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Cooperation at the Cooperative

Rebirth of Rochester's Steam System Delivered by a Most Unlikely Coalition

By Bea Slizewski

What do you get when you mix the public and private sectors, profit and non-profit businesses, in a cooperative venture beneficial to all? Five city ordinances, five county resolutions, two state laws, and corporate resolutions from 40 separate companies to authorize membership.

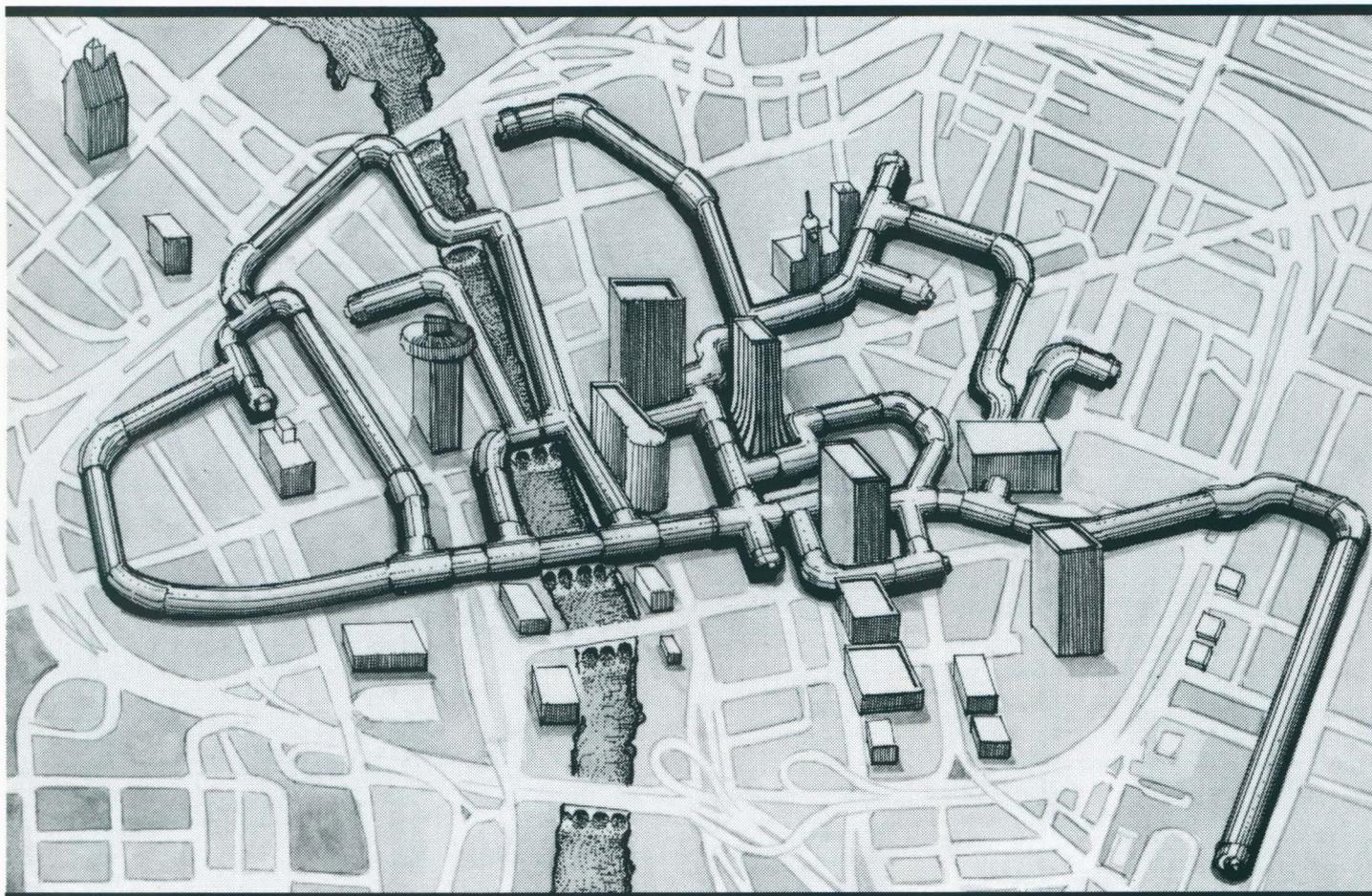
That's what it took in Rochester, NY five years ago when a most unlikely coalition teamed together to purchase and operate one of the oldest district heating systems in the country. Today, the Rochester District Heating Cooperative, Inc. (RDH) is healthy and strong, with members successfully operating the first steam cooperative in New York State, one of only three in the nation.

RDH attorney Michael Howard, who is a partner in the law firm of Boylan, Brown, Code, Fowler, Randall & Wilson, was one of the pioneers in the venture. He states flatly, "It simply would not have happened without that public and private sector coop-

eration." Reflecting back on those 'roller coaster' days, Howard remembers that it was an incredible time, with one obstacle after another blocking the way. Yet it worked, almost in spite of itself.

The RDH story really begins back in 1889 when Rochester Gas & Electric (RG&E) first added steam to its centralized electric system. By 1963 the century-old system was the fourth largest in the United States, serving 621 customers. But the next two decades produced a steady decline in RG&E's customer base along with a rapid rise in operating costs. Energy sources became uncertain and expensive. Urban problems, rate increases and further attrition led to a decision by the utility to discontinue the service, and in 1984 RG&E received permission from the New York Public Service Commission to abandon the steam system by October 1985.

During this same period, the City of Rochester had begun some investigative work of its own, con-



The 8.2 miles of RDH pipeline link Rochester's downtown buildings together in a cost-efficient steam system. Many well known Rochester landmarks are Coop members, including Xerox Tower and Lincoln Tower, visible in the center of the diagram.

tracting with the New York State Energy Research and Development Authority (NYSERDA) to look into the feasibility of revitalizing the downtown steam system. The NYSERDA study assessed both the economic and technical implications of the project. Interested in using the Rochester system as a pilot project, NYSERDA picked up \$60,000, two thirds of the study's cost. RG&E, the City and steam customers kicked in the remaining third. Businesses including Xerox Corporation and Chase Lincoln First Bank contributed to the study and representatives from all the member interests joined together to form a "steam users group." Armand A. Lartique represented Xerox and was elected to chair the group. Xerox donated office space, supplies and employee time. It was this group that would meet every week from 1984 through closing in December 1985.

Two other names were key to the startup. Joe Reisdorf and Bill Hanselman. "Reisdorf worked for the Rochester Engineering Society," Lartique said, "and had close ties with the City and the County. He was one of the first to look into various options, including *what we would be.*" Hanselman represented Resource Development Associates, an engineering consulting firm which researched a number of questions for the group and provided technical support and direction.

Investigating just what they would be was a priority. "The City didn't want to run a municipal system," Lartique continued, "yet there was pressure to do something." Pressure came not only from public but private businesses as well. After all, most of these downtown buildings had been heated by steam for decades. They did not have boilers on site, nor were many designed to

do so. There was an extraordinary incentive to maintain the steam system. "For a company like Xerox," Lartique said, "it would have cost over two million dollars to install boilers." The next logical step was to see a cooperative in action, and in September 1984 the steam users group visited Pittsburg Allegheny County Thermal, Inc. (PACT). PACT is a cooperative which successfully took over most of downtown Pittsburg's steam system in 1983. After the visit, the group saw that clearly this type of cooperative *could* exist, and that it could make good economic sense for members.

It was also clear that there were a number of legalities to overcome. That's when they began interviewing law firms and selected Rochester-based Boylan, Brown, Code, Fowler, Randall & Wilson. According to lawyer Howard, "The first major obstacle was to incorporate as a legal, non-



Rochester District Heating Cooperative board members are an eclectic mix, representing the public and private interests of RDH members. Pictured in the steam plant with General Manager, Howard Cone, are left to right, Henry Manczyk, Director, Buildings and Equipment, County of Monroe; Darrell G. Hartline, Sr. Vice President for Finance, Genesee Hospital; John D. Hellems, Vice President, Genesee Hospital; Lawrence E. Davies, Vice President, Chase Lincoln First Bank; Paul E. Haney, First Deputy Director of Finance, County of Monroe; Armand A. Lartique, Manager, Site Services, Xerox Real Estate/ General Services Div.; Peter Gangloff, Vice President and Treasurer, Midtown Holdings Corp.; Edward F. Watson, Deputy Commissioner, Dept. of Environmental Services; Carl Van Ness, President, CAVCO Services, Inc.; Robert Renehan, Building Engineering Coordinator, Rochester Telephone Corporation; Michael A. Howard, Esquire, Boylan, Brown, Code, Fowler, Randall & Wilson.

profit cooperative entity. RDH was the first non-profit steam cooperative in New York State. Then they had to figure out how to finance the project, with no assets and a nine million dollar financial package! RDH was looking at a tax exempt bond issue and wanted to avoid any municipal or corporate guarantees other than a pledge of the steam use agreements."

Each member signed a "take or pay contract," the RDH attorney explained, where they agreed to pay for the steam even if they don't take it. "RDH had to convince a number of key decision makers that they were capable of acquiring a reconfigured portion of the RG&E steam system, financing the project, designing and building a power plant and providing reliable, cost-effective service. At the time, however, RDH had no track record. Every single one of the 40 members representing the base load had to sign the contract or the deal would fall through." They did. In addition, each member was asked to donate to the kitty one dollar per M pound of steam used. They dug into their pockets and came up with \$350,000.

Yet, for every problem solved, it seemed another took its place. The tax law was changing on December 31, 1985 and the financing structure was based upon the current tax law. In addition, RG&E had per-

mission to abandon the existing system prior to year end. That posed challenges. "And RDH had to convince RG&E to sign a letter of intent to transfer the system to us, rather than to abandon the system or sell it to someone else," Howard said, noting that the public utility did have other offers. "Then in late summer," he continued, "we ran into

A new state-of-the-art facility was commissioned in February, 1987, on schedule and within budget.

a major problem involving the transfer of easements for the system. RG&E was concerned about the potential for residual liability for the distribution system. Ultimately the City stepped in, and agreed to condemn a new easement for the existing steam lines."

The City and County buildings wanted to continue their buildings on the steam system but red tape threatened to interfere. Would it be legal to participate in a cooperative? The City Corporation Counsel checked the City charter and concluded, "no

problem.' However it wasn't quite that simple for Monroe County. The County decided that a special state law would be necessary to allow its 15-year participation in the cooperative. That need generated the first of the two state laws.

The second law involved regulation of the cooperative by the Public Service Commission. "We knew early on that we needed to be exempt from the P.S.C.," Howard relayed. "The accounting, administrative and approval requirements would have been too burdensome for the cooperative and largely unnecessary given the consensual nature of the relationship with its members. We also knew that we couldn't get out of that without a state law." So they worked closely with their state legislative delegation and went through the political process a second time, resulting in law number two.

Special permits were required to go under the city streets. And so on.

Then there was the eleventh hour insurance crisis. "We needed millions of dollars in liability insurance," Howard confided. "But during the year major insurance underwriters abandoned the market. Then, literally on the eve of closing, it came through. We did not have the insurance certificate until the eve of closing."

The Rochester District Heating Cooperative (RDH) was formed in 1984 and an ambitious master plan called for resumption of full heat service for a reconfigured portion of the steam system plus complete renovation of the generating plant. In March, 1985, the Energy Authority signed a \$350,000 contract with RDH to complete the work necessary to procure and finance the steam system. RDH was providing steam to members in January 1986, and a new state-of-the-art facility was commissioned in February, 1987, on schedule and within budget. During that year's time, a temporary plant was installed in a nearby parking lot, using rented boilers which provided uninterrupted service to members. Gas and oil-fired Nebraska package boilers began operating in March 1987; at peak capacity, two of these boilers can provide 150,000 M lbs. per hour and the third 50,000 M lbs. per hour.

Genesee Hospital was one of the earliest members to sign on with RDH. They were not new to the system. "The hospital had been on the steam system for more than 70 years," confided John D. Hellems, Genesee Hospital vice president, adding that, "we were probably one of the first customers on the pipeline. But when RG&E said they

were going out of the steam business and raising rates . . . that's when we started looking into other possibilities." Those possibilities included building boilers on site, Hellems explained.

"We looked very seriously at building our own plant," he continued, "we already had the design and had brought a proposal before our board. The financial people looked at it and said if RDH could deliver what they promised, we would be better off with them."

Genesee had no qualms about the reliability of steam energy, Hellems noted, even though the system was admittedly getting older. "It had worked very well for us for a long time, and we had assurances from RDH that it would continue to do so. Everyone realizes that our needs are the most critical to the system, so if there are any disruptions, we have top priority for backup systems." Hospitals have very special needs for steam, the v.p. explained, not only for heating patient and operating rooms but for instrument sterilization. Although instruments are usually sterilized prior to operating, there must be a way to sterilize during the procedure, if for example, an instrument gets dropped. That's one reason why Genesee Hospital is a customer 12 months per year.

And, most importantly, the bottom line that those financial people were scrutinizing looks even better than they anticipated. "We've saved hundreds of thousands of dollars since we signed on. Even with low inflation, there aren't many costs that go down like that."

The RDH story coincides with an exciting revitalization in downtown Rochester. The area boasts a new cultural district, pedestrian mall, retail center, transportation plan and parking facilities. RDH has played a supporting role in Rochester's renewal by updating its facilities and by offering an attractive, low-cost heating alternative both to businesses currently located downtown and to those considering locating in the downtown area. Serving both the Monroe County Office Building and City Hall, RDH has the full support of local government officials, including Monroe County Executive Thomas R. Frey and Mayor Thomas P. Ryan.

"We are delighted to be partners in this exciting concept," Ryan said. "Rochester District Heating Cooperative responded to a need among downtown building owners and found a creative way to fill that need. We are encouraging businesses to take a new

look at downtown and trailblazers like RDH, with their cost-efficient energy options, help make the job that much easier."

County Executive Frey adds that this unique partnership benefits not only the immediate downtown area, but all of Monroe County. "Without a doubt, the downtown revitalization has a ripple effect throughout the County. Downtown Rochester is the heart of Monroe County, vital to its economic health. And the type of creativity and innovation that RDH represents keeps that heart beating strong. We are proud to be part of the unique RDH team—a perfect synergy of public and private forces."

Short term objectives for RDH are marketing, cost reduction, operational fine tuning and distribution system management. As the "little guy" in town, RDH must stay one step ahead of its bigger brother and so it does, marketing aggressively and creatively. One example of this creative marketing is RDH's use of a sophisticated infrared photography survey by an upstate New York company, Ergonomy, Inc. In 1987 Ergonomy surveyed the entire 8.2 mile pipeline and produced a thermograph which immediately highlighted the problem areas. "Hot spots are easily identified by color

changes," RDH general manager Howard Cone explained, "once we find a hot spot, we can make the next decision, i.e., will the cost of repairing the leak be recovered in savings for the lost steam." A 'hot spot,' he said, is a prime indicator of a steam leak. RDH can thus assure prospects that there will be no surprises when they sign on.

There were a number of skeptics who felt these questions could not be answered because the pipes were buried, Cone remembered. "But we knew the infrared was an outstanding tool. When we found a major leak, one we had dubbed, 'Old Faithful,' we tracked it down, found that it was a leak in a weld joint and fixed it. Then we put the offending piece on display in the RDH boardroom. They were convinced."

Cone, who joined the cooperative in 1986, said that marketing is not the only use the infrared has in RDH operations. "We can do preventative maintenance, and fix small problems before they become major ones. It gives us an independent way of confirming that the system is good." Cone added that several downtown plumes were eliminated when RDH found and corrected old steam leaks. Pipes are replaced as needed, and glass wool insulation, strength-

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RDH is today a "profitable" cooperative—if such a thing can be said about a non-profit operation. Steam prices are 30 percent lower and 1988 results were within two percent of plan. Introductions since start-up include direct gas purchases, steam turbines, combustion controls and a new condensing heat exchanger. An 80-foot high smokestack, a new downtown landmark on the Rochester skyline, is part of a \$300,000 condensing heat exchanger system which will reduce member costs by about 10 percent annually.

Members play a key role in cooperative decisions, from planning stages through implementation. The Board of Directors is advised by the Technical and Finance Committees and these committees, in turn, draw on both members and non-members for their advice and support. A typical scenario in that decision-making process involves the recent economizer purchase. The initial proposal was reviewed by the Technical Committee for feasibility, then passed on to the Board for approval.

After review by the Financial Committee, an independent engineering consulting firm was hired to evaluate the different proposals and oversee implementation of the project. After the first phase review, both committees passed the recommendation to the Board where it was approved. The mesh of private, public, profit and not-for-profit representatives brings added strengths to the committees. Committees meet at least once monthly and neither Board nor committee membership is restricted to employees of member organizations.

Because it is a cooperative, the group brings strengths in a number of areas. But that can have its drawbacks, too, Lartique cautions. "We all have our own jobs and it's difficult to devote the proper time to the Coop."

Employees work an eight-hour shift and the plant runs 24 hours per day, seven days a week, manned by two member teams represented by the International Union of Operating Engineers. The distribution system is maintained by members of the United Association of Plumbers and Pipefitters, Local 13. All operating engineers hold at least a second class license and many hold first class licenses. The Coop encourages its employees to obtain advanced licenses and offers a pay incentive to those who do so. RDH has

adopted an Employee Assistance Program, has a competitive pension plan and, in cooperation with the unions, has developed a strong policy on substance abuse. There are 15 full-time people including two in administration.

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Marketing remains a high priority with RDH. Overall costs will be reduced as more members sign on, and since the plant was designed to handle a load appreciably larger than currently used, new members may be added without immediately adding additional production capacity. As a further incentive to turn off their boilers and sign on, current members agreed to offer new members a discount on fixed operating costs. This approach has proven to be a strong marketing tool. In addition, a new membership category has been adopted for membership during the construction period. This latter membership has been patterned after one introduced by Boston Thermal.

Initially, some RG&E customers decided to install their own boilers; many are now reconsidering this alternative and two are expected to join RDH shortly. The University of Rochester's Eastman School of Music Dormitory, a major new downtown building, is considering RDH as its source of thermal energy when construction begins next summer.

Even though RDH has achieved its short term goals, it is still in an embryonic state. Energy management is tied to economics and society's expectations. For example, people expect a warm environment in the winter and have now come to expect a cool environment in the summer.

However, capital costs to install or replace traditional air conditioning equipment can be prohibitive and electric rates during the summer skyrocket. District Cooling can offer an attractive alternative to those costs and RDH is actively pursuing that possibility, joining forces with NYSERDA to begin a Phase I study of District Cooling for Rochester. The study will be paid for on a shared cost basis and the technical work performed by an outside engineering consulting firm.

Other challenges in the future include the prospect of co-generation, condensate recapture and possible alternative fuel sources. Working together again to study these alternative sources are the City and RDH in a project funded in large part by the City and NYSERDA. NYSERDA has co-sponsored successful district heating projects in Buffalo and Jamestown. Dr. Fred Strnisa, manager at NYSERDA, commented that, "Rochester is one of the keystones of the Energy Authority's District Heating and Cooling Program. Unlike Jamestown and Buffalo which involved the development of new systems, our activities in Rochester were focused on saving an existing system.

"At NYSERDA we emphasize research projects that involve public/private cooperation. The Rochester District Heating Cooperative shows that this type of joint venture works—and works well."

RDH will continue to investigate cost cutting measures in the distribution system, taking a close look at optimum driving potential; temperature/pressure relationships; the effect of a new building on system performance and other such necessary questions. Normal, almost mundane questions asked by any normal, growing business.

Yet those involved since the beginning still seem occasionally astounded that it actually happened.

Mulling over RDH's complicated birth, Lartique said, "RDH was born out of necessity and implemented through sheer effort and determination; a clear indication that anything is possible, even the seemingly impossible."

And Mike Howard stressed that, prior to closing of the financing, "There was absolutely no guarantee at any point that RDH would succeed. Except for the PACT model, the RDH team made the whole thing up as it went along! What other coop in New York State has started from scratch and built a steam production plant?

"It simply never would have happened without that cooperation."

