

DEVELOPMENT ISSUES IN THE CITY OF WORCESTER, MA

Laura McNaughton, October 21, 1988

INCOME AND POVERTY AND POPULATION

Worcester is the second largest city in New England. It's metropolitan area is smaller than that of many other New England cities (Hartford, Springfield, etc.) but the population within the city is highly concentrated, particularly on the East side. This is largely due to the fact that almost half of Worcester's housing stock is triple deckers. Worcester's population in 1986 was 164,651. There has been a 2% increase in population since 1980, but more than 20,000 fewer people live in Worcester now than in 1960. According to the 1980 Census, 6.1% of the population is minority (primarily Hispanic), 16.3% is older than 65 years of age, about 6% is younger than 5 years of age, and the owner occupancy rate is around 44%.

The current median income for a family of 4 is \$30,530. 14.2% of the population is below the poverty line (around 14% is also the national percentage) and 11.2% of Worcester's families are below poverty. Many people in Worcester feel that the high cost of rental housing has greatly increased economic hardship in Worcester, so poverty line data doesn't tell the whole story. It is estimated by the Worcester Committee on Homelessness that there are somewhere between 3,000 to 5,000 homeless people in the city.

JOBS AND ECONOMY

Worcester has shifted from a primarily manufacturing center to a service economy.

Between 1970 and 1980, the proportion of employment in the services areas (including finance, insurance, real estate, and other services) increased from 19.5% to 41.3%, while manufacturing dropped from 43.1% to 26.8%. The top ten employers in 1986 combined to provide 25,708 jobs, roughly 30% of the total. Only one of these top ten companies is in manufacturing (Norton Company) while three are hospitals and one is the City itself. In 1960, only 10% of the people who lived in Worcester worked outside the city. By 1986, this had increased by about 25%.¹

Local employers complain about not being able to hire people for entry level service jobs. This includes fast food, bank tellers, clerks, etc. There are also jobs available for skilled machinists and metal workers. However, if you aren't already trained or skilled, there are not jobs available that can support a family. A number of people I spoke with felt that job training programs are needed. Some resources that might be available to create job training are the 10 universities and colleges who should have expertise in human development, as well as employers who have a self interest in a skilled work force.

The business community is concerned that Worcester has not done all that it can to foster development in the downtown area. The City Council just voted for the lowest residential tax rate for homeowners, which shifts more of the tax burden onto businesses. Community groups have been arguing for this to protect low and moderate income homeowners and tenants for 10 years. It wasn't until the City Charter was revamped and dis-

1. Worcester Master Plan Draft, February 1987

district councilors were added to the city council that this shift has occurred. Many politicians are not willing to challenge business groups about their demand for development, because they are afraid of being labeled "anti-business".

This is very frustrating for Janice Nadeau, the district councilor from Worcester's poorest district. She feels that there is an important opportunity to tie downtown development to neighborhood development with linkage & inclusionary zoning. Neighborhood and housing advocates are working together to make these arguments, but additional examples and technical assistance from other cities is needed. In addition, more neighborhood people need to be organized and mobilized to put the pressure of numbers on the City Councilors.

HOUSING

The lack of affordable housing was the most mentioned specific need in the city of Worcester by people I spoke with. Housing is being built, (over 2,300 new housing units since 1985), using up the city's open space resources, but little of it is targeted toward low and moderate income families.

The local neighborhood centers and Community Development Corporations, are seen as important resources that are in fact creating some affordable housing now. There will soon be a hearing of the City Council housing committee, which advocates see as an opportunity to make the case that the City should act aggressively. Most housing advocates feel that the city of Worcester has not made the creation of affordable housing a priority. A member of the city planning department feels that

the rental rehab work currently being funded is an important resource since it is much cheaper to bring unused buildings and apartments up to code than to build new structures.

THE SCHOOLS

Everyone I talked to who had school age children, and many who didn't mentioned problems in the Worcester school system. I ^{why?} ~~was surprised~~. Racism, minority representation, poverty, and integration are often discussed in this context.

As in most cities, Worcester is highly segregated by income, race and language. Most hispanics, blacks, asians, and poor whites live in Great Brook Valley, a large housing project on the edge of town, or in the inner part of the city. Worcester neighborhoods tend to have formed in pie shape, due to the large number of hills and uneven terrain, and the focus of the downtown, with the poorest section of each neighborhood being closest to the downtown.

Worcester has a network of neighborhood elementary schools, and a high school in each quadrant. Worcester schools are "integrated" by the magnet school concept. Schools in the inner city with high minority populations are upgraded and offer special programs to encourage white families to send their children there.

Many Worcester residents commented that the school system acts as a caretaker where teachers are either too burnt out, old-fashioned, or without enough resources to actually educate children. Both gifted children and children with special needs are inadequately served. Many people feel that the city does

have adequate resources, but that the system is not well managed. The school committee is composed completely of white men, which does not reflect the make up of the school age population. Many residents hope that the input of Parent Advisory Councils (particularly the new Hispanic PAC) may help.

There is also a need to address integration in planning housing development, which would then have a positive impact on the schools.

WATER

Worcester currently has an inadequate supply of water. Worcester's current annual consumption is 9.3 billion gallons, with a total reservoir capacity of 7.8 billion gallons. Worcester should have a reliable supply of 15-18 billion gallons annually, according to the Worcester Master Plan. In addition, the water regularly exceeds federal limits for purity of drinking water. This past summer, the City Council raised water rates to residential customers by 200%. This increase, together with state and federal funds, will be used to build a filtration plant to improve water quality. The price increase may also encourage conservation.

Worcester's neighborhood groups and churches could work together on a water conservation education program similar to the WISE energy workshops that took place in the early 1980s. A program such as this could provide low cost low-flow showerheads, faucet aerators, and toilet dams and education in no cost techniques to cut water usage.

Is this the end? Is there a page missing? (A-)

Good overview - good blend of statistical and anecdotal. You could have gone into some of the

To: Small business CED group and others
From: Laura McNaughton *Dec 1988*
Re: My CED project, "Design & Create Support for a Water Conservation Project in Worcester, MA"

The following background is taken almost verbatim from the Worcester Master Plan Draft, February 1987 (prepared by ON-SITE INSIGHT) pages 29-31, with some additional information updates from local newspapers.

WATER SUPPLY AND QUALITY ISSUES IN WORCESTER

Worcester currently has an inadequate supply of water. Worcester's current annual consumption is 9.3 billion gallons, with a total reservoir capacity of 7.8 billion gallons. This 80% ration of supply to demand is just the opposite of what good resource management indicates should be the practice. A system like Worcester's ought to have a reliable supply of roughly 15-18 billion gallons annually, or 160-200% of annual demand. This situation has existed for many years, leaving the city very vulnerable to periods of extended drought.

Roughly 70% of the water service customers are residential. They account for an estimated 20% of the annual water usage. The bulk of Worcester's water is consumed by large and small industrial customers and commercial customers. The remainder of the demand comes from the institutional sector. Studies estimate Worcester's 1999 demand as approximately 30 million gallons per day, about a 20% increase over 1986. Most of this increase will be from non-residential customers.

The acquisition of new watersheds is very costly, both financially and politically. Thus a more effective near term solution is groundwater resource management and reduction in demand by existing and future users.

Closely related to the supply issue is current water quality. Recent problems with turbidity (lack of clarity) and potential contamination by fairy shrimp and giardia are well documented. There is concern about contamination of one reservoir through proximity to the Leceister landfill. Aging pipes in the distribution system both contribute to diminished water quality and exacerbate problems in existing water supply.

In July 1988, the City Council adopted a package to raise water rates. These are expected to bring in about \$3.4 million more. The increases will help pay for the cost of a new filtration plant, to bring water quality up to Clean Water Act standards (which the water often does not meet at this time) and some distribution improvements.

Residential and Commercial rates increase from 85 cents per hundred cubic feet to \$1.22, with out of town users also experiencing a 44% increase. The City Manager's plan for paying

for water improvements projects similar increases every year for the next 5 years.

THE CONSERVATION AND EFFICIENCY SOLUTION

Using our existing water supply more efficiently is the cheapest and least environmentally destructive way to meet Worcester's growing water supply needs. Listed below are the components of a water conservation strategy:

1. LEAK DETECTION BY CITY (ongoing, working well)

2. RESIDENTIAL PROGRAMS

- a. Public education presentation developed for schools, neighborhood centers, etc. Worcester's neighborhood groups and churches could work together on a water conservation program similar to the WISE energy workshop series that took place in the early 1980s. An educational program should provide training in the installation of low flow showerheads and faucet aerators, toilet dams and leak detection. These materials should also be available to the public at low or no cost.

3. COMMERCIAL PROGRAMS

Businesses (particularly small) need technical information and resources to determine how they could cut their water usage, substitute alternative supply, and/or recycle.

WHAT NEEDS TO HAPPEN TO DEVELOP THOSE PROGRAMS

1. Outreach to other organizations and people to get all available studies and proposals and bring people into the process*WPC

2. Convince the Fair Share Development Corporation (who I work for) to fund the proposal development.

3. Literature review from the Massachusetts Water Resource Authority, Rocky Mountain Institute, Community Energy Partnership, etc.

4. Create program design

5. Begin to approach city agencies for funding.

I REALLY NEED FEEDBACK AND ASSISTANCE FROM PEOPLE IN FLESHING THIS OUT AND FIGURING OUT THE MISSING STEPS. THEN I NEED ENCOURAGEMENT FROM PEOPLE SO I WILL ACTUALLY DO THIS!

CED PROJECT CONTRACT OUTLINE

"Evaluate possible resource conservation projects which can be delivered by the Fair Share Development Corporation Worcester office in order to keep the office open"

Laura McNaughton, December 16, 1988

LOCATION: The City of Worcester is my community.

PROBLEM: Worcester has not done a good job of managing and protecting its natural resources. These include water, energy, and the impact of trash disposal. The cost of providing these basic and life sustaining services are increasing dramatically. It makes much more sense to conserve existing resources with active conservation and demand side management. Conservation also cuts down on pollution problems. The Fair Share Development Corporation's office in Worcester will close down next year unless new projects are created. FSDC is a logical organization to help the city implement conservation. Here's a brief summary of the specific needs around each of these three issues:

WATER: Worcester currently has an inadequate supply of water. The water also does not meet Clean Water Act standards. Many people in Worcester buy bottled water. In July, 1988, the City Council adopted a package to raise water rates. The increases will help

pay for the cost of a new filtration plant and some distribution improvements. Residential and business users will see a 300% increase in water costs over the next five years.

ENERGY: As part of the regional power grid, Worcester is experiencing new electric demand peaks almost every month. The increasing demand means black and brown-outs or the need of utilities to access higher cost and environmentally destructive additional capacity (nuclear, coal, etc.) A coalition of conservation, consumer and community based energy organizations formed the New England Energy Policy Council in 1987 to try to force utility companies to invest in conservation and power management as opposed to new supply. Currently, members of the Council are meeting with Massachusetts Electric (Worcester's electric utility) to get agreement on a comprehensive conservation program for that utility. This is an important opportunity for Worcester to get more local control of its energy useage by participating in such a program, encouraging the more efficient use of current energy resources and protecting residents against increasing energy costs.

TRASH REMOVAL: Worcester sends its trash to Wheelabrator, a new Trash Incinerator right over the line in Millbury. Residents in the area are concerned about pollution from the plant and truck traffic. The costs of trash disposal are increasing rapidly and take a chunk out of the city budget which would be used to meet

other needs. Although there has been some talk of starting recycling to cut down on trash burned (particularly plastics) no recycling project has been started.

UNDERLYING CAUSES:

1. CITY GOVERNMENT

Worcester's city government is tightly controlled by the area's business elite. The City Manager is the former head of Planning and Community Development whose office spent lots of time planning downtown re-development, with little concern about neighborhood development. The city has consequently been very reticent about resources conservation programs, because little education has been done with local businesses to show them that conservation is actually in their best interest. Now that there is district representation and some new blood on the City Council, there is more opportunity to move forward.

Also lack of significant tax revenues due to Prop. 2 1/2 have left the city without staff to review and move forward on some of these proposals. The City now plans to hire a Water Resource Manager, but there is some concern about funding levels now that the state budget is so tight.

2. COMMUNITY ORGANIZATIONS LACK OF TECHNICAL SKILLS

There are a number of advocacy organizations in Worcester which have been pushing agendas on resource conservation. Massachusetts Audubon Resources for Worcester has done some good initial cheerleading with the Chamber of Commerce about water conservation and has positioned their organization as the organizer on this issue. That's originally what I wanted to do for my project, so that's why I've expanded it and tried to focus it more on the practical needs of FSDC as well. (See below). The Regional Environment Council just held an informative forum on Recycling. As mentioned, NEEPC is negotiating with Mass Electric. However, local expertise is needed in the actual implementation of these programs. This is where the Fair Share Development Corporation can play a critical role. In Boston, FSDC provides energy audits and technical consulting to Boston Edison, and has an experienced water conservation project managers on its staff. I ran a neighborhood based energy conservation outreach and technical program in Worcester in the early 1980s for FSDC. FSDC Worcester shut down after that until 1986, when the Worcester office was re-opened to administer the State's 0% Energy Loan program. However, when that program ended in 1989, there is not a clear funding base to continue the organization in the area. The goal is to develop resources in the Worcester FSDC staff on these issues and put together additional service programs to fund the continuation of the office.

3. OUTDATED AND INCORRECT BELIEFS ABOUT RESOURCES

The root problem is the belief, fostered by our economic system and federal government that natural resources are not finite, and that the earth and its inhabitants can recover from misuse and massive pollution. In fact, growing evidence (the greenhouse effect, increased rates of cancer and other environmentally caused diseases, lack of resources for the poor in this country and in all developing countries) shows that this is not the case. For the local economy to prosper, to protect consumers from crippling water, energy, and waste removal costs, and to protect consumers from water, air and land that may be poisoning them, resource conservation is the most sensible solution.

4. CURRENT SERVICE DELIVERER IS NOT COMMUNITY BASED OR LOCAL

Energy audits in Worcester are currently provided by Mass-Save, and organization created and directed by the utility companies to provide state mandated conservation programs. This organization contracts with a profit making delivery firm to provide energy services. They do not provide the kind of comprehensive delivery system which emphasizes actual implementation and do not have any kind of community ties. Unfortunately, since community based organizations have been ignored until recently by utility companies, Mass-Save has more experience in delivering energy and water conservation programs in the Worcester area.

PROJECT GOAL:

Evaluate potential resource conservation projects in terms of community need and potential to create resources to keep open the Worcester Fair Share Development office.

Minimum objectives and method:

1. Refine and re-write this contract based on feedback from my focus group, Chris Clamp, and FSDC .
2. Develop FSDC's expertise and community contacts in the resource conservation area by participating in ongoing meetings between CBOs, city government, the business community, politicians, local utility companies, etc. Keep track of these in my datebook and summarize at the end of each month and bring to CED weekend.
3. Develop library on resource conservation projects ongoing in other parts of the country. Actually read the program descriptions and articles. Write a one paragraph summary for each useful project and enter and index in FSDD computer.
4. Evaluate in writing a potential project in at least 1 out of the 3 areas of water, energy, and trash management. Include the community need this will address, funding sources, organizational resources that need to be developed in order to be successful in implementation, political/ organizing work that needs to be done.

MAXIMUM OBJECTIVE: Receive funding and program support and start one of these projects.

WATER CONSERVATION PROJECT TIMELINE MAY-AUGUST 1989

MEETINGS & PHONE CALLS

Mass Audubon
Worcester Water Resources
CEP
Holly at FSDC Boston

DEVELOP NEIGHBORHOOD BASED WATER CONSERVATION PLAN

How many Worcester households?
How much estimated water useage?
How much could be saved?
Cost of materials?
Workshop location
Answer above questions & Write
First Draft
Continue refining
Interim Drafts Completed
Initial Budget
Final Budget

ORGANIZE POLITICAL SUPPORT FOR WATER CONSERVATION

Meet with Grace Carmark
Meet with Janice Nadeau
Meet with environmentalists
Figure out how this affects bills
Meet with Ray Mariano
Mailing to other city councilors
Attend public hearings

WATER CONSERVATION ITEM SALES

Determine prices for items
Get approval to buy samples
Display samples
Prepare outreach piece
Develop advertising plan
Receive approval from Boston

LIBRARY

Read materials we have
Prepare bibliography
Check with Boston office
for more

PROJECT ACTIVITIES - March 20- April 13, 1989

Laura McNaughton

"Evaluate resource conservation projects for FSDC, Worcester"

MARCH 20 Installed energy efficient lightbulbs in several exterior lighting fixtures in South Worcester for Energy Fitness project

MARCH 24 Met with Water Coordinator and Mass Audubon. They decided they wanted to concentrate on large scale water conservation use for right now (working with Chamber of Commerce to hold workshops for large industries and institutions). There has been a turn around in the Water Department and it looks like conservation will now have a budget. We determined that we will need to bring people and testimony to the Budget hearings before the City Council Public Works committee to support investing in conservation. I offered to work on preparing a plan for residential neighborhood conservation. I learned that the Worcester reservoirs are currently at 93% capacity, and a larger problem than lack of supply is the age and inadequacy of the pumping stations, which will cause a ban on some outdoor water use even if there is enough supply!

MARCH 30 Went to Water Conservation meeting sponsored by Community Energy Partnership (our statewide umbrella network). There are now a broad range of water conservation products available that we could sell from our office. In addition, FSDC in Boston is putting together a study to show the economics involved in water conservation as opposed to creating additional water supply.

MARCH 31 Met with neighborhood centers and Mass Save and New England Electric about the Energy Fitness program.

APRIL 2 Retreat with FACE about new program development (similar to programs we are considering for Worcester)

APRIL 12 Installed energy efficient lighting in interior fixtures with FSDC Executive Director and representative from Mass Electric.

PROJECT INTERIM REPORT APRIL 15, 1989

"Evaluate resource conservation projects for FSDC Worcester"
Laura McNaughton

At the beginning of the term, I had done nothing on the project since I wrote my project contract on December 16, 1988. The contract had outlined three possible areas for new programs for the Fair Share Development Corporation office in Worcester. They were water conservation, electric conservation, and recycling. In October, I had wanted to focus exclusively on water conservation, but then had been concerned that I really couldn't make anything happen in that area, and I wanted to expand my focus. My original contract is a good analysis of the situation in Worcester, although I had not done a timeline, and the project goals were a little unclear.

In February, I received the assignment from our Boston office to do the demographic neighborhood analysis of Worcester for a proposed electric conservation program Mass Electric was planning called "Energy Fitness". The assistant director was unclear about what exactly my role would be in this project, so I assumed (as he did at that time) that FSDC Worcester and I would have a role in the actual delivery of the program.

Doing the demographic analysis of Worcester was useful and enjoyable. I got to use my knowledge of the neighborhoods, as well as that of a number of old friends from past political and neighborhood campaigns. I enjoyed doing the census tract analysis and I made an important new contact in Don Chamberlyne, who is the only person in Worcester who seems to have an empirical handle on the changing ethnic and racial character of the city.

At the February class weekend, I handed in the four page analysis with five appendices. I was confident that the energy fitness program would be my project for the remainder of school, and that I had also helped to create a lasting, interesting job for myself and potentially other FSDC staff people.

In meetings throughout March, however, it became clear that I had not totally understood the situation. In fact, Mass Electric had decided that they wanted to contract with Mass-Save, our utility company controlled competitors, to deliver this program. In essence, I turned over a lot of my knowledge and contacts to Mass-Save.

Meanwhile, I had made contact with the Water Resources Coordinator for the city of Worcester and the Mass Audubon Society and was developing a working relationship with them to try to push for water conservation programs in the city of Worcester. I gave both of them a packet which talked about FSDC's experience in water conservation, and some various basic program designs. At the class weekend in March, I felt that it might make more sense for me to go back to concentrating on water conservation as my CED project.

At the March class weekend, I handed in a list of updates to my original contract which were:

1. That I need specific feedback on re-organizing my contract
2. That I have started summerizing my monthly activities, and will continue to do so
3. That I am developing the library, but want to amend the contract so I am only doing an annotated bibliography. The

annotated bibliography means I will develop a list of all the articles, books, pamphlets that I have on water conservation and list them with a one or two sentence explanation of what the main point is.

I also gave a list of items that should be on the timeline, but with no dates or specifics associated with them yet.

The main problem with the whole "Energy Fitness" program was the lack of clear direction and information to me from the Executive Director, who was responsible for FSDC's participation. He had been hired by Mass Electric as a consultant to work on this project, and was concerned about pushing the agenda of energy conservation programs as opposed to new power supply. In that role, he was not thinking clearly about the implications this had for FSDC Worcester. Ultimately, I doubt the outcome would have been any different. There is not much we could have done to stop Mass Electric from choosing Mass Save. They would eventually get the same demographics information I gave them from the neighborhood centers. However, I would have felt much better about the whole process if things had been clear from the start.

I have talked about this with the Executive Director, and he agrees that there were problems with this situation. He also feels betrayed by Mass Electric, because it was his original understanding that we would have more a role in it.

Perhaps we might have been able to organize the neighborhood centers to support us. Interestingly, I found out, their initial reaction about working with FSDC was concern because they associated with Worcester Fair Share and the organizing

fundraising work we used to do. Therefore, Mass-Save was able to go back to Mass Electric and say the neighborhood centers didn't want to work with us.

I have talked with the Executive Director about the need to analyze what the organization's future should be and what the workplan is, and he agrees for the need to do this. The problem is that it is almost impossible to get any of his time.

So, what I have learned from this process is:

1. Never assume that you know what is going on . Despite feeling stupid, ask questions to clarify issues and concerns.
2. Make sure that all "allies" determine common interests before meeting with competitors. You may not have allies where you think you do.

Support from NHC CED

Chris Clamp has been very helpful throughout this whole process, both in her quickness to understand the situation, and by her suggestions. What would be most helpful would be to talk to her on a weekly basis about things, but I never get around to calling. Our focus group meetings with comments from other students have been exceedingly helpful.

Plans For Next Term

I do want to go back to concentrating on water conservation for my school project. I will probably be working on evaluating other things as a part of my job, but for my project I'd like more focus. However, getting funding to actually do any of these things is going to be terribly difficult. Since Worcester controls its own water supply and pays for it through the rate

base, that is the logical funding mechanism. However, Worcester's budget is in crisis. The City Manager has already proposed using the water and sewer rates to help cover the budget deficit (see attached news articles). As my favorite city coucilor said to me, : " How can I approve money for conservation education when we are laying off police and teachers?"

I need help with strategy from the focus group and Chris.

My plans for the summer term are:

1. Continue giving a summary of monthly activities at each class weekend.
2. Continue meeting with Mass Audubon & Water Resources & Community Energy Partnership water conservation group
3. Begin organizing support for water conservation (see timeline)
4. Write neighborhood based water conservation plan with budget.
5. Keep collecting and reading materials and write annotated bibliography
6. Call Holly at FSDC Boston on a weekly basis and check in
7. Develop prices for sales of water conservation materials from our office, sales materials, and marketing, advertising plan and present to FSDC Boston. If approved, start sales.

for the city of Worcester to be kicked off next year. She believes the budget would be in the \$500,000- 1 million range. Holly and I talked about an installation program with a customer education component.

This fall Kathy will invite organizations to form a water conservation coalition consisting of Mass Audubon, the Chamber of Commerce, us, and other interested groups.

Kathy has 6 people on her staff now inventorying water bills to come up with a true picture of the residential vs. commercial/industrial water use. Traditionally, all the planning information has said residential use is 20%, but that is essentially a made up number. We need to know what the residential useage really is (we think its actually between 30 and 40 percent) to justify a residential program.

After the meeting, Holly & I went out to perform 2 water audits for FSDC members. These are being offered to our members through our newsletter. (See attached). This is helping me build my technical knowledge of residential water conservation techniques.

PROJECT ACTIVITIES April 15 - August 15, 1989

April 19: Participated in lobby day to save the Executive Office of Energy Resources from state budget cuts. Met with state senators, explained our organization, and the need for statewide coordination in energy policy

May 3: Still taking slides of lightbulbs installed for Energy Fitness program

May 12: Water conservation training at Water Conservation Services in Concord, sponsored by CEP. Good hands on information, mostly about toilets

May 23: Attended water conservation workshop at Worcester State College sponsored by Mass Audubon and Massachusetts Water Resources Authority. Talked with Kathy Klein and other locals

June 3: Turned in marketing analysis and tactic for Marketing class. This includes a SWOT analysis, with the marketing objective of positioning FSDC as the organization to deliver water conservation programs in Worcester

June 6: Attended annual meeting of Regional Environmental Council. The topic was "Protecting our water resources". I had a table of devices (of which we sold a few) and was introduced by the president.

June 8: All day training on lighting. Talked with the FSDC Assistant Director about water programs. FSDC Worcester is working with the town of Shrewsbury to do an electric hot water program. This will include installation of showerheads, aerators, tank wraps. The town doesn't want to do cold water measures, because they can't get the water department to agree.

July 13 Attended "Conserving your Liquid Assets", a water conservation workshop for businesses sponsored by the Chamber of Commerce, Mass Audubon, and the City of Worcester. We had a display I talked with a number of people, and got my picture on the front page of the business section (although it was a picture of me with energy efficient lightbulbs!). See attached.

July 10-July 20 Planned and held 6 hours Situational Analysis with the Worcester FSDC staff and Assistant Director. This was all written up for the Organizational Management class. See attached.

July 31 Held focus group for Marketing Class about Worcester homeowner's views on water supply and quality. This is written up in maketing update.

August 3 Met with Kathy Klein, Worcester's Water Resources Coordinator with Holly Gettings, FSDC's Boston Field Director. Kathy wants us to design a residential water conservation program

PROJECT INTERIM REPORT AUGUST 15, 1989

"Worcester Water Conservation"
Laura McNaughton

At the end of the last term, I made a decision to focus on water conservation in Worcester as my project. I presented what I hoped to accomplish over the summer term in the "Water Conservation Program Timeline" (on page 7). I will use that structure to evaluate what I accomplished during the summer term.

"MEETINGS & PHONE CALLS" - This is ongoing and continuing. I put it on the timeline because I wanted to remind myself that I have to take the time to keep in touch with people. I will put it on the final timeline for the same reason.

"DEVELOP NEIGHBORHOOD BASED WATER CONSERVATION PLAN" - Some of the preliminary research and information about Worcester's water situation has been collected. Kathy Klein has now essentially asked us to develop a proposal for the city to review. The water audits that Holly (FSDC Field Director) and I am doing, and the hot water conservation program that we are running for the town of Shrewsbury are giving us good information about actual field costs. We may also be able to get some information about actual savings after a few months. Originally, I had planned to develop this by the end of the summer term.

It has become clear through the SWOT analysis that I did for the Organizational Management course and the focus group run for the Marketing course that FSDC has to sell both our organization and the need for water conservation in the city before we can be

secure about the city's political will to fund a residential

conservation program.

At the same time, I still need to start putting concrete program ideas down on paper so we can do good planning and program development within FSDC. I find it difficult to discipline myself to do this until the last minute when I've got a deadline. We will have a better proposal to the city and the process will be less hectic if I can start doing drafts now. NHC CED program can help by having Chris Clamp bug me about this everytime she talks to me!

"ORGANIZE POLITICAL SUPPORT FOR WATER CONSERVATION" - For the summer term, this was defined pretty vaguely. I have talked to the environmentalists I know and Councillor Nadeau. Attending the REC meeting and Commercial Water Conference have given FSDC and me some visibility on this issue. (See the article on page 8) I have not attended any public hearings or had contacts with other politicians.

As I explained above, the schoolwork of the summer term has given me a lot clearer picture of the organizational weaknesses we need to overcome and some of the strengths we can use to do that. Our lack of clear identity is a real problem. We are trying to get an intern to help organize some coherent marketing.

I am planning to send a mailing to local politicians and decision makers about our organization and the fact that if their constituents are complaining about water bills and quality, we can help.

Holly is going to set up a meeting for us with Steve Cowell,

the Executive Director, to strategize about program design, and

making sure we don't once again design a program that Mass-Save or DMC ends up delivering.

As I discussed in my Marketing paper, we need to do a public education campaign. We have to produce a report detailing that demand management is the best way to deal with Worcester's water crisis. We have to point out again, that it is in fact a crisis. Holly and I talked about this, and how to get funding to produce this report. It's tricky because politically and practically, I don't think we can get the money for the city. I don't feel like I have time to get foundation money.

I need help from Holly and Steve to detail exactly what pieces of research and analysis we need to make such a report credible. It is too vague right now. Again, if I could get my initial ideas down on paper, it would give them something to react to , and make it all much more concrete.

Our major strength in regards to our competition is the focus FSDC has on customer education and empowerment. We need to become more adept at stressing this point and figure out how it sells us in the best way.

"WATER CONSERVATION ITEM SALES"

I worked with the Boston office to price these items and we now have a good stock in our inventory. I did not develop an advertising plan or do mass sales. Again, through the SWOT analysis process, it became clear to me that we don't want to concentrate on material sales, but use that fact that we have high quality low cost materials with expert advice and education as one

of the services we provide. After we have created more of a demand

through publicity of the problem, it might make sense to do some advertising then.

"LIBRARY"

I still haven't done anything about preparing a bibliography. I'm not going to do it unless we can hire an intern. I have been reading a lot of materials, but I haven't taken the time to organize it.

My revised timeline is on page 4-A (next page) . I'm not sure if either the "Saving Worcester's Water " report or the final program design will be done by January. At least, I will have interim copies to present. I am also not sure exactly what I will need to do for my final report and project presentation, and I assume we will start talking about that in September.

With this report I've included complete copies of the papers I wrote for Dakota and Michael. Listed below are the page numbers, and what I think is of most interest.

** Project Activities pp5-6

Old timeline p7

** Press pp8-9

** Marketing Class Presentation p10

** "Saving Worcester's Water " mock p11

* Marketing Research pp12-18

Focus group Participants p19

Focus Group Questionnaire p20

Appendix A: Marketing Analysis & Tactics

** Appendix B: SWOT ANALYSIS

Appendix C: Organizational Management paper

*Appendix D: FSDC summer newsletter

FINAL PROJECT TIMELINE

9/23

10/20

11/17

12/15

MEETINGS & PHONE CALLS

Environmentalists

Kathy Klein

CEP

FSDC Boston (Holly etc)

PRODUCE "SAVING WORCESTER'S WATER REPORT"

How much water do we need to save?

Costs of developing new supply

How much could we save ? per hld?

Find intern to help with above?

Good report design

Printing

Press event

How do we pay for this?

How to involve allies in process?

DEVELOP WORC. RESIDENTIAL WATER CONSERVATION PROJECT

Get numbers from KK for useage

Strategize about avoiding MSI

Field test costs

Numerous drafts

ORGANIZE POLITICAL SUPPORT & PUBLICIZE FSDC

Letter to politicians

Get intern to help with mktg?

Write REC newsletter article

Release "Report"

Develop do-it yourself articles on conserv.

Participate in city's coalition

Build movable good looking display

FINAL PROJECT REPORT & PRESENTATION

JANUARY

PROJECT ACTIVITIES August 15 - December 15, 1989

August 21- 22: Participated in hot water conservation training for the town of Shrewsbury. We plan to install hot water conserving devices (showerheads, aerators, pipe and hot water tank insulation) in over homes in Shrewsbury over the next year, in a contract with the Shrewsbury Electric Light Plant.

August 29: Installed water saving devices in Kathy Klein's home in Millbury, as we do for water survey. Had good discussion about devices and suppliers.

August 30: Did several installations in Shrewsbury with our new full time installer.

September 11: Met with FSDC Exec. Director and staff about water conservation. We determined that we needed development money to do more research, and Laura should develop proposal to city of Worcester.

September 17: Presented installation program, devices and organization to Shrewsbury Democratic Committee.

September- December : developed Business Plan for marketing and delivering FSDC Water Conservation Survey in Worcester. Completed December 15. Also provided technical assistance to the 15 non-profit organizations I am working with to get energy conservation grants about water conservation devices and practices. Talked with local environmentalists and within organization about promoting water conservation on an ongoing basis.

September 25: Met with Dynamy staff person to try to get student intern to help with marketing. (Students decided not to do it)

November 9: FACE 10th year anniversary in Fitchburg. Shared water conservation ideas with colleagues in network.

November 11: Attending Mass Audubon Annual meeting and talked to more environmentalists about water conservation.

November 14: Met with Clark Environment, Technology & Society students to see if they could do some of the technical analysis of current Worcester water usage.

November 15: Spent all day in FSDC Boston office writing proposal to city of Worcester and meeting with staff people about it.

November 15- December 6: Reviewed proposal with CED and FSDC people. Left 10 messages for Executive Director to call me. Wrote nasty letter to E. Director threatening to quit.

December 1: Regional Environmental Council Newsletter is published with my article about the Industry Water Conservation Conference in July.

December 7: Executive Director called and apologized. Agreed to help work on budget and meet with Kathy Klein on December 20.

December 12: Talked with Clark student. They are meeting with Kathy Klein to see what Clark can do for data analysis. Talked with Kathy Klein.....

(notes from talking with Kathy Klein)

She got my proposal on the same day as she met with Clark people. They have completed categorizing 38,000 water meters as to residential, commercial, etc. They have 2,000 left to do. They were waiting for new assessors maps since theirs were 5 years old. They just received them.

She thinks all this analysis is helpful, but thinks ultimately it will make the most sense to do projections by number of people in the household, and use some accepted per gallon per day figure.

In terms of planning she's already decided that some kind of retrofit program where teams go in and actually install devices is what makes sense, coupled with some sort of educational component.

Worcester has about 67,000 units of housing, according to OPCD with average of 2.3 people per unit. Multiply that times the low gallon figure of 60 gallons per day, and that accounts for half of Worcester's total water use. She really wants to shift efforts from non-domestic to domestic, since she thinks industry and colleges will do this stuff to a large extent on their own.

She wants to advocate to the city for a direct installation program with crews. Hitting the domestic will have the biggest impact on Worcester's average demand over the long term. We should be spending money on this now!

The city is tackling the meter problem (meters are very old and underreading). They will be replacing 8,000 per year for the next 4 years (32,000). There are an additional 7-8,000 which are big meters which it makes more sense to rebuild. The city got a \$400,000 grant from the state hopefully to do this.

Rockwell has been hired to do this and they are training installers. Someone suggested to her that the retrofit program happen at the same time as the meter change since people will have to make appointments to do that too. This would be with different people (meter changers are specially trained and that's all they do).

She is working to hire a firm, Brown and Caldwell (?) to do an initial report for her (Rai thinks it cost them about \$20,000). She find she is spending 90% of her time doing water protection

as opposed to conservation. The written plan will be ready in 8 weeks.(end of Feb/March) They will do some estimates of costs of retrofitting, what would be priorities. It will be pretty sketchy on the residential side, she thinks only a couple of pages. She hopes they will do cost ranges. The reason she wanted to hire them is that they will provide examples and case studies from other cities. She thinks she really needs this professional report to convince the city council and others that we should be moving in this direction. Then she wants to work with local people to do the specifics of tailoring a program to Worcester.

She still has some money in her budget. She talked with Andy (?) about hiring the Clark people and he felt that other colleges (WPI) had offered to do these things for free , and Clark doesn't pay any taxes, so the city would never go for paying their students to do anything. Things might be different for FSDC since we're a corporation. She wasn't sure whether we are actually looking to do the work, or just saw that it needed to be done (I reassured her and set up meeting with Steve next week)

What I proposed is much more detailed and at a different level than what Brown and Caldwell are doing. Potentially we could get started on that before March 1st since it would only make their report all the more solid. The appendix will be the drought management plan.

Worcester has agreed to give water to Holden so they can build the filtration plant up there and also there was a section in Business about BASF locating in which Manager and DPW guaranteed 800,000 gallons. Kathy says these decisions are made on a case by case basis with no overall planning and its just what the heads want to do.

There are a number of recommendations she's looking at that are pretty radical, and the B&C report will have examples of them. She thinks city should tighten up hook-up process. She's wondering about a seasonal water rate. (Others before have felt it is inequitable and unfair). Worcester's demand was 30mgd in July-Aug 88 and 24mgd (average in July-Aug 89. That's outside watering. This peak demand can be very critical to overall water supply, particularly on a daily basis. Generally, in May to June the mgd jumps from 22 to 30. They know that's outside watering.

The power of the Water Commissioner is set by the City Charter.

He has a broad and undefined range of power to protect the public health & safety. For example, they can set a hook-up moratorium. Currently, you have to get a water and sewer permit. and this is evaluated based on proposed design with minimum state standards. They just run around and get someone to sign it, there is no process. The DPW could set stricter standards and needs a review process.

Innovative program is 2 for 1, where state can require in order to put in new sewers that developers must find enough leaks in system to repair to provide twice as much water as would be used in new development. In CA they require the same thing for water usage, so that developer has to go replace toilets or something in other structures to create his supply for new construction. (It's a little more complicated than that).

To: Carl Fawcett & Steve Cowell'
From: Laura McNaughton 2/15/89'
Re: Worcester's Neighborhood Centers and Areas

The following is based on conversations with City Councillor Janice Nadeau (yay!)& Grace Carmark. The director of the Worcester Community Action Council is now excellent, Patty Lewis, a good friend of Janice (who sits on their board) and she sits on the Affordable Housing board that I sit on. When I talk with her she may have some additional insights. WCAC funds all the neighborhood centers. This information is confidential. However, I've got it on the computer, so if you want me to edit it so that it can be public just let me know. I'll be away on Friday at school and up in Vermont visiting Deb and Martin on Sunday and Monday. I'll be back in Worcester by noon on Tuesday. I'm somewhat flexible, so let me know.

Once important point is that I think that the landlord permission is a crucial issue that needs to be thought through better. Can we do installations without landlord permission? That doesn't seem like a great idea, but we never had any problem that I recall during ComGas LAFUT. Also, most basements (where H2O tanks are) in renter buildings are locked, and tenants don't always have keys. Almost all areas we target will be almost exclusively renters.

CRITERIA FOR CHOOSING A PILOT NEIGHBORHOOD:

A Reasonably high percentage of hispanic/asian households so we can test bilingual outreach capability and reach households that are traditionally excluded and need the services most. This is based on our best guess. The Census information is hopelessly out of date and the city of Worcester is worse. (Though I am trying to pull this together and document as much as I can).
1: low percentage - 5 : high percentage

B Competence of neighborhood center outreach
1: low competence - 5 : high competence

C Low level of political infighting and turf battles among neighborhood organizations.
1: lots of infighting - 5 cohesive, organized

D. Relatively well defined area (I can do that by streets, but I'm trying to compare with Census tracts). Basically, we can get this specific with whatever neighborhood we choose, so it doesn't help narrow things down. We can get this specific at a later date. In each neighborhood, we can find areas that are similar in terms of income, ease of access, housing types.

THE NEIGHBORHOOD CENTERS:

1. Union Hill/Grafton Hill : FRIENDLY HOUSE:

Pro: Gordon Hargrove is an incredibly politically savvy director

who has maneuvered Friendly House out of all the political fighting about which neighborhood centers will be closed down. Union Hill has a mixed ethnic base. We have a sense that their is higher hispanic/asian population which is fairly tied into the center than say Island/Vernon Hill but less than Piedmont. Friendly House is the best funded, most diverse neighborhood center. On the one hand, that's a good chance for success, on the other, we feel like they always get new programs and at another area where there might be less going on, it might have more of a focus. The staff is extremely overworked and Gordon has a tendency to promise the moon and dump it on staff. We really should try to get some money for the neighborhood centers.

A:3 B:5 C:5

2. South Worcester Neighborhood Center. This is where FSDC is located. This is the heart of Janice's district. This area has fewer minorities (needs to be confirmed) but more are moving in. The center is well run, but they are planning to collapse the Quinsigamond Village Neighborhood Center in with it, which in terms of area is weird because that's really closer to Vernon Hill. This area is next to Main South, which they are trying to collapse into the Piedmont Neighborhood Center, which is a big deal.

A:2 B:5 C:3-4

3. Main South/ MS and Piedmont neighborhood centers have always been separate because MS is whiter. The lowest income areas of Main South have become increasingly minority. We don't want to start a pilot with them and we won't be sure what organizations we will work with in this area until the dust settles.

A:4 B:2 C:1

4. Piedmont : Piedmont Neighborhood Center, ALPA, Centro Las Americas & St. Paul's outreach. This is the heart of the infighting among the hispanic community. Piedmont NC doesn't do such a great job of serving people (though historically better than Main South), ALPA is useless but people are afraid of being called racist so they don't defund them. We like Jaime Florez best who works out of St Paul's, worked on WISE II and is still does the news on the hispanic radio program. We also like Gladys Rodriguez from Centro. We want to work with all these groups, but as individuals, and we have to be very careful. This is the area that needs the assistance most, so I am really torn.

A:5 B: Variable, depending on which agency C:1 3

5. Belmont/Shrewsbury St Area. : This is where Prospect House is located. This is the one black power center, but Betty Price, the director is a bitch and a lot of people in the black community can't stand her. We have found their outreach not to be great from WISE. The Shrewsbury St area, the old Italian area is trying to get organized through the East Side Improvement Association, and are pissed off that they don't have a neighborhood center. There are increasing numbers of hispanics & vietnamese moving into this area, and they want to do something at Mt. Carmel (Father Bafaro & Pezzella).

A:3 B:3 C:2

6. Island/Vernon Hill/Quinsigamond Village: Currently this area is served by the Green Island Neighborhood Center and the QVCC. The QVCC has a horrendous board of directors and is going to be collapsed into the South Worcester Neighborhood Center. GINC serves a tiny area which is where we traditionally kicked off the WISE program because it was so easy to do outreach. This area is whiter and with a high population of elderly.
A:2 B:3 3:3

Remember that in Worcester some other important neighborhood based outreach are the churches and the Head Start programs.

North Worcester.

To: Steve Cowell and Carl Fawcett
From: Laura McNaughton, 2/17/89
Re: Worcester Demographic Analysis and Neighborhood Targeting
for Energy Fitness Program.

There are four critical issues that I believe must be addressed in the successful program design of a Worcester Energy Fitness program. They are: 1) Neighborhood definition and choice of pilot area, 2) Minority Outreach and Service Delivery, 3) Water Conservation, and 4) Landlord agreement.

Neighborhood Definition and choice of pilot area

Refer to Appendix A, "Target Worcester Neighborhoods By Census Tract". These are the concentrated low income areas of the city, with the exception of Great Brook Valley, which is operated by the Worcester Housing Authority. If you would like the actual statistical data from the census regarding poverty in these areas, that is easy to prepare.

The housing stock in this area is almost exclusively multi-family, predominately wooden three deckers. In the Piedmont area, we also see larger brick tenements. There are a few single family homes mixed in with the larger housing stock. Again, it is simple to pull the census information to give you exact numbers.

Most of the target population, then, are renters. There are some older owner occupants, but the trend is increasingly toward absentee ownership, particularly in the poorest areas.

I recommend that these five neighborhoods be the focus of the project (see Appendix A): 1) Main South, 2) Piedmont, 3) East Side (inner part of Lincoln, Belmont, and Shrewsbury Streets), 4) Union Hill, 5) South Worcester, Green Island, lower Vernon Hill.

Here's my analysis of neighborhood characteristics. I think they are all similar in terms of housing types, ease of access, and income. The chart below looks at strength of local organizations and neighborhood cohesiveness. I am adding one additional criteria which is non-English speaking residents. I feel strongly that this program must target Spanish and Vietnamese speakers in order to fulfill its mission. The areas are ranked on

Scale of 1-5 with 1 the weakest and 5 the strongest.

	Non-English Speakers	Local Org. Strength	Neighborhood Cohesiveness
Main South	4	3	3
Piedmont	5	4	4
East Side	2	4	2
Union Hill	3	5	4
So. Wo/I/VH	2	5	4

These ratings are based on statistical data and interviews with a number of informed Worcester activists & public figures. The information on non-English speakers will be discussed below. See Appendix B for a list of contacts.

Minority Outreach and Service Delivery

One of the most critical aspects of understanding Worcester's low income neighborhoods is the dramatic change in recent years from a largely non-minority, aging population with fewer families and fewer children to an increasingly minority-dominated population with a much larger proportion of families and children. Because the 1980 Census data does not capture this recent trend, Donald Chamberlayne of the Social Service Planning Corporation has analyzed Worcester School Department data. Mr. Chamberlayne is currently preparing "Living Here Tomorrow", a strategic community needs assessment sponsored by the United Way, the Worcester Community Action Council and the City of Worcester. I have included some of the preliminary, not final, results from his analysis to shed some light on this issue.

Appendix C estimates that in the City as a whole, Worcester's minority population has increased by 72% since the 1980 census, making up about 13 percent of the population in 1988. Appendix D shows the tremendous change in Worcester public school enrollments by race and ethnicity.

Appendix E is my compilation of some of his disaggregate data for a number of the neighborhoods I've targeted. Obviously the number of minority children does not correlate directly with the number of minority households. However, a number of community sources confirmed that "minorities" are becoming the majority in Piedmont and parts of Main South, and that other inner city areas are moving into the 20-30% range of minority households.

In Worcester; Hispanic and Asian residents make up 71% of the population. Consequently, in targetting low income areas for service delivery we must assume that close to fifty percent of the households will have difficulty in participating if the service providers are not bilingual. It is critical that a large number of the outreach workers and installers speak Spanish or Vietnamese, and that the project coordinator work closely with neighborhood organizations, Hispanic and Vietnamese service providers, local politicians, WCAC, etc. This is similar to the kind of outreach performed in the WISE program in the early 1980s. A brief summary of that program is enclosed as Appendix F *Hispanic*

Water Conservation

Although Worcester is not directly tied into the MWRA, there is great concern about adequate water supplies this summer and in the future. Worcester's current annual consumption of 9.3 billion gallons is backed by a reservoir system of only 7.0 gallons. This 80% ratio of supply to demand is just the opposite of what good resource management indicates should be the practice.

In July 1988, the City Council adopted a package to raise water rates. These are expected to bring in about \$3.4 million. Residential rates increased from 85 cents per hundred cubic feet to \$1.22. The City Manager's plan for paying for water improvements to meet Clean Water Act standards projects similar increases every year for the next five years.

I will be meeting with a task force including the Regional Environment Council, the city's new Water Resource Coordinator, and Massachusetts Audubon next week to begin to develop recommendations for the City Council. What an opportunity to get some water conservation on line quickly!

I believe the water conservation aspect is an important selling point with landlords. They will want to know what they get out of the Energy Fitness program. With the exception of some exterior lighting improvements, most of the benefits will accrue to the tenants in the form of reduced electricity bills. However, given the dramatic increase in water rates, water conservation devices will have a positive impact on the landlord's water and sewage bills.

Landlord Agreement

These target neighborhoods are almost exclusively renters. I think it is terribly important to tie in faucet aerators and showerheads, but how do we deal with liability issues? I am concerned about what would happen to a tenant who agreed to Energy Fitness work without the landlord's permission, and had some small problem caused by the installation. Doing showerheads is a little problematic because of the bad plumbing maintenance in much lower income housing.

The neighborhood centers know most of the families and the local landlords. It might make sense to contract with neighborhood center staff to schedule installations on specific streets. One could also consider targeted mailings to landlords. This information may be available through the city Assessor's office.

APPENDIX A

TARGET WORCESTER NEIGHBORHOODS BY CENSUS TRACT

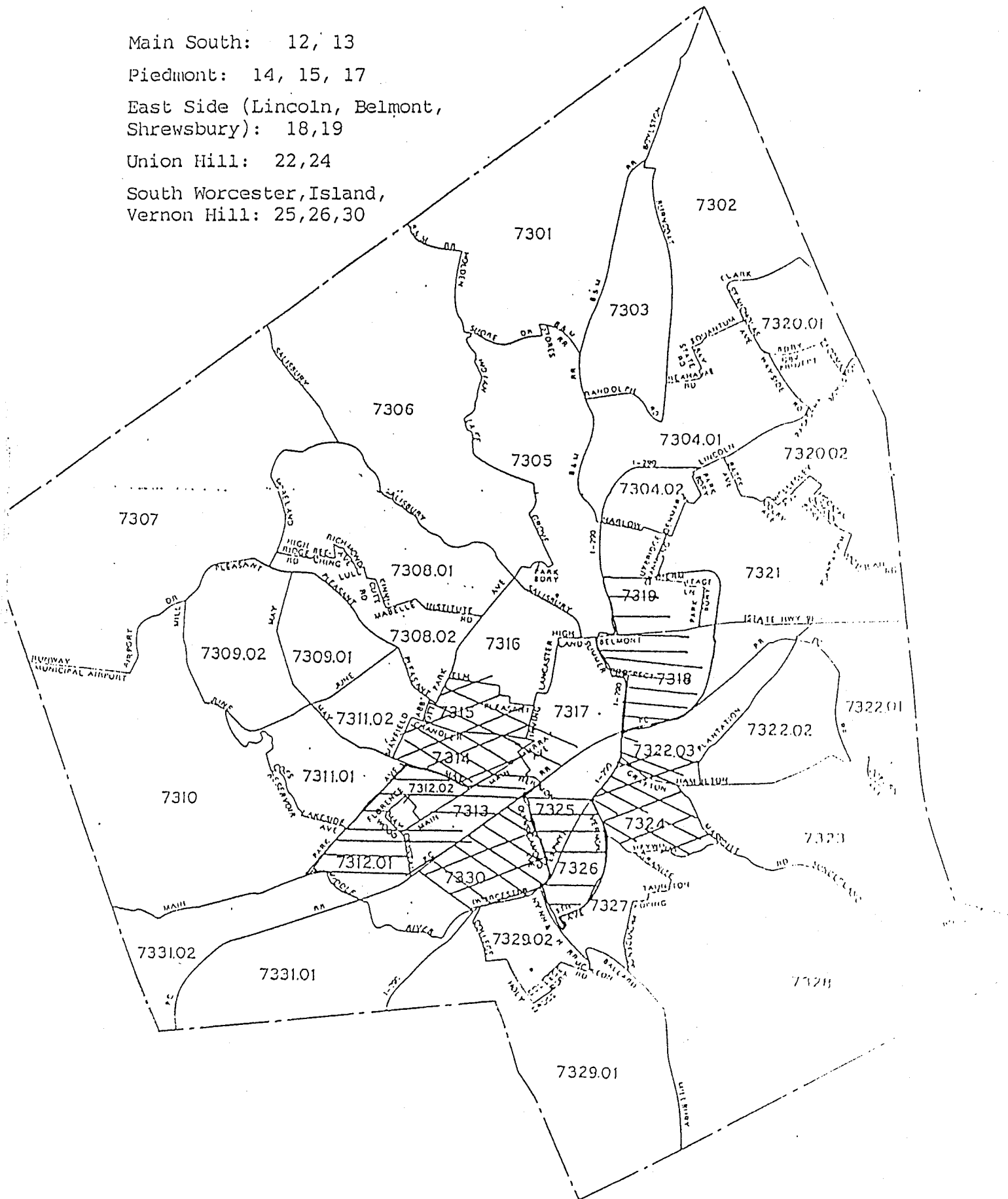
Main South: 12, 13

Piedmont: 14, 15, 17

East Side (Lincoln, Belmont,
Shrewsbury): 18, 19

Union Hill: 22, 24

South Worcester, Island,
Vernon Hill: 25, 26, 30



Appendix B

WORCESTER COMMUNITY SOURCES AND CONTACTS

Written:

Worcester Master Plan Draft, February 1987, On-Site Insight

The Neighborhoods of Main South, Main South CDC, SSPC, 1988

A Seller's Market, Housing in Worcester in the 1980s, Worcester
OPCD, SSPC, 1986

U.S. 1980 Census

Community Contacts:

Patty Lewis: Executive Director, Worcester Community Action
Council

Donald Chamberlayne: The Social Service Planning Corporation

Janice Nadeau: District 4 City Councillor

Jaime Florez: St. Paul's Outreach, WCUW Community Radio,
Worcester Affordable Housing Coalition

Vinh Nguyen: Worcester Human Rights Department

Ted Conna: President, Regional Environmental Council

Debra Zimmerman: Oak Hill Community Development Corporation

Grace Carmark: State Senator John Houston's staff

Steve Patton: Central Massachusetts United Way Community
Development Chair

Suzanne Patton: Worcester Girl's Club, Parent's Advisory Council,
Massachusetts Advisory Council on the Status of Women, Fair Share
Development Corporation

APPENDIX C

PRELIMINARY NOT FOR PUBLIC DISTRIBUTION

TABLE 2
ESTIMATED TOTAL POPULATIONS
FOUR ETHNIC/RACIAL MINORITY GROUPS
City of Worcester, 1988

	1980	change	October 1988
	-----	-----	-----
Black Non-Hispanic	4,473	35 %	6,000
Hispanic	6,877	84 %	12,650
Asian	974	187 %	2,800
American Indian	352	- 7 %	325

All Minorities	12,676	72 %	21,775

information provided by:
Donald W. Chamberlayne, Ph.D.
The Social Service Planning Corp
Worcester

APPENDIX D

PRELIMINARY NOT FOR PUBLIC DISTRIBUTION

TABLE 1

ENROLLMENTS BY RACE AND ETHNICITY, WORCESTER PUBLIC SCHOOLS
1981 - 1985 - 1988

	1981 -----	change -----	1985 -----	change -----	1988 -----
WHITE Non-Hispanic	18,268	-3162 -17.3%	15,106	- 821 - 5.4%	14,285
BLACK Non-Hispanic	1,189	+ 168 +14.1%	1,357	+ 229 +16.9%	1,586
HISPANIC	2,185	+ 600 +27.5%	2,785	+1103 +39.6%	3,888
ASIAN	311	+ 157 +50.5%	468	+ 487 +104.1%	955
AMERICAN INDIAN	52	- 5 - 9.6%	47	+ 5 +10.6%	52

ALL MINORITIES	3,737	+ 920 +24.6%	4,657	+1824 +39.2%	6,481
percent	17.0		23.6		31.2

Source: Worcester School Department

information provided by:
Donald W. Chamberlayne, Ph.D.
The Social Service Planning Corp
Worcester

APPENDIX E
PRELIMINARY NOT FOR PUBLIC DISTRIBUTION

Percentage of Hispanic, Black, Asian, American Indian aged 5-17 in Worcester Public Schools by Census Tract

Census Tract	Location	%
7313	Main South around Beacon Street	66
7314	Piedmont between May & Chandler	77
7315	Piedmont, between Chandler & Pleasant	68
7318	Shrewsbury St (includes Plumley Village)	61
7319	Belmont/Lincoln	36
7324, 7325 7326 7327 7330	Aggregate of Union Hill, Vernon Hill, South Worcester (This is a little misleading because it includes moderate income areas)	21

information provided by:
Donald W. Chamberlayne, Ph.D.,
The Social Service Planning Corp
Worcester

APPEDIX F

Worcester Fair Share was responsible for the outreach and coordination of WISE. The management of this program and the Fair Share Oil Co-op was shifted to the Fair Share Development Corporation in 1984. Laura McNaughton was one of the original WISE outreach workers in the winter of 1981, coordinated FSDC Worcester energy programs for several years, and left in 1985 to become the Executive Director of FACE in Fitchburg. Laura resumed working for FSDC Worcester in the fall of 1988.

WISE

A cornerstone of Worcester Fair Share's work on energy issues has been its participation Worcester Is Saving Energy (WISE). Founded in 1981, WISE began as a cooperative effort of Worcester Fair Share, the Worcester Labor Coop, and the Worcester County Extension Service, to address a serious problem. In 1981, more than 8500 low income Worcester families received federal fuel assistance to help pay their fuel bills. But very few knew how to reduce their bills through conservation. Many low to moderate income individuals, and families on extremely tight budgets, simply could not afford even minimal investments in low cost conservation hardware, even though this material would save them money and reduce energy loss in their homes. Ironically, taxpayers' dollars were being used to homes and apartments which had not been weatherized; aid monies were literally being lost out of the cracks around windows, doors and foundations of the typical triple-decker. The WISE program began with the goal of reaching out to

FAIR SHARE DEVELOPMENT CORP.

To: Patsy Lewis, Director WCAC
From: Laura McNaughton, FSDC
Re: Proposed Mass Electric "Energy Fitness "Plan

Here is some information about the Energy Fitness program operated in Santa Monica, which is the prototype for what Mass Electric is proposing. Here are some of the key elements ,many of which are not finalized:

1. Mass Electric plans to provide this targeted, street by street service to 2500 low income households in Worcester. My proposal to them for the target areas is included on the census map.
2. This program will target electric useage. This will include lighting retrofits, cleaning refrigerator coils, measures for electric hot water if applicable, customer education.
3. We are hoping to tie this into the City of Worcester's Water Conservation efforts, so that water saving devices will be installed in all households regardless of Hot water fuel.
4. Hopefully, there will be close coordination through the neighborhood centers and WCAC. There may be money available to pay the neighborhood centers for outreach services.
5. Mass-Save will probably be responsible for the actual crews.

Please feel free to call me at 797-5725 if you have any questions or want more information. Otherwise, I'll see you and Meredith on Wednesday at 1 pm at the Fair Share Development office.

③ STRATEGIC PLANNING

Skill Building Project: Strategic Planning Process

Laura McNaughton - Org. Mgmt. - August 4, 1989

I had several goals when I initiated a strategic planning process with my co-workers at the Worcester office of the Fair Share Development Corporation. I wanted to find out :

1. Is the SWOT analysis process a useful one? Does it, as one description in the readings explained: a) build practical group consensus, b) address underlying issues, c) draw forth innovative solutions, d) enhance team spirit ?

2. If you involve people in the pre-meeting planning does it increase participation and ownership?

3. Do I have some of the necessary skills to lead a process like this? Will I be able to facilitate the objectives outlined above in #1 ?

4. Is writing on wall charts helpful?

5. Once you've had the initial meeting, can you create a mechanism to continue team building and the creation of organizational strategy?

6. Can you use the meeting to make sure that everyone shares information and ideas so that you create a shared understanding of an overall vision of the group's work?

I didn't expect to get definitive answers to these questions, but I wanted to see if the process seems to work at least to some extent for my organization and for me.

*Laura,
These are great
questions, and
a very good way to
structure this
Skill-bldg endeavor!
Congrats!!*

Pre-meeting planning

One of my goals for the SWOT analysis was to try to create an empowering experience for the program director. Karen is the person in charge of the Worcester office, and therefore needed to be involved in the planning from the beginning.

Consequently, before the June class weekend, I gave her a written description of what I wanted to do along with three pages of information I selected from your materials (See appendix A). Karen reviewed it, said it sounded like a good idea to her. Karen agreed to talk with the Assistant Director to coordinate his participation.

We set up a meeting for July 10th, where we discussed the actual content of the SWOT meeting. We came up with a rough agenda and approximate times. Karen and I decided to work on preparing charts for the information concerning current programs, and that Karen would talk about the new action program, I would talk about water conservation, and we would ask Scott to talk about lighting. Karen would talk with Carl (the Assistant Director) about his section of the agenda: FSDC's purpose and mission.


*Excellent
Group building
Consensus
preparation*

I talked through the rough agenda at the staff meeting on July 14th and passed out and explained Appendix A. Suzanne and Scott liked the idea. Scott agreed to prepare information about lighting.

On July 19th, the day before the meeting, I spent an hour talking with Karen about her presentation about current programs,

and about three hours preparing charts for the meeting. The charts were done on large sheets of paper. After the meeting I typed these up and they are Appendix B. Overall, I spend about 12 hours planning and doing meeting preparation.

I defined the format that I wanted Karen to use in presenting the current program information. I wanted to be sure that the information would be presented in a graphic way, but it gave her less control over her presentation.


had a good?

The meeting

I did the final agenda before the meeting on July 20 in the form of a big wall chart. This is enclosed as Appendix C, with the planned times on the left and actual running time on the right.

You should always plan this as a facilitator.
We started 20 minutes late by the time everyone stopped the other things they needed to do. My introduction was quick and to the point, and basically ran through the agenda and described the goals of sharing information, analyzing our situation, and determining the best strategy to take advantage of opportunities and minimize threats.

Carl's discussion of the organization's mission statement was not particularly clear. There was a staff and Board process in Boston last year to discuss the organization's purpose and mission, but it didn't sound very conclusive to me. Carl was unable to say our mission in one sentence. We all tried and came up with some possible mission statements (Appendix D). Since I think I put Carl in an embarrassing position, it would have been better if I had explained to Karen ^{very good "present"} so she could explain to Carl exactly what I meant by a mission statement, so he would have been aware beforehand if the organization hadn't succeeded in it's past attempts to clarify FSOC's mission. *Good self-education*

The presentation and discussion of currently funded programs and new possibilities gave us a chance to share information and make sure that everyone had the same information about our programmatic and funding base. The lack of resources before we

* Not had idea to say to Karen. "Can I check in with Carl about this after you talk to him?" if you're unsure you'll get from her contact of him. You're intimately resp. for what happens.

clear through this discussion. (This is the information that is on the charts of Appendix B). I think it would have been impossible to do the situational analysis without discussing this information first. In fact, this section took twice as long as I thought it would: 65 minutes as opposed to 30.

The evaluation section went well. My handwriting is bad, so we decided Suzanne should do the charts. (These are Appendix E) I found this a little frustrating since I thought I would do a better job of phrasing the issues, but looking back on it after a few weeks, I think it worked out pretty well. We had some fun with the fact that disasters (pollution, war, rising costs) are good for business, and I felt that we hit all the important ideas and came up with points no one had thought of before. This took 85 minutes as opposed to 60, and we stopped for lunch at 1 p.m.

I thought the analysis and discussion during the SWOT section was excellent. We kept looking back at the charts from the evaluation section, and also pulling in information from the program charts. New opportunities were discovered. The threats, though fewer in number, are very sobering. This part took a little less than one hour. These charts are Appendix F.

I discovered (during this part of the meeting!) that I really wasn't sure how to explain what a strategy was and how to move from the SWOT analysis into strategy. I said that a strategy is the course of action we would take to take advantage of opportunities, and minimize threats, but that didn't help people much. We did come up with some ideas, which are Appendix G. We spent about 1/2 an hour on this. People were tired and

felt like there hadn't been enough time to digest the SWOT information.

We then did a chart for Next Steps which is Appendix H. This took about 15 minutes. I then adjourned the meeting at about 3:30. I realized about half an hour later that we had forgotten the evaluation, so I called the Worcester staff back together and we did that for about 1/2 an hour. Unfortunately, Carl had already left.

Meeting Evaluation

Scott thought that it was a long day, and it might have been better to break it into two days. Scott felt it is critical that the information from the analysis be typed up and updated, so we could use it as a quick reminder. He said that follow through on the next steps at staff meetings was very important.

Karen thought Laura was acting as a good facilitator when she made people aware of the time constraints in the beginning. She also felt it was too much for one day. She thought it may have been better to stop after the SWOT analysis and leave strategy discussion for another day. *Yes*

Karen wished she had been more prepared and thought about the topics more before the meeting, but wasn't sure exactly what she wishes she had done. She felt it was good that we focussed in on issues like our identity, publicity, and funding, and felt that we did a good job of asserting ourselves with Carl. She felt Carl had been disrespectful of the process when he said, once everything was up on the wall, "well, there's nothing really surprising here." *Need to be communicated in a supportive but appropriate way to Carl*

Suzanne liked the format and Laura's facilitation. She felt it was important that Carl was there and we should pursue our ideas with him. She felt that the strategy discussion really didn't happen. She was not sure that we understood what a strategy is.

Post-meeting process

We had the first staff meeting after the SWOT analysis the following week, on July 28th. I had given out the typed copies of the meeting charts to people several days before hand. We brought them out. Once again, it was hard for people to know how to focus on strategy, and I didn't know how to help with that, so what we ended up talking about was people's main concerns in terms of threats and opportunities.

Suzanne was most concerned about our lack of funds both to meet current needs such as more equipment, and also to keep the staff on board.

Scott was concerned about the current lack of space, and the fact that the new 'Shrewsbury program will need a lot of storage room (particularly for hot water tank wraps) and space for an additional staff person. Increased material sales would also create a need for still more storage space.

I am very concerned about our lack of a clear image in the community and the need to do more outreach and publicity work. Karen suggested that maybe we could get an intern to help us with coordinating publicity efforts.

I explained that of course it is difficult to come up with an overall, integrated strategy, so that we could keep working on it. In the meantime, I asked Scott and Suzanne to take responsibility for gathering information and ideas about how to deal with our funding and space shortfall, and I would call several universities and other programs to see about getting an

intern.

Since that meeting, Scott has been thinking and talking about the space issue a lot, and has produced a to-scale office plan since the meeting. I called several programs and we will receive internship applications. Suzanne has talked about some ideas, but has been very busy, so she hasn't organized her ideas. Karen is on vacation.

We will bring our ideas back to the next staff meeting on August 3rd, and decide what our next steps are.

Summary and Evaluation

So the answer to my questions is: YES!

The actions that I took, leading up to and during the SWOT meeting helped to create a good process. *I should say so!* The time that I took thinking about the process and organizing presentations paid off in the quality of the discussion and analysis. During the meeting I was able to encourage everyone's involvement, and at the same time, move the discussion forward so we didn't get bogged down. I received very positive feedback from my co-workers about the entire process.

On the practical side, the wall charts were very useful. It was successful in focussing everyone's attention and making sure we were all talking about the same thing. Karen asked if we could save them, even after I type them up on paper, because they are helpful to look at.

The reason I forgot about the evaluation was that I had added it to the agenda chart as an afterthought, next to "Next Steps". It is critical to write in the evaluation as an important part of the meeting. ✓✓!

It is clear to me that if the facilitator doesn't understand a concept or how to encourage discussion in a particular area, it is not going to just happen because that's what's next on the agenda. That's what happened with our strategy discussion. *Good point*

I checked in our readings, and looked back over my class notes, and the concept of what a strategy is not spelled out in

terms of an example anywhere. I am also trying to develop a marketing strategy in the CED marketing class, and I can't get a handle on that either. I need help to understand what a strategy is, and then I'd like to learn how to help others understand what a strategy is and to come up with examples.

Good point. I'll try to address this gap in future.

Despite that, I feel that we are making good process on areas of great concern. At least we've delegating taking responsibility for our need for additional space, funding, and publicity/marketing strategy, and we're all trying to think and do things about these concerns.

It was interesting that at the follow-up staff meeting we focused on these concerns as threats rather than opportunities. I definitely have that negative orientation. I wonder if there is a way to deal with these issues in a more positive way, without being naive about it.

A good question to continue with the staff.

It is helpful to this process that continuing the discussion and checking in on this process has become my main function at staff meetings. (We try to have a meeting each week). Karen and Suzanne both have to talk about specific tasks and share information in their role as program managers. If I was one of them, I would be tempted not to talk about the SWOT process since it would seem less important and immediate than other tasks.

Yes! Very good.

If an organization can have a staff person intimately involved in the SWOT process, even if an outside consultant is the facilitator, that person can continue the process as her/his "piece" at meetings. It should not be the Executive Director!

This has been a valuable and worthwhile process for FSDC

Worcester to have undertaken. One of the things I'm happiest about is that everyone has taken this process seriously. The pre-meeting preparation and involvement helped to contribute to that. I was surprised at the time people were preparing their parts of the agenda, and talking about the process before the meeting.

found a superb group of building commitment & ownership. That's democratic leadership!

The fact that the organization is changing dramatically due to the end of the program (HEAT) that funded almost the entire staff is a great incentive to take an organization analysis seriously. It was clear to everyone that this was important to me, that I was spending a lot of time on it, that I was well organized, that Karen took it seriously, and that Carl was taking the time to be here.

I believe this process has made the transition a little less threatening (at least we have talked about the worst of it together) and acting on our concerns together is empowering. I feel that we have become more of a team.

A wonderful undertaking, an excellent write-up. You should be incredibly satisfied and proud of your accomplishments here, both on a content & process level. One question you formulated were excellent, the care you took in preparation very well-structured, your analysis & self-reflection thorough and insightful throughout. It's not surprising to me you had trouble moving from the analysis to the strategy. We didn't talk about it much, and it's not in the materials. What's involved is

	STAFF REQUIREMENTS	CURRENT STAFF	STAFF FUNDING	EQUIPMENT REQUIREMENTS	CURRENT EQUIPMENT
INSPECTIONS	30%	30% Laura	30%	Htg. test kit	Htg. test kit
HEAT & MULTI-FAMILY	150%	50% Karen 60% Scott 25 % Suz	60% Karen 80% Scott	10% computer 2 desks	10% computer 2 desks
NEEP	250%	75% Suz 65% Laura 10% Scott	100% Suz 60% Laura 5% Scott	100% computer 2 desks	75% computer 2 desks
AUDITS 175 audits	35% (min)	10% Mike 20% Scott Sheila	10% Mike 20% Scott Sheila	3 Htg. test kits 20% computer 2 Portable computers STORAGE	2 Htg test kits (+Laura's makes 3) 10% computer 1 portable computer
OILCO-OP	10%	10% Karen	10% Karen		
SHREWSBURY WATER AUDITS 1500 by July 1990	300%	Karen Co-ord Installers		20% computer 1 Desk 1 table STORAGE	1 desk
RETAIL SALES	10%???	10% Scott	\$20/month	5% computer	5% computer

Appendix B

APPENDIX C FAIR SHARE DEVELOPMENT CORP.

WORCESTER S.W.O.T. ANALYSIS JULY 20, 1989

AGENDA

Actual

5 min.	1. Today's purpose	Laura	Started 9:50
10 min.	2. Mission & purpose of FSDC	-Carl	
15 min.	3. Current funded programs	-Karen	
15 min.	4. New programs		
	-Water conservation	-Laura	
	-Radon	-Karen	
	-Electric/Lighting	-Scott	11:15
15 min. each	5. EVALUATION		11:35
	-General Environment		
	-Competative Environment		
	-Marketing		
	-Internal Environment		
60 min.	LUNCH		1 PM
60 min.	6. <u>ANALYSIS</u>		2 PM
	-Strengths		
	-Weaknesses		
	-Opportunities		
	-Threats		
60 min.	7. STRATEGY		
15 min.	8. Next steps & Evaluation		3:25 Arrived

Forgot evaluation
Did it without Carl
from about 4-4:30

Wall chart at the meeting. ✓

APPENDIX E

ENVIRONMENTAL ANALYSIS

Opportunities

rising utility costs

pollution of water supply

war in mid-east oil spills

Steve as consortium member

member of CEP

EOER existence

Funding legislation

seasonal attitudes of consumers

Utility move to invest in efficiency

job for us : uneducated consumers : creates lack of demand

societal shift to info and
service economy

Threats

decreasing utility costs

rain

less public \$
end of HEAT

end of oil overcharge \$s

economy (disposable income)

hard to get publicity

COMPETITIVE ANALYSIS

Strengths

Weaknesses

Mass-Save

Have "in" with
utilities
city of Worc
local community groups

Central bureaucracy
impedes them

Have \$
Narrow focus
Name recognition & clear identity
Good press locally
Good staff :Pat W.

No conscience
More regulated

DMC

More national experience
Delivers energy audits for
ComGas

Profit-motivated
Limited local
contacts

Mass Audubon: competition in terms of education and advocacy, but
they do not deliver services

good local contacts
high profile
more \$ & members
Debbie Cary :good staff

Spag's

competitive prices
sell some of same
products
big and loyal market

no public education
no QC of products

Local suppliers more convenient
(hardware stores)

more expensive

Utility cos.

can use own staff to
deliver programs
decides who delivers
programs.

MARKET ANALYSIS

<u>WHO</u>	<u>OPPORTUNITIES</u>	<u>THREATS</u>
Utilities	Significant funding	Lots of competition
HEAT loan clients	We know who they are & vice versa	Can't make much \$ with them
Educated consumers	Potential grassroots support	Lack of strategy to reach them & not much \$
Oil Co-op members (seniors)	Provide additional services to make \$	Worc. staff not involved in strategy to reach Clients concerns about service contracts
FSDC members	Donations, support	No strategy
Non_profits	Community contacts "give us good image References for our good work	No \$ to spend
Small commercial	Have \$	No strategy
Homowners	They can save money We have experience to help	Need to expand/rethink strategy
Large corps	Have \$, people, resources	Lack of or negative identity

INTERNAL ANALYSIS

Strengths

FSDC Boston has resources giving us
contacts, tech. expertise,
administrative help

We're zealots

New program changes is an
opportunity for growth:
we are diversifying so
improve skills & grow new
ones, expand profile of
organization

We have a base of support

Conscientious staff (Treat
people as customers, not clients)

Good range of skills on staff

Willingness to work as team

CEP network :skills & assistance

Ability to respond to challenges

Well organized

Community ties

Weaknesses

Lack money = not
enough equipment,
space, admin.support

Distance from FSDC
Boston decision
making process

Lack of time & focus

Change=
disempowerment
apprehension
lack of energy
physical move?

Lack of identity

Not enough time for
training & evaluation

Conscientiousness
takes time

Don't prioritize
planning aspect

CEP low training
priority hinders us

work disrupted by
outside (funders)
demands

Lack of or negative
identity with
decision makers

FAIR SHARE DEVELOPMENT CORP.

WORCESTER S.W.O.T.. ANALYSIS JULY 20, 1989

STRENGTHS

1. Quality of work
2. Resources and skills of CEP network and FSDC central
3. Program track record
4. Steve's role as a consultant to Utility Companies
5. Experience in consumer education
6. Good relationships with contractors technical contacts
7. Have and are continuing to develop good working relationships with utilities, local govt., local MSI
8. Good relationships with EOER, Kathy Klein (potential funders)

FAIR SHARE DEVELOPMENT CORP.

WORCESTER S.W.O.T. ANALYSIS JULY 20, 1989

WEAKNESSES

1. Market is price sensitive, low rates= less efficiency
2. Wrong/No Identity
3. Difficult to focus
4. Local decisionmakers either don't know us or think we're Fair Share
5. Utilities think we're adversaries
6. Weak strategy/planning
7. Lack of resources: Time, Equipment, Staff MONEY, Training

*Some of these
are pretty serious*

FAIR SHARE DEVELOPMENT CORP.

WORCESTER S.W.O.T. ANALYSIS JULY 20 1989

OPPORTUNITIES

1. Utilities are making investments in efficiency
2. Shrewsbury water audit program gives us a chance to prove ourselves in water program delivery and is replicable
3. Audubon and other conservation publicity positions us to serve the market
4. There is a need for education which creates a market for our services
5. Rising utility prices
6. Possible oil tax in Mass. for funding
7. Radon program could bring us contacts and reputation with large companies
8. Multifamily loans could provide opportunities to sell lighting, water, and weatherization products & services
9. NEEP may allow us to do lighting sales & move into small commercial audits & services
10. If we need to move office the possibility for more space
11. Healthy house concept may sell well at home shows. ✓

Jim Hart

FAIR SHARE DEVELOPMENT CORP.

WORCESTER S.W.O.T. ANALYSIS JULY 20 1989

OPPORTUNITIES

1. Utilities are making investments in efficiency
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11. Healthy house concept may sell well at home shows. ✓

Good list

FAIR SHARE DEVELOPMENT CORP.

WORCESTER S.W.O.T. ANALYSIS JULY 20, 1989

THREATS

1. Legislative & muni cuts Less public money for programs
2. MSI DMC COMPETITION
3. Off ice will close if not successful in developing new programs
4. Move may make keeping office open unfeasible and may lose identity.

FAIR SHARE DEVELOPMENT CORP.

FSDC MANAGEMENT MEETING IN WORCESTER

Wednesday, September 20, 1989

11 AM - 2:30 PM

Lunch will be served during the meeting: Pizza and salad

- 12 noon
1. Regular business or announcements -45 min.
 2. Worcester Programs and Resources
 - ~~12:45~~ 12:45. Presentation - Karen - 15 min.
 - Discussion - 20 min.
 - Current process for resource allocation - - 5 min.
 - Creating a process to include Worcester -10 min.
 - Next steps to implement - 10 min.
 - 1 pm 1:40 3. SWOT: Strengths, Weaknesses, Opportunities & Threats
 - Current Organizational Strategy - Steve -15 min.
 - Worcester SWOT -Suzanne - 15 min.
 - Discussion - 30 min.
 - Next steps -15 min.
 - 2 pm 4. Evaluation -15 min.

The Worcester staff really appreciates the effort the Boston staff is making to join us and help discuss strategy and policy.

Laura will be acting as facilitator for this meeting, please call her if you have suggestions.

SEE YOU ON WEDNESDAY!

RESULTS FROM PLANNING MEETING SEPTEMBER 20, 1989

What's needed to make progress:

Staff Development and Planning

How do we make time for new program development?
Nuture sharing of experiences & support & growth
Get information and resources from business world and
technical information
Get more training

2. Market Research

Who are the big users as a possible market?
How do we reach them?
What are the needs?
What are we delivering

WE NEED A BROCHURE TO MARKET OURSELVES

3. Market Opportunities

Shared Savings programs
What do we know?
Will they pay us?
How do we market?
What's HOT?? look forward

NEXT STEPS

1. Activate the Worcester area membership
Get a new list
2. Write an article for the next newsletter
focussing on Worcester (Laura will do)
3. Get the newsletter/brochure out to our friends
4. Get back to HEAT people

MEETING EVALUATION

Next time encourage participation from those who didn't

It's good to meet and reaffirm that we share the same
goals

Feedback to the Boston staff is critical and should be
continued

The information exchange enriches Boston's work as well

④ Ecological Innovations

Ecological Innovations

Fair Share Development Corp.

The Catalog of Efficiency Products for the 90's

15% Off List Price for FSDC Members

Boston: (617) 482-7186

Worcester: (508) 797-5725

Fax: (617) 482-3414

Fall 1989

Power Sharing Newsletter Enclosed

Fair Share Development Corporation

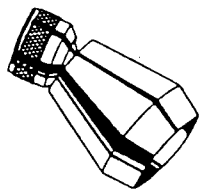
Fair Share Development Corporation (FSDC) was created in 1984 to promote energy and resource conservation in Massachusetts. FSDC's mission is to help Massachusetts citizens improve their standard of living through the efficient use of natural resources. We do this by designing and providing specially-tailored programs and services. Most of our programs to date have focused on electrical energy; our work in this area has helped to place Massachusetts at the cutting edge nationally in energy efficiency and progressive energy policy. FSDC's most recent projects include finding solutions to radon contamination in homes across Massachusetts, and helping to abate skyrocketing water costs through water conservation efforts.

FSDC has grown to be one of the largest and most successful non-profit resource conservation organizations in the country. FSDC and its 5,000 members are helping to create an environmentally safe and economically sound future. Some of the ways we do this are:

- * FSDC created a statewide Oil Buying Cooperative, the only statewide program of its kind in the country. The FSDC Oil Co-op has helped to stabilize retail home heating oil costs for over 8,000 households; Co-op members are saving 8-25¢ per gallon. Further, our industry watchdog efforts have spotlighted and prevented price gouging attempts by big oil companies.
- * FSDC designed a residential energy audit and conservation program, which has become the model for utility programs throughout the state. FSDC delivers this program to over 4,500 households annually for Boston Edison, in cooperation with other non-profit agencies.
- * FSDC delivered the 0% HEAT loan program in the Boston and Worcester areas. Serving over 4,500 households, we dispersed more than \$20 million dollars in consumer loans. These individual investments will reap many times their original value in energy savings, and are helping to foster a healthier environment through more efficient use of energy.
- * FSDC is a founder of the New England Energy Policy Council, which spearheaded the successful effort to revolutionize utility company investment policies, by having the utilities pay for energy efficiency instead of building the more expensive power plants.
- * FSDC is responding to the problems of radon contamination by providing testing services, technical assistance, and education to help reduce the dangers in our homes.
- * We are also helping to conserve our water resources by providing water surveys and installing water saving devices in homes throughout Greater Boston and Worcester.

FSDC and our members believe that we can all be part of the solution to our world's environmental dilemma. Problems such as global warming, toxic water supplies, acid rain, and shortages of water and energy will only be lessened to the extent that we, as individuals, contribute to the solutions. Our children will inherit our positive actions.

Let FSDC demonstrate how to save money while being part of the solution. If you are not already a member of FSDC, join us and become one for only \$15 (regular membership) (\$7 low income or elderly). Additional contributions are always welcome.



Water Products

Fair Share Development Corporation

Water Saving Showerheads

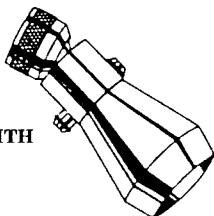
Our standard water saving chrome plated showerheads reduce the flow of water from the typical usage of 5-6 gallons per minute to 2.5 gallons per minute, without any significant sacrifice in comfort. The optional shutoff valve allows for the temporary shutoff and resumption of water without having to readjust the temperature and pressure. The Nova Showerhead has a flow rate of 2.1 g.p.m.

\$3.00 STANDARD

\$4.00 STANDARD WITH SHUTOFF

\$8.40 NOVA 6401 SHOWERHEAD

\$1.75 MALE/FEMALE ADAPTER

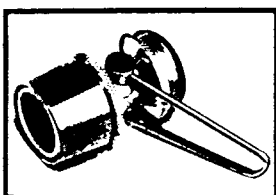


Faucet Aerators

Reduce the typical faucet flow from 4-6 gallons per minute (g.p.m.) to 2 g.p.m. Can save 50+ gallons over the course of washing dishes for 10 minutes.

\$.70 STANDARD

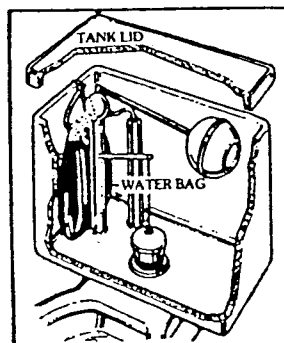
3.90 STANDARD WITH SHUTOFF



Ifö Cascade Ultra Low Flow Toilet

The Ifö Cascade 1 gallon toilet has the longest and most impressive track record of any water saving toilet. After nearly 50 years of worldwide experience, Ifö engineers have established "state of the art" toilet flushing efficiency with the Cascade. Designed by a sculptor, the attractive Cascade toilet uses only gravity to flush; no pumps, no motors. Every Cascade toilet is preassembled and tested at the factory. This can save up to 20 minutes in installation labor compared to conventional toilets.

\$249.25 TOILET
\$35.00 SHIPPING



Toilet Tank Bags

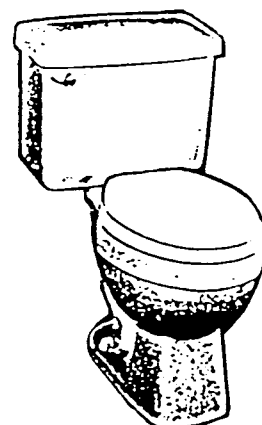
Saves 1 gallon per flush. Comes with two dye tablets for leak detection. One leaky toilet can waste 50 gallons per day.

\$.85 KIT

Peerless Hydro Miser Toilet

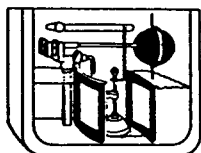
The Peerless 1.6 gallon toilet looks exactly like a conventional toilet. It is the best product for those who like larger water surface area, flat tank top and a conventional look. It uses no pumps, motors, pressure tanks or other complicated apparatus.

\$137.00 TOILET
\$35.00 SHIPPING



Toilet Dams

These dams can help you save 1 gallon of water with each flush. Savings can equal 20 gallons per day for a family of four. These quality dams have a flexible stainless steel plate encased in a rubber gasket, ensuring many years of use.



\$4.15 PAIR

**Get an FSDC
Home Water Survey
Save Water = Save Money**

(See back cover for details!)

Drip Irrigation Kits

Drip irrigation applies water directly to the root zone, slowly and evenly, without waste. Drip watering promotes faster growth, results in up to 84% greater yields and saves up to 70% on plant watering bills.

The garden kit can water up to 240 sq. ft. of garden and the vegetable kit waters up to 120 sq. ft. of garden (the actual configuration of your garden may necessitate additional tubing or drippers). Optional accessories include a Y-adaptor for fertilizing, plant food tablets, extra hose, tubing, drippers, etc.



**\$26.65 GARDEN KIT
(240 SQ. FT.)**

**\$15.00 VEGETABLE KIT
(120 SQ. FT.)**



ACCESSORIES:

**\$12.40 Y-FILTER &
FERTILIZER
APPLICATOR**
**\$3.30 Y-FILTER PLANT
FOOD (10)**
**\$1.30 FILTER WASHERS
(30)**
\$1.05 HOLE PLUGS (15)

**\$4.50 MINI IN-LINE
DRIPPERS (10)**
**\$4.20 1/4" VINYL TUBING
(50')**
**\$7.50 1/4" VINYL TUBING
(100')**
**\$9.00 1/2" POLYETHYLENE
HOSE (50')**
**\$15.75 1/2" POLYETHYLENE
HOSE (100')**

Gardena Gun Nozzle



This adjustable gun nozzle saves water by making sure the water stops running from the hose when it isn't needed. The spray is adjustable, you can easily control the volume, and the trigger is equipped with a handy lock.

\$7.35 NOZZLE

Gardena Water Timer



This top of the line timer will automatically shut off your water from 5 minutes to 2 hours after you turn on your sprinkler or drip irrigation kit. The timer is easily connected between the tap and the hose. Manufactured with corrosion resistant materials, the timer should be long-lasting and trouble free.

\$30.00 TIMER

NSA Bacteriostatic Water Treatment Unit

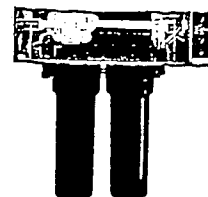


This low priced filtration unit improves the color and taste of water by removing chlorine. Non-permanent installation, the unit sits on your countertop. All faucet hardware is supplied. The Manufacturer notifies you when to replace the cartridge. The unit has a 5,000 gallon capacity, and weighs 5lbs.

\$179.00 RETAIL

\$152.00 MEMBERS

Electrolux "Lifeflo" Water Purification System



The Electrolux "Lifeflo" water purification system is easy to install under your sink and delivers an unlimited supply of clean water at 1 g.p.m. It adds no chemicals to your water and uses ultraviolet light to destroy 99.9% of bacteria and viruses. A granulated activated carbon filter and a modified carbon block filter reduce over 100 other contaminants. It is also immune to bacteria recontamination.

\$455.00 LIFEFL0

\$16.50 REPLACEMENT FILTERS

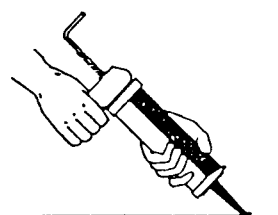
\$49.50 REPLACEMENT ULTRAVIOLET BULB

Switch/Outlet Draft Stoppers

These fire resistant switchplate and outlet gaskets fit behind the plates on outside walls, reducing the amount of cold air infiltrating into the house.

**\$.05 SWITCHPLATE
GASKET**

\$.05 OUTLET GASKET



Caulking Gun

This standard caulking gun is well made, yet inexpensive. Good for either long-term use or those one-time caulking jobs.

\$1.90 CAULK GUN

Weatherization Supplies

Fair Share Development Corporation

Caulk



DAP and Red Devil caulks are excellent 25 year interior/exterior caulks. Added silicone improves flexibility and adhesion. Phenoseal vinyl adhesive caulk, manufactured in Massachusetts, has many features of the silicone caulks, and is also paintable in just one hour. GE and Dow Corning construction grade silicone caulks are rated to last 10 years longer than the other products, but are not paintable.

\$1.80 DAP ACRYLIC LATEX WITH SILICONE (WHITE)

\$1.80 RED DEVIL SILICONIZED ACRYLIC LATEX (CLEAR)

\$3.60 PHENOSEAL VINYL ADHESIVE (CLEAR)

\$3.90 DOW CORNING OR GE SILICONE (CLEAR)

\$3.90 DOW CORNING OR GE SILICONE (WHITE)

Glazing



DAP's quality, oil based, glazing will adhere to wood, metal and glass. The cartridge has an applicator tip which allows you to make an even, neat bead with an ordinary caulking gun.

**\$2.25 CARTRIDGE
(10.3 oz.)**

\$3.75 QUART

\$14.90 GALLON

\$5.25 GLAZING POINTS

Armaflex High Temp Pipe Insulation

For use with hydronic (forced hot water) space heating systems. Rated to 220 degrees. Comes in 6' lengths with a 1/2" wall thickness. Special order item.

Iron Pipe	Outside Diameter	Cost / 6'
3/4"	1.05"	\$3.30
1"	1.31"	\$4.35
1 1/2"	1.90"	\$6.60
2"	2.38"	\$7.80

Copper Pipe	Cost / 6'
1/2"	\$2.70
5/8"	\$3.00
3/4"	\$3.30
7/8"	\$3.60
1 1/8"	\$4.20
1 3/8"	\$4.50
1 5/8"	\$5.40
2 1/8"	\$8.10
2 5/8"	\$8.70

Expandable Foam

This product expands to three times its packaged volume. Each can has a yield of 150 linear feet of .5" bead. 1" of foam will provide an R-value of 5. Excellent for sealing large cracks and thermal bypasses.

\$6.75 EXPANDABLE FOAM

Outlet Plugs

These inexpensive plastic plugs can help reduce infiltration through electric outlets. They are also an effective safety measure in reducing the risk of electric shock.



\$.10 PLUG

Tyzall Interior Storm Window Kits

Each kit comes with self stick channel lengths and strong 4 mil. thick clear vinyl. Once the channel lengths are affixed around the window opening, the vinyl sheet is spread across and locks in place. The kits can be reused year after year.



- \$5.25 38" x 64" (WHITE)**
- \$5.25 38" x 64" (BROWN)**
- \$6.30 50" x 80" (WHITE)**
- \$6.30 50" x 80" (BROWN)**
- \$9.00 72" x 82" (WHITE)**
- \$9.00 72" x 82" (BROWN)**

White Rogers Oil/Gas Setback Thermostats

All White Rogers setback thermostats are 24 volt and offer two warm and two cool cycles per day. The electronic model allows for weekday and weekend settings, and has a digital display. This model can be ordered for systems with central air conditioning. The mechanical model will cycle the same way every day. Both models have battery backup.

\$72.10 ELECTRONIC HEATING

\$77.25 ELECTRONIC HEATING/COOLING

\$56.25 MECHANICAL

Domestic Hot Water Pipe Insulation

We stock three sizes of hot water pipe insulation. All sizes have 1/2" wall thickness and come in 3 foot sections. The insulation is made of closed cell polyethylene which is UV stabilized. It is rated to withstand temperatures of up to 180 degrees. Insulations fit 1/2", 3/4" and 1" copper pipe.

\$.65 1/2" x 3' LENGTH

\$.70 3/4" x 3' LENGTH

\$.75 1" x 3' LENGTH

Fiberglass Sleeve Pipe Insulation

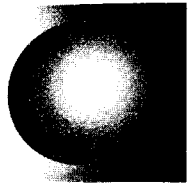
We sell 1" thick fiberglass sleeve insulation for steam space heating pipes on a special order basis. We also carry 90 or 45 degree elbows, and T's for wrapping joints. What makes ordering particularly confusing is

that pipe sizes are generally measured by the inside diameter of the pipes. Since you cannot measure the inside diameter of your pipes, you need to do a conversion, see the following table. Special order item.

NOMINAL PIPE SIZE (INSIDE DIAMETER)	ACTUAL OUTSIDE PIPE DIAMETER (WHAT YOU MEASURE)	COST FOR 3' SECTION	ELBOW COST	T COST
0.5"	.84"	\$4.20	\$1.10 - #7 -	\$1.95
0.75"	1.05"	\$4.80	\$1.10 - #7 -	\$1.95
1"	1.31"	\$4.95	\$1.45 - #9 -	\$2.65
1.25"	1.66"	\$5.40	\$1.45 - #9 -	\$2.65
1.5"	1.9"	\$6.00	\$1.80 - #10 -	\$3.05
2"	2.38"	\$6.45	\$2.20 - #11 -	\$3.85
2.5"	2.88"	\$7.20	\$2.55 - #12 -	\$4.60
3"	3.5"	\$8.10	\$3.30 - #13 -	\$6.10
3.5"	4"	\$8.85	\$5.95 - #15 -	\$9.95

Power Sharing

Crisis With a Cure



An Insidious Intruder

When battling the world's environmental woes, people pick their targets from a menu of typical suspects to fight. We look to auto and coal plant emissions, the Valdez oil spill, the local nuclear power reactor, and toxic wastes in our water supply. But now scientists and health officials are alerting us to look much closer to home — to look, in fact, inside our homes — for one of the biggest and most insidious health problems we face today. The culprit? Radon.

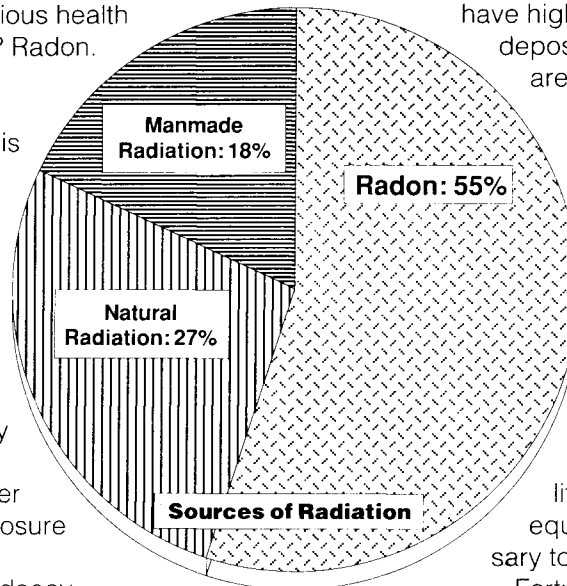
What is Radon?

What has the human race done this time to hurt the earth and its inhabitants? What or who is to blame for this invasion into our homes? Therein lies the rub. No one is at fault. Radon is a naturally occurring radioactive gas that comes out of the earth's rocks and soils. Yet it poses a potentially enormous threat. The Environmental Protection Agency (EPA) and other scientific groups estimate that up to 20,000 lung cancer deaths each year may be due to exposure to radon and its decay products.

Radon is produced as part of the decay process of natural uranium found in the earth's crust. The radon gas escapes from the earth through tiny spaces in the soil and produces charged, chemically reactive particulates, which are radioactive. As we breathe, these radon

decay progenies can become trapped in our lungs. As these decay products break down further, they release small bursts of energy which can damage lung tissue and lead to lung cancer.

Concern about elevated indoor concentrations first arose in the late 1960's when it was found that some homes in the West had been built with materials contaminated by waste from uranium mines. We have only recently become aware, however, that houses in various parts of the U.S. may have high indoor radon levels caused by *natural* deposits of uranium in the soil on which they are built.



What Can be Done to Rid the Home of Radon?

Since radon is colorless, odorless and tasteless, the only way to know whether or not it is present in your home is to test for it. The EPA recommends that homeowners who have houses with radon concentrations of over 4 picocuries/liter take steps to reduce these concentrations. Yet the government has done little in the way of providing the test equipment or mitigation assistance necessary to detect and solve the radon problem.

Fortunately, private organizations like Fair Share Development Corporation are making it easy and inexpensive to find out about the radon levels in your home, and how to reduce the radon levels if they are high. FSDC

Continued on page 4

Seeing the Light of Energy Conservation

Recently, the focus of much of FSDC's work has been on electric energy conservation. One of the ways that FSDC is doing this is by promoting a variety of new high efficiency lighting technologies. Wide use of these lighting technologies will help reduce the assault of power plant emissions on the environment, while saving you money. By replacing your typical 75 watt incandescent with a new 18 watt compact fluorescent bulb, you will cut 570 kWh off your electric bill or \$50 at 8.7 cents/kWh. In addition, you save the cost and time of buying and replacing about ten ordinary incandescents during the 9000 hour lifetime of just one compact fluorescent.

■ Save Resources & Lower Pollution

In terms of resources needed to produce power, the bulb will eliminate the need for nearly one barrel of oil or 524 pounds of coal. This automatically cuts down on the environmentally hazardous emission of carbon by approximately 220-382 pounds; reduces acid rain culprits sulfur oxide (SOx) and nitrous oxide (NOx) by about 20 pounds and 2 pounds respectively; and diminishes the greenhouse gas, carbon dioxide (CO2) by 2000 pounds. In terms of nuclear energy, there is a 25 milligram reduction in plutonium production, translating to a savings of 2000 doses of potentially cancer causing radiation.

Continued on page 4

Worcester Update

Where can you go in Worcester County for low cost, high quality conservation devices, professional and friendly technical advice, and the newest energy and water conservation information? The Worcester Fair Share Development Corporation office, of course! According to Karen Cathcart, Worcester Program Director, "Most people know us as the agency that made 0% HEAT loans available to homeowners in Worcester County, but we want them to be aware that we do a lot more."



FSDC Worcester Staff

Take the CEW

One of Worcester FSDC's new programs is "Take the CEW" (Conserve Energy and Water) for the town of Shrewsbury. Sponsored by the Shrewsbury Electric Light Plant and delivered by FSDC, the program will provide any resident of the town with the free installation of pipe insulation, faucet aerators, low flow showerheads, and electric hot water tank wraps.

Energy Audits

For those who want a more thorough evaluation of energy uses in their homes, FSDC continues to offer energy audits to the residents of Shrewsbury and Boylston. For a fee of \$10, an FSDC auditor will install up to \$30 worth of conservation devices, do a complete written analysis of the energy efficiency of their home, and make recommendations for other improvements.

Water Surveys

As detailed in the last edition of Power Sharing and our

new materials catalog, FSDC Worcester is now also offering water surveys for anyone in the Worcester area. FSDC auditors can assess your water uses and install some conservation devices to help cut down on your water consumption.

Materials Co-op

All the conservation materials which are used in the Energy and Water Surveys are on display and for sale at the Worcester office or by mail order. According to Scott MacDonald, FSDC's technical specialist, "While we always offer

the traditional conservation materials, the lighting portion of our display has been of particular interest to consumers. FSDC has a wide selection of efficient lighting products available for homes and commercial buildings."

Also Worth Mentioning...

The range of services FSDC Worcester provides is not limited to these programs. The office also offers:

- ◆ The Fair Share Heating Oil Co-op
- ◆ Direct grants of up to \$16,000 for non-profit organizations through the Non-Profit Energy Efficiency Program
- ◆ Low interest loans to multi-family building owners (5 units or more)
- ◆ Educational materials about conservation

Please call the Worcester staff at (508) 797-5725, or stop by the office at 72 Cambridge St. (Smoke Stack Place), Suite 210, if you'd like to find out more about what we're doing in the Worcester area. □

Energy Conservation Programs Hit the Street

After many months of intense and time consuming negotiations, FSDC has reached agreements with the state's utilities that will soon reap tangible rewards in residential dwellings across the Commonwealth. Energy conservation plans for the residents served by Western Mass Electric Company and Massachusetts Electric Company have just been filed with the Department of Public Utilities (DPU) for final approval. In addition, plans with Commonwealth Electric and Boston Edison Company are nearly complete and ready for filing.

These residential conservation programs are part of the ground-breaking Collaborative Program Design Process. It began last May after consumer and environmental groups made their case for aggressive conservation before the DPU. FSDC, Mass PIRG, the Attorney General's Office, the Conservation Law Foundation, and the Executive Office of Energy Resources have been working with the state's

utilities since then to craft what should be the most aggressive "efficiency power plant" yet seen in the nation. The programs will be hitting the street in early 1990.

Some ways in which this "efficiency power plant" will serve Massachusetts homeowners and renters include: making electric hot water systems more efficient, increasing the availability of efficient lighting products through free installations, rebates and catalogs, and eliminating drafts and leaks in electrically-heated homes. The program has been designed to cut energy consumption by all residents of the Commonwealth, regardless of income level, according to the specific needs of their housing type.

Total electricity savings over the next 10 years should displace the need for up to six new 500 Megawatt coal plants, and should save hundreds of millions of dollars in electricity costs. □

The Weatherization Handy Person: Sealing Up for Winter

With fall here, the time is right for organizing a few energy saving projects in your home before cold weather hits. Even if you don't think of yourself as a handyperson, chances are you can successfully complete these projects I've outlined. Without spending a lot of money, you can tighten up your home and make it more comfortable to live in while also cutting down on your heating bills this winter.

■ Where to Start

Burning Stick Test: To get an idea of where you may be losing heat or letting cold air leak in your home, do the burning stick test. Hold a lit cigarette or incense around windows, doors and baseboards to check for draft sources. When the stick smokes or burns more brightly, you have discovered a source of leaking air. These are areas to which you will want to pay particular attention.

■ What to Do

Windows: Chances are that you discovered some leaky areas around your windows. Cracked windows can be temporarily repaired with glass patches. The adhesive plastic sticks to glass and helps to cut down on drafts.

To seal other window drafts, you have a couple of choices. A temporary rope caulking such as Mortite may be used to line the cracks in the

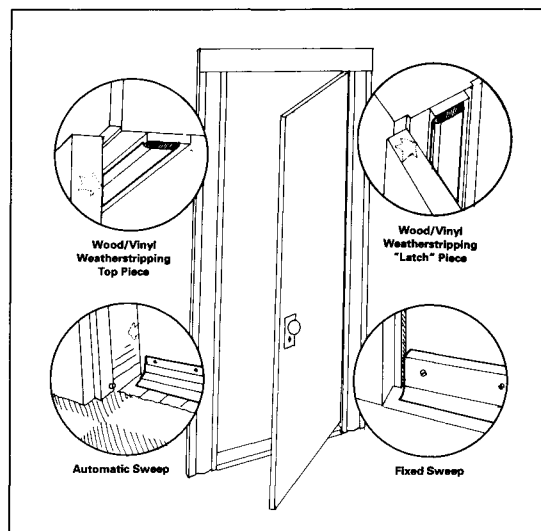
window casing, but as it also fastens the windows to the casing, caulk only windows which won't be opened during the winter. Remove it during the warmer months and save it; rope caulking can often be re-used if it doesn't dry out. Apartment dwellers like this product because it is cheap, temporary, and effective.

Polyflex V-strips are a more permanent means for weatherstripping, and allow you to open and close the window while it's in place, but a bit more expensive to install per window. Complete your window weatherization project by installing interior storm window kits. It's kind of like covering your windows in heavy duty Saran Wrap. Even though the plastic is available in clear, it does cut down on visibility (but what a small price to pay for comfort).

Doors: Now that you have mastered the fine art of window weatherstripping, move on to your doors. Several door weatherstripping kits are available in a variety of materials, each with its good and bad points. Portaseal wood/vinyl kits are attractive, but not the most durable; MD aluminum/vinyl kits are cheap and relatively effective; but the more expensive Wright aluminum/silicone kits seem to be the most durable. Installation of these kits is relatively easy, as you will only have to do some measuring, cutting, and fastening (when fastening, use screws whenever possible; nails will tend to pop out over time).

Doorsweeps are another cheap, easy product which will help to eliminate drafts. If you have a carpet near the door or an older house plagued with uneven floors, an automatic spring loaded sweep such as MD Auto Sweep is what you want. Otherwise, a conventional sweep such as the Triple Flange Aluminum/Vinyl Sweep or the Heavy Duty Aluminum Sweep will do the trick.

Hot Water Tank Wrap and Pipe Insulation: Why let heat go to waste? By covering your hot water tank with insulating wrap, you can cut

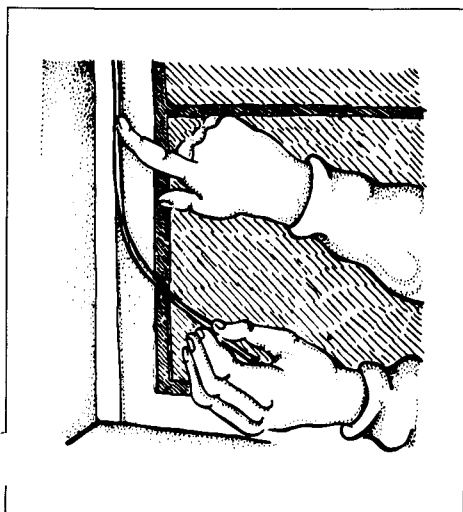


Door Weatherstripping

down on the workload of your heater and save money. To further prevent heat from escaping, wrap your pipes with insulating material. Remember that the first ten feet of domestic hot water piping is where most of the heat loss will take place, so be sure to cover at least that much.

■ Where to Buy Materials

All of the materials needed for the projects I mentioned can be purchased through the Fair Share Conservation Products Co-op and Ecological Innovations catalog. Remember that as a Fair Share Member, you are entitled to a 15% discount on your purchases. For those of you who are still hesitant to start on these projects by yourself, call FSDC to schedule an energy survey (in Greater Boston, Boylston, Hull, and Shrewsbury). One of our auditors would be happy to do an assessment of your energy needs and show you how to get started on these projects. □



Rope Caulking Window

Firewood Co-op

Cut, split seasoned or green, and delivered.

The People's Energy Resource Cooperative (PERC), an oil co-op member, negotiates discounted prices for firewood in Framingham & the surrounding area. Call PERC at 1-800-752-7372 for more information.

■ Crisis With a Cure, *con't.* from page 1

provides radon test kits and educational information, as well as a contractor directory should you need to hire someone for radon mitigation. In addition, FSDC has developed a Testing and Education Program for corporate sponsorship to benefit employees. Check to see if your company would be interested in sponsoring the radon program.

Radon Detectors

The most popular commercially-available radon detectors are the charcoal canister and the alpha track detector. FSDC offers both types through its conservation products catalog. Both of these devices are exposed to the air in your home for a specified period of time and sent to a laboratory for analysis. Using the charcoal canister, you can obtain the radon reading within 4 to 8 days. Alpha track detectors can monitor radon levels for longer periods of time (3 months to 1 year) and are a bit more expensive. Other continuous monitoring devices are available on the retail market but they cost 10 times what the charcoal

canister or alpha track detectors cost, and are no more accurate in detecting radon levels.

Dealing with the Problem

Your risk of lung cancer from exposure to radon depends upon the amount of radon entering your home and the length of exposure. There are a number of proven ways to eliminate most of the radon in your home. These methods either prevent radon's entry or replace contaminated indoor air. The effectiveness of any one method will depend upon the unique characteristics of each house. Sometimes a single method may be sufficient, but where levels are high, it may be necessary to combine several methods to achieve acceptable results. Once the work has been completed, follow-up testing should be done to assure that the radon level has been effectively reduced.

Although many environmental dilemmas require years of enormous effort to reverse or improve, radon is one worry we can eliminate from our lives with relative ease. Testing the radon level in your home is the first step. □

■ Seeing the Light, *con't.* from page 1

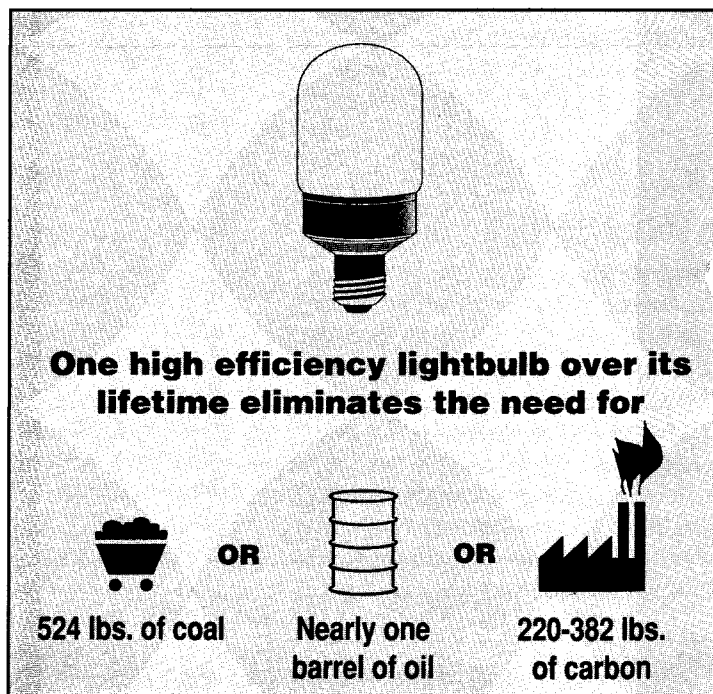
Quality of Light

One of the most common questions people ask about the high efficiency fluorescent bulbs concerns their quality of light. In the past, fluorescents have been known to give off a poorer quality of light, however the new improved compact fluorescents are changing that view. When discussing light quality, it is helpful to be familiar with certain concepts. Bulbs are rated by a Color Rendering Index (CRI) and by color temperature. The CRI is a number which indicates how closely the bulb will light objects to their true colors, with 100 being the optimum color rendering and 1 being the poorest. The color temperature is usually rated in degrees Kelvin (K). The temperature can range from 1500 K, which is a warm red orange, up to 9000 K, which is a cool blue. A normal incandescent usually has a CRI of 90 or better and a temperature of approximately 2700 K. Many compact fluorescents now have CRI ratings as high as 82 and color temperatures in the 2700 K range, making them a competitive alternative to incandescents.

What to Buy

When purchasing high efficiency bulbs, there are two types of compact fluorescents to consider, the all-in-one and modular. The all-in-one fluorescents are one piece units which last about 9000 hours. Compare this to regular incandescents which last only 700-900 hours. Modular bulbs have separate ballasts and bulbs. The inexpensive replaceable fluorescent bulbs last about 9000 hours and the ballasts often last about 40,000 hours. (Remember that there are 8760 hours in a year.)

The bulbs are easy to install, however, adjustments to expand the harp (the frame which holds the shade) on certain lamps may be necessary in order to accommodate some of the larger bulbs. In addition, the bulbs may be



somewhat limited in lighting options right now, particularly when it comes to three-way settings and dimmer switches (high efficiency halogen dimmer bulbs are a good alternative to the dimmer switch problem though).

Where to Get Them

As they are a relatively new technology, the bulbs are not always available from local department stores and lighting retailers. To help ease this problem, the FSDC Conservation Products Co-op offers a variety of bulbs which can be purchased by appointment in the FSDC office or through the new catalog. □

Radon Detection Kit

For initial testing, this 3-7 day test kit is suggested. Perform the test during the heating season when air exchange rates in your home are the lowest. The kit includes lab fees, mailing package, and postage.

**\$25.00 KIT & EDUCATION
PACKAGE**

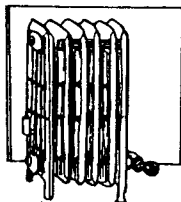
Heating Duct Insulation

Where hot air ducts pass through unheated spaces they should be wrapped with insulation. This gray duct insulation is 2" thick, offering an R-value of 6.5. Duct insulation is easy to install yourself, and annual savings can be as high as \$.75 per foot of insulated duct.

\$46.40 2" x 4' x 30'

\$59.20 2" x 4' x 40'

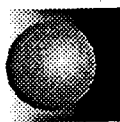
\$70.40 2" x 4' x 50'



Radiator Reflector

1/4" thick bubble pack material with a foil radiant barrier laminated on each side. Ideal as a heat reflector behind hydronic and steam radiators.

\$3.00 2' x 3' REFLECTOR

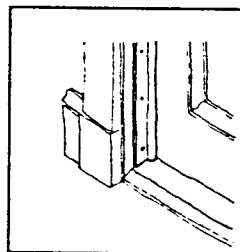
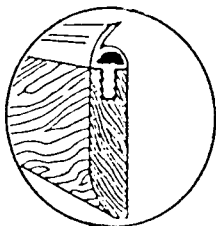


RADON EDUCATION AND TESTING PACKAGE

- * Testing Kit
- * Laboratory Analysis
- * Informative Literature on Radon
- * Technical Assistance on Mitigation Strategies
- * Tips for Prospective Home Buyers

Door Weatherstripping Kits

Portaseal Wood/Vinyl kits are effective, durable, easy to install and attractive. Each kit has two 6'9" pieces and one 36" piece. MD Aluminum/Vinyl kits are rugged, inexpensive kits for exterior use. Wright Aluminum Silicone kits are the highest performance aluminum door kits. These long-lasting kits will remain effective for years.



**\$13.75 PORTASEAL 1.5"
NATURAL WOOD**

**\$6.85 MD ALUMINUM/
VINYL W/ NAILS**

**\$14.75 PORTASEAL 1.5"
PRIMED WOOD**

**\$7.40 MD ALUMINUM/
VINYL W/ SCREWS**

**\$9.80 PORTASEAL 1"
PRIMED WOOD**

**\$15.00 WRIGHT ALUMINUM/
SILICONE DOORKIT**

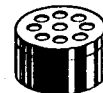
Duct Tape and Vinyl Tape

Duct tape is a wonderful invention. It holds together car roofs, suitcases, eyeglasses, and almost anything else. However, it does not do a very good job of sealing ducts and fastening duct insulation. For jobs requiring exposure of tape to high temperatures, we suggest vinyl embossed tape. This wide, white tape is the product commonly enclosed with water tank insulation kits.

\$4.05 2' x 180' DUCT TAPE

\$10.10 3' x 150' HIGH TEMP VINYL TAPE

Alpha Track Radon Kit



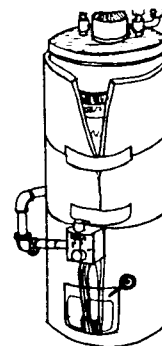
If you want a long term radon exposure test (as long as one year), use the Alpha Track kit. Testing over a long period of time will provide a more accurate evaluation of radon exposure than short term tests can produce (radon levels can vary somewhat during the year).

**\$47.00 KIT & EDUCATION
PACKAGE**

**A Healthy House
is
Tested for Radon!**
(See back cover for details.)

Water Tank Insulation Kit

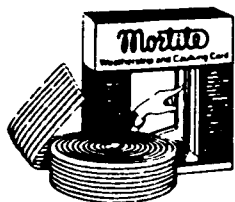
Standard kits are 2" fiberglass (R-6.7) with white vinyl covering. Embossed vinyl tape is included with kits. Kits come 75" (for gas and small electric tanks), 87" for larger tanks (principally electric), and even an extra large 102" size. Tops are available for electric tanks.



\$13.00 2" x 48" x 75"

\$14.60 2" x 48" x 87"

\$2.00 2" TOPS



Mortite

Mortite is a multi-purpose economical weatherstripping and caulking cord. It provides a leakproof, weather-tight seal by conforming to surface irregularities. It is easily installed by pressing into place with fingertips. It is long lasting, won't harden or crack, and can be easily removed in the spring.

\$3.70 90' ROLL (GRAY)

\$3.70 90' ROLL (BROWN)



Ives Sash Locks

These brass window locks are excellent for security, not to mention stopping drafts between the window sashes.

\$1.05 CLAMSHELL SASH LOCK

\$1.90 CAMTITE SASH LOCK

\$1.80 SIDE FASTENER LOCK

Polyflex

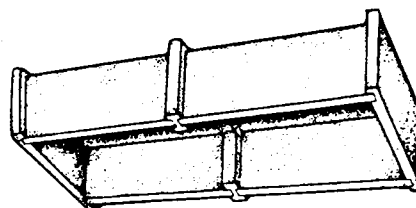
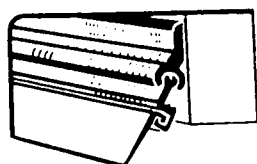
Even a window that is in fairly good shape is not always air-tight. Weatherstripping can save you fuel dollars every winter, and will increase occupant comfort significantly even if you have good storm windows. If you don't have storms, you will notice an even greater difference. This weatherstripping is the best plastic adhesive available. Each length of polyflex is pre-molded to provide superior resiliency, giving you many years of effective use.

\$2.50 .5" x 7' PIECE NARROW

\$2.80 1.25" x 7' PIECE WIDE

Doorsweeps

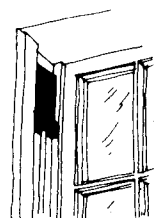
The triple flange standard sweep (with screws) is superior to most other sweeps in the market. Its three flanges insure durability. For large gaps under doors, the heavy duty sweep with a thick 7/32" vinyl flange that is 2 3/8" wide should be more than adequate. If you need a sweep which will clear a carpet near the door or have old floors which have settled, use a spring-loaded automatic door-sweep. The automatic sweeps are available in either white or dark brown.



Energy Lid (for attic stairways)

Make your home more comfortable both winter and summer with this energy lid attic stairway cover. Constructed of high density polystyrene, the energy lid snaps together in minutes to fit most standard attic stairway openings (22" x 54" and 25" x 54"). No tools are required and installation is easy. Each lid with 1" thick walls has an R-value of 5.

\$40.45 LID

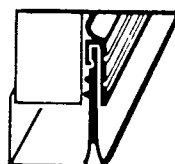


Pulley Seals

Sold in pairs, pulley seals fit securely over window pulleys with an adhesive gasket and screws. They are the most effective way of reducing drafts from the wall cavity through the pulley openings. Note: pulley seals will slightly reduce the extent to which the window may be opened.

\$1.30 PAIR (WHITE)

\$1.30 PAIR (BROWN)



\$2.20 36" TRIPLE FLANGE SWEEP

\$3.75 HEAVY DUTY 32" SWEEP

\$4.00 HEAVY DUTY 36" SWEEP

\$4.95 HEAVY DUTY 42" SWEEP

\$5.55 36" AUTOMATIC SWEEP (WHITE)

\$5.55 36" AUTOMATIC SWEEP (BROWN)

Glass Patch

Clear glass patch is useful for patching and reinforcing cracked and broken glass.

\$.75 2" x 25" ROLL

Energy Efficient Lighting Products

Fair Share Development Corporation

All-in-One Compact Fluorescents

These lights have approximately a 9,000-10,000 hour lifetime. When the lamp burns out, the unit needs to be replaced - unlike the component units in which lamps and ballasts are separate (and ballasts have a 45,000 hour lifetime). The magnetic ballast lights are heavier than the electronic ballast lamps, and they may take a second or two to come on. The electronic ballast lamps start more quickly, particularly at lower temperatures, and are quite bright. They are about the same height and diameter as the magnetic ballast lights, but are more expensive.

The 15w bulbs produce about the same light as a standard 60w incandescent bulb. The 18w, 20w and 21w bulbs can replace a 75w bulb without sacrificing light output. The 27w lamp will replace a 100w bulb. Many of these lights are attractive in bare bulb applications. Their color is warm white, and appear very similar to the color of incandescent light. They should not be used with dimmer switches, and their performance will suffer in temperatures below freezing or above 90°.

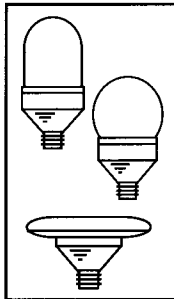
MAGNETIC BALLAST PRODUCTS:

\$14.10 15w TUBE STYLE CAPSULE
(3"D x 6.75"L)

\$14.10 15w GLOBE STYLE CAPSULE
(3.75"D x 6.75"L)

\$15.45 15w CIRCLITE
(5"D x 4.6"L)

\$17.25 21w CIRCLITE
(6.5"D x 4.8"L)

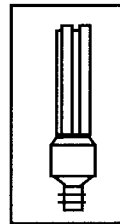


ELECTRONIC BALLAST PRODUCTS:

\$23.00 18w CAPSULE
(3"D x 7.5"L)

\$23.00 20w QUAD STYLE
(2.5"D x 7.25"L)

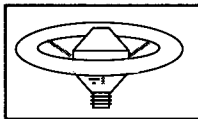
\$25.25 27w QUAD STYLE
(2.5"D x 7.9"L)



Circle Fluorescent

These halo shaped lamps are ideal for retrofitting table lamps. The bulb circles the harp of the lamp. We recommend using the 22w lamp to replace a 60w incandescent bulb.

\$14.50 22w BULB
(8.3"D x 4.75"L)

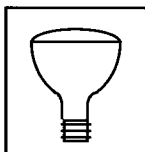


Elliptical Reflectors

Elliptical reflectors focus light to specific areas. You get more light where you require it using less energy. These bulbs should last about 4,000 hours.

\$5.85 50w
(3.6"D x 6.25"L)

\$5.85 75w
(3.6"D x 6.25"L)



Compact Fluorescent Reflector Light Kits

With these reflector kits, you can create efficient and enduring PAR 38 spot/flood lamps. These kits work particularly well in recessed ceiling fixtures. You not only receive the advantage of efficient fluorescent bulbs, but the design of the reflector lens also focuses light to improve output. *Kits include a lamp, a ballast, and a reflector lens.*

\$20.50 7w REFLECTOR KIT

\$25.50 9w REFLECTOR KIT

\$27.95 13w REFLECTOR KIT

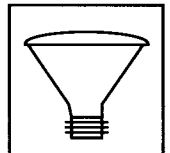
\$44.50 22w REFLECTOR KIT

Halogen Flood/Spot Lamps

These 2,000 hour floods use a tungsten halogen technology and combine it with an efficient reflector lens housing that redirects stray light back into the central beam spread. The result is an energy saving product which can be an effective substitute for a lamp using 30-50% more wattage.

\$9.85 45w
(4.8"D x 4.25"L)

\$9.85 90w
(4.8"D x 4.25"L)



***NOTE: Length of each bulb is measured from tip of lamp to base of threaded end.**

Modular Compact Fluorescents

Modular, or 'component' compact fluorescents are made up of two parts - a lamp and a ballast. When the lamps burn out, and their rated lifetime is 10,000 hours, they can be replaced. The ballast component has a 45,000 hour rated lifetime. The lamps are available in 'twin' and 'quad' tube configurations. The twin tube lamps are less expensive than the quad tube lamps, and actually produce slightly more lumens per watt, but they are also significantly longer than the quad lamps, and thus fit in fewer fixtures.

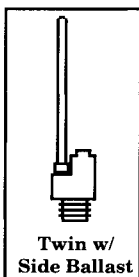
Ballasts also come in two basic styles - side insert ballasts which are rectangular in shape, and center insert ballasts which are round. The side insert ballasts, because they have a narrow side, can fit in some locations (such as between the harps of table lamps) where center ballasts will not fit. The center ballasts are generally more appropriate for recessed fixtures, and for fixtures enclosed with globes.

MODULAR LAMPS WITH BALLASTS

\$11.50 7w TWIN TUBE
w/ SIDE BALLAST
(2.5"D x 6.75"L)

\$13.00 7w TWIN TUBE
w/ CENTER BALLAST
(2.25"D x 7.4"L)

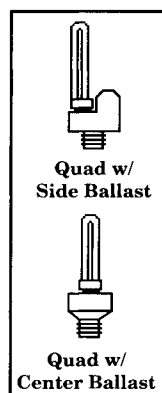
\$11.50 9w TWIN TUBE
w/ SIDE BALLAST
(2.5"D x 8"L)



\$13.00 9w TWIN TUBE
w/ CENTER BALLAST
(2.25"D x 8.75"L)

\$12.50 13w TWIN TUBE
w/ SIDE BALLAST
(2.6"D x 8.25"L)

\$17.25 13w TWIN TUBE
w/ CENTER BALLAST
(2.25"D x 9.25"L)



\$17.25 9w QUAD TUBE
w/ CENTER BALLAST
(2.25" Dx 6.5"L)

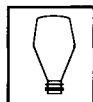
\$18.25 13w QUAD TUBE
w/ SIDE BALLAST
(3"D x 6"L)

\$20.50 13w QUAD TUBE
w/ CENTER BALLAST
(2.25"D x 6.75"L)

\$21.50 22w QUAD TUBE
w/ SIDE BALLAST
(3.4"D x 7.5"L)

Halogen 'Capsylite' Bulbs

Sylvania's Capsylite halogen bulbs use tungsten halogen technology to produce a more efficient, and in many respects more pleasing, incandescent light. Halogen bulbs recapture particles burned off lamp filaments. They have longer lifetimes (3,500 hour rating), and maintain brightness. The energy savings is not as dramatic as with the compact fluorescents, but these halogen bulbs have the advantage of being the same size as a standard incandescent bulb. If used on a dimmer switch, these lights will flicker perceptibly.



\$3.15 42w CAPSYLITE
(2.4"D x 4.25"L)

\$3.15 52w CAPSYLITE
(2.4"D x 4.25"L)

\$3.15 72w CAPSYLITE
(2.4"D x 4.25"L)

Replacement Lamps:

\$4.05 7w TWIN TUBE

\$4.05 9w TWIN TUBE

\$4.35 13w TWIN TUBE

\$8.65 9w QUAD TUBE

\$8.65 13w QUAD TUBE

\$9.75 22w QUAD TUBE

Energy Efficient Lighting Options

BUY	REPLACE	ENERGY SAVINGS	BUY	REPLACE	ENERGY SAVINGS
All-in-One Fluorescents			Reflector Kits		
15w Tube	60w	\$40	7w kit	40w	\$31
15w Globe	60w	\$40	9w kit	45-75w	\$34-64
15w Circelite	60w	\$51	13w kit	75w	\$60
21w Circelite	75w	\$50	22w kit	100-125w	\$75-100
18w EL Capsule	75w	\$51	Circle Fluorescent		
20w EL Capsule	75w	\$50	22w Circular	60w	\$38
27w EL Capsule	100w	\$66	Elliptical Reflectors		
Modular Compact Fluorescents			50w	75w	\$6
7w Twin	25-40w	\$16-31	75w	100-125w	\$6-12
9w Twin	40-60w	\$29-49	Halogens		
13w Twin	60-75w	\$45-60	42w Capsylite	50-60w	\$3-5
9w Quad	40-60w	\$29-49	52w Capsylite	60-75w	\$3-8
13w Quad	60-75w	\$45-60	72w Capsylite	100w	\$10
22w Quad	75-100w	\$51-76			

Ecological Innovations

Fair Share Development Corporation

180 Lincoln Street
Boston, MA 02111

72 Cambridge St., #210
Worcester, MA 01603

Quantity	Product	Unit Price		Total Amount	

Please be sure to indicate color preferences where appropriate.

Name: _____

Address: _____

City: _____

State: _____ Zip: _____

Home Phone: _____

Work Phone: _____

Total Cost

15% Member Discount

Subtotal

5% Sales Tax

10% Shpng - \$3.50 min.
(Shipping charges can be avoided
by picking up order at our office.)

GRAND TOTAL

Please make checks payable to "FSDC".



Yes, I would like to join FSDC.

Enclosed is my annual membership
fee of \$15.00 (\$7.00 if student, senior
citizen, or low-income).

**Visit our conservation products showroom
at our Boston or Worcester offices, M-F 9-5.**

Terms and Conditions

Payment Terms

Fair Share Development Corp. (FSDC) accepts cash, personal and certified checks, or money orders for payment. Payment is required at the time of sale in our showroom, or enclosed with the mail order. Please allow 2-3 weeks for delivery.

Shipping of Orders

Mail orders and special orders may be picked up at our downtown Boston and Worcester locations upon the customer's prior request.

Special "Rush" service can be arranged for an additional charge.

Claims on goods damaged due to mishandling by the shipper, are to be filed against the shipper, by the customer, in order to recover the value of the damaged merchandise.

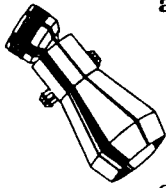
Returns and Credits

If the merchandise purchased through FSDC is defective, FSDC will honor all expressed manufacturers warranties in replacing or repairing said merchandise. No other warranties will apply. The Buyer shall be responsible for the return cost of the merchandise to an FSDC location. A credit will be issued if the defective merchandise cannot be replaced from stock.

If a customer returns an item which is not defective, there will be a 15% restocking charge. The original packaging is required on all restocking returns.

Prices

Prices effective until March 1, 1990



**Water Rates & Sewer Rates
are Skyrocketing Up to 300%**

**Strike Back!
with the
FSDC Water Survey**

Save Water and Save Money!

The survey consists of:

- * Evaluation of Water Usage and Efficiency
- * Determination of Excessive Water Consumption Sites
- * Installment of a *Free* Conservation Device in each Bathroom
- * Plumbing Work-Order for Further Conservation Measures
- * Detailed Evaluation Report with Prioritized Recommendations and Consumption Reduction Goals

Estimated Savings on the Average Home can be up to 20% to 30%

Price: \$50 / \$42.50 for FSDC Members

Call for an appointment at (617) 482-7186
In Worcester Call: (508) 797-5725

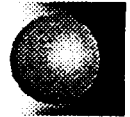
Survey available in Greater Boston and Worcester Areas

How Healthy is your House?

The E.P.A. estimates that 20,000 lung cancer deaths may be caused by radon.

**Introducing the
FSDC RADON TEST PACKET**

- * Education Information Package & Prospective Home Buyers Tips
- * Testing Kit
- * Laboratory Analysis
- * Technical Assistance
- * Contractor Directory



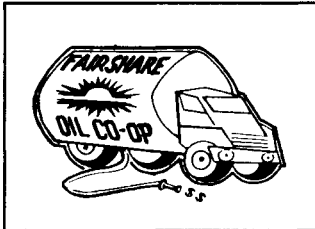
Cost: \$25 / \$21.25 for FSDC Members

For more information call: (617) 482-7186
In Worcester call: (508) 797-5725

Fair Share Development Corporation Programs

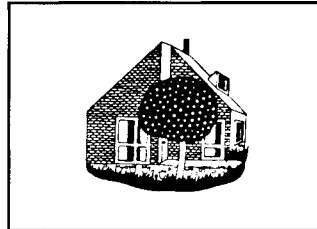
Boston Office: 180 Lincoln Street, Boston, MA 02111
(617) 482-7186

Worcester Office: 72 Cambridge St., Worcester, MA 01603
(508) 797-5725



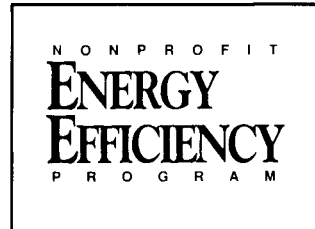
Oil Co-op

(617) 482-7473
(508) 797-5725



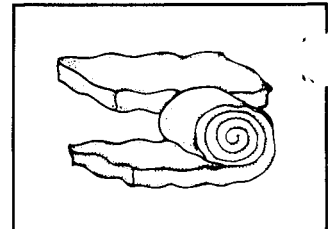
Home Energy Audits

(617) 482-7186



NEEP

(617) 482-7084
(508) 797-5725



**Conservation Materials
Co-op**

(617) 482-7186
(508) 797-5725

Fair Share Development Corp.

180 Lincoln Street
Boston, MA 02111
(617) 482-7186

Bulk Rate
U.S. Postage Paid
Boston, MA
Permit No. 54087

⑤
MARKETING

FAIR SHARE DEVELOPMENT CORP.

January 2, 1990

Dear Mayor Levy,

As you may be aware, the Fair Share Development Corporation is a private non-profit corporation with offices in Worcester, dedicated to helping Massachusetts citizens improve our standard of living through the efficient use of natural resources.

We have just printed our new newsletter and catalogue, and wanted to make sure you received a copy. The newsletter is in the center of the catalogue, with a special article about our Worcester office.

Please feel free to contact us or refer people to us who have questions about stabilizing their energy or water bills. We have a number of programs available to the general public, including the Heating Oil Co-op and Home Water Survey, to help cut heating and water costs. We also plan to help address the problem of radon contamination by offering a Radon Testing and Education Program to area corporations as a benefit to their employees. In addition, there is grant money available through our office for non-profit organizations to pay for energy conservation improvements to their facilities.

The Worcester office is located at 72 Cambridge Street (Smokestack Place), room 210. Our telephone number is 797-5725. Again, please call us if there is anything FSDC can do to be of assistance.

Sincerely,

Laura McNaughton
Conservation Specialist

CLASS PRESENTATIONYour name Laura McNaughton**Name and describe your organization.**

Fair Share Development Corporation: providing consumer education and technical assistance to help Worcester homeowners conserve water.

What is your primary marketing objective?

Convince homeowners that there is a water shortage and that conservation will solve the problem economically with no harm to environment.

Describe your product, service or idea.

A detailed research report that proves that conservation is the most economically & environmentally cost effective solution

Who is the target market?

Worcester homeowners and decision makers via the Telegram & Gazette, Worcester Magazine, and local radio.

Strengths	Weaknesses	Opportunities	Threats
Good contacts Credibility on energy issues Successful program manager Track record in community education	Confused identity Lack of \$ Not enough strategizing	Not enough water Statewide press We're offering services first Homeowners can save \$ Competition unimaginative	Rain Less public \$ Competition more experienced City manager likes competition

What is your TACTIC? 16/20

We specialize in consumer conservation education and organizing consumers to make improvements which lower their utility costs & (increase comfort?)

STRATEGY: Product

We have to create the demand for the product by proving that there is a water shortage. To do that we will release a research report showing how residential conservation will save homeowners 40% of their water bill and avoid high costs in treating contaminated water. *Is this promise real? necessary?*

STRATEGY: Pricing

I have to get some entity to help pay for the research and development of the report. I can charge an hourly rate for my time, the problem is finding a funder.

STRATEGY: Distribution**STRATEGY: Promotion**

We will work with the city to form a "Worcester United to Save Water coalition. The release of our report will also be a press event. I will contact local officials to offer our services to their constituents who are concerned about their water bills.

MARKETING ANALYSIS AND TACTIC

Laura McNaughton - June 3, 1989

The Fair Share Development Corporation is a private non-profit corporation serving the greater Boston and Worcester communities. FSDC was created for the purpose of designing and implementing programs that promote the efficient use of energy in residential and commercial structures. The organization spun off from the Citizen Action group Massachusetts Fair Share in the 1984. The organization employs 30 people (four of whom work out of Worcester) and administers seven programs related to conservation and weatherization. This year's budget is close to \$1.25 million. The organization has over 5,000 members, who give \$15 a year, so they can participate in the Heating Oil Co-op.

I analyze energy useage in non-profit buildings, help them get funding for improvements, and inspect completed work. I am also helping investigate new program directions. The Worcester office will have to close within the next year due to the end of the state's 0% loan program, if we do not develop some new revenue sources.

The Worcester office has a program director, but new program and resource allocation decisions are made out of the Boston office. The Field Director in Boston has run water conservation programs in other states and has good contacts in the industry.

The Exective Director of FSDC (Steve Cowell) is a visionary entrepreneur type and has also helped create a number of related organizations including: Community Energy Partnership, which is the statewide umbrella organization of community based energy

conservation organizations; the New England Energy Policy Council, which advocates for the use of conservation and load management as opposed to new plant development; and the Energy Federation, Inc (EFI), which is the bulk purchasing mechanism for all these groups.

2/2 In the past six years, EFI has sold over 40,000 low flow showerheads, 30,000 faucet aerators, and more than 5,000 toilet dams. Additional devices available through EFI include water saving toilets, timers for outdoor watering, and drip irrigation systems.

Marketing Objective:

Promote FSDC Worcester as an organization which has an answer to water supply and quality concerns : CONSERVATION : and position the organization to be involved in the delivery of water conservation devices and programs.

1/3 Measure this by press coverage which mentions FSDC, any progress on funding by municipalities for water conservation programs, increased sales of water conservation devices through the Worcester office, local requests for the FSDC "water audit" (explained below) and calls from interested consumers and activists about this issue.

make this measurable.

I don't believe every single goal we strive toward can be reduced to numbers, quantified.

I do think the effort to name quantifiable goals is very helpful in planning and learning/evaluating our work.

So how many people do you want to reach how often w/ your coverage?
JDOVER

The Products:

At the end of this narrative is the list of water conservation devices available through FSDC, with information concerning sales of these products for the last eight months. The next page has a picture of several devices, and following are the first drafts of information to be included in the next FSDC newsletter about water conservation. (The newsletter piece was developed by the Boston office).

5/5
These devices would be installed as part of the "water audit", which will also include in-home counseling on water useage and leak detection. The Boston office plans to make the water audit available at the cost of \$80 to the general public, \$50 to FSDC members. The purpose of the focus group will be to get a sense if there is a market for this service. The Boston office is also pursuing selling the "water audit" to towns who are not part of the MWRA system. I would like to convince the City of Worcester, which pays for and controls its own water supply, to also invest in water conservation programs as a source of new supply, and to pay us to deliver them.

An average single family homeowner will save 26 ccf per year of water, or about \$57 by installing these devices in the home, either do-it-yourself or through a "water audit".

4/10

Target market: I am stuck on how I should define the target market. It could be

1) The target market for this project is Fair Share Development Corporation members who live in Worcester. I can get the list of members from Boston, and it is probably about 200 people. They are primarily white, moderate income, in their middle years, and homeowners. They were either originally members of Mass Fair Share and continued with FSDC because they wanted to buy less expensive fuel oil, or joined FSDC to participate in the oil co-op. Saving 10-20% on their oil bills was important enough to them to change oil dealers.

or 2) The target market is the Worcester city council and administration. They are almost exclusively egotistical white men (except for the former president of Worcester Fair Share, who we elected last time). City officials are overseeing massive cuts in city services due to lack of revenue and it is difficult to convince them that spending money for education and conservation now makes sense. They are not familiar with FSDC and think we are still Worcester Fair Share which is considered to be an anti-business, rabid pro-consumer organization.

I want to target both these markets, and hope to do both over the next few months. I'm not sure which is more appropriate for the marketing class.

What do you want to accomplish?
Sell lots of water-saving devices?
OR
Raise money from city budgets?

Whichever direction you choose, you need to get more detailed about your target group.

Situational Analysis: The Environment

I believe that a shift is occurring in the world view of the "limitless" potential of natural resources. . International conferences on the depletion of the ozone layer, rain forests, soil, water, energy, etc., receive coverage in the evening news and in newspapers.

In regards to energy resources, this has led to a realization that it is easier to manage the demand through more efficient technology and scheduling. Through the New England Energy Policy Council, we made this~~n~~ arguement successfully before the Massachusetts Department of Public Utilities. Most utility companies in Massachusetts are now designing programs which will conserve megawatts of electricity.

Water conservation is also the cheapest way to create additional water supply. The Massachusetts Water Resource Authority provides water and/or sewer service to sixty towns, including most towns east of 128, as well as Framingham. The MWRA has launched a massive water conservation education program (See attached brochure) and is also running several pilot programs, testing the direct installation of conservation devices, and sites where customers can pick up the devices to install themselves. The Quabbin reservoir (the MWRA's main source of water) is currently at 77% capacity, and the MWRA have imposed water emergency use restrictions in Boston.

Worcester is part of the Boston TV market, so there is a lot of information and news coverage of the need for water conservation, due to the efforts of the MWRA. Lack of snow this

winter, and the dry, hot summer last year have prompted fears that there is not enough water.

The situation in Worcester is slightly different. Our reservoirs are at capacity (and spilling!) but the system only has enough pumping capacity to meet 40 million gallons per day. Demand in July has reached 42 million gallons in the past, so the City plans to impose voluntary restrictions this summer.

Although Worcester's reservoirs are full, the system does not have enough capacity to meet the demand. Worcester's current annual consumption of water is 9.3 billion gallons, with a total reservoir capacity of 7.8 billion gallons. This 80% ration of supply to demand is just the opposite of what good resource management plans indicates should be the practice. This situation has existed for many years, leaving the city very vulnerable to periods of extended drought. Consequently, the City is investigating tapping two unused wells owned by the city, on the shores of Lake Quinsigamond for an additional 3.8 million gallons per day. The water in these wells would need to be treated.

The cost of water is increasing rapidly in the city of Worcester and in Massachusetts in general. In July 1989 rates will rise to a cost per 100 ^{cubic feet} ~~CF~~ (water and sewer combined) of \$2.18 in Worcester. The average usage of a single family home is about 91 100 ~~CF~~ per year, making the average bill about \$200. The average bill for a three family home is about \$500. This is about a 100% increase since 1987. The city manager has proposed similar rate increases for the next three years to pay for a new

How is this deficit made up?

filtration plant.

Water users in Worcester often receive retroactive notices that city water does not meet Clean Water Act standards. At times, the water is contaminated with fairy shrimp and giardia. The filtration plant is slated to cost \$50 million dollars, and the concept has been approved by the City Council.

The City of Worcester hired a Water Resources Coordinator about six months ago. She believes water conservation is a critical component of the city's ability to provide water to its citizens. I have met with her several times. In this time of cuts in city services due to Proposition 2 1/2 and state budget deficits, she needs public support for spending on water conservation, so the cost of conservation can be included in the water rates.

Good.
section 14/15
What about consumers?
Is conservation high?
Are people worried about
the rising cost?
About giardia + water
contamination?
Without knowing where most
people are at re: water
conservation issues, how
can you choose the right
tactic, angle?

Part II: RESEARCH

I sent the following two pages to you two weeks ago.

Our conversation was very helpful. Based on that and the

feedback from the focus group, I have refined my goal to be education of Worcester water bill payers about the desirability of conservation.

2/5 still not measurable

Information on the focus group participants is on page 21

I have listed their zip codes (Worcester has 10), the number of units

in their building, (All residential buildings have one meter, even if there are three units - triple deckers is a very common housing

type in Worcester), The age of the participants, the number of people

in their household, their occupation, their income, and the numbers of

bathrooms in their home. The questionnaire that I used to get this

information is on page 25.

These homeowners were generally of a higher income and whiter

(they were all white), than the average Worcester resident. I don't

know if they may in fact be very representative of Worcester homeowner

in general since the census information is so out of date. I talked to

City Councillor Janice Nadeau (I'm on her campaign committee) who

represents the poorest district of the city. She is all up in arms

about how high the water bills are. This group of people felt the

water bills are fair, and in fact should continue to increase to force

people to conserve, so the income factor may be important.

Since my target group was Worcester homeowners, and I wanted

some geographical diversity, the focus group was representative on

that basis.

FOCUS GROUP RESULTS

The most important results for me were:

- Local issues ^{- water isn't a local issue? What is?} are the first thing on people's mind, though they admin~~ist~~ that water quality is an importatn problem

- People think the city has enough water - ^{Why wouldn't they?}

- 7 out of the 8 buy bottled water !

- Most people would drink city water if it tasted OK

(in the taste test, people said it tasted like swamp water, but also most of us complain about the high levels of chlorine)

- People think the water is contaminated in the pipes.

Everyone is aware that the pipes are old and that the city is on a program to replace them. Peple do not understand what the point of the filtration plant is ^{is} the water is contaminated in leaky pipes.

- People knew how much their water and ^{sewer} ~~swet~~ bills were. At the old rates, they range from \$200 - \$500, with the three deckers being at the high end.

- These peopole were initially not much concern~~ed~~ about water and had not installed many conservation devices. A number of people had had bad experiences with early "low flow" showerheads.

- People had the wrong idea about what the Fair Share Development Corporation is. We were confused with the citizen organizing of Worcester Fair Share or with our competitor Mass-Save.

- After I had explained about the fact that we don't have enough water, except when rainfall makes up the difference, and pass~~ed~~ed around the devices and explained how they were installed, people siad they thought the city should invest in conservation, and that

Done

they would install water saving devices. I asked why they had changed their point of view, and Dottie said, "Well, now we know about the ~~pro~~ problem and know what to do about it." Others agreed.

On page is a copy of our newsletter, which I had people read, and on page is the fact sheet that I gave to people. I tried to give specific savings for Worcester households. People felt that the 20% savings cited weren;t much of an incentive (particularly for single family homes). However if th savings were 30-40%, that was something eople would notice. Much of the literature suggests that you can see 40% savings (and a friend of mine did see that when she installed the devices), but I ~~a~~ was trying to be conservative. I guess I won't be from now on!

I focus group was extremely helpful to me. I thought everyone knew that we had a water supply problem! I meet with the city's ~~Water~~ Water Resources Coordinator, and she was also amazed. It became clear to me because of the focus group that a city wide education campaign is critical, otherwise, why would people want to conserve water is they don't think there is a shortage! Therefore , before we can get the city to pay us to install these devices in people's homes, we have to convince the voters and water users of the city that there is a shortage problem.

Sands like this focus group but it's risky to base your choice of strategy on just one focus group especially since the participants only cover one part of your target market. A different segment could think rather different things. 1/3/15

12/15
STRATEGY

The idea that we need to get across to the voters and decision makers of Worcester is that we have a water supply problem.

1. First we need to document the problem (not enough water) and explain the solution (increase efficient useage of the water we currently have, essentially, creating additional supply. With electric utilities, this is called demand side management). Two years ago, FSDC in coalition with other conservation groups, released an influential foundation-funded report entitled, "Power to Spare," which laid out this case, and prompted Public Utility Comissions throughout New England to force utilities to invest in conservation. In Worcester, it's time for a "water to Spare"

document +
dramatize -
people buy
with
emotions

After the focus group, talking with the Water Resources coordinator, we realized that the city doesn't even know what classes of users use how much of the city water. Traditionally, everyone has said that residential is 20%, but we think it is much more. She is working to get actual numbers, and will feed that information to me. If the residential class really is a larger percentage, then the need for residential conservation becomes even clearer.

what if
it's not?

① If I can get some additional funding to pay for my time, FSDC should release a "water to Spare" report with a big publicity campaign.

No water to spare

What if you can't get funding?
Then what?

At the same time, we will work to form a "Worcester United to Save Water" coalition. I am stuck on the funding mechanism for this. After the report has shown the need and cost-effectiveness of conservation, we will begin to lobby the city to fund a residential installation program, modeled after the FSDC "water audit" described in our newsletter. I did two of these

so why plan on it?

audits yesterday. Both customers felt they got their money's worth
for \$50. We replaced the toilet flapper valves, installed toilet
dams, replaced showerheads and installed faucet aerators, and
gave the customer a written report with leak repair recommendations.

PRICING

The goal is to get the city to pay at least a part of the
water audit price. We plan to charge them about \$25 for the
walk-thru education part, and then a per item fee for the materials
installed. It will be in the \$50 to \$75 dollar range. Since
we are offering this service now on the market, we have a chance
to see what our actual costs are before we will need to bid on
the city's project. (They will have to put it out to bid).

This should allow us to make any changes in pricing
and to make any needed arguments about funding.) At least as
for as some city officials are concerned, we have gotten
their first, so this puts us ahead of our competition, Mass
Save and DMC. (By the way, DMC stands for Disaster Management
Corporation. They started out being a labor pool for floor
flood relief).

In terms of pricing the report, the problem is more who
I can get to pay for it. It may be difficult to get the city
to cover those costs. I am going to talk to allies I trust to
see if they have any ideas.

You're avoiding
the industrial use conservation issue -
even though it's 60-80% of all water ~~conservation~~ use
in Worcester. If I remember right it's because
another group is working on it. So what? Do
you have an alliance with them? Whether
you take it on as part of your work or not, you
still need to deal with it as an issue - even if
you credit another org. as working on
it.

PROMOTION

25/40

Our "Water to Spare" report will be an analysis of current water useage, the cost of creating additional supply (treating and piping the polluted water from several closed wells and lake Quinsigamond) versus the cost of residential conservation programs. This report will be typeset and printed on good paper, with graphics and a clear Executive Summary. We will release this at a press conference. Before that time, I will send letters to public officials explaining our organization and offering us as a resource if consumers call complaining about their water bills. We will provide public education over the phone, at our office, and sell the conservation devices at a discount price and provide an installation and in-home counseling service (the water audit) for the elderly and handicapped.

Who's the target for this report?

We will work with the city of Worcester to form a Worcester United to Save Water Coalition. This will include the Chamber of Commerce and Mass Audubon, so this will give us increased credibility. We will create materials to explain to homeowners that there is a water shortage, and there is something they can do to gain control of their increasing water bills, and at the same time, be good citizens by helping Worcester conserve water.

This campaign will rely on written newspaper and radio coverage.

An "analysis" is going to be interesting to academics, business owners, some residents - but the majority won't read it - maybe not even the Exec. Summ. So, like you've implied, you'll need a media campaign. That's what you should be describing here in detail - measured against your organization's resources.

JD

⑥ SCOPE OF SERVICES

SCOPE OF SERVICES

WORCESTER DOMESTIC WATER CONSERVATION PROGRAM DESIGN

1. ANALYZE DOMESTIC WATER DEMAND

In order to design a workable water conservation program, the Fair Share Development Corporation (FSDC) needs to have as clear an understanding as possible of how various demographic attributes relate to actual water consumption. This understanding will then be shared with Worcester decision-makers and the general public so that there is agreement about what action to take.

A domestic water conservation program will create costs for bill payers which should be cushioned by lower usage. In order for bill payers to support an increase in their rates which will have the end result of stabilizing their water bills, we need to present as much verifiable information as possible.

For example, if there are particular neighborhoods or households with high water consumption, we want to try to pinpoint the most relevant contributing factors. We may find that tenants are more likely to have higher water bills than owner occupants, since they do not pay the bills and may have a difficult time getting landlords to fix leaks. That finding would have important implications for targeting the installations and marketing.

FSDC'S ASSUMPTIONS: The analysis would begin at the point where the water consumption information has been added to the OPCD data base, and is useable or some other data base is created. We assume that once this is done it will be possible to compare water consumption with:

1. Number of units in building
2. Number of inhabitants in the building
3. Location of building

We would also like to be able to compare consumption with the following attributes as well (which are categories in the 1979 Census), and will plan to do so if it is possible. Other relevant attributes:

4. Age of building
5. Number of bathrooms
6. Occupant Owner or Renter
7. Occupied by Persons 65 or Older
8. Income Range

With information organized by the first three attributes, FSDC can analyze and infer much of the other information based on our staff's experience of working in Worcester's neighborhoods for the past 10 years. However, if the information is available broken down by the other attributes, it will allow us to quantify these contributing factors.

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Domestic Water Conservation

GOALS: a) to understand how the attributes relate to domestic water consumption.
b) to develop ranges of use (high, average, low) per household size and number of units to help consumers trouble shoot for leaks, ineffective equipment, etc.
c) develop baseline information to allow for comprehensive program design

TASKS: 1. Review overlay maps of water conservation correlated with various demographic attributes
2. Check assumptions on street by street basis as necessary
3. Develop profile of what demographic attributes contribute to water consumption (how does usage of specific groups: elderly, tenant, 3 deckers, large lot size, number of occupants, etc. vary and compare to overall average)
4. Work with city to map areas of high, average and low usage
5. Compare actual Worcester consumption to MWRA average.
6. Prepare short draft report (5-10 pages written, plus maps as needed) detailing findings.

BUDGET:

Staff	Hours	Cost
Laura McNaughton, Worcester	80 hours X \$30 =	\$2400
Steve Cowell	10 hours X \$50 =	500
		<hr/> 2900

2. PROGRAM DESIGN:

FSDC has significant experience in program design as well as program delivery for private utility companies and state government. Through this work, we have developed a set of planning goals. There are three preeminent principles: (1) Avoid lost opportunities; (2) serve all customers equitably, particularly low-income, multi-family tenants and other populations too often neglected in conservation program design and implementation; (3) design cost effective programs. We also have the following additional goals:

- a. address both long and short term investment needs;
- b. maximize market transformation which incorporates new technologies;
- c. mobilize community resources to educate consumers;
- d. deliver comprehensive services which secure maximum cost-effective resources;
- e. design programs which are easy to market and avoid barriers to customer participation.

Following the aforementioned design principles, FSDC will tailor program components which address domestic conservation opportunities and overcome market barriers. Domestic water end uses, building size, building ownership, and high actual usage are the four major factors which will distinguish different program components from each other. For example, the actual service offered to a single family owner occupied house and an absentee owned three decker might be the same. In cases such as these, the differing ownership characteristics will have significant implications for marketing strategies and delivery vehicles.

The categories of buildings that we would examine for program design are:

1. Public Housing

FSDC, working with the Citizens Conservation Corporation, now has a data base of the ownership of public housing (whether its funded by EOCD, HUD, MHFA, etc.) including energy utility information. Comparing this information with usage will allow FSDC to determine the possibilities for greatest savings, and design programs that have the greatest chance of success. A number of actors must be involved for Worcester to realize the full water savings from device installations in public housing. This includes a design for water conservation materials and education

programs for the tenants, involvement of the maintenance staffs in program design, and taking advantage of new provisions in the 1987 Housing Act which enable Public Housing Authorities to postpone sharing the savings created through conservation with funding agencies.

2. Single family home neighborhoods

The issues here relate to creating an effective delivery system in low density areas, addressing the consequences of outdoor watering as an end use, and examining the impact of multiple bathrooms per households.

3. Mixed 1-6 (primarily 3 decker) home neighborhoods

These households will have mixed ownership characteristics, with many users not paying water bills directly. These neighborhoods are densely populated, with fewer bathrooms per household.

4. Larger residential tenements (primarily in the Piedmont area and Downtown). In these buildings, primary contact may be with the landlords, though user education will be an important component. The age of these structures and their plumbing will also influence final program delivery.

5. Large privately owned apartment buildings

If these buildings are master metered, there is once again the split incentive problem of the users not paying the water bills. Consumer education will be critical. From an outreach perspective, these complexes will probably be targeted as a unit.

6. Condominium and Townhouse developments

The difference between these and (5) relates to ownership with the assumption that these units will be separately metered. The bill payer and user may be the same person. The close proximity of the units to each other and the possibility of development associations (organizations of owners) will effect marketing.

Each of these six housing types have differing water use and ownership characteristics which will be examined in the program design phase.

Based on our experience and literature review, there are two major ways to target a domestic conservation program. It can be done by demographic geographic targeting (i.e. by neighborhoods) or by focussing on high use (based on exceeding averages for the particular type of unit).

The program design analysis will give pros and cons of each type of program, actual examples that have been used, and potential program characteristics specifically for Worcester. Neighborhood and high use targeting could both be

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Domestic Water Conservation

incorporated into the final program recommendations.

Goal: Develop a specific, detailed program recommendation for a domestic water conservation program for the City of Worcester.

Tasks: 1. Outline several options of conservation implementation and marketing in which we will examine:

- Potential target markets
- Direct installation vs. other approaches
- Varying approaches to reach 6 categories of housing
- Savings associated with installation of each device and recommendations for which devices to use
- Recommendations for incentive programs to encourage conservation if appropriate
- Suggestions for community education process (cognizant of the need to involve Worcester residents who do not speak English)
- Suggestions for/review of marketing materials

2. Project cost ranges for delivering these various program options

3. Interview and receive feedback from several key community leaders (in cooperation with DPW):

- DPW employees
- Plumbers union
- City Council Public Works Committee
- Neighborhood center directors
- United Way "Living Here Tomorrow" coordinators
- Chamber of Commerce
- Worcester Property Owners Association
- Church/Synagogue leaders
- Others as appropriate

4. Present FSDC's recommendations for the most appropriate program design

5. Prepare final report of findings (10-20 pages)

BUDGET

Staff	Hours	Cost
Laura McNaughton, Worcester	160 hours x 30 =	\$4800
Steve Cowell	40 hours x 50	<u>2000</u>
		6800

TOTAL COSTS:

1. Analyze Domestic Water Demand	\$2900
2. Program Design	\$6800
TOTAL BUDGET FOR DESIGN PROJECT:	\$9700