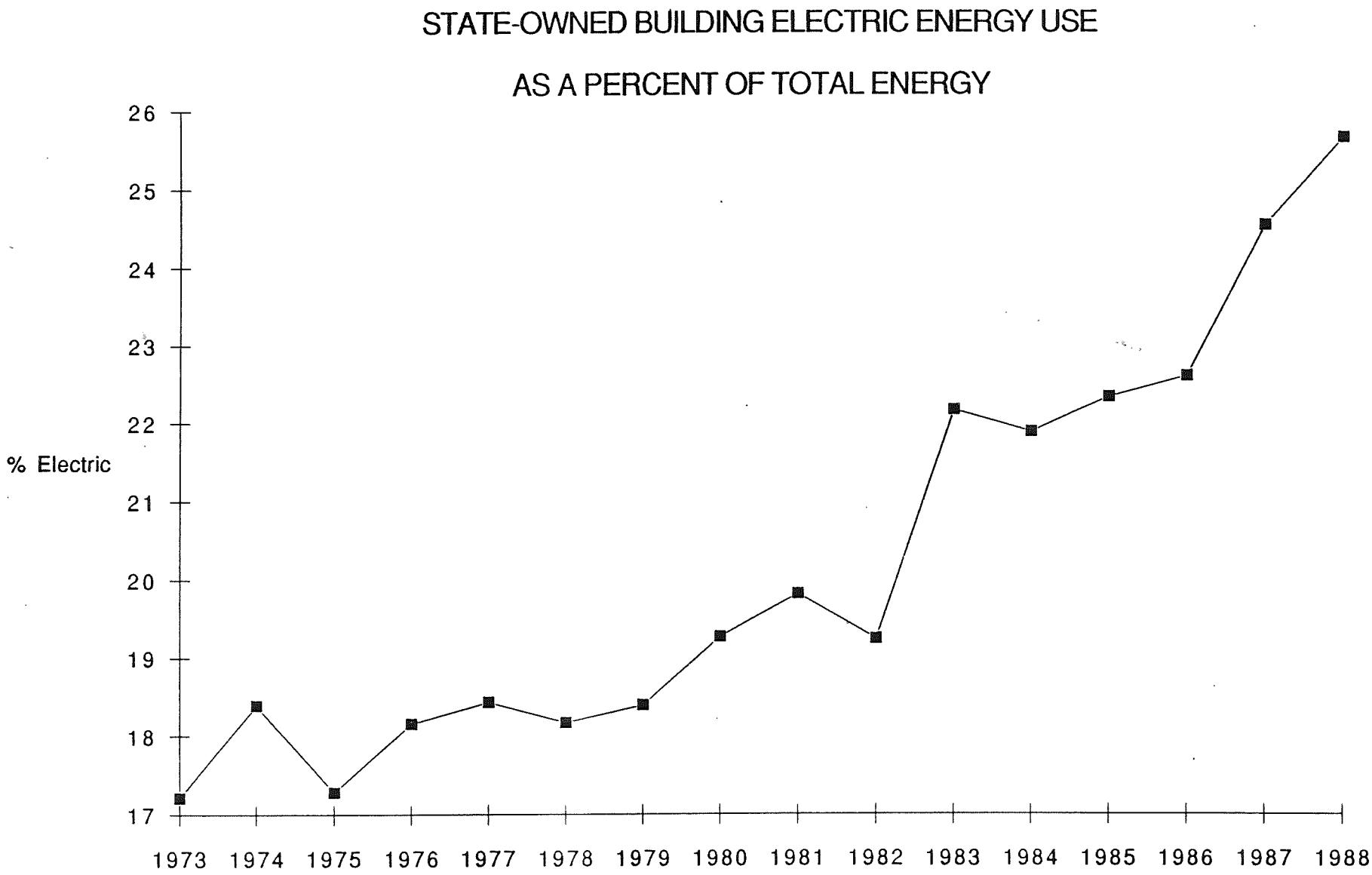
STATE OWNED BUILDING TOTAL ENERGY USE

BTU PER Sq. Ft./PER HEATING DEGREE DAY



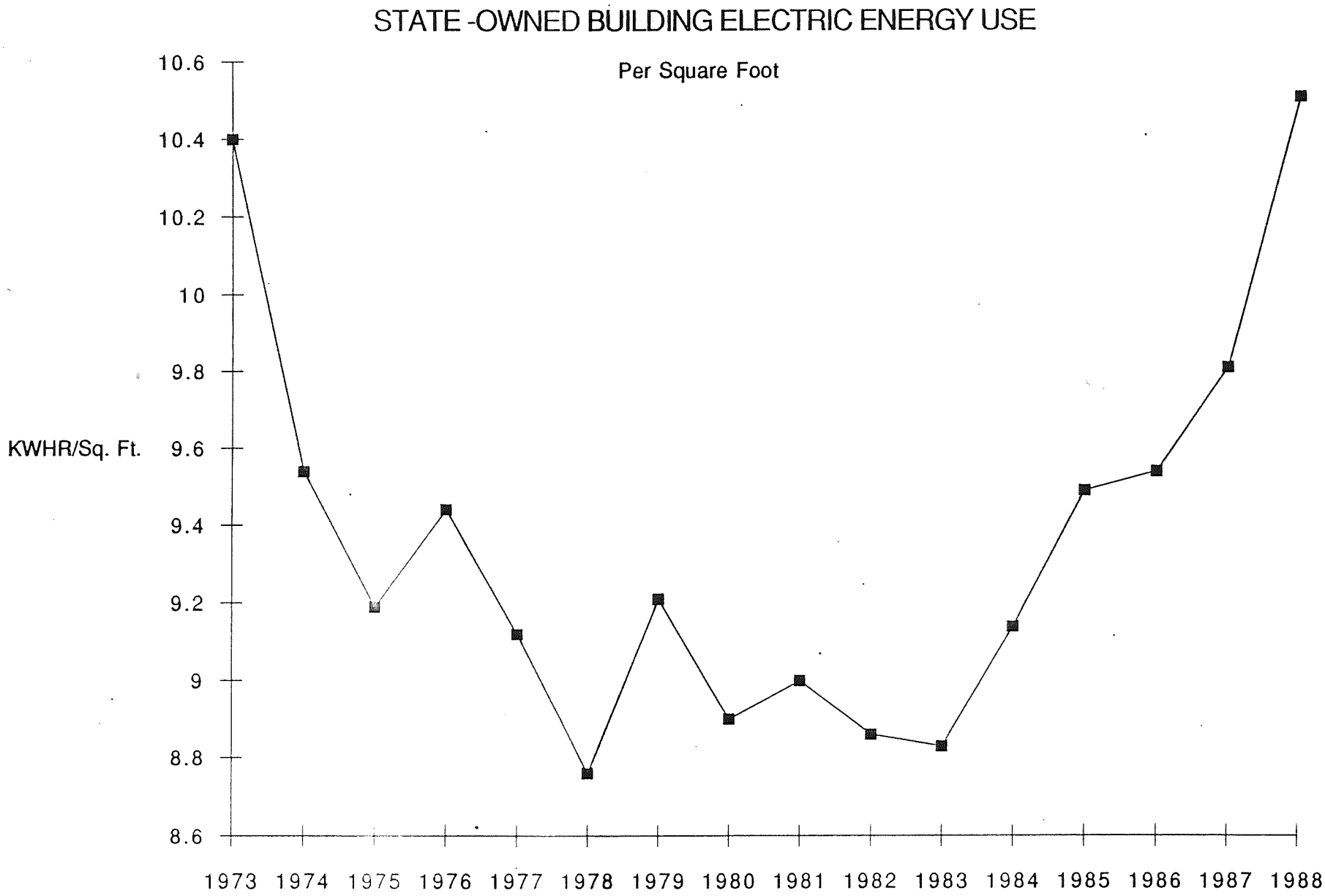
Minnesota Department of Administration/Energy Conservation Division

Figure 3



Minnesota Department of Administration/Energy Conservation Division

Figure 4



Minnesota Department of Administration/Energy Conservation Division