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ENERGY PLANNING IN WASHINGTON COUNTY RHODE ISLAND

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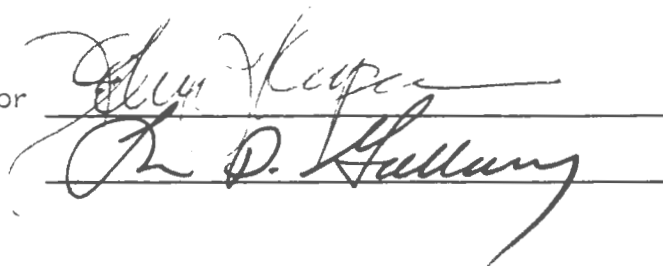
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MASTER OF COMMUNITY PLANNING THESIS PROJECT
OF
PATRICIA ELIZABETH MARSTON

Approved:

Major Professor



The image shows two handwritten signatures in black ink. The top signature is written over the first horizontal line, and the bottom signature is written over the second horizontal line. The signatures are cursive and appear to be 'John Kasper' and 'R. D. Gallany'.

ENERGY PLANNING IN WASHINGTON COUNTY
RHODE ISLAND

BY

PATRICIA ELIZABETH MARSTON

A THESIS PROJECT SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF COMMUNITY PLANNING

UNIVERSITY OF RHODE ISLAND

1981

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INTRODUCTION

Presently, there are very little data on local government energy involvement in Rhode Island. The objective of this Thesis Project is to provide information on energy planning in Washington County, Rhode Island. The study describes the current energy situation, the need for local government involvement, and the actual energy activities of five towns and one Community Action Agency within the County. The case studies show what energy activities have been undertaken, the elements influencing choice and implementation of these activities, and barriers experienced by these local governments in their activities. The analysis concludes with recommendations to overcome these barriers.

The Current Situation

In the past four decades, drastic increases in U.S. energy demands have molded our society and the environment we live in. Low priced and readily available supplies of oil and natural gas have promoted a growing utilization of more cars and highways, homes in the suburbs, more shopping centers, bigger office buildings, and sprawl development. High consumption has been stimulated by low fuel prices and utility rates that until recently have ignored the external environmental and social costs of providing energy, the costs of pollution, land abuse, and the needless depletion of resources. America matured in an era when oil cost \$2 a barrel. Today the world price is nearly \$40 a barrel.¹

The phenomenal rates of economic growth and the resultant high standards of living are an outcome from the great impact of science on technology and the discovery and development of petroleum and natural gas since 1859.²

Until oil and gas became the primary national energy sources in the late 1940's, the U.S. was self sufficient in energy and relied primarily upon coal, wood and hydropower. In 1950, the nation was almost completely self sufficient in petroleum. Heavier reliance on foreign sources began in the late 1960's, as demand began to surpass domestic supply. Today, nearly 50 percent of America's daily petroleum requirement is imported. By 1990, 60 percent of the national petroleum requirements will be imported at present rates of consumption.³

More than half a decade has passed since the oil crisis of 1973-74 began a new era in U.S. history. For years scientists had been warning that the earth's supplies of petroleum and natural gas were finite. Still, the policy response to the energy situation has been slow. Even the passage in 1978 of The National Energy Act did not resolve the problems. Meanwhile, the number of barrels of oil imported increases, and the Three Mile Island nuclear accident and summer gasoline dilemma provide reminders that much needs to be done.

Local Energy Concerns

The realization that fuel supplies are limited has created an awareness that methods to reduce energy waste must be found. The strategy thus far has been to motivate consumers to buy economy cars, to use public transportation, and to weatherize their homes. This is a start, but now it is essential to promote energy planning and management in the community. Municipal governments have an obligation to their citizens to play a critical

role in the response to America's energy crisis. Although the focus of national energy policy is federal, local administrators can become more effective energy planners and managers by becoming conscious of opportunities to introduce management innovation.⁴ It is critical to recognize that much of our energy consumption pattern is organized on the local level and much of our potential for energy involvement is similarly a local option.

Energy planning is a relatively new municipal concern, and there is little experience to guide municipal decision makers. The managerial, legal, technical and financial resources of local government, however, can provide for a significant foundation for development of effective strategies to combat the energy situation.⁵

The important contributions that local officials can make in solving local energy problems derive from both authority and precedent. Leaders of government in most jurisdictions can significantly fashion public policy through their exercise of control. By means of their influence, many local officials are beginning community-wide action to save energy and reduce waste. Work lies ahead, as municipalities and local government learn to use less in their own operations and help to develop an energy awareness among all users.

Determining where to direct energy efforts, how to address problems and on whom to place responsibility is not an easy task. Each local program will be unique in its specific form and function. Municipalities vary as to the sources and amounts of energy used, the tax base available, the employment economies, the population composition and the priorities of each community. This is important because the structure of a government unit, where it is positioned and how it is directed are essential variables in determining the success or failure of that unit.

When a resource such as energy is essential to our economy, it is imperative that a choice be made between spending more money for fuel, or learning how to thrive with less. There are several approaches to energy planning at the community level which can be employed by local government.

1. Appoint a full-time energy coordinator. This approach places the responsibility for all energy activities on a single individual with or without staff.

2. Designate an energy coordinator from existing staff. This involves delegation of responsibility for municipal energy policies to one individual who has other duties as well.

3. Assign energy management duties to existing staff. This approach divides management responsibility among several municipal departments.

4. Appoint an Advisory Committee. This relies upon a committee of citizens, often including municipal officials, to make recommendations on energy management activities. The committee is appointed by a council and usually oversees municipal and community energy activities.⁶

Though the scenario may be a new one, energy planning concerns require the same organizational and administrative attention that other municipal functions are given.

BACKGROUND

Many cities and towns throughout the country have led the way in developing innovative energy management programs.

Davis, California, concerned over its rapid growth rate, endorsed a series of measures targeted at reducing energy use by as much as one-half. To reach that goal, the city legislated the siting of buildings, use of insulation, location and size of glass in structures and so on. The city also encouraged the use of solar energy and obtained funds to develop model solar buildings. Davis renovated its fleet of city cars with more energy efficient ones and installed a rack of bikes to be used by city employees for local errands.

In Oakland, California, conversion of street lights to energy efficient, high-pressure sodium lamps saves more than 900,000 dollars a year, the equivalent of over 30,000 barrels of oil. In Nassau County, New York, the careful monitoring of energy use in some 300 public facilities saves the county nearly a million dollars a year. In Seattle, one of the nation's pioneers in energy conservation, a range of simple but carefully coordinated measures has reduced winter energy consumption in downtown buildings by 42 percent. These are just a few of successful efforts local governments have undertaken to improve community energy efficiency.¹

Unfortunately, these examples of local energy management are the exception rather than the rule. The New England area especially has been

slow in developing energy planning at the local level. This is extremely distressing when one considers the region's overwhelming dependence on oil. Nearly 80 percent of New England's energy requirements are dependent on oil, compared to 45 percent nationally. There are many factors which account for this condition :

- 1) New England lacks large reserves of fuel ;
- 2) New England's geographical location places it at the end of domestic oil and gas pipelines ; and
- 3) it is remote from the nation's coal mines.

The energy sources which New England does relish in relative abundance are wood, hydro electric, solar, solid waste and wind. These sources are not yet economically profitable enough to develop on a large scale basis.²

Rhode Island

Rhode Island played a major role in the transition of New England and the country from the stable subsistence life style of the past to modern resource exploitation. The use of water power to operate manufacturing mills began in Pawtucket, Rhode Island, in the 1790's. Their success changes society, as the mechanical energy of rivers and streams was harnessed for numerous manufacturing activities. In the 1800's, Rhode Island was a national leader in steam technology. But advanced technology brought many changes to the region as Rhode Island entered the age of petroleum.³

Today Rhode Island shares most of the same distinguishing characteristics with New England in its use of energy. Homes and businesses use more energy for space heating than the national average, while less is used in industry and transportation. The result is that the total energy use per person is 30 percent less in Rhode Island than the nation as a whole (Table I).

In addition, the State accounts for only 7 percent of New England's total energy consumption when the fuel to generate electricity is excluded.

TABLE I
NATIONAL, REGIONAL AND STATE ENERGY CONSUMPTION
PER CAPITA, 1976
(millions [10^6] of BTU's)

	Residential / Commercial	Industrial	Transportation	Total
Rhode Island	88.2	42.6	64.5	195.3
New England	89.4	45.2	69.9	204.5
United States	75.2	113.6	91.9	280.7

Source: Bentley, 1978.

New England's energy use increased 45 percent between 1962 and 1976, while Rhode Island's energy consumption grew only 16 percent. This increase in statewide consumption is deceiving. Total energy demand in Rhode Island increased 27.3 percent between 1962 and 1971. This was due to a 20 percent increase in fuel use per capita and a 10 percent increase in population. Since 1972, the State's consumption level has actually dropped from a high of 205.4 trillion BTU's down to 187.4 in 1976 (Table II). This can be traced to the extremely harsh impact of the nationwide recession during the mid-70's on Rhode Island and a drop in population. Also, energy prices have played an important role in reducing energy use substantially.

Rhode Island fuel mix differs sharply from the national picture. Natural gas accounts for about 30 percent of energy use nationwide, compared to only 10 percent for New England and 14.7 percent for the State. One-half of all residential and commercial needs and almost 40 percent of industrial fuel is supplied by natural gas in the United States. Electricity consumption is also different from the national average. Only 14 percent

TABLE II
 HISTORICAL ENERGY USE IN RHODE ISLAND
 (trillion [10¹²] BTU's)

Year	Oil	Gas	Coal	Electricity	Total
1962	124.7	14.1	15.0	7.5	161.3
1965	133.3	10.7	9.0	9.1	162.1
1970	155.0	25.8	0	13.3	194.1
1971	165.4	26.3	0	14.4	205.1
1972	167.7	22.4	0	15.3	205.4
1973	159.1	23.5	0	16.4	199.0
1974	126.1	24.1	0	15.5	165.7
1975	142.8	23.1	0	15.1	181.0
1976	143.3	27.7	0	16.4	187.4

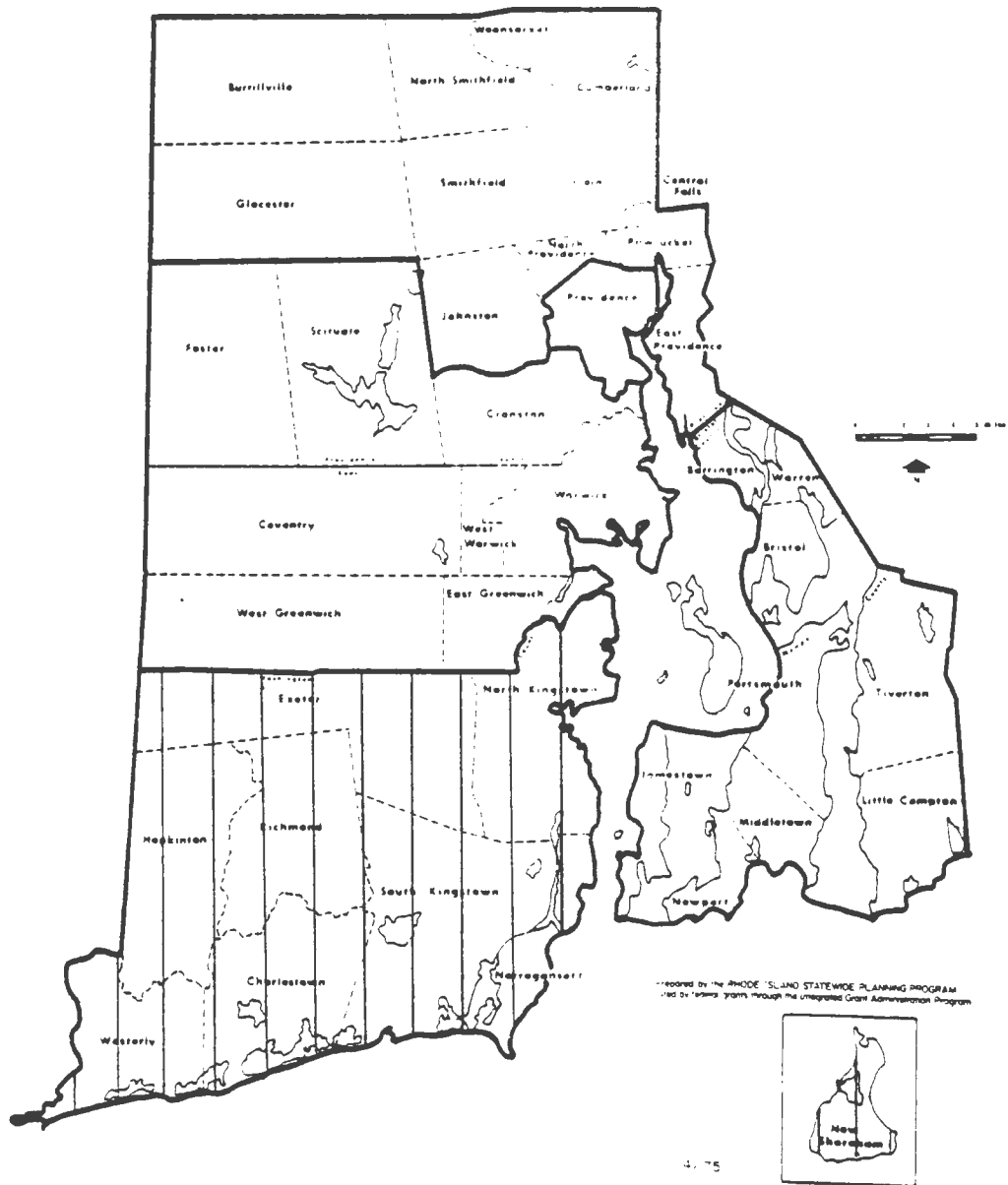
Source: A.D. Little, 1974; Bentley, 1978.

of the State's residential and commercial energy came from electricity in 1976, compared to 16.8 percent for New England and 24 percent for the nation. Oil continues to be the most important source of energy in Rhode Island, contributing 76.5 percent of energy supply in 1976 as compared to 47.3 percent nationally.⁴

Washington County

Washington County is a predominantly rural county, located in the southern portion of Rhode Island (see Map). It includes nine towns, and has a population of 93,317 as of the 1980 Census. Known for its many vacation pleasures, Washington County has undergone tremendous growth, with a 49 percent increase in population since 1960. This growth impact is also reflected in the number of housing units in the county. In the past, Washington County has had the highest annual percent gain of housing units in the state. From 1970 to 1980, housing units increased by 32.1 percent.⁵

Map of Washington County, Rhode Island



In the early days, farming in Washington County was the principal land use based on some of the best agricultural soils in Rhode Island. Washington County lies next to the sea and six of nine towns within the county border the coastline. The shoreline and its immediate interior represent a widely varied and significant asset to all of Washington County communities, where the present economy is predominantly tourism, manufacturing, agriculture and fishing. Commercial activities such as seafood processing and natural recreational facilities which draw tourism figure prominently into the economic development of the towns.

The most immediate energy problems facing most people in Washington County are in the areas of gasoline and fuel oil. It is probable that tourist gasoline consumption will be greatly impacted by shortages and price hikes. The county relies heavily upon summer tourism. If tourism decreases, related businesses could possibly close, and result in a rise in unemployment and reduction of capital in the local economy. Direct impact of increasing fuel prices will be felt by those residents who commute to Providence or outside their town to work.

Fuel oil price increases will have detrimental effects county-wide. A large percentage of homes in Rhode Island are heated by fuel oil. As this resource increases in price, many families will be severely impacted and the greatest burden placed on low income residents. Because of low median family income, it is anticipated that residents will suffer significant financial difficulty as fuel prices rise.

What does this mean to the county? Washington County's economy is anchored by manufacturing, agriculture, fishing and tourism. The vulnerabilities of all sectors within the region, the uncertainties of energy supply,

and the rising cost of energy are significant threats to the economic, physical and social welfare of the county.

The following section is a description and analysis of the actions being taken by five towns and a community agency to combat the energy crisis at the local level.

CASE STUDY: NORTH KINGSTOWN

North Kingstown is situated along the western shore of Narragansett Bay. The town covers 43.5 square miles and possesses an attractive 30 mile long coastline, with many sheltered coves, inlets and wetland areas. Only 20 miles south of Providence, North Kingstown still retains a somewhat rural charm. While its location is its principal asset, the historical background of North Kingstown is outstanding as one of the oldest towns in Rhode Island. It was first settled in 1621 and incorporated as King's Towne in 1674.¹

The town is governed by a town manager with a 5 member council. The town meeting form of government provides the citizens with direct input into the local political system.²

A commission known as the North Kingstown Energy Advisory Commission was the first of its kind established in Washington County. The commission began in June of 1977. It was appointed by the town council at the suggestion of the town manager. Although the leader in establishing an energy program in Washington County, the commission was short-lived and dissolved within one year's time.

The purpose of the commission was to assist the town council in formulating plans, programs and policies to conserve energy in North Kingstown. The commission was also required to evaluate proposals for the development of new sources of energy.³ The advisory group, consisting of five appointed members, worked in two priority areas:

- 1) auditing and improving the efficiency of town buildings; and
- 2) providing energy education for the residents.

The energy program targeted three major town facilities for measurement of the combustion efficiency of the heating units at the town hall, library and high school. The final report to the council concerning town facilities covered two areas:

- 1) short-term goals which could be achieved with minimal expense, including preventative maintenance as indicated by efficiency measurements; and
- 2) the recommendation to the council that all new public buildings in the town be constructed in accordance with the American Society of Heating, Refrigeration and Air Conditioning engineer energy savings standards.⁴

Even though the commission was advisory and without funding, they still were able to get involved. The North Kingstown Commission took part in sponsoring a program on solar energy education which coincided with National Sun Day activities the week of May 3, 1978. The Commission, in cooperation with the North Kingstown Senior Association, the North Kingstown Recreation Department and the Rhode Island Solar Energy Association, brought together state legislators, public officials, University of Rhode Island professionals and solar vendors to answer questions and provide displays on solar energy. The involvement proved to be a success.⁵

During the one year term, the commission learned that there were many opportunities for energy conservation within the town. It also became apparent, however, that the job was big and would require more time and effort than the Commission members could bring to bear on a voluntary status. On November 22, 1978, the chairman, Laurence E. Rossiter, officially resigned and the Commission no longer existed.⁶

Since the disintegration of the North Kingstown Energy Advisory Commission, the town planning department has become involved in energy

planning and has written a Preliminary Energy Plan. The document was financed through an urban planning grant from the Department of Housing and Urban Development. The plan was drafted in order to recommend a set of preliminary goals, policies, implementing actions and methodology to be used in the preparation of the energy plan for the town.⁷

CASE STUDY: CHARLESTOWN

Incorporated in 1738, Charlestown is located 36 miles south of Providence in Washington County on Rhode Island's south coast. The town covers a total of 41.3 square miles of land. Many of the large land holdings along the shore have been divided and seasonal residences have been built. Much of the central and western part of Charlestown, however, remains undeveloped as idle tillable, woodland and brush land. Charlestown, since its founding, has remained a rural community where farming, shore oriented recreation and tourism have predominated. Recently, Charlestown has begun to feel the effects of urban sprawl.

Unlike surrounding towns in Washington County, Charlestown did not have any early industries, and today the town has few large industries located there. Its coastal location and great tidewater inland ponds make Charlestown an ideal spot for surf bathing and camping for tourists. It is important to note that 80-85% of the employed workers residing in Charlestown are employed outside the town. Governed by a 5-member town council headed by a president, Charlestown's economy is based upon seasonal activity.⁸

Energy activity in Charlestown has its roots in a citizen advisory committee formed in 1973 to deal with the potential threat of a nuclear power plant installation in the town, proposed by Narragansett Electric and New England Power Company. In 1973, Narragansett Electric and New England Power announced a proposal to build two nuclear plants at the old naval auxiliary landing field. In December of 1973, New England Power and Narragansett Electric met with the town officials and informed them of the

plan for the construction of two nuclear plants. At this time, they had already invested 30 million dollars into the planning and testing of the project.

The nuclear issue was met by town-wide concern. Educational groups were established to explain nuclear power and its threats to townspeople. By mid-1974, the town was opposed to nuclear power, and Claudine Schneider organized the Concerned Citizens of Charlestown group, which was soon formalized and known as the Concerned Citizens of Rhode Island. The Concerned Citizens of Rhode Island decided the public's only recourse was through the courts and in 1979, after much litigation, the proposed construction of the nuclear power plant was averted.

In the winter of 1980, the town council established an Energy Advisory Committee. The Advisory Committee, in its first year, undertook a careful energy efficiency study of the town hall. From their calculations, they established that fuel consumption in the town building could be cut down from 6,500 to 3,500 gallons of oil a year if proper insulation was installed.

The chairman of the newly appointed committee (which consisted of five appointed members), Sam Seely, hopes that the committee will become an advisory service to the community on energy matters. The new committee has already applied for an Appropriate Technology Grant which would be used to renovate an existing building on the abandoned Charlestown Naval Base. The building would be used as an energy education center, exhibiting examples of various types of alternative energy. The success of the new committee, according to Dr. Seely, will depend on "who gets involved and how much they are willing to do."⁹

CASE STUDY: SOUTH KINGSTOWN

South Kingstown's 63.5 square miles contain some 23,000 people. Situated 30 miles south of Providence, the town is the largest in area in the state and has the largest town population in Washington County. Rapid growth after World War II and during the 1950's has transformed South Kingstown into one of the main centers of activities for the county. The town is bordered on the north by Exeter and North Kingstown, on the east by Pettaquamscutt River, on the west by Charlestown and Richmond, and to the south, South Kingstown borders the ocean. The town is highly diversified both physically as well as economically. The area consists of freshwater wetlands, beautiful coastline, salt ponds, forested areas and unique glacial formations.¹⁰

With its many recreational features, South Kingstown has gradually become tourist-oriented and dependent on the University of Rhode Island and various manufacturing plants for support. The University, established in 1892, is the main employer in the area with a student body numbering over 10,000

South Kingstown officials' first concern about the energy dilemma became evident in November of 1979, with the establishment of the Energy Audit Board. The Board, composed of interested citizens, works in an advisory capacity to the town council. The Commission has pursued the priority areas of exploring conservation programs for the town owned buildings, and advising the general public as to the application of energy conservation practices in the home. Another Commission responsibility has been to act as a "clearinghouse" in the collection and analysis of data

relative to energy conservation within the town. Recently, at the suggestion of the town council president, Duncan Doolittle, the school committee has appointed people to serve on the energy commission to aid in the energy management program for the town.¹¹

Thus far, the town has been principally concerned with its own buildings and facilities. The commission has completed analysis of fuel usage within the town buildings for the past year. They have also attempted a few community activities aimed at energy conservation as it related to the local citizen. The commission has distributed energy material at town financial meetings in hopes of educating the public on home energy saving tips. Another related activity put on jointly by the Energy Audit Commission and the town library was an energy conservation contest. The purpose of the contest was to find the "top tips for saving energy at home, work, in the car, winter or summer."¹² The contest was a successful way to arouse public attention and involvement in energy conservation.

The commission has worked since its appointment, without funding. Although their start this year has been slow, the commissioners have requested a \$500 budget, and hope to get their new projects underway soon.

CASE STUDY: PEACEDALE COMMUNITY ACTION PROGRAM

A county-wide program dealing with energy concerns originated within the Peacedale Community Action Program in 1975.

In the northeast especially, energy bills have skyrocketed. The poor have become the hardest hit, and the most desperate for relief. Fuel bills are taking bigger chunks out of the household budget daily. The individuals most affected by this are Washington County's 2,000 people with incomes below the poverty level.

Each year since 1975, CAP has administered the state and federal fuel emergency assistance program in Washington County. This program is for low income households, poverty level or below, earning not more than \$9,000. Eligible households may receive vendor payments up to \$450.

In Rhode Island, rising fuel costs are affecting a predominantly oil heated housing stock. As fuel costs have risen, so has the demand for aid. Last year alone, CAP (with a budget of \$232,000) assisted 697 low income families in meeting heating fuel expenses.

Since 1975, CAP has also provided a weatherization service for low income households in the county. The program, which installs energy saving materials in low income homes, has expanded steadily each year. The budget in 1978 was \$126,000 and has increased to \$147,000 for 1980-81. The state this year has appropriated \$12 million for weatherization out of the Department of Community Affairs for Rhode Island.

The weatherization program has been a success recently with the addition of staff and greater familiarity with problem solving.

A team of workers from the Comprehensive Employment and Training Act program (CETA), employed to implement weatherization practices, has been funded by the Department of Community Affairs. They are taught weatherization methods at an energy training center located at Davisville, Rhode Island, which is funded by the Department of Energy and CETA. This training involves weatherization practices in solar energy (both active and passive), electricity, plumbing and oil burner repair.

The weatherization process for individual homes is preceded by an energy audit, estimation of the job cost, provision of up to \$560 per household for materials, and the actual installation of the material is by CETA workers.

The CAP program has been providing valuable services for county residents at no cost to the local government. The CAP energy director and staff hope to continue their activities and to expand their energy program to play an increased role in Washington County. Recently, the Agency has become involved in alternative energy development. A solar greenhouse has been built at the Peacedale agency with a \$1500 grant from the National Center for Appropriate Technology. Their intention was to develop an education program on growing food. Presently, the program is at a standstill, due to lack of funding and tools. The agency has also received a DOE small Appropriate Technology Grant for \$20,000. The money will be used to construct a wind generator on the old Matunuck school in South Kingstown. The center will be used for an education center and will incorporate varied examples of alternative energy.¹³

Although a benefit to Washington County, the future of CAP is shaky. The Reagan administration plans to abolish the Comprehensive Employment and Training Act's public service employment programs, which will cost

more than \$3.7 billion next year. It is expected that there will be much opposition from local officials, but the program will likely be phased out by the end of fiscal year 1983. This is certain to have considerable affect on the Community Action weatherization program in the area since the loss of funding will surely limit CAP's ability to perform.¹⁴

CASE STUDY: WESTERLY

Westerly, located in the far southwestern corner of Rhode Island, is about 42 miles from Providence. The town, 33 square miles in area, contains a population of approximately 18,000. The boundaries of Westerly are mainly natural. The meandering Pawcatuck River, the major waterway of southern Rhode Island, separates Westerly from Hopkinton in the north and from Stonington, Connecticut, on the west. To the south the town borders Block Island Sound and the eastern border is Charlestown. The many different physical areas of the town are a result of the last continental glacier which ended its southward movement in Westerly.

The early industries in the town were shipbuilding, fishing, tanning, and farming. The earliest manufacturing began in 1750 along the Pawcatuck River, and in 1814 the first large woolen mill was established. Today its major industries include textiles, food, furniture, printing, stone, and machinery manufacturing. Once an important agricultural area, Westerly has become a favorite vacation area with its 6 miles of sandy beaches.¹⁵

The catalyst for the formation of the Westerly Energy Committee, has been Dr. Clement A. Griscom, a professor at the University of Rhode Island and a Westerly resident. His view on solving the energy problem is that the solutions will come from a "grass roots level," referring to the towns and their residents. Dr. Griscom suggested that the citizens of Westerly would benefit from a central source of knowledge, a "clearing house of energy information," to aid them in reduction of energy costs.¹⁶

The result of this initial interest was that in December of 1979, the town council voted to establish an Energy Committee. The Committee began its work in the summer of 1980, and was comprised of representatives from private and public energy suppliers and planners. It was established for one year. Its purpose was to study energy consumption on a town-wide basis, with the following charges:

- 1) the determination of energy consumption within the town over the last two years by fuel type and by usage;
- 2) an assessment of renewable energy resources within the town, their potential contributions, constraints to development, and incentives required for their development;
- 3) the recommendation of energy conservation measures and programs for town owned buildings and personnel;
- 4) collection and analysis of town information on energy conservation and alternative forms of energy; and
- 5) assistance and advice to the general public in solving energy problems.¹⁷

These measures were an important starting point for the town to begin energy planning. They also allow the town to play an active part in federal, state, and regional energy programs.

By the fall of 1980, Westerly had become familiar with the energy characteristics of the town buildings and facilities. The Committee prepared preliminary energy audits on each municipal building. These audits were a collection of data relating to each building's design, energy consumption and energy conserving features. The audits were the first step of Westerly's participation in the federal Title III program, sponsored by the Governor's Energy Office. The end result of this program will be technical assistance for the town to develop energy conservation measures for each of its buildings.

The Committee has also compiled figures on total gas, oil and electricity costs and usage by the town over the past two years. Analysis of the data provided several possible ideas for energy savings and a goal of 10-15 percent reduction in Westerly's energy usage has been agreed upon.¹⁸

Up until this point in time, Westerly has been concerned mainly with its own facilities. In addition, the Westerly Energy Committee must gain and maintain public support to be effective. They do provide information and speakers upon request to various civic groups, which is a great way to educate interested citizens. But in the future, the Committee would like to develop a broader emphasis on public education through radio broadcasts and special projects.

In less than one year, the Westerly Energy Committee has been extremely successful in its endeavors. The key ingredients to its success are a knowledgeable and energetic committee that foresees the importance of energy activities.

CASE STUDY: NARRAGANSETT

Located on the southeastern coast of Rhode Island, Narragansett's 18.3 square miles have rapidly developed into a summer tourist and fishing community. During the 1870's, the "Pier" area of Narragansett was transformed from a small village surrounding a coal pier, to a prominent summer resort.¹⁹ Originally a farming area, Narragansett's greatest possessions are its many beaches which have distinguished the town as a popular water recreation area. Commercial development is limited to tourist oriented business, with manufacturing employing a small percent of its residents. Other development is centered on waterfront fishing and research activity of the state and federal government at the University of Rhode Island. However, a large portion of year-round residents have had to find jobs in neighboring communities.²⁰

Population growth in the town has been maintained at a swift pace over the last 30 years. The 1950 population was 2,298 and it has increased to a 1980 population of over 12,000 residents.

Narragansett is governed by a town council, town manager form of government. The five member town council is headed by a council president.

A relatively recent addition to the town has been the formation of a town energy board. For the past few years, Narragansett has been recognized as a leader and innovator of energy activities. The town was among the first in the county to recognize the need for energy conservation involvement.

The Narragansett energy activity began in the spring of 1978, with the establishment of the Point Judith Power commission. The commission was comprised of a group of citizens concerned with the increasing cost of power. In July of 1978 a formal ordinance establishing the Narragansett Energy Study Commission was approved by the town council. The ordinance created a 7 member board--4 appointed members, the town manager, director of public works and the building inspector. Eventually, in order to make coordination of conservation efforts easier, the name was changed to the Narragansett Energy Board in September of 1978.

The intent of the organizational establishment was to act in an advisory capacity to all municipal departments and to investigate alternative energy sources for the town. The board so far has undertaken a varied range of projects.

The board views its principal role as the creator of public awareness in regard to renewable resources. Its major thrust, therefore, has been to increase visibility, through the display of alternative energy sources, to the citizens. Through a Community Development Block Grant, the town constructed the "Pier" comfort station with a solar hot water system. Also, through a Community Development Block Grant, in conjunction with funding from the Heritage Conservation and Recreation Service, a wind generator has been installed at Canonchet Farm on a 174 acre tract of town owned land. The eventual goal is for the generator to power one of the existing buildings on the farm.

Another involvement of the board has been through the presentation of educational workshops and lecture series. The emphasis has been to provide information on solar energy and to create interest on the subject.

The board's endeavors have not stopped here. It is presently developing plans with the school department to incorporate a solar hot water system into the high school. Although somewhat conservative, the town council has recognized the need for energy conservation and has set aside 13,000 dollars to be used for this project. Narragansett will open bids on the project in late May.²¹

Has the Narragansett energy board been a success? The members have mixed feelings. As Public Works Director George Allaire stated, "How do you measure success? How can you tell if a citizen has installed a solar system as a result of your program? You would like to think so, but who can measure it!" In any case, the board has high hopes for continuing its activities into greater depth.

FINDINGS

The communities of Washington County have slowly recognized the importance of the energy problem. A new energy awareness in our society has resulted from the oil crisis of 1973-74, and local governments have the potential to arouse this awareness in their own communities. Many community leaders have been successful energy information and service providers. Community outreach efforts have been mounting throughout the country. Local governments have at least four characteristics that can spur community awareness:

- 1) access to people;
- 2) potential to tailor information to fit the needs and character of their area;
- 3) ability to influence people to change their habits;
- 4) ability to integrate energy conservation into their own functions saving taxpayers money.¹

Despite many benefits resulting from local energy planning, there are a number of problems in its development and implementation. Implementation of recommendations in energy management is often the biggest problem involved in local energy activities. North Kingstown was the first town in Washington County to establish an Energy Committee and acknowledge its public responsibility. In the case of North Kingstown, energy endeavors were met by numerous obstacles that included lack of authority, support, commitment, and data funding and caused the disintegration of the Committee within a year of its formation.

This section discusses the obstructions that pertain to the power, execution and effectiveness of Washington County's energy activities. The towns of Narragansett, North Kingstown, South Kingstown, Westerly and Charlestown have selected the same basic organization for energy management in their communities, and all have run into similar hindrances.

Advisory Nature

Local governments have the potential to guide the form and direction of energy information and education best suited to influence conservation efforts. In all cases, the town's energy involvement has originated at the level of an Advisory Committee. These smaller communities with town council/town meeting forms of government, limited personnel and financial resources have not been as actively involved in energy management as have larger municipalities.

The Advisory approach has relied on a committee of interested citizens appointed by the Town Council to advise them on energy management activities. This is an excellent way to make the program more acceptable and to ensure that it meets community needs through assistance and the advice of public officials and private citizens in the development of energy goals.²

A major problem hindering all the appointed commissions is that they are advisory to the appointing body and have little power to institute recommended energy activities or to make commitment to them as high priority issues. Frustration among committee members has resulted because decisions relating to energy issues depend on their approval by the Town Council's vote. Narragansett is a prime example of the above. Its Energy Board has been involved in preparation of grants and designing projects, but seldom obtains Town Council approval. The commission's lack of precedent and authority has created the necessity for it to rely on

governmental support. In general, political and departmental support for the energy effort may be typified as minimal. The lack of implementation of energy goals and policies may indicate the intensity of the government's concern, reflect where the initiative originates and suggest the depth of support.

Local Governmental Support

Due to their advisory role, in house programs and guideline development requires support of administrators if recommendations are to be adequately enforced. The energy commissions invariably have to work within town departments to implement energy programs. Therefore, they are very dependent on the cooperation they receive from politicians and other departments within the town. The importance of high level cooperation establishes potential leverage points, where development of interest in energy could improve program implementation. In Washington County, having an established ordinance is helpful, but does not compel cooperation. The overall pattern is one of infrequent subject-specific contact between various departments. An important factor affecting this cooperation appears to be awareness.

Many of the energy commissions studied are dissatisfied with the lack of intra-government cooperation. Hard feelings and personal conflicts have come about between town departments and the committee members.

Commitment of Members

In regard to cooperation, a critical factor in the effective implementation of energy policies and programs seems to be the presence of committed members. For the most part, energy planning in Washington County is the newest local government activity. Its progress depends on dedication of

the advisory volunteers. In a majority of energy commissions studied, one outstanding problem suggested by the membership has been lack of decision.

Other towns in which committed members initiated energy planning are Narragansett and Westerly. In these towns, perseverance has been the basis of success. Westerly, in the short time it has existed, has undertaken more activities than all other commissions.

The effective implementation of energy activities, whether covered by policy or not, seems to depend heavily on the commitment displayed by all involved, including the general public.

Lack of Citizen Involvement

There has generally been little citizen participation from outside the commissions in the development of local energy projects. All of the local governments studied have undertaken efforts to conserve energy in their own facilities. This internal focus of programs could result in the lack of citizen interest in energy planning. This lack of citizen interest may reflect on the low priority local governments have given energy activity. It also appears to cogitate a confusion about what are appropriate and effective measures. The consequence is the absence of constituent groups with an interest in broad energy issues. Although there are groups in Washington County with related interests, they have not as yet evolved as advocates.

In the absence of clear pressure from citizens' groups, governments tend to assign their limited resources to other concerns than energy. The lack of public interest also makes selling energy programs to decision makers more difficult. In general, public apathy is an important issue with broad implications.

In all towns studied, citizen involvement has not been the primary objective. North Kingstown did create substantial public involvement during "Sun Day" activities the week of May 3, 1978. This proved successful in drawing a variety of people together on solar energy education.

Local governments need to convince citizens of the seriousness of the energy situation. Enhancement of energy awareness through strong and visible support would be a great asset to successful energy involvement. Findings show that citizen groups play essential roles in shaping energy policies and provisions.³

Data Problems

Perhaps the most important activity in energy planning is the collection and analysis of data. Data are needed in order to:

- 1) assess local problems and vulnerabilities;
- 2) identify areas of greatest need and opportunity;
- 3) set priorities for action;
- 4) develop solutions;
- 5) establish a convincing case before political decision makers;
and
- 6) evaluate and monitor progress.

Data collection has been a significant problem for the study towns. Without precise consumption figures, identifying energy management options and priorities becomes an inaccurate estimate, leading to questions regarding credibility of the data. Problems experienced by towns in Washington County include:

- 1) absence of energy consumption data;
- 2) lumping of data;

- 3) shortage of manpower; and
- 4) lack of experience and coordination in dealing with energy data.⁴

Many of the local governments studied have ongoing programs to collect data on the energy they themselves consume, and this information is used to evaluate the effectiveness of internal conservation measures. Internal energy consumption data are usually collected from utility bills. No town as yet collects data on energy consumption in its community or evaluates its program effectiveness. There is considerable variation and degree of standardization and detail in the data collected by all of the towns. Even within a specific energy committee, different methods of reporting fuel consumption data in regard to town owned buildings have caused considerable difficulty.

Data collection has also led to the discovery that Westerly has an exceptionally high cost for street lighting. When Westerly's cost per kilowatt hour was compared with other Rhode Island towns with larger than 10,000 populations, it was found that Westerly's cost was the highest of all.⁵ The energy committee is presently investigating this situation.

Funding

Another problem involved with energy planning at the local level is lack of funding. Budget appears to be the most significant constraint to energy activities. Few small governments have the financial capacity to undertake energy projects. The front end costs present an overburdening problem to all of Washington County.

Of the five towns researched, only Narragansett has a town financed energy planning budget. The capital set aside for the Narragansett Energy Board activities last year was \$5,000.00. Committee members outside of

Narragansett feel that the lack of resources committed is a reflection of the low priority given to energy issues in the towns by decision makers. As a result, commissions have had to look to the state and federal governments for financial assistance. This presents an additional problem because members lack information and direction on where to look for funding opportunities or how to take advantage of them.

The Peacedale Community Action Program carries out its county-wide energy activities without any financial support from the towns impacted. Their success is totally dependent on funding from the state and federal governments. If reliance were placed on local governments in the area of weatherization and fuel assistance, it is doubtful if they would obtain similar accomplishments.

Summary

There is a variation among local governments looked at, but in general they can control or influence an assortment of decisions affecting energy consumption and production. Clearly, there is more energy planning activity in Washington County than a few years ago. The success is hard to quantify but it does not mean community involvement is not important.

What a local government perceives to be its energy problem highly influences the types of solutions it will look for. The energy crunch is being experienced by all case towns in their own increasing energy costs. Findings in general indicate that lower priority is given to energy by government in comparison to other topics. However, even with low priority frequently accorded energy matters, considerable actions have been undertaken to deal with the problem.

RECOMMENDATIONS

The Energy Plan

The first step to increase efficiency of energy activities in Washington County, is to develop an energy plan which provides a sound basis to direct local energy efforts. Based on its consumption statistics and community goals, a local government can draft a multi faceted energy plan. The development of such a plan should be undertaken with the inclusion of elected officials, governmental staff, energy committee members, civic leaders, university resources, representatives of business and other interested citizens and groups.

A local energy plan is needed as a step in the implementation of a national energy policy. National energy policy which would be effected through local initiative will basically be in the form of:

- 1) efficiency improvements;
- 2) adoption of less energy intensive modes of living; and
- 3) utilization of renewable energy resources.¹

Many of these initiatives can best be implemented on a local level. In order to efficiently carry out local energy conservation, a course of action should be designed to coordinate and implement a broad range of conservation areas. A community energy plan should set energy goals to be pursued, recommend policies to follow, and set out possible energy conservation courses of action to be followed to execute energy conservation efforts. The energy plan should identify and address the following:

- 1) energy associated problems;
- 2) short-term and immediate solutions;
- 3) long range studies in which alternatives and recommendations for meeting different problems will be evaluated;
- 4) priorities within each of the above in order to efficiently utilize the available energy resource available at the University of Rhode Island and other governmental departments; and
- 5) a crisis plan specifying what steps are to be taken in the event of a temporary or extended shortage of fuel or energy.²

Local governments, through an energy plan, can accomplish a number of things. They are as follows:

- The energy plan can be tailored for a specific community, incorporating distinct characteristics and energy related issues of the town.
- Energy conservation efforts in government operations can save money for taxpayers.
- The community, with local government aid, can save energy and that money can then be spent for other purposes.
- Most importantly, local governments have a responsibility to ensure the minimization of energy-related hardships.³

The energy plan should be adopted by the Town Council and ordered through ordinances to be carried out. The authority to enforce energy conservation guidelines would probably result in considerably more energy savings than have been realized by any town studied.

Funding

The principal restraint to adding energy planning to local government is cost. In an era when inflation is skyrocketing and local taxpayers are somewhat belligerent, the suggestion of an additional component of

government is hardly enthralling. It has resulted in limited amounts of money being available for energy management activities in local governments throughout Washington County. Therefore, a crucial consideration is how to get the most energy savings out of every dollar. An essential consideration for energy activities is the source and amount of funding.

With constraints on all Washington County governmental budgets, it is imperative to identify the best funding procedures available and educate the energy commission on them. Funding sources are limited, but failure to support energy conservation measures because of lack of funding is unsatisfactory. The Governor's Energy Office may be helpful to contact in order to identify funding sources.

The following are a variety of funding practices for energy involvement in local government.

Low cost, no cost measures:--For local government in Washington County with little capital to invest for conservation efforts, measures requiring limited amounts of money should be first priority. There are many no and low cost conservation measures which can be carried out as general maintenance activities, using funds from all departmental operating budgets. Public Technology, Inc. (PTI) published a book discussing a number of conservation savings listed below.

1. Walk through your building. Are there areas that are unoccupied, or which can be vacated by making better use of the remaining areas? If so, turn off air conditioning, lights, ventilation, and heating (where freezing is not a hazard) permanently. Isolate these areas from other spaces by doors, walls, or other means. If 10% or 15% of the building can be vacated, energy savings will follow almost in the same proportion.
2. Repair broken windows and leaking pipes or ducts; clean filters, radiators, light bulbs, and fixtures; caulk leaks around doors, windows, louvers, and openings. In many cases 5% to 15% energy savings are possible, especially in cold climates where infiltration of cold air increases the heating load and causes your heating system to operate longer hours.

3. Lower thermostats to 65°F in occupied areas during the heating season and even lower in less critical areas. Lower the relative humidity settings to 20% in the winter. Raise thermostats to 78°F or higher in the summer if your building is air conditioned, and shut off the air conditioner, fans and pumps at night, weekends, and holidays. Savings of 6% to 15% in energy can be realized simply by resetting the control points.
4. Shut off lights that are not needed. Post colored signs alongside the switch to remind the occupants to do so.
5. Repair all leaky outdoor air dampers, and shut off all ventilation systems when the building is unoccupied. Outdoor air which must be heated or cooled often accounts for as much as 30% of the energy used in many buildings. More than half can be saved by night and weekend shutdown, since there are more hours of low occupancy in those periods.
6. Have your oil burner and boiler or furnace checked. Clean soot, and scale and adjust the firing rate, draft and combustion. The heating bill can be reduced by as much as 10% to 15% in many buildings; the colder the climate, the greater the savings.
7. Replace lamps with more efficient ones giving more lumens per watt; remove lamps in unoccupied spaces and disconnect ballasts. Many areas in the building require less illumination than others. Reduce lighting levels in less critical areas by removing lamps and disconnecting ballasts. In schools, office buildings, and retail stores, lighting often accounts for up to 50% of all energy used and the heat from the lights also forms a major part of the air conditioning load. The energy used for lighting can be reduced by up to 20% to 40% in many buildings.
8. Clean your windows to let in more natural light. You may find that doing so will permit turning off some of the electric lights near the windows.
9. Set the aquastat lower on your water heater to save energy. In schools, hospitals, and houses, domestic hot water often uses 25% to 40% of the energy required for space heating even in cold climates.
10. Coordinate or reroute deliveries and pickups, inspections, garbage collection, police and emergency vehicle patrols, and other vehicular operations.
11. Implement a preventive maintenance program for municipal vehicles: more frequent inspection for engine tuning, cleanliness of filters, tire pressure, and wheel alignment and balance.
12. Remove excess weight from vehicles. Substantial fuel savings can be realized by leaving unnecessary equipment and tools off of municipal vehicles.
13. Avoid idling for more than one minute. Properly tuned engines should not need longer warm-ups; engines should be turned off when vehicles remain stationary for periods of longer than a minute (such as in street maintenance operations and police patrols).

14. Encourage efficient driving habits: slow starts and stops, obeying speed limits, avoiding riding the brakes, maintaining steady speed.⁴

Local budget support:--Local governments in this study have been unsuccessful for the most part in providing funds for energy activities

A strategy that towns could undertake would be the graphic presentation to the town council of past and projected energy costs of the town and the projected savings resulting from their involvement in energy conservation efforts. These figures can augment efforts to obtain financial and political support from officials. In this way, requests for energy management funds from councils can be justified by presenting the officials with an intelligible idea of the payback of proposed conservation measures.

State and federal support:--An increasing amount of funding for local government energy management activities is being made available through state and federal agencies. It is difficult to ascertain definite funding sources, as we await the results of President Reagan's "Budget Surgery." In any case, possible financial support may come from the following.

1) U.S. Department of Housing and Urban Development is responsible for an Urban Development Action Grant. Amendments in the Urban Development Action Grant Program (UDAG) allow funding for energy conservation and alternative energy supply projects. These projects include:

- a) District heating, either with or without power plant co-generation, except for thermal systems.
- b) Geothermal systems.
- c) Co-generation systems.
- d) Modular integrated utility (M.I.U.S.)
- e) Alcohol fuels production systems.
- f) Loan/grant pools for building conservation or alternative resource measures.
- g) Wind power systems.

- h) Waste-to-energy systems.
- i) Recycling or reclamation facilities or systems.
- j) Solar thermal energy systems.
- k) Photovoltaic manufacturing facilities.
- l) Low and medium BTU gasification facilities.

U.S. Department of Housing and Urban Development is also responsible for Community Development Block Grants.

While it is not mandated that energy projects be funded through CDBG, many communities have been able to develop projects relating to energy through the normal established procedures designed by HUD.

Solar and residential conservation retrofitting are the most common energy related applications with the CDBG.

U.S. Department of Energy and the Governor's Energy Office, are responsible for the Small Scale Appropriate Technology Grant. Three types of energy related projects are eligible for grants under this program:

- 1) Concept Development grants of up to \$10,000 will be made for the research into development of and study of innovative ideas or new concepts.
- 2) Project Development grants of up to \$50,000 will be made for studies, investigations, models or hardware invoking experimentation and testing.
- 3) Project Demonstration grants of up to \$50,000 will be to test and evaluate the feasibility of technologies through actual operational use.

The U.S. Department of Housing and Urban Development is responsible for the Comprehensive Planning Assistance Grant (701 program). To qualify for a grant under this program, HUD requires that proposed applicants must follow general criteria.

- 1) The community must have a satisfactory housing and land use element completed and available for renewal and certification.
- 2) The proposed work program further one or more of the national priority objectives set forth by HUD as follows:
 - a) conservation and improvement of existing communities;
 - b) expansion of housing and employment opportunities and choice for the poor minorities and disadvantaged;
 - c) promotion of orderly and efficient growth and development.
- 3) Other requirements of HUD relating to environmental considerations, historic preservation, comprehensive planning, handicapped access and citizen participation must be observed as they apply to the subject material of the work program proposed for funding.⁵

Franklin County in western Massachusetts is a DOE model of successful community energy planning. An example of diversity in funding sources can be seen in Franklin County. Some of the financial support obtained for their projects came from the following:

U.S. Department of Energy

- study of renewable resource supplies, implementation strategies for town committees, solar heat demonstration projects, weatherization program, private appropriate technology grants, hydroelectric feasibility studies, guidebook to local energy planning.

U.S. Department of Labor (CETA employment and training program)

- building audits, woodstove safety advisor, foresters, weatherization, greenhouse construction, fuel wood marketing, town committee research projects, bus drivers, task force coordinator.

U.S. Community Services Administration

- fuel emergency assistance, community action agency programs.

U.S. Department of Interior

- Youth Conservation and Community Improvement Program: recycling.

U.S. Department of Agriculture

- Soil Conservation Service, Cooperative Extension Service.

U.S. Department of Housing and Urban Development

- alternative energy systems for public housing, community development and block grants.

U.S. Department of Transportation

- rural public transportation.

Massachusetts Office of Energy Resources

- county energy office and staff.

Massachusetts Department of Community Affairs

- weatherization, study of municipal utilities, community action agency programs.

Town Government

- appropriations for building improvements, in-kind services.

National Center for Appropriate Technology

- self-reliance journal, solar greenhouse.

Rockefeller Foundation

- energy committee organizing, environmental impact analysis.

Raytheon Corporation

- hydroelectric study analysis.

Electric Utilities

- hydro feasibility study, wood-waste generation seminar, technical assistance.

University of Massachusetts and Greenfield Community College

- computer time, research assistance, student interns, energy auditor training, program development.⁶

Public support:--It must be noted that even if proposals are scientifically, technically and economically sound, without the backing of the community, they cannot be implemented. Narragansett, South Kingstown, Charlestown and Westerly energy commissions must gain and maintain public support to remain effective. In order to achieve this support, activities should begin with very clear and obtainable goals and objectives. Beginning with a specific targeted program helps to ensure some measure of success. Success will establish the credible evidence to citizens of energy conservation. This support is necessary to obtain funding from an elected body which is responsible to the public for expenditure of tax dollars.⁷

To publicize the efforts of the energy committee and to educate the public, Washington County energy commissions should utilize the media. The media can be employed to focus attention on the progress of the energy effort and commission members should work closely with the press to transmit information correctly.

Energy Education

The increasing complexity of factors relating to energy makes understanding local energy problems a difficult task. Local governments are becoming sought after as a source of information on dealing with local energy conditions. It has become essential that the public, as well as local governments, be presented opportunities to learn about our energy crisis and what can be done to meet the challenge.

Energy management is a new local government concern in Washington County. It is necessary therefore, to educate government employees and committee members first, in order to develop an understanding of how energy problems can affect both governmental operations and the public. In many other communities, local government administrators have begun to

educate themselves, their boards, department heads and employees about how and why energy management opportunities should be addressed.

Education of the public in energy concerns has two main purposes. The first is the informational function of developing public awareness, to encourage voluntary energy conservation, and the second is to keep the energy commission visible to maintain its credibility and endorsement.⁸

The local energy committees can establish a library of materials to act as a local clearinghouse for information. A special collection located in the town library can provide information on subjects ranging from home energy conservation tips to area agencies and businesses involved in resource development. Energy information materials must be accessible to the public in other areas, such as shopping centers. Committees should sponsor workshops and seminars on various energy issues.

Energy commissions in Washington County should take advantage of and actively encourage utilization of existing federal and state education and information sources. Also, the development of personal contacts within the federal DOE, the Governor's energy office, the EPA and other energy related offices is necessary to keep abreast of services and information available.

The following is an excerpt from the Management Information Service Report on "Managing the impact of the energy crisis: the role of the local government." This is an example of a successful energy education program in Great Falls, Montana.

Energy Education in Great Falls, Montana

The city manager's office of Great Falls, Montana, has taken a number of steps to educate and motivate municipal employees and private citizens alike to conserve energy.

In-house Efforts: Chris Cherches, the city manager, established a "Committee on Urban Technology" in the various municipal departments. Energy is a standing item on the agenda of every staff meeting; in fact, compliance with Cherches's conservation directives is a criterion used in internal evaluation of city staff. An in-house flyer, "Energy Alert," provides municipal employees with information on energy conservation opportunities.

The local Chamber of Commerce and other Great Falls merchants offered their assistance to city hall to help cut municipal costs. They approached the city with a plan to generate employee suggestions for safety, reducing red tape, and innovative measures, including energy conservation. Monthly, semi-annual, and annual awards, ranging from dinners and movie passes to resort weekends and televisions, all donated by the participating merchants, would be given to municipal employees who submitted the most beneficial suggestions.

Community Education and Outreach Efforts: As an educational service, the city has published conservation tips in its quarterly newsletter to Great Falls residents. The city engineer made his local television debut when he appeared on a Great Falls talk show to discuss energy conservation. Another municipal service to the community is the testing of conservation devices and materials, such as different types of insulation, on city facilities. In addition, the local gas utility has offered to donate funds and technical assistance to the city to experiment with solar energy. The results of these tests will be promoted through the newsletter and, if they merit enough attention, on the local television station.

Cooperation with the University of Rhode Island

Washington County has a prime energy research and management resource in the University of Rhode Island located in Kingston. The University can provide the state and region with various kinds of specialized technical assistance and expertise. The use of the University and its resources would eliminate the need for duplication of equipment and specialized professional help within the local program.

Some of the services which may be utilized are listed below.

- 1) Surveying--universities have trained staff and facilities for aid in the collection and analysis of data.
- 2) Detailed technical analysis can be obtained, including energy alternatives and specific conservation measures.

- 3) Graduate students and interns may be made available to aid local energy offices in specific projects. Departments requiring student internships may be potential targets to acquire assistance.
- 4) Professors can be consulted on internal local government organization to grant proposal development to public dissemination and educational methods.
- 5) The University of Rhode Island has an Energy Education Center located in Wales Hall. This Center provided information to the general public on conservation.

A source of money may be available through cooperative town-university efforts. Specific federal funds are available only to universities. Mutual interest projects may be proposed to appropriate agencies by towns and the university. Funding is very uncertain and the competition is often extensive.⁹

As yet, cooperative venture between the University of Rhode Island and the local governments has been non-existent.

Regional Organization

The answer to the Washington County energy problem may be the organization of a regional energy committee. The county unit, although not an important government level in Rhode Island, possesses some valuable characteristics to aid in energy activities. The county has a regional economic picture. It also is close enough to the local level to foster interest and permit meaningful involvement by people with a concern about their community and a willingness to cooperate with people they know. A consortium of local governments can provide different viewpoints to many local problems and share problem approaches and solutions among member towns.

The approach would enable residents of a county to discuss their specific local energy needs, the effect of energy price increases on families and on the economy, and how the native resources directly available to them can be used to solve local problems.

Problem areas common to some or all of the towns in the county strongly point to a need for regional cooperation. The promotion of open communications between towns with common problems could create the existence of an organization better able to handle these problems. The following are policies associated with a regional organization.

- 1) To assist in the energy education of the residents in the county.
- 2) To promote and increase citizen participation by relating energy programs more closely to the people of the region.
- 3) To discover means whereby energy planning and programs can be improved.
- 4) To provide planning functions with a geographic base in an attempt to provide more effective practices.
- 5) To facilitate the opening of channels of communication between local governments.

Mason Wilson, Chairman of the South Kingstown Energy Board, noted the importance of coordinated efforts in dealing with Washington County energy problems. He said, "If we don't work together we risk duplicating each other's efforts and moving in opposite directions."

In conclusion, Washington County cannot be termed a model energy conservation program; however, its experiences can provide valuable assistance to other small towns undertaking energy endeavors. No matter what type of energy conservation programs implemented, the previous discussion has identified several important considerations which should be kept in mind to increase success.

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⁴International City Management Association, "Managing the Impact of the Energy Crisis: The Role of the Local Government," Management Information Service Report, Vol. 12, No. 2 (1980), p. 10.

⁵Richard Chew, Foundation for an Energy Plan for East Providence, Rhode Island, Department of Planning and Urban Design, City of East Providence, Rhode Island, August 1980, pp. 16-20.

⁶U.S. Department of Energy, Groundwork: Energy Planning in Franklin County (Washington, D.C.: Government Printing Office, March 1980), p. 45.

⁷Department of Mechanical Engineering, p. 5.

⁸Ibid., p. 5.

⁹Ibid., pp. 14 & 21.

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