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COMMUNITY PROGRAMS

Capturing Conservation through Community Energy Management

by Paul I. Berkowitz, Sabrina L. Karl, and Judith Ramsay

A renewed interest in energy conservation has spawned a revival of community-based energy management projects throughout the United States and Canada.

Responding to the "energy crisis" of the late 1970s, many communities in the United States and Canada turned to energy conservation, renewable energy sources, and alternate transportation policies to reduce energy consumption and costs. In the late 1970s and early 1980s, community-based energy conservation programs were born. Some projects have persisted over time, but in the mid-to-late 1980s, energy prices dropped and the movement toward energy-efficient cities and towns ebbed as "growth" became synonymous with prosperity.

Now, community-based energy conservation programs are staging a comeback. Bolstered by utility least-cost planning, higher energy prices, and environmental concerns, more than 25 community-based programs have emerged in the last five years (see Table 1). Utilities have found conservation can be less expensive than building new power plants, and many of their demand-side management (DSM) programs include a "community" approach.

Government agencies and citizen groups are also involved in designing and implementing community-based energy conservation projects. As utilities discover the community as the centerpiece for demand-side management, cities and towns rediscover the link between energy consumption and other quality-of-life issues such as suburban sprawl, economic uncertainty, environmental degradation, and companion issues such as water and waste management. Projects that address broader resource issues—for instance waste, water, or transportation—can have a great impact on the quality of life and economic health of communities.

This article provides a brief overview of the community energy management concept in North America, discussing the design models they employ, and the selection and transformation of host communities. Building on this foundation, the New London Resource Project in New London, Wisconsin, is presented as a case study in the fast-evolving community energy management field of the 1990s.

Courtesy of Ontario Hydro

Many communities in both the United States and Canada are enjoying the benefits of community-oriented demand-side management programs.

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Three Community Energy-Management Models

Community energy-management projects can generally be characterized in three ways:

In the **marketing model,** an organization—usually a utility—initiates, designs, and implements programs to meet its objectives. The utility views the community as a marketing arena or distribution mechanism for its demand-side management programs.

In the **partnership model,** an outside organization such as a utility or government agency initiates the process but it joins in partnership with the local community to develop conservation objectives and design programs. Partnership programs involve negotiations between the outside organization and the community.

The **developmental model** is a more diverse approach. Here, community organizations and/or local government design and control the programs, while outside organizations (state or provincial energy departments and/or utilities) act as enablers of community objectives, providing funding and other support. Some projects initially target specific programmatic areas (usually with public education and monetary incentive programs) then develop broader strategic plans after they have gained some direct experience.

Projects with a marketing approach tend to concentrate on capturing demand-side resources as an alternative to new energy supply. The utility focuses on the amount of energy savings achievable in the community. In contrast, diverse objectives are established in the community under the developmental model. For instance, the goal may be to improve the community's economic well-being or environment, with communities viewing energy use changes as a means to this end.

Utility-driven programs concentrate on the tools available to them, such as monetary incentives, public education, or technology development, while municipality-initiated or partnership programs may also rely on fiscal or regulatory measures to achieve their objectives. In addition, utility-led programs stress monitoring and evaluation to quantify energy savings. Programs run by local non-governmental organizations, however, may have diverse objectives that are more difficult to quantify and evaluate. Operating with limited funds, they often focus on low-cost measures such as public education and do not generally expend resources on performing detailed program evaluations.

Access to funding differs greatly among the various types of organizations. Utility-driven programs can provide more incentives and other monetary measures since they have access to funding through the utility's rate base. Government-sponsored programs, however, must rely on general program budgets typically funded by tax revenues. Lastly, municipalities must draw from a combination of local revenues, self-generated funds, and grants.

Osage Endures

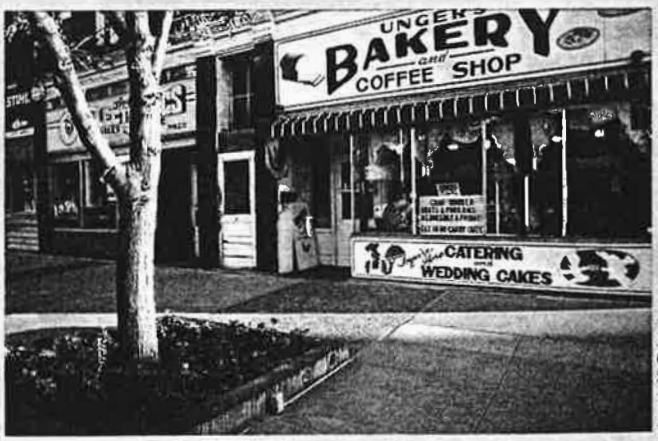
Some community energy-conservation efforts have persisted over time. For instance, in 1974, the Osage (Iowa) Municipal Utility initiated an energy efficiency program to reduce the demand for electricity in all customer sectors. The goal was to delay the need for additional generation capacity. Wes Birdsall, the utility manager, was the driving force behind the ongoing project, which also sought to reduce customer's utility bills to improve the economic well being of the 3,500-resident community.

The project has focused on energy education, with minimal financial incentives for measure installation. All of the community's households have participated in some facet of the project since its inception. The following are some of the accomplishments of the project for the 1974–1992 period:

- Sixty percent of residential households have received an energy audit, including infrared thermograph and blower-door analysis.
- Ninety-two percent of residential gas and electric water heaters have been insulated.
- Seventy-one percent of the households have installed energy-efficient showerheads.
- Ninety-six percent of residential central air conditioners and 75% of residential water heaters are controlled with radio switches.
- Ten percent of commercial businesses have participated in the two-year interest-payment incentive for efficiency improvements in lighting, HVAC systems, and the building shell.
- One hundred percent of industrial facilities have received an extensive energy audit.

In addition, a compact fluorescent lighting rebate program and a tree planting program have operated for the last few years. Efficiency standards for new construction have also been implemented in the community.

The success of Osage can be traced to the relationship and trust that has been built between the utility and its customers. The utility estimates that the project has prevented $1.2 million a year from leaving the community and $800,000 a year from leaving Iowa. In addition, customers have enjoyed three rate reductions and has needed no new capacity additions for the community. This has been accomplished with a $500,000 investment over 18 years.



Larsh K. Bristol

In Osage, Iowa, the community has supported an energy efficiency program continuously since 1974. The high participation and success rates at Osage are a reflection of the trust and ongoing relationship which the community has had with the local utility.

Launching a Community-Based Energy Management Project

Some communities have specific reasons for pursuing energy efficiency and will initiate their own project. Community objectives, such as improving economics (job creation and mitigating dollar flow from the community), minimizing the rate impacts of changes in energy costs, promoting community growth, or addressing environmental issues, are typically the main catalysts for such projects.

In utility-initiated projects, a community may be selected for the project, or communities may be required to compete for hosting the project in order to find the most suitable community for meeting the utility's objective. These objectives may include selecting a community that is representative of the utility's service territory, the presence of community attributes that could lead to community involvement and the project's success, needing to defer transmission and distribution system upgrades, and/or addressing political issues such as the siting of a new generation facility near the community.

Attributes that influence a utility's selection of a host community or indicate a project's potential for success include

- Identification of a project champion willing to be the key community organizer and spokesperson for the project.
- Ability to create an advisory committee composed of influential community members.
- Capability to organize committees that represent the community's different sectors (residential, commercial/retail, institutional, and industrial).
- Presence of news media, such as a daily or weekly newspaper, a radio station, or a network and/or cable television station.
- Existence of a trade ally infrastructure that has some familiarity with energy-efficient equipment and products.
- Diversity of retail establishments and trade allies, as well as a willingness to receive education and training about new or emerging technologies.
- Existence of civic groups and organizations with the ability to organize successful community campaigns.
- Existence of a positive track record in supporting and attaining a goal for the benefit of the community.

Transforming Communities

A successful community-based energy conservation program must focus on preparing markets (such as manufacturing, distribution, and retail) for energy-efficiency activity and transforming the marketplace to a higher level of energy efficiency in equipment, products, and services. In addition, the project should strive to establish a community conservation ethic among residents and businesses that will outlive the project itself.

To prepare and transform the community's marketplace, as well as to promote a conservation ethic, an infrastructure for distributing energy-efficient equipment and products to trade allies and the community is required. Local contractors must learn about the benefits of energy-efficient technologies and installation/maintenance practices to ensure the persistence and reliability of savings. Retailers will require training and education about new products available for purchase, to ensure that customers make informed choices. Consumers also need education about new technologies, proper equipment operation, and lifestyle modifications. In addition, energy efficiency information should be introduced into school curricula.

Larry Hasterok, Wisconsin Energy Conservation Corp.

Expanding the use of compact fluorescent lighting is one goal of the New London Resource Project in New London, Wisconsin. The three-year partnership program is being designed and implemented by the Wisconsin Energy Conservation Corporation, assisted by an advisory committee of community residents.

Only a long-term integrated strategy targeting every facet of energy consumption in a community will create an environment where energy markets and lifestyles are conditioned to adapt to changes in the efficiency marketplace. Changes should occur in the community infrastructure so that energy planning becomes part of the community's planning and management functions. Energy consumption patterns should be continuously monitored and initiatives undertaken to foster energy efficiency in all sectors of the community. As energy efficiency becomes institutionalized within the community, decisions and actions related to energy consumption will become proactive, rather than reactive to external events such as increases in fuel prices and supply interuptions.

The New London Resource Project

New London, Wisconsin (population 7,500), recently launched a community-based DSM program. New London Utilities (a municipal electric and water utility), Wisconsin Public Power Inc., (WPPI) SYSTEM (which provides power and services to 30 municipal utilities in Wisconsin), and Wisconsin Gas Company are jointly conducting the three-year project. WPPI is interested in developing DSM programs that are transferable to all of its member utilities. Wisconsin Energy Conservation Corporation is designing and implementing the project with assistance from an advisory committee made up of community residents.

Members of the advisory committee were solicited both at a public meeting and through an additional mail invitation to various community residents. The ten-member committee consists mostly of small business owners and members of the community's school administration and faculty staffs, plus New London's building inspector, an owner

of a funeral home, and two industrial representatives. Each member has different experience, expertise, and resources to offer the committee. For instance, the small business owners provide important input into the marketing of the project. One committee member often offers his restaurant for meetings among the various stakeholders in the project. As a whole, the committee reviews program designs, organizes community residents, promotes the project through word-of-mouth, and assigns subcommittees for specific components of the project, such as marketing, industrial programs, and school programs. The subcommittees are composed of advisory committee members and other interested community residents.

The goals of the New London Resource Project are to increase customer participation and to introduce positive cash flow financing as an alternative to rebates. This approach should save more energy without incurring the rate impacts typical of historical DSM programs that offer large rebates and/or incentives The project covers all end uses and customer classes, and also targets water conservation. When appropriate, the program includes fuel switching from electric to natural gas.

In lieu of financial rebates to encourage participation, the project relies on utility financing in which the customer repays the energy efficiency investment out of monthly cash savings on his or her utility bill. Most measure and instal-

Table 1.

UNITED STATES

PROJECT	MODEL TYPE	OBJECTIVES	ACTIVITIES	STATUS
Pacific Gas and Electric Model Energy Communities Program, CA	Marketing	Utility peak load reduction, targeting the transmission and distribution system	Monetary incentives, public education and technology development	Implementation
Rock Valley Energy Efficiency Research Project, Iowa Public Service Company	Marketing	Reduce demand for all energy sources through efficiency improvements	Monetary incentives, public education and technology development	Implementation
Hood River Conservation Project, OR. Natural Resources Defense Council, Pacific Power, Bonneville Power Administration, Hood River Electric Cooperative, Northwest Power Planning Council, Northwest Public Power Association, and Pacific Northwest Utilities Conference Committee	Marketing	Building a conservation power plant, research and evaluation	Monetary incentives, residential weatherization, targeting electric space heating	Complete
Viroqua, WI, Northern States Power	Marketing	Determine achievable potential of DSM by innovative program design, reduce demand and energy	Monetary incentives, public education and technology development	Implementation
Mayville/Horicon, WI, Wisconsin Power and Light	Marketing	Reduce demand and energy, market transformation and conservation ethic	Monetary incentives, public education and technology development	Implementation
Iola and Mauston, WI, State of Wisconsin, University of Wisconsin, and Wisconsin Power and Light	Partnership	Economic development through energy-efficiency improvements	Monetary incentives and public education	Complete
North Carolina Alternative Energy Corporation	Partnership	Moderate energy and demand through efficiency and conservation	Public education	Ongoing
New London, WI, Wisconsin Public Power SYSTEM	Partnership	Reduce demand and energy, markettransformation and conservation ethic	Monetary incentives, public education and technology development	Implementation
Osage, IA Municipal Utility	Partnership	Reduce energy demand through efficiency improvements	Monetary incentives and public education	Ongoing
Urban Consortium Sustainable Cities Project (Portland, OR; San Jose, CA; San Francisco, CA)	Partnership	Improve energy efficiency of buildings, transportation systems and waste/water management	Monetary incentives, public education and technology development in partnership with utilities	Ongoing
Colorado Office of Energy Conservation, Western Area Power Administration	Developmental	Economic development through energy efficiency	Monetary incentives, public education and technology development	Ongoing
Davis, CA	Developmental	Manage growth and reduce energy demand	Public education and regulatory measures	Complete
Fremont, NE	Developmental	Economic development through energy efficiency	Monetary incentives and public education	Complete

CANADA

PROJECT	MODEL TYPE	OBJECTIVES	ACTIVITIES	STATUS
Remote Communities Program, BC Hydro	Marketing	Avoid expansion of diesel plants	Monetary incentives and technology development	Implementation
Espanola Power Savers Project, Ontario Hydro	Marketing	Avoided capacity, conservation ethic, research and development	Monetary incentives, public education and technology development	Complete
Jasper Energy Efficiency Project, Alberta Power	Marketing	Reduce energy demand, avoid expansion of generating plants or building of transmission link to Jasper	Monetary incentives and public education	Implementation
Atikokan Energy Efficient Community Program, Ontario Ministry of Energy	Partnership	Energy reduction and economic development	Monetary incentives, public education and technology development	Implementation
Cornwall Energy Efficient Community Program, Ontario Ministry of Energy	Partnership	Energy reduction and economic development, heating and cogeneration	Monetary incentives, public education and technology development	Implementation
Enviro Towns, The Clean Nova Scotia Foundation and Nova Scotia Power	Partnership	Energy reduction through conservation and efficiency	Monetary incentives and public education	Implementation
Sarnia Energy Efficient Community Program, Ontario Ministry of Energy	Partnership	Energy reduction and economic development	Monetary incentives, public education and technology development	Implementation
Peterborough Green-Up	Partnership	Conservation of water, energy and reduction of waste	Monetary incentives and public education	Implementation
City of Toronto	Partnership	20% reduction in CO_2 by 2005 across all sectors	Fiscal, monetary, regulatory measures, public education and technology development	Implementation of Stage 1
Guelph Green Team, Guelph Round Table on the Economy and the Environment	Developmental	Conservation of energy and water	Monetary incentives, public education, and technology development	Implementation
City of Ottawa	Developmental	20% reduction in CO_2 by 2005 across all sectors	NA	Planning
City of Regina	Developmental	20% reduction in CO_2 by 2005 across all sectors	NA	Planning
City of Vancouver	Developmental	20% reduction in CO_2 by 2005 across all sectors	Fiscal, monetary, regulatory measures, public education and technology development	Planning

lation costs are repaid by the customer at 6% interest over 84 months. This mechanism provides for lower utility bills in spite of the monthly service charge for efficiency products and services, resulting in an immediate positive cash flow for the customer.

A "whole facility" approach for residential and commercial customers, enhanced by the cooperation of New London Utilities and Wisconsin Gas Company, aims to minimize lost opportunities. Through energy assessments, low-cost and no-cost measures are targeted along with more significant, major measures. For industrial customers, the project will serve as an integrator/financier in installing energy-efficient equipment and products and providing services.

To eliminate barriers to customer participation, the project involves virtually no up-front costs. There is also less hassle for participants because the utility arranges the energy assessment, directly installs low-cost measures, and provides contractor arranging for major measures. Post-installation quality control is performed on a cross section of the installations, adding further confidence to the reliable capture of persistent energy savings. In addition, residential customers are offered conservation coupons redeemable for up to $100 in financing for the purchase of energy-efficient goods and services from local retailers.

The program also includes a public school education component as well as a strong trade ally component (see "Trade Allies: Long Haul Partners," *HE* Sept/Oct '93 p.17.). An important initial element of the project was market preparation to ensure the availability of high-efficiency products and equipment from local retailers and contractors.

Residential Resource Partners

Through the Residential Resource Partners component of the New London project, trained technicians perform energy assessments in customer homes, including blower-door testing. Information is provided to educate customers on individual technologies and on behavioral changes that can provide comfort and reduce energy consumption. The following low cost measures are installed and services performed during the residential energy assessment

- Water heater wrap
- Water heater pipe insulation
- Faucet aerators in kitchen and bath
- Low-flow showerheads
- Water heater temperature adjustment
- Toilet retrofit device

Customers with gas or electric heating pay $35 for these services either at the time of delivery or in monthly installments on their utility bills. If the home has propane or oil heat (with gas or electric water heating), the assessment excludes blower-door testing and a space heating energy assessment, so customers pay only $19.

Efficient Lighting

During the energy assessment, opportunities for high-efficiency lighting are also identified. Retrofits are based on a minimum three-hour burn time of existing bulbs. Customers can lease compact fluorescent lamps (CFLs) through a monthly charge on their bill. Bulbs are paid for over seven years, and monthly savings are greater than the leasing charge. For example, the installation of five CFLs results in monthly payments of $1.75, while estimated savings approach $2.00 per month.

Major Efficiency Improvements

Based on utility cost-effectiveness criteria, approved major measures include

- Insulation—attic, walls, basement, and sill box
- Programmable thermostat
- Minor and major air sealing
- High-efficiency gas furnace/boiler
- High-efficiency gas water heater
- Fuel switching—from electric to gas water heating
- Ultra-low volume toilets (1.6 gallons per flush)

All measures except high-efficiency furnaces/boilers and water heaters can be financed via the customer's utility bill. In 1993, Wisconsin Gas Company provided rebates for high-efficiency gas furnaces/boilers, high-efficiency gas water heaters, and fuel switching. Utility financing will displace the rebates in 1994.

Water Conservation

By integrating water and energy conservation activities, New London Utilities aims to reduce leak-repair service calls and eliminate the need for future freshwater and wastewater treatment capacity additions. The impacts of a water conservation program can be researched while seizing opportunities afforded through the synergies of a joint program (see "Pulling Utilities Together: Water-Energy Partnerships," *HE* July/Aug '93, p.17).

In designing the project's water conservation component, a variety of residential water-saving measures were tested in the first 200 participating homes. Customers were offered the choice of three flush-adapter devices—the Frugal Flush, the Magic Flush, and the Select-A-Flush—for primary high-use toilets, and a combination of toilet dams and a new flapper for secondary toilets and other high-use toilets where flush adapter installation was not possible.

Wisconsin Power and Light Company: Energy Conservation 2000

The goal of the Energy Conservation 2000 project is to demonstrate that a demand-side management (DSM) project evolving from a targeted community can achieve more conservation over a longer term and at lower costs than historical utility DSM programs (rebates, information, and so on). Energy Conservation 2000 was launched by Wisconsin Power and Light Company (WP&L) in conjunction with the adjoining communities of Horicon and Mayville, Wisconsin, and Wisconsin Energy Conservation Corporation. The project includes both gas and electric demand-side measures, in a comprehensive package with financing on customer utility bills. A community advisory group and subcommittees have provided input into all components of the project.

Both the residential and small commercial portions of the project entail a free energy assessment, direct installation of low-cost measures, contractor-arranging for major efficiency measures, financing of major measures on a customer's utility bill, and quality control of a portion of work performed. A unique feature of both the residential and commercial programs is a community reward or incentive. For major measures installed by a homeowner or business owner, Wisconsin Power and Light Company will donate $10–$30 for designated community projects. In the residential sector, close to 500 households participated in the the program from June to December 1993.

The project also features an energy education effort in the local schools, a retail component aimed at ensuring the availability of efficiency equipment, products, and services, and an industrial program that focuses on shared savings. Energy Conservation 2000, in combination with past community efficiency activities, has delayed upgrading the transmission and distribution system serving the area. The three-year project ends at the end of 1994.

Mike Hodges, Courtesy of Wisconsin Power & Light

Who is this masked man? It's John Jennings of Conservation Services Group preparing to do some air sealing for the Energy Conservation 2000 project. The goal of the project is to demonstrate that a demand-side project in a targeted community can achieve more conservation than traditional rebate programs.

Table 2. Savings and Costs of Toilet Retrofit Measures Installed in The New London Resource Project

Water Saving Measure	Estimated Savings Per Measure (gal/flush)	Estimated Average Annual Savings (gal/year)	Average Measure Cost	Estimated Installation Cost	Installed Cost per Measure	Estimated Annual Water Bill Savings
Ultra-low volume toilet	2.1	13,031	$90	$40	$130	$44.44
Select-A-Flush	1.55	9,618	$20	$15	$35	$32.78
Frugal Flush	1.3	8,067	$5	$12.50	$17.50	$27.51
Magic Flush	1.55	9,618	$8	$12.50	$20.50	$32.78
Toilet dams and flapper replacement	0.85	5,274	$3.50	$9.25	$12.75	$17.99

The toilet retrofit measures, including installations, were offered free of charge to the program's first 200 participants. The three flush adapter devices (Select-A-Flush, Frugal Flush, and Magic Flush) were field tested for technical performance and customer and crew acceptance. The estimated savings were based on retrofitting a 3.7-gallon toilet (an approximate average of existing toilets). Average annual savings were calculated assuming 17 flushes per high-use toilet per day. WECC field testing and independent laboratory testing results for each flush adapter were included in the savings estimates.

The measure costs reported in the table are wholesale costs, with bulk discounts in some cases. Installation costs for the flush adapters and the dams/flappers are based on the actual time crew members spent installing each device (at an an hourly rate of $37.50). Annual water bill savings were calculated using the estimated average annual savings for each measure and New London Utilities' rates of $1.14 per 1,000 gallons of water and $2.27 per 1,000 gallons for wastewater ($3.41 total per 1,000 gallons).

The Frugal Flush was chosen for inclusion in the full-scale Residential Resource Partners Program. Although, the Magic Flush offered a benefit/cost ratio comparable to the Frugal Flush, absolute installed cost was a critical consideration for New London Utilities because this measure is distributed and installed free of charge. In addition, customer and crew acceptance were considered in the choice. Toilet dams and replacement flappers are also offered for free to participants for lower-use toilets or units which cannot be retrofitted with a Frugal Flush. The Select-A-Flush and the Magic Flush will be included with the Frugal Flush in the 1994 retail promotion for purchase by New London residents.

possible. For toilets with excessive water use or in serious need of repair, ultra-low-volume (ULV) units were recommended (see "Changing the Way Southern Californians Flush," *HE* July/Aug '92, p.29). Based on savings estimates obtained during field testing, measure and installation costs, and customer and installation crew acceptance, the Frugal Flush was chosen for the full-scale Residential Resource Partners program (see Table 2).

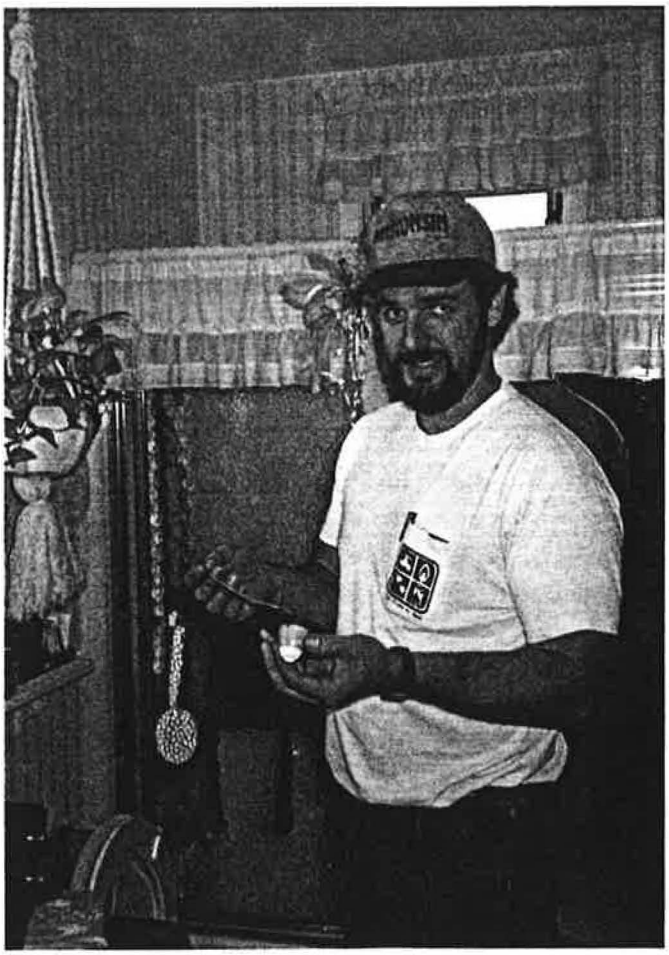
Because one goal of the project is to research the potential for water conservation programs, the Frugal Flush, toilet dams, and replacement flappers are distributed and installed free of charge for customers participating in Residential Resource Partners. While ULV toilet installations are not free, customers can pay for them through the positive cash flow financing option.

Results to Date

First offered to customers in July 1993, Residential Resource Partners has been marketed through direct mail, door hangers, and word-of-mouth. A two-person crew from CAP Services, Incorporated, a state weatherization grantee, is delivering the services. The goal is to visit at least 2,000 of New London's 2,750 households over three years. As of December 1993, approximately 300 homes had participated.

The Retail Promotion

The retail promotion component of the project ensures the availability of energy- and water-saving products in New London's retail outlets. It involves seven retailers, including hardware, grocery, discount, and building supply stores, and focuses primarily on efficient lighting. Water conservation products will be targeted in the retail outlets beginning this year. Retailers were encouraged to stock a group of eight CFLs, chosen to provide variety in wattage, application, and retrofit



Larry Hasterok, Wisconsin Energy Conservation Corporation

The New London project tested a variety of toilet flappers and flush adaptors in the first 200 participating homes to find out which provided the highest level of customer satisfaction. The Frugal Flush was chosen for the full-scale direct installation program.

The Jasper Energy Efficiency Project

The goal of Alberta Power's Jasper Energy Efficiency Project is to lower the community's power demand by 20%. Jasper, a tourist town of 4,500 residents (and 150 businesses), has experienced a near doubling of electricity demand over ten years. In 1992, the town faced a critical decision: build another electric plant, expand an existing diesel plant, extend a power line and hook up with the provincial utility grid, or pursue energy efficiency. Choosing efficiency paid off, with the town meeting its 20% goal within eight months.

Jasper's program targeted commercial, industrial, and residential customers. The goal was to reduce demand by 400 kW in the residential sector, 1,500 kW in the commercial sector, and 1,000 kW in the industrial sector. To date, Alberta Power has spent over $1.5 million (Canadian) on the project.

Residential measures consisted of household audits, sales of efficiency devices at reduced prices, and cash incentives for converting hot-water heaters from electricity to propane. Customer response was excellent, with 891 of 1,100 households (81%) requesting audits and 75% of businesses signing up for audits. The residential portion of the project has saved an estimated 420 kW, with an additional 71 kW from streetlighting conversion to high-pressure sodium lighting.

One of the lessons learned is that the project benefited greatly from the input it received from a local advisory committee made up of the Jasper Chamber of Commerce, environmental groups, the school board, the local hospital, the Canadian Park Service, and Alberta Power.

The goal of Alberta Power's Jasper Energy Efficiency Project was a 20% reduction of the community's power demand. With commercial, residential, and industrial participation, the town reached its goal within eight months.

capability. To spur CFL purchases, several marketing activities were planned and implemented. Demonstrations of CFLs and high-efficiency light fixtures were conducted in two participating hardware stores. Cooperative advertising by manufacturers, distributors, participating retailers, and New London Utilities featured the eight bulbs in the local newspaper and shopper's guide over a two-month period.

The next step in the retail promotion involves distributing conservation coupons to New London residents. Customers can redeem four "Up to $25" coupons that allow financing on purchases of energy- or water-saving products. Again, the conservation coupons allow positive cash flow financing through customers' utility bills.

Targeting Small Commercial Customers

The small commercial program also includes energy assessments, contractor arranging, and installation quality control. Again, positive cash flow financing is offered to customers, with monthly dollar savings exceeding the monthly payments. To kick off this program, an effort was made to locate customers who would be willing to participate in a demonstration. Nineteen commercial customers volunteered to participate, with audits and energy-efficient equipment installations beginning in June 1993. The commercial program will be expanded in 1994 to include all of New London's 300 small commercial customers. ■