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Evaluation of DOE's Partnership in Low-Income Residential Retrofit (PILIRR) Program

May 1989

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EVALUATION OF DOE'S PARTNERSHIP
IN LOW-INCOME RESIDENTIAL
RETROFIT (PILIRR) PROGRAM

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ABSTRACT

In July, 1986, the U.S. Department of Energy (DOE) awarded competitive grants to five states to conduct pilot projects to establish partnerships and use resource leveraging to stimulate support for low-income residential energy retrofits. The projects were conducted under DOE's Partnerships in Low-Income Residential Retrofit (PILIRR) Program. These projects have been monitored and analyzed through a concurrent process evaluation conducted by the Pacific Northwest Laboratory (PNL). This study reports the findings of that evaluation.

The overriding goal of the PILIRR Program was to determine whether the states could stimulate support for low-income residential energy improvements from non-federal sources. The goal for the process evaluation was to conduct an assessment of the processes used by the states and the extent to which they successfully established partnerships and leveraged resources. Five states were selected to participate in the program: Florida, Iowa, Kentucky, Oklahoma and Washington. Each state proposed a different approach to promote non-federal support for low-income residential weatherization.

Three of the five states--Florida, Iowa, and Washington--established partnerships that led to retrofits during the monitoring period (October 1986 -October 1988). Kentucky established its partnership during the monitoring period, but did not accomplish its retrofits until after monitoring was complete. Oklahoma completed development of its marketing program and had begun marketing efforts by the end of the monitoring period.

In general, the evaluation found that the resource-leveraging approach has significant potential, but states and local agencies attempting to use it need to have a realistic understanding of the time required to develop and implement these programs, the additional technical skills in areas such as marketing and planning that will be needed, and the degree of institutional support that may be required to initiate these efforts.

EXECUTIVE SUMMARY

In July, 1986, the U.S. Department of Energy (DOE) awarded competitive grants to five states to conduct pilot projects to establish partnerships and use resource leveraging to stimulate support for low-income residential energy retrofits. The projects were conducted under DOE's Partnerships in Low-Income Residential Retrofit (PILIRR) Program. These projects have been monitored and analyzed through a concurrent process evaluation conducted by the Pacific Northwest Laboratory (PNL). This study reports the findings of that evaluation.

The overriding goal of the PILIRR Program was to determine whether the states could stimulate support for low-income residential energy improvements from non-federal sources. Currently, such weatherization is sponsored by DOE primarily under the Weatherization Assistance Program (WAP). Weatherization is also supported as part of a federal energy assistance program for low-income (Low-Income Home Energy Assistance Program or LIHEAP, sponsored by the U.S. Department of Health and Human Services).

The goal for the process evaluation was to conduct an assessment of the processes used by the states and the extent to which they successfully established partnerships and leveraged resources. Evaluation objectives included 1) identify state agency characteristics and organizational factors that have affected the projects; 2) develop an understanding of the planning processes used by states in these projects; 3) identify the processes through which partnerships were implemented; 4) identify state activities that facilitated the formation and sustainment of partnerships; and 5) develop an understanding of the advantages, disadvantages, and implications of the types of partnerships and leveraging mechanisms used by the states and their local PILIRR subgrantees.

Thirty-three states submitted proposals in response to the DOE's Request for Proposals for the PILIRR Program. The five states selected to participate in the program were Florida, Iowa, Kentucky, Oklahoma and Washington. Each state proposed a different approach to promote non-federal support for low-income residential weatherization.

The Florida project relied heavily on two local groups to develop community-based funding and in-kind resources. The state administrator of PILIRR, the Florida Governor's Office, awarded competitive grants of \$30,000 to each of the local groups to weatherize 50 to 100 low-income homes (each) over a period of a year. Use of the grant money was restricted to administrative expenses of the community agency.

The PILIRR project in Iowa was designed to buy down loans acquired by landlords of low-income rental buildings. At the state level, responsibility resided with the Iowa Department of Natural Resources (IDNR). Iowa's program was targeted at landlords of multi-family buildings and required landlords to secure a conventional bank loan to fund weatherization. As its leveraging approach, the program provided a buy-down of loan interest. The basic approach was presented to a group of Community Action Agencies (CAAs) who had chosen to participate. The participating CAAs demonstrated the approach in their territory by conducting pilot projects using the basic leveraging mechanism.

Kentucky's PILIRR project was designed and implemented by the Kentucky Energy Cabinet (KEC). The approach focuses on the elderly homeowner and the application of loan buy-downs. During development of the pilot project, KEC was the main player. A local housing corporation was selected to conduct the local pilot program. The corporation is located in western Kentucky and KEC selected it from participants in another innovative program. Once the operational part of the pilot, and the eventual project itself, begins, KEC's role should diminish as other partners recruit participants, arrange funding, and deliver the weatherization services.

Oklahoma's project is primarily a marketing effort to encourage use of a recently adopted 50% state income tax credit for donations to a low-income weatherization fund. As such, its leveraging mechanism was quite different from that employed in the other projects. The state Department of Commerce (ODOC) administers Oklahoma's project. PILIRR grant money has been used to develop and implement a marketing program to encourage major businesses to use the tax credit.

Washington's PILIRR program focused on weatherizing large, multi-family buildings with owners contributing to the costs. Other leveraged funds came from pooling state, utility, and a small amount of federal funds. The program was implemented by the state WAP agency, the Washington Department of Community Development (WDCD). Three WAP CAAs implemented the project at the local level. The state's role encompassed the overall planning and coordination of the project. The actual leveraging was carried out by the three WAP CAAs selected on the basis of past performance to conduct local demonstrations. The selected CAAs recruited multi-family building owners; developed financing packages; and provided the actual weatherization services.

Even with the limited number of states participating and with the diversity of approaches taken, the demonstration achieved its goal. Several states successfully established partnerships that delivered resources supporting low-income housing retrofits.

Three of the five states--Florida, Iowa, and Washington--established partnerships that led to retrofits during the monitoring period (October 1986 -October 1988). Kentucky established its partnership during the monitoring period, but did not accomplish its retrofits until after monitoring was complete. Oklahoma completed development of its marketing program and had begun marketing efforts by the end of the monitoring period, but information about the success of its approach was not yet available.

In the four states that established partnerships during the monitoring period, private sector participation occurred. (Oklahoma's declared partners were the state tax code and private sector businesses. Active marketing began in late August 1988, but no contributions had yet been received by October 1988, so no "partnerships" were apparent at that stage. We estimate that an additional six to nine months may be needed for this to occur.)

Each of the four states achieved at least some utility participation and contributions. Three of the states relied on the building owner to make an investment in the retrofit of their building; such investments would likely not have occurred during this period without PILIRR. The share of weatherization resources from strictly private sector sources, including building

owners, ranged from about 30% to nearly 100% in the three states that accomplished retrofits during the monitoring period. Overall, these projects demonstrated that, at the pilot project level, private sector support could be stimulated to support low-income residential energy improvements.

One of the criteria DOE employed in its evaluation of the state proposals was evidence of sustainability, that is the ability to maintain and support the proposed project on an on-going basis after the pilot project ended. Florida, Iowa, and Washington actually obtained resources to extend their projects. Neither Kentucky nor Oklahoma proceeded far enough in the pilot during the monitoring period to establish a full-scale follow-on. The three states that have begun their follow-on projects are relying heavily on Petroleum Violation Escrow Account (PVEA, or oil overcharge) funding to substitute for the grant funds provided by DOE during the pilot. PVEA funding was a valuable asset to the projects where it could be obtained.

Three main observations that should be taken into account in future demonstrations can be made now based on feedback from the participating states and information gathered from evaluation monitoring. First, the unique requirements of these projects meant that the states needed special technical assistance. The resource-leveraging aspect in particular made several unfamiliar technical demands on the states. The need to institute interagency and inter-organization planning mechanisms also required skills and expertise that was not always easy for participating agencies. In future demonstration programs, it would be advisable for DOE, the states (or other sponsors) to allocate sufficient resources to cover the cost of special technical assistance as the need develops. Some of the technical assistance requirements can be anticipated from the outset, but others will emerge as the projects progress.

Second, a considerable amount of information exchange occurred among the states, but even more would have been beneficial. Periodic conference calls among all the states and DOE were helpful, but this mode was somewhat awkward, and the information content of the calls was sometimes limited. One problem that arose with these calls was the difference among the states in their degree of progress on the projects at any given time.

One or more intermediate workshops where states could exchange information (and also receive focused technical assistance) on targeted issues and problem areas would benefit future demonstrations. However, in PILIRR, the different rates of progress of the various states made this step impossible.

Third, the amount of time to implement the pilot projects was underestimated in most cases. Three of the five states could have benefited from more time to institute their projects. The time required varied considerably depending on how unfamiliar the approach was to the state participants and the magnitude of problems that arose. In some cases fundamental exogenous problems or serious institutional disruptions added considerably to the schedule. In other cases however, the increased technical assistance and information exchange among the states advocated above might have shortened the time required.

The validity of extrapolating the results from this evaluation to other cases where resource-leveraging partnerships are being considered is limited, primarily because this evaluation is based on results for only five state projects. Nevertheless, the diversity of the projects helped ensure that any lessons that emerged with some consistency across the states could be anticipated to be relevant to typical projects that might be initiated in the future. Based on this evaluation, four major observations can be offered about resource-leveraging partnerships:

First, resource-leveraging partnerships involve processes and mechanisms with which few state planners and project managers have much familiarity. The essential lesson is that the project is more likely to succeed if it does not push the "state-of-the-art" too far in too many areas at once.

Second, because they are unfamiliar and relatively complex endeavors, resource-leveraging partnerships demand careful, thorough planning before, and continued planning during the early-implementation phase.

Third, the project will have to be "marketed" and planners and managers must take this into account. Specifically, project planners and managers must recognize that resource-leveraging partnerships require marketing aimed at diverse audiences and that the unique needs of public sector marketing must be recognized.

Finally, agencies and individuals who implement resource-leveraging partnerships must have a special mix of skills, and the authority and responsibility required to carry out the program.

GLOSSARY

BPA	Bonneville Power Administration
CAA	Community Action Agencies
CDBG	Community Development Block Grant
CDC	Community Development Corporation
DCAD	Division of Community Affairs and Development (Oklahoma)
DCS	Division of Community Services (Washington)
EES	Energy Extension Service
FDCA	Florida Department of Community Affairs
FGEO	Florida Governor's Energy Office
GMN	Greater Miami Neighborhoods (Florida)
HACAP	Hawkeye Community Action Program (Iowa)
HUD	U.S. Department of Housing and Urban Development
IDHR	Iowa Department of Human Rights
IDNR	Iowa Department of Natural Resources
ISU	Iowa Southern Utility
JTPA	Job Training Partnership Act
JVP	Joint Venture Project (Iowa)
KCHR	Kentucky Cabinet for Human Resources
KEC	Kentucky Energy Cabinet
KHC	Kentucky Housing Corporation
LIHEAP	Low-Income Home Energy Assistance Program
ODOC	Oklahoma Department of Commerce
PILIRR	Partnership in Low-Income Residential Retrofit Program
PNL	Pacific Northwest Laboratory
PSA	public service announcement
PVEA	Petroleum Violation Escrow Account
RFP	Request for Proposal
SECP	State Energy Conservation Program
SICA	Southeast Iowa Community Action Organization
SNC	Spokane Neighborhood Centers (Washington)
THF	Tallahassee Housing Foundation (Florida)
WAP	Weatherization Assistance Program
WDCD	Washington Department of Community Development

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PROJECT UPDATE INFORMATION

After the monitoring period for the evaluation described in this report closed, Kentucky conducted two pilot demonstration projects to test its PILIRR approach. One pilot project was in the service boundary of the Purchase Area Development District in the extreme western part of Kentucky. The second was conducted in the major metropolitan area of Louisville-Jefferson County.

The Purchase Area Development District project sought to demonstrate the approach in a rural area with single-family homeowners, and using a public lender. Two senior homeowners participated and the local non-profit housing corporation loaned the funds. In each project, the KEC contributed 25% of the total cost (through a loan buy-down). In the Louisville-Jefferson County project, the participant was the landlord of a 235 unit high-rise, multi-family building with 280 senior citizens as tenants. The KEC contributed 20% of the total cost and the loan was obtained through a commercial bank.

In Oklahoma, a modification of the tax credit legislation on which that state's PILIRR project is based was approved by the Oklahoma State Legislature in its 1989 session. This modification will allow any funds acquired through the tax credit mechanism to be used for low income weatherization grants as well as loans.

1.0 INTRODUCTION

In July, 1986, the U.S. Department of Energy (DOE) awarded competitive grants to five states to conduct pilot projects to establish partnerships and use resource leveraging to stimulate nonfederal support for low-income residential energy retrofits. These programs have been monitored and analyzed through a concurrent process evaluation conducted by the Pacific Northwest Laboratory (PNL).^(a) This study reports the findings of that evaluation.

1.1 BACKGROUND

Leveraging federal grant monies to stimulate partnerships with the private sector was identified as a key activity in DOE's Office of State and Local Assistance Program's (SLAP) 1985 Strategic Plan. This activity was justified as "a common sense strategy in any instance where [state and local] grantees and subgrantees want to expand or diversify [their] resource base . . .^(b) to minimize program vulnerability to externally caused disruptions." To test the feasibility and the effectiveness of DOE support for such efforts, the SLAP Office sponsored a unique pilot program from 1986 through 1988. This program, titled "Partnerships in Low-Income Residential Retrofit," or PILIRR, provided \$100,000 grants to states to conduct innovative programs to leverage nonfederal resources for low-income home energy improvements.

Thirty-three states submitted proposals in response to the DOE's Request for Proposals for the PILIRR Program. The proposals were evaluated on the basis of 1) the capabilities of the submitting state agency to perform innovative leveraging, 2) indications of adequate coordination with other state agencies, 3) expected amount of leveraged resources, and 4) estimated project sustainability.

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- (a) Pacific Northwest Laboratory is operated by Battelle Memorial Institute for the U.S. Department of Energy.
 - (b) U.S. DOE. 1985. "Strategic Plan for the State Energy Conservation Program and the Energy Extension Service." Office of State and Local Assistance Programs, Office of Conservation and Renewable Energy, DOE, Washington, D.C. (not publically available).

The five states selected to participate in the program were Florida, Iowa, Kentucky, Oklahoma, and Washington. Each state proposed a different approach to promote nonfederal support for low-income residential weatherization. Support was broadly defined to include both monetary resources and in-kind contributions of materials and labor. The sources of the support could range from state and local agencies, to private businesses and individuals, to nonprofit organizations. The states had wide discretion in using the PILIRR grant, but the funds were not allowed to be used to directly purchase home energy improvement labor, materials, or real property, or to lobby.

1.2 PROGRAM AND EVALUATION GOALS

As a pilot effort, the primary goal of the PILIRR Program was to determine whether the states could stimulate support for low-income residential energy improvements from nonfederal sources. Regulations that govern the selection of eligible homes and levels of home improvement for the federal Weatherization Assistance Program (WAP) were applied to PILIRR. While PILIRR addressed the same sector as the WAP, it was not intended to compete with or replace that grant program. In DOE's words

. . . a major objective of PILIRR is to build on the success of the federal Weatherization Assistance Program and to determine the degree to which states can facilitate and encourage public-private sector coordination and formation of partnerships to achieve a workable approach for making low-income home energy improvements. The program also will demonstrate the extent to which the private sector is willing to and can provide the resources necessary . . . and the extent to which the resources provided are translated into high-quality retrofits.^(a)

A secondary but related goal of the PILIRR Program was to assess the need for and type of technical assistance role for DOE in any future efforts to encourage state-level resource leveraging for low-income weatherization.

The goals for evaluating the process were somewhat less broad and were based on several discussions with DOE to establish the focus and associated research objectives. We considered three possible levels of evaluation: 1) assessing the processes the states used and the extent to which they success-

(a) U.S. DOE. 1986. "Solicitation Number DE-PS01-86CE63466 for the Partnerships in Low-Income Residential Retrofit Program." Office of Procurement Operations, DOE, Washington, D.C. (not publically available).

fully established partnerships and leveraged resources, 2) assessing the sustainability of the state projects beyond the demonstration phase, and 3) assessing the various state programs' ability to be replicated and transferred to nonparticipating states.

The timing of the evaluation and the focus on the process of partnership development and resource leveraging led to an agreement to limit the effort primarily to the first level of evaluation: assessing the processes the states used and the extent to which they successfully established partnerships and leveraged resources. Furthermore, while the outcomes of the five projects--the number of low-income units weatherized through leveraged resources--were used as evidence of achievements, the real emphasis of the evaluation was on the developmental and implementation processes that could be discerned in the projects.

We established a set of research objectives that were linked to tangible evaluation activities and provided the basis for developing specific research questions. The objectives included the following:

1. identifying state agency characteristics and organizational factors that have affected the projects
2. developing an understanding of the planning processes used by states in these projects
3. identifying the processes through which partnerships were implemented
4. identifying state activities that helped form and sustain partnerships
5. developing an understanding of the advantages, disadvantages, and implications of the types of partnerships and leveraging mechanisms used by the states and their local PILIRR subgrantees.

1.3 TECHNICAL ASSISTANCE ACTIVITIES

The DOE anticipated that partnership development and resource leveraging could require broader and more technical skills in specialized areas, such as marketing and innovative conservation financing, than may typically be available in state agencies. Therefore, in addition to evaluating PILIRR, PNL was also requested by DOE to provide some pre-implementation training/ orientation for PILIRR state agency personnel in the grantee states, and a moderate amount of "on-line" assistance as needed during the conduct of each state's project.

Two workshops were held as part of this effort: one at the program "kick-off" stage in 1986, and one near the end of the program implementation period in 1988. The purposes of both workshops was 1) to transfer and share information among the states and 2) to provide information to PNL that would be used for the evaluation. The second workshop in particular was used as an evaluation tool. PNL's typical ongoing assistance included providing contacts and special information as requested by the states (on such topics as marketing and energy consumption estimating software), performing literature searches and providing states with relevant research reports and articles, and encouraging networking among the participants.

The collaborative role played by PNL is one that is recognized as appropriate for formative (as opposed to summative) evaluations (for example, Patton 1982). Moreover, this role had several benefits for the evaluation. The training and assistance activities helped the evaluators to develop the rapport needed to conduct a nonsuperficial process evaluation. The technical assistance also gave the evaluators an excellent way to assess the states' and local agencies' needed skills and required roles. In PNL's more objective role as evaluators, care was taken to assess these support interactions.

1.4 REPORT STRUCTURE

This report is organized into seven sections and six appendixes. Section 2 describes the development and application of the evaluation methodology, while Section 3 describes the PILIRR projects in each grantee state, the sponsoring agencies, and the project settings. In Section 4 project processes are discussed and analyzed. These processes are categorized according to themes that were found to cross-cut almost all the projects, even though project design varied a great deal from state to state. Section 5 summarizes the results of the evaluation. A list of references, and a glossary of terms and acronyms used in this report are provided as Sections 6 and 7, respectively. In Appendix A, the workshops and other technical assistance activities conducted by PNL are described. A more detailed description of the methodology is included as Appendix B. Appendix C lists those interviewed in the study. Finally, Appendix D contains summary information about the Tallahassee Housing Foundation's approach from its recently published

handbook, and some interesting perspectives on coordinating weatherization and rehabilitation of multi-family buildings provided by Spokane Neighborhood Centers.

2.0 EVALUATION METHODOLOGY

This section discusses the methodology that was developed and applied in evaluating the PILIRR projects. First, we discuss briefly how the methodology was developed and the major considerations that affected the methodology. Then the specific steps in the methodology are discussed.

2.1 METHODOLOGY DEVELOPMENT

We worked with DOE in developing evaluation methodology to ensure that the approach would address DOE's needs. The methodology was developed through an iterative process over several months; during that time we worked with DOE to clarify our perceptions of the context for the evaluation, DOE's needs, and the focus of the evaluation. Many issues and their implications were considered. These issues included the following:

- DOE's needs
- relationship of resource-leveraging partnerships to traditional weatherization programs
- evaluator's role in the projects
- variability of projects
- qualitative nature of project data
- lack of control cases
- innovative nature of resource-leveraging partnership approach
- reliability and validity.

As a result of these issues, the methodology we applied

- focuses on process evaluation^(a)

(a) Process evaluations focus on how programs work; "outcome" or "impact" evaluations focus primarily on programs' outcomes.

- has a feasibility analysis orientation^(a)
- emphasizes exploratory and descriptive methods^(b)
- applies qualitative data analysis methods
- focuses on decision-makers and decision-making processes.

Overall, the methodology design was intended primarily to allow us to understand the underlying processes in each project and to assess what factors most affected implementation feasibility.

Figure 2.1 shows an overview of the steps conducted in the evaluation. In the first step we established the study goals and objectives, discussed in Section 1. Each of the remaining steps is described in the following subsections.

2.2 PROJECT MODELS DEVELOPMENT

After the study's goals and objectives were established, the next step in the evaluation methodology was developing a generic PILIRR project model and state-specific models. The generic model, shown in Figure 2.2, identified the key actors: the state agency, partnership participants, and target audience. Main activities were the resource-leveraging and partnership creation and implementation. The generic model provided the basis for developing state-specific models representing how each state planned to implement the concept. (The models developed for each state are discussed in Section 3 and are based on information in each state's proposal to DOE.)

Because there were no control cases, the state models provided a reference against which to compare the actual state projects to help show what changes occurred and possibly to identify what caused the changes.

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- (a) The state projects provided tests of the feasibility of the concept proposed by DOE. They provided information that could be used by a state or DOE to decide whether to pursue such projects in the future and how to plan and implement them (Patton 1987, p. 44).
 - (b) Descriptive and exploratory approaches typically deal with questions about ways in which the projects worked. Explanatory approaches deal more with causal relationships associated with why the projects worked or didn't work.

FIGURE 2.1. Steps in Evaluation Methodology

2.3 HYPOTHESES DEVELOPMENT

The next step involved developing hypotheses to translate the evaluation goals and objectives into specific research questions for collecting data. These hypotheses were used primarily to help structure the questions, and not for testing purposes, as they might be in a standard deductive approach. The hypotheses consisted of such statements as "States should identify and apply incentives and marketing tactics that are tailored to partner types and objectives."

Because the processes were the primary research focus, most hypotheses were intended to reveal the projects' process characteristics. Since this evaluation was primarily exploratory, most hypotheses addressed issues of which processes helped establish and maintain resource-leveraging partnerships. We also wanted to infer what actions led to project success,

FIGURE 2.2. Generic PILIRR Project Model

although causal relations were not the primary evaluation focus. Consequently, some hypotheses dealt with issues that helped reveal causal relationships and behavior. Finally, some hypotheses implicitly addressed issues related to implementing innovations (PILIRR, in this case) by taking into account two project characteristics linked to the implementation of innovations: the decision-making process and participants' objectives.

2.4 DEVELOPMENT OF RESEARCH QUESTIONS AND INFORMATION SOURCES

Because we were principally using qualitative analysis techniques, the evaluation relied heavily on verbal information and opinions. Before data were collected, the next two steps were conducted in parallel: research questions were developed and information sources were identified, as shown in Figure 2.1.

Starting with the hypotheses, we developed questions about five major components--lead state agency, leveraging approach, partners, partnership mechanisms, and target audience^(a)--selected from the generic project model, and a sixth element, the environment. Going from the hypotheses to the research questions involved an intermediate step: defining underlying factors expected to influence project success. Table 2.1 presents the factors used as the basis for collecting data on each project component. For each factor, a set of "variables" was defined that formed the basis for the research questions used to collect project data.^(b) Examples of the variables examined for several of the project components included

(a) In several of the projects, the occupant of the dwelling receiving weatherization played a limited and passive role in the project.

(b) We identified variables that represented key aspects of each project component and we expected the "value" of each variable to vary across projects. Research questions were designed to obtain information on each variable. Most important were "malleable" variables, i.e., those variables reasonably susceptible to change to bring about a desired result (Majchrzak 1984). An example of a malleable variable related to the lead state agency was "characteristics of the planning process used to develop the projects."

TABLE 2.1. Project Factors

<u>Lead Agency</u>	<u>Partners/Partnership Mechanisms</u>	<u>Resource Leveraging</u>
Factor 1: Ability to Plan, Design, and Implement Innovative Projects	Factor 1: Partnership Characteristics	Factor 1: Characteristics of the Leveraging Approaches
Factor 2: Implementation Experience with Low-income Programs	Factor 2: Characteristics of Partners	Factor 2: Feasibility of Leveraging Approach
Factor 3: Capabilities and Experience of PILIRR Staff and Outside Supporting Personnel	Factor 3: Activities Used to Solicit, Select, Acquire Partners	Factor 3: Stability and Sustainability of the Leveraging Approach
Factor 4: Need for, and Degree of, Coordination with Other Agencies or Internal Divisions	Factor 4: Activities and Mechanisms Used to Communicate between Partners and to Solve Problems	Factor 4: Appropriateness of Leveraging Approach to Target Group
Factor 5: Characteristics of Key Administrators		

<u>Target Audience</u>	<u>Environment</u>
Factor 1: Characteristics of Target Audience	Factor 1: State and Local Economic Conditions
	Factor 2: Low-income Weatherization Activities
	Factor 3: Government Attitudes and Regulatory Climate

- lead agency: amount of experience with low-income programs, degree to which programs involved non-agency participants, institutional and organizational changes, and amount of experience with projects involving multiple parties or organizations
- resource leveraging: type and amount of leveraged resources, type of financial mechanism, extent to which leveraging approach is accommodated by existing institutional environment
- partners/partnership mechanisms: extent of previous partnership activity by PILIRR partners, roles of each partner and what they contribute, size of partner and area served.

The hypotheses and research questions were developed iteratively with the data collection activities described in the next subsection to incorporate new knowledge and understanding in the evaluation approach.

The key data sources were information sources, primarily at the lead state agency and the partner organizations, who were directly involved in the PILIRR project. We also considered cognizant state agency personnel responsible for conventional low-income weatherization programs to be primary information sources.

2.5 DATA COLLECTION

Individual members of this study were assigned to specific states to collect data. Most data collected were based on interviews, but background information was also collected from written sources.

Data collection was designed to obtain information on the five fundamental components of each state project and the environment. The grant proposals provided information to construct the initial state project models. Background information from state fact books and other sources provided insight into the context in which the state projects were conducted. This background information was particularly important to identify variables that were not malleable, yet would have to be considered if one wanted to transfer a given resource-leveraging or partnership approach to a different setting.

We obtained project data through telephone calls and indepth interviews. We monitored the projects' progress through frequent telephone calls with key project participants, and we made several conference calls that involved all

the states, DOE, and PNL. At the sites, interviews were conducted using the research questions developed. Several key people from each state were interviewed in depth two or three times.

Data were collected using the qualitative analysis procedure recommended by Miles and Huberman (1984). Although we had no strong feelings about what project characteristics or actions would produce success, the hypotheses we developed with DOE helped narrow the scope of data collection. Although data collection was relatively structured, the onsite and telephone interviews were designed to permit open-ended data gathering to accommodate the exploratory dimension of the evaluation. Collecting similar information from multiple participants, or triangulation, helped develop construct validity (Yin 1984).

Data collection activities also provided opportunities for transferring information or providing technical assistance to the participants. This assistance involved inputs to the state projects that had to be considered in our evaluation. We documented all such interventions.

In addition to the more conventional data collection techniques described above, a workshop conducted near the end of the data gathering phase served partly as a data collection activity. One part of the workshop was devoted to a Q-sort/Nominal-interacting process in which representatives from each participating state were asked to rank several different factors (based on evaluation hypotheses and information gathered during prior data collection) in terms of their importance to implementing successful projects. The participants then were presented with the group rankings and given an opportunity to discuss the factors and how they were ranked. This activity provided an another way to assess success factors and a check of the validity of the inferences made from data collected through the conventional interviews.

In the second portion of the workshop, the participants were asked to work as a group to plan a hypothetical weatherization resource-leveraging partnership. This activity provided additional information about the group's assessment of success factors. Details of the workshop are presented in Appendix A.

2.6 DATA REDUCTION AND PRELIMINARY ANALYSIS

Figure 2.1 shows that the data were reduced and the preliminary analysis was conducted iteratively with data collection activities. The evaluator was responsible for coding information obtained using a common method. As project data were collected, each evaluator summarized the information and shared it with the other evaluators. Preliminary assessments of the information led to minor modifications in the procedure for collecting data; new hypotheses emerged that merited attention and gaps in the data were identified. Ongoing data analysis helped assure analytic quality by facilitating early peer review.

2.7 DATA ANALYSIS AND INTERPRETATION

The evaluators assembled the detailed information they collected on their projects. The raw data were distilled and processed into case descriptions that are presented in Chapter 3 of this report.

The focus of this study was single-site analysis--identifying what occurred in each state. Nevertheless, the approach did allow analysis or comparisons across projects. Based on what we learned from the data collection phase, we organized the analysis around categories of project actors and activities. Within each category, we examined the record to identify patterns and themes that characterized each project. These patterns and themes provided the basic information that was desired about what happened in each project. The analysis in Section 4 focuses on these themes; and although the emphasis is on single-site analysis, the analysis provides information on each state project so the variations across the projects are apparent.

We also highlighted links in projects to examine possible causal relationships. The intent was to identify the relationships more than it was to explain them or their implications.

Throughout the analysis (presented in Sections 4 and 5), we addressed the issue of project success by examining what had been accomplished in terms of both establishing a functioning project and delivering low-income

weatherization. To some extent we identified how project structure and characteristics contributed to success.

Finally, we pooled the information from individual state projects to conduct limited cross-site analysis and make general observations about resource-leveraging partnerships for low-income weatherization, discussed in Section 5. Some insights from the individual projects were sufficiently supportable to be generalized to potential situations and circumstances in other states. We also were able to make some inferences about the sustainability of the projects conducted in this demonstration.

These analyses techniques satisfied the exploratory needs of this evaluation and partially addressed explanatory aspects as well. Although they did not fully answer transferability and sustainability questions, the single-site and cross-site analyses provided initial, valuable insights into the factors likely to determine the success of other resource-leveraging partnerships for low-income weatherization.

3.0 DESCRIPTION OF PILIRR PROJECTS, AGENCIES, AND SETTINGS

Although the PILIRR program was founded on a single concept, the resulting state programs varied. Therefore, to help guide the reader in the analytic portion of this report (Section 4), each of the five state projects in the program is briefly described in this section. For each state, the general setting for low-income weatherization activities and the implementing agencies are discussed. The Florida, Iowa, and Washington projects involved local demonstrations or variations of a general approach developed by the state. In those cases, details of those local versions are provided.

3.1 FLORIDA

This subsection discusses the Florida project, which relied heavily on two local groups to develop community-based funding and in-kind resources.

3.1.1 The Setting: Low-Income Weatherization in Florida

Over 700,000 homes in Florida meet the eligibility criteria for participating in DOE's Weatherization Assistance Program. Between 1977 and 1985, about 4% of those homes were weatherized using federal funds (Florida Governor's Office 1986a). The state agency administering these programs (as well as most social service programs in Florida) is the Florida Department of Community Affairs (FDCA). Petroleum Violation Escrow Account (PVEA)^(a) oil overcharge refunds available to the state have been used in recent years to supplement federal funding for low-income weatherization. In 1988, the legislature authorized a supplement of \$3 million from this source, while the WAP contributed approximately \$500,000.

While a number of Florida utilities have active conservation activities, only one major utility (Gulf Power) currently operates a grant-type program for whole-house weatherization for low-income homeowners. The other major

(a) For this report, PVEA is defined to be all state funding allocations from the federal government derived from negotiated settlements and judgments against oil companies for price overcharges during the period from September 1973 to January 1981.

utilities typically offer partial payment of low-cost energy improvements (caulking, water heater wrap, etc.), or operate loan-type weatherization programs available to all homeowners.

3.1.2 The Implementing Agencies

The implementing agency for Florida's PILIRR grant, the Florida Governor's Office (FGEO), is part of the Executive Office of the Governor of Florida. It is a relatively small organization, with a staff of 25 to 30 fulltime employees. Its responsibilities include energy planning, collecting and analyzing energy-related data, managing certain federally funded grant programs (for example, the Institutional Conservation Program), and conducting a number of state and federal conservation programs. While the FGEO has certain oversight responsibilities for the state WAP, it does not administer the program nor deal directly with the WAP subgrantees. WAP administration is the responsibility of the FDCA.

FGEO is funded primarily through federal grants, cooperative agreements, and (in recent years) oil overcharge refunds (FGEO 1986b). Florida's winning PILIRR proposal was developed and submitted by the FGEO and is indicative of that agency's efforts to implement a range of innovative energy programs, including weatherization-type programs. The agency's role in the PILIRR project included developing the concept and overall design of the program; soliciting, selecting, and funding the community organizations to conduct local demonstrations; and monitoring, encouraging, and reviewing those efforts. It did not take an active role in partnership development or resource leveraging because those activities were conducted at the community level.

One community organization selected to conduct local projects was the Tallahassee Housing Foundation (THF). It is a small private nonprofit agency with a fulltime staff of six to seven individuals. Its funding is provided primarily by United Way and its own fundraising efforts. Most of its activities (emergency home repair, preventative maintenance, weatherization and temporary shelter for homeless families) are directed toward very low-income households and are accomplished through a well-developed system of leveraging volunteer labor and other in-kind resources.

The second local agency participating was the Greater Miami Neighborhoods, Inc. (GMN). It also maintains a relatively small staff, but it serves a much larger area; and, with its affiliation with the Enterprise Foundation and support from local organizations and government, the GMN tends to be able to draw on resources and leveraging opportunities that many nonprofit agencies would envy. For example, when GMN was founded, \$750,000 was contributed by the City of Miami, Dade County, and private contributors for operating funds and seed capital for housing projects. The nature of GMN's operations also differs from those typical of most nonprofit agencies: it is a multi-level partnership with emphasis on leveraging financing for housing and developing effective community-based organizations rather than direct services to the needy.

3.1.3 Florida's PILIRR Program and Demonstration Projects

Florida's PILIRR Program emphasized developing community-based funding and in-kind resources for low-income weatherization. A model of the program is shown in Figure 3.1. The implementing agency, the FGEO, awarded competitive grants of \$30,000 each to the two community organizations, the THF and GMN, to weatherize 50 to 100 low-income homes (each) over a period of a year. The grant money was restricted to administrative expenses of the community agency. Other than that restriction and a requirement that WAP specifications for retrofit measures and qualifying recipients be met, the participating community organizations faced no other design requirements.

The FGEO intentionally selected dissimilar agencies, settings, and approaches for its two local demonstrations for PILIRR. THF is a private, nonprofit organization that seeks to improve housing for low-income and disadvantaged citizens of Tallahassee and Leon County, Florida (total population approximately 165,000). Typically, its clients are elderly homeowners and minorities.

For its PILIRR demonstration, THF adapted an approach used for emergency housing repair and rehabilitation, based on the use of volunteer labor and materials donated or purchased with proceeds from fundraising activities. Crews of volunteers, often from a single organization, were recruited for

FIGURE 3.1. Florida's Program

limited time periods (typically one or two weekends) to weatherize and repair owner-occupied low-income homes. Each crew was assigned a specific home and was trained onsite and supervised by a local construction professional, who also was a volunteer but was recruited separately by THF through its contacts with local building trades organizations. Most materials used (both new and used) were donated by local suppliers, builders, and residents. Insulation

materials and installation were provided by the local municipal utility as an extension of its current home insulation program. Installation contractors agreed to forego their profit as a contribution to the project. In addition, THF was able to raise a moderate amount of cash from local organizations, businesses, and individuals.

Through THF's effort 70 homes were retrofitted at an average cost of \$980 (including the estimated value of volunteer labor); many homes received nonenergy related repairs as well.^(a) Based on the promise shown by this approach, THF received additional administrative funding in 1988 from the FGEO (from PVEA funds) to continue and expand its efforts.

GMN is the Dade County affiliate of the Enterprise Foundation, a national organization committed to housing and related services for very low-income families. GMN was formed rather recently (1985) as a local housing resource center, providing financial and technical support to Community Development Corporations (CDCs) for producing low-income housing.

In the PILIRR demonstration, GMN marketed enhanced weatherization (to WAP levels) for homes being constructed or rehabilitated by five neighborhood CDCs. Participating CDCs were responsible for signing up qualified families and inspecting completed retrofits, for which they received incentive payments of \$100 per retrofit from GMN. GMN also coordinated utility-subsidized audits and weatherization and sought matching funds from community sources and contributions (labor and/or materials) from weatherization contractors. Through its Owner Builder Center at Miami Dade Community College, GMN also sought to provide additional training to low-income families in energy management and self-help weatherization techniques.

GMN's primary goal is to increase housing opportunities for low-income families, not simply to weatherize homes. Although GMN's leveraging approach was relatively successful, achieving the PILIRR target was more difficult than expected because of GMN's goal and problems "selling" WAP-level weatherization (which primarily addresses heating, rather than cooling

(a) For example, THF installed a bathtub in one home, and indoor plumbing in another.

efficiency of homes) in the Miami area. However, by the fall of 1988, about 100 homes had been weatherized at an average cost of \$355 per home.

3.2 IOWA

The PILIRR project in Iowa was designed to buy down loans acquired by landlords of low-income rental buildings. At the state level, responsibility resided with the Iowa Department of Natural Resources (IDNR).

3.2.1 The Setting: Low-Income Weatherization in Iowa

At the start of the PILIRR project, Iowa was receiving about 120,000 applications each year for low-income weatherization services, but the state program could meet the needs of only about 9,000. Total expenditures were about \$12 million per year. In recent years, state PVEA funds of about \$3 million per year had been used for low-income weatherization. After a state government reorganization that occurred about when PILIRR started, the Iowa Department of Human Rights (IDHR) assumed responsibility for WAP and conducted it through a network of 19 Community Action Agencies (CAAs). There was a perception that occupants of multifamily rentals were not being reached adequately by the existing weatherization programs, and the PILIRR project was designed to partially address this need.

3.2.2 The Implementing Agencies

The Energy Bureau of IDNR's Energy and Geological Resources Division had responsibility at the state level for implementing PILIRR. This group was formed after the state government reorganization that occurred about the time Iowa received its PILIRR grant. The agency that had submitted the proposal to DOE originally also had responsibility for WAP, but it was no longer in existence when the grant was received. The Energy Bureau in IDNR was given responsibility for energy conservation programs and PILIRR, while WAP and other grant programs went to the IDHR.

Iowa's proposal was prepared by several of the people originally involved in the project, even though the reorganization eventually moved some into different organizations. The proposal was designed to rely heavily on the state association of CAAs and the individual CAAs. When implemented, the

project maintained this reliance. However, the state agency that assumed responsibility for PILIRR was no longer the one that administered WAP; therefore, the direct administrative and funding link envisioned in the original plan was not present in the actual program.

The director of the Joint Venture Project (JVP), established by the Iowa Association of Community Action Directors, was the original project coordinator on behalf of the CAAs. By the time the project started the JVP had been eliminated, but the coordinator continued his role for a while on behalf of the CAA directors. Subsequently, a key staff person from the Hawkeye Community Action Program (HACAP) assumed this role.

HACAP covers a six county area in eastern Iowa, and in 1988 had a budget of about \$11 million. It provides a multitude of services and employs about 250 people fulltime or part time. HACAP is generally considered to be one of the more innovative CAAs in Iowa and willing to take on risky projects. HACAP accomplished retrofits on 9 units under PILIRR. The other CAA that succeeded in delivering some weatherized units was the Southeast Iowa Community Action Organization (SICA), located in Burlington. It covers a four county area and has a budget below the median for the state CAAs. Sixteen units were weatherized under the SICA pilot project. A third CAA, Mid-Iowa Community Action (MICA), proceeded fairly actively, but ran into a major obstacle when it tried to coordinate its project with U.S. Department of Housing and Urban Development's (HUD's) rehab activities in Marshalltown. MICA serves 5 counties in central Iowa and is generally considered among the more innovative CAAs in the state. Its budget is about average for the state.

3.2.3 Iowa's PILIRR Program

Iowa's program was targeted at landlords of multifamily buildings and required landlords to secure a conventional bank loan to fund weatherization. The program model is shown in Figure 3.2. As its leveraging approach, the program provided a buy-down of loan interest. The project design drew upon existing state projects, particularly HUD's Solar and Energy Conservation Bank (HUD Solar Bank) program, which had developed a network of participating

- Notes:
1. Flow diagram illustrates activities during operational mode. During initial demonstration phase no contributions are likely to be solicited to fund loan buy-downs.
 2. DNR and the JVP will provide training/technical assistance throughout the project. The JVP will also prepare required materials for other participants in the project and provide information throughout the project.
 3. Landlords and the CAAs will assess buildings and tenants for conservation potential. The CAAs will train occupants in conservation practices.

FIGURE 3.2. Model of Iowa's Program

lenders and provided loan principal buy-downs to individuals. When implemented, however, the Iowa PILIRR project diverged from these prior projects.

The basic model for Iowa's PILIRR Program was presented to a group of CAAs who had chosen to participate. The participating CAAs were to demonstrate the approach in their territory by conducting pilot projects using the basic leveraging mechanism. These CAAs worked with the project coordinator, an employee of the state association of CAAs, who had major responsibility for implementing the project. The original coordinator was later replaced by a representative from HACAP, as noted earlier. The CAAs' meetings were usually attended by the CAA representatives; an IDNR representative, the state agency administering the project; and a IDHR representative, from the state agency administering WAP.

During the early implementation stages of the PILIRR project, this group hammered out the details required to implement the project, including the type of buildings targeted, characteristics of the loan buy-down, and approach and materials for marketing. No other participants were routinely at the group's meetings so this group was quite different from the task forces formed in some other states' projects.

Landlords were recruited from Low-Income Home Energy Assistance Program (LIHEAP) lists initially through mass mailings. After a landlord indicated interest, several steps occurred: 1) a free walk-through audit was provided and an initial cost estimate; 2) tenant incomes were verified; 3) a detailed weatherization work writeup was provided; 4) the landlord arranged with his bank for a loan and signed the PILIRR agreement; 5) the CAA crew or contractor weatherized the units; and 6) a check was issued to the landlord to buy down the loan amount.

A fund of \$30,000 from the PILIRR grant was made available for loan buy-downs. The original goal was to obtain another \$50,000 during the project, probably from the PVEA, to buy down loans and weatherize of about 1,000 units. Of the six CAAs originally interested, only two accomplished any weatherization. During the monitoring period, only 19 units were weatherized under PILIRR; and another 7 were weatherized in conjunction with PILIRR

either directly by the landlord or with WAP funds. For all 26 units, about \$26,000 was contributed by landlords and \$6,000 in PILIRR grant money was spent to buy down loans.

Although the initial numbers were disappointing, the demonstration was successful in generating follow-on funding. The PVEA fund awarded \$240K to PILIRR II, and one utility granted \$150,000 to the project.

3.3 KENTUCKY

Kentucky's PILIRR project was designed and implemented by the Kentucky Energy Cabinet (KEC), which is responsible for the state conservation programs. The approach emphasizes the elderly homeowner and the use of loan buy-downs.

3.3.1 The Setting: Low-Income Weatherization in Kentucky

Total annual funding for state low-income weatherization activities was \$8.4 million at the time PILIRR was implemented. This amount included WAP, LIHEAP, and state PVEA resources (\$700,000) committed to weatherization. In 1988, the legislature directed that PVEA funds of \$2.3 million/per year be devoted to weatherization through the existing program.

In 1987, about 5,500 homes were weatherized through the WAP at an average expenditure of about \$1,500 per home. Out of 360,000 eligible households statewide, only 60,000 have been reached by the weatherization programs since such programs began. The rating system for prioritizing weatherization candidates gave preference to the handicapped and elderly, yet many elderly were not being reached by the existing program because their incomes were not in the lowest category. Weatherization is conducted through 22 CAAs and three local governments. The WAP is administered by the Kentucky Cabinet for Human Resources (KCHR). No weatherization programs were conducted outside of those occurring under the state program, but several utilities contributed to this and related programs.

3.3.2 The Implementing Agencies

State responsibility for the project resides in the governor's Energy Cabinet (KEC) in the Conservation Division of the Department of Energy Production and Utilization. The cabinet has traditionally played a major

role in conducting research and developing policy related to coal production and utilization. The eight members of the Conservation Division are responsible for the State Energy Conservation Program (SECP) and the Energy Extension Service (EES) programs, but not WAP. The KCHR, which administers WAP, expressed little initial interest in PILIRR, and KEC staff developed the proposal to DOE. KEC was selected by the governor to conduct the demonstration after DOE selected Kentucky's proposal.

While the pilot project was being developed, KEC was the main player, providing the lead and direction to convert the proposal into an operating project. Once the operational part of the pilot, and the eventual project itself, begins, KEC's role should diminish as other partners recruit participants, arrange funding, and deliver the weatherization services.

The Purchase Area Housing Corporation, located in western Kentucky, was selected to conduct the local pilot program. KEC selected the corporation from participants in another program, the Seniors Weatherization and Training program (SWAT), discussed later. KEC has worked with the Kentucky Housing Corporation (KHC) for about one-and-a-half years to develop a statewide capability to conduct PILIRR. KHC was established by the Kentucky General Assembly as a private, nonprofit organization with the public purpose of providing low- to moderate-income housing. KHC established a foundation and attempted to receive tax-exempt (501c) status for the foundation so that it could accept money raised through fundraising efforts. This status was not granted until late in 1988. KHC has served only an advisory role in the project so far, although the project's design called for it eventually to be a major player.

3.3.3 Kentucky's PILIRR Program

The design of Kentucky's PILIRR program was influenced by state experience with the HUD Solar Bank program. It was intended to take advantage of existing information and contacts, largely those established with lenders statewide. Figure 3.3 presents a model of the program. The project targeted elderly homeowners who, because of their income level, were not high enough priority candidates to receive conventional weatherization funding. The

- Notes:
1. Flow diagram illustrates project activities during operational mode, but does not show activities to promote project to other states.
 2. Energy Cabinet will play a role in most activities during demonstration phase and probably will continue to maintain involvement until the non-profit organization is fully functioning and supported by other than Energy Cabinet funds.

FIGURE 3.3. Model of Kentucky's Program

proposed PILIRR program included participation by a wide range of partners and a major financial commitment by weatherization recipients. Early in the grant period, however, most of the activity was conducted by the KEC to plan the project and set up the mechanisms and institutional arrangements required.

Kentucky's demonstration project was considered a pilot, and its structure was different from the planned structure for the eventual program. In the long-run, KEC expected a statewide nonprofit organization to be the main player, but in the pilot project KEC played the central role and relied on a local Area Development District to implement the project.

KEC took several months to establish the Task Force on Residential Energy Conservation Financing to advise KEC on program design. The Task Force helped establish project guidelines, develop project materials, and target the project.

In July 1988 after several meetings of the Task Force and an extensive planning effort by KEC, the pilot began. KEC initially committed \$5K from SECP funds to the local project; the local Area Development District committed \$5K; and recipients were expected to contribute \$10K. The local utility was expected to perform audits and the recipient was expected to secure a low-interest loan, if they did not have the cash required, to cover their contribution. KEC relied heavily on mechanisms and partnerships established through the SWAT program, instituted about the time PILIRR began. For consistency, they called the PILIRR project SWAT II. SWAT II was intended to augment the low-cost, no-cost coverage of SWAT I.

3.4 OKLAHOMA

Oklahoma's project is primarily a marketing effort to encourage use of a state tax credit for donations to a low-income weatherization fund. As such, its leveraging mechanism was quite different from that employed in the other projects. The state Department of Commerce (ODOC) administers Oklahoma's project.

3.4.1 The Setting: Low-Income Weatherization in Oklahoma

The state agency implementing PILIRR in Oklahoma, the ODOC, estimates that 40,000 low-income homes in the state had been weatherized by 1987, and that 44,000 eligible single-family dwellings remain to be treated. The ODOC/Division of Community Affairs and Development (DCAD) is also the agency responsible for administering federal grant money for low-income weatherization.

3.4.2 The Implementing Agency

The ODOC is a relatively new agency that was formed by combining the Department of Economic and Community Affairs and the Department of Economic Development. This restructuring occurred at about the same time that Oklahoma received the PILIRR grant. Most of the responsibilities and staff of the two agencies remained intact, so the ODOC is a rather large, multi-program organization. The DCAD itself is a relatively small group (28-29 staff persons) within ODOC, with two main functional branches. The Planning and Development Branch has planning and evaluation responsibilities for a variety of programs and activities, including Community Development Block Grants, Rental Rehabilitation, WAP, Energy Business Development, Economic Development, etc. This branch developed the PILIRR proposal; however, because of a reorganization of activities, implementation was turned over to staff in the Operations Branch, which handles program management and fiscal matters.

Responsibility for the PILIRR program rests with a core of two to three staff members within ODOC/DCAD. One individual was responsible for conceptualizing and developing the marketing material, and actual promotional presentations have been conducted by that individual and one or two others.

3.4.3 Oklahoma's PILIRR Program

Figure 3.4 provides a model of Oklahoma's program. The basis of the Oklahoma PILIRR program is a recently adopted 50% tax credit for donations to a weatherization loan fund. The credit is available to all Oklahoma taxpayers but has not attracted any use since its adoption in 1986. PILIRR

FIGURE 3.4. Model of Oklahoma's Program

grant money has been used to develop and implement a marketing program to encourage major businesses to use the credit. The project required state agency staff to undertake an unfamiliar and unusual activity--promotion and marketing directly to the state's business community. Developing, testing, and obtaining agency approval of the marketing materials (public service announcements, a short marketing video, and written materials) took much longer than expected, so actual marketing did not begin until 2 years after the grant money was received in August, 1986. Implementation was also delayed because the ODOC/DCAO sought to modify the authorizing legislation for the tax credit to allow donated money to be used for weatherization grants as well as loans. This has been a politically sensitive issue, and the modification was not achieved in either of Oklahoma's two legislative sessions since the award of the grant. At the time this report was written, ODOC/DCAD staff have made about 15 marketing presentations to businesses. While the material initially has been received quite favorably, no funds have yet been donated.

3.5 WASHINGTON

Washington's PILIRR program focused on weatherizing large, multifamily buildings with owners contributing to the costs. Other leveraged funds came from pooling state, utility, and a small amount of federal funds. The program was implemented by the state WAP agency, the Washington Department of Community Development (WDCD).

3.5.1 The Setting: Low-Income Weatherization in Washington

Approximately 233,000 households in Washington fall within the population defined as low-income, constituting about 13% of all households or 15% of the population.

Ongoing weatherization of low-income homes in Washington is conducted under at least three different types of programs: federal programs administered by the WDCD and conducted by 36 CAAs; a regional low-income program sponsored by the Bonneville Power Administration (BPA) and conducted by both the state and BPA's customer utilities in Washington;^(a) and utility-supported programs conducted by the state's three investor-owned electrical utilities (IOUs). Virtually all electric utilities in Washington, therefore, offer wholly or partially subsidized weatherization to their low-income customers. (The BPA and IOU programs, however, cover only electrically heated residences.)

Washington's natural gas suppliers sponsor home audits but not weatherization. Even though the share of multifamily homes (about one-third of all units) treated under the WAP and LIHEAP programs is higher than the national average, single-family homes have still been the primary beneficiaries of these and the other programs. Since 1987, the state has supplemented federal funding with money from the state's PVEA. Of the state's PVEA, \$12 million has been earmarked for direct low-income weatherization assistance.

(a) BPA wholesales electric power to approximately 80 publicly owned utilities in Washington and other utilities in other Northwest states.

3.5.2 The Implementing Agencies

The WDCD is one of the larger state agencies in Washington and is responsible for a wide spectrum of federal- and state-funded services and programs for Washingtonians. The Community Services Division (CSD), which has direct responsibility for PILIRR, is one of eight divisions and has a staff of about 40 persons. WDCD/CSD is the administrative and field assistance locus for a variety of low-income programs, including the WAP and LIHEAP. The division has been actively involved in several recent innovative social service and service delivery programs, particularly programs funded by the state's PVEA. Over the period of the PILIRR project, typically three staff members were actively involved in its management and implementation.

Three WAP CAAs implemented the project at the local level. Clark County and Pierce County CAAs are both well-established county agencies that are contractual subgrantees with the WDCD/CSD. Both agencies conduct weatherization funded by federal programs and local utilities. They also provide other state-supported services to low-income households (food assistance, energy assistance payments, etc.). They conduct weatherization by contracting with private firms from lists of previously qualified suppliers.

The third WAP CAA, Spokane Neighborhood Centers (SNC), is a well-established private nonprofit agency that is also a contractual WAP/LIHEAP subgrantee. Its services also include emergency home repairs, employment assistance, crisis intervention, food banks, etc. Its funding sources included grants and contributions from nonpublic sources, and the agency had some experience with the leveraging of public funds. SNC maintains its own weatherization crews.

All three local agencies have developed excellent records for their weatherization work and have some experience in multifamily building retrofits at the outset of the demonstration.

3.5.3 Washington's PILIRR Program and Demonstration Projects

Although Washington's approach was tested primarily through three local demonstration projects, implementation also included activities conducted at the state level. Figure 3.5 shows a model of the program.

- Notes:
1. Primary product of the Washington PILIRR project is the partnership model.
 2. PILIRR project is being conducted by the Division of Community Services (DCS) in the Department of Community Development.
 3. Model will include research findings by DCD/DCS and information on use of currently available state resources.

FIGURE 3.5. Model of Washington's Program

The state's role included conducting the overall planning and coordination of the project; setting up a multiagency task force and coordinating its meetings; administering PVEA seed money for the participating CAAs; and developing the final model to be distributed to all CAAs in the state. This model consisted of a looseleaf binder with information about the demonstration projects, the task force, state utility weatherization programs, sundry federal, state and nonpublic financing options, and marketing guides.

One of WDCD's first actions was to convene an interagency task force, which performed a valuable oversight and facilitation function throughout the project. Its membership included representatives from four state agencies involved in low-income issues, a large electric utility, the CAAs involved in the demonstration, a statewide apartment owners' association, the regional HUD office, and a low-income legal advocacy organization. This group provided an effective medium for unifying the separate local demonstration projects and for bridging the varying perspectives on low-income weatherization of federal, state, and local agencies, and the public and private sectors.

The actual leveraging was carried out by the three WAP CAAs, selected on the basis of past performance to conduct local demonstrations: Clark County CAA (Vancouver, Washington), Pierce County CAA (rural environs of Tacoma) and Spokane Neighborhood Centers. The CAAs recruited multifamily building owners; developed financing packages of owner contributions, utility funds and in-kind assistance, state PVEA money, and federal (WAP/LIHEAP and community development block grant) funding; and provided the actual weatherization services. A total of 318 units in four buildings was weatherized at an average per unit cost of \$1,177. Over 30% of the cost was provided by the private sector (building owners and utilities). The remainder was provided by state PVEA and a small amount of WAP funds.

4.0 ANALYSIS OF THE PILIRR PROJECTS

Monitoring the five different PILIRR projects over a period of two years produced a large quantity of varied data on project processes. Analyzing these data has been challenging. From the outset, however, the evaluation of the PILIRR projects has been organized into several factors that served both as hypotheses to guide methodology development and as a means to structure data collection (see Section 2). To structure the analysis, the same factors were organized into several general process themes that emerged when the data were distilled. The analytic results of the evaluation are discussed in this section using those themes.

4.1 APPROACH TO THE ANALYSIS

The intent of the PILIRR evaluation was to understand and describe a general process, not to compare the efforts and results of individual state projects. Therefore, while the histories of and variations among the five projects are of some interest, they are not the main focus of this study. We chose instead to focus the analysis on several general process themes that should be more valuable than individual case studies if other states or local organizations try to use the PILIRR weatherization model.

Four themes were found to be relevant to successful development and implementation of the PILIRR approach:

- the institutional and organizational setting
- program planning and design
- marketing
- partners, partnerships, and resource leveraging

The remaining subsections in this section address each of these topics. In each subsection, the theme is described in general terms and its various components are identified. The findings are then discussed, covering all the states and local activities where the theme or factor was relevant. This

approach is used to streamline the discussion and to increase the understanding of the issues, not to draw comparisons among state or local projects.

4.2 INSTITUTIONAL AND ORGANIZATIONAL SETTINGS

Because the focus of this study was on the processes involved in implementing PILIRR projects, rather than on their outcomes, we had to characterize the organizational and political environments in which the projects were conducted. The influence of this factor was most apparent during the initial phase of the projects, when the winning proposals were transformed into projects and implemented. Three key institutional factors were identified:

- administration and political changes, departmental and internal reorganizations, and other events that destabilized an organization
- relationships with other key state agencies
- the extent of past experience with nontraditional programs and roles.

Structural modifications and administrative changes are a political fact of life for most state organizations. A newly elected governor or appointed agency head invariably will begin a new administration by making organizational changes, particularly if political parties as well as personalities have changed. In most cases, well-established programs (particularly if funded by categorical federal grants like the WAP) are not greatly affected by these types of changes. However, new programs or projects, such as PILIRR, may be more vulnerable to any unsettling effects of such changes. Organizational or administrative changes occurred or were expected to occur in four of the five PILIRR states at some point during the two-year monitoring period.

The second institutional factor deals with the extent to which the, PILIRR agencies were able to coordinate needed support for the pilot project from other state agencies. From the outset, DOE recognized that interagency coordination or partnerships at the state level were likely to be as

important to the success of leveraged weatherization as partnerships with nongovernment entities.^(a) In addition, DOE intended for PILIRR to be considered as an activity to supplement, not replace or compete with, the WAP. Adequate coordination at the state level was considered necessary to prevent conflicts with ongoing WAP activities and to insure comparable retrofit levels and eligibility requirements.

The responsibility for housing programs, low-income programs, and energy conservation programs is often dispersed across and within state agencies. In three of the five states participating in PILIRR, traditional weatherization assistance programs are conducted in agencies other than the one which conducted the PILIRR pilot projects. However, all five state proposals contained elements that required support from other agencies or that affected some of their activities.

Although PILIRR was not intended to supplant WAP, there was evidence that some state WAP agencies had reservations about the project because of this perceived possibility. The relationship between PILIRR and traditional low-income weatherization programs had its basis in the level of political support of the WAP by Congress and the administration since 1980. Although the WAP program has been in place for a number of years, the administration has questioned the need for continued support of the program. As a result, budgets submitted by the administration to Congress contained zero budget requests for the the WAP for the past several years. While Congress has repeatedly restored the program's annual budgets to relatively high funding levels (for example, \$160 million in FY89), this situation has created uncertainty for the states. The PILIRR program was intended in part to test the feasibility of state-generated resources and to reduce the instability caused by federal funding policy. Nevertheless, several WAP offices in states that received PILIRR grants viewed the program as the beginning of federal abandonment of traditional low-income conservation programs. This tended to color their attitude toward the concept and their willingness to participate or contribute.

(a) For example, one of the criteria for selecting grantees was evidence of the intent to coordinate with other state agencies (DOE 1986).

The final factor considered in the institutional/organizational theme was the experience of each state's PILIRR agency with "innovative" social service programs. The experience of some state and local agencies consists largely of administering and delivering services for long-standing assistance programs (state or federally funded) under a set of well-tested procedures and expectations. It was felt that such agencies might initially find implementing the PILIRR approach difficult. PNL hypothesized that prior experience or experimentation with nontraditional ways to fund and deliver social and other services might increase the state's chances of successfully implementing the PILIRR approach.

"Experience" is a difficult variable to define or measure. For our purposes, evidence of relevant experience included prior participation in projects involving marketing concepts, the private sector, partnerships, innovative financing concepts, and/or the use of support networks within and outside state government. We also looked for evidence that key staff had experience or training in these areas.

Although we assessed experience in the evaluation, it gradually became clear that experience in a number of these areas, not just one of them, was the essential element. Inasmuch as the PILIRR programs were intended to test untried approaches, it was unlikely participants would have much directly relevant prior experience. "Experience" as a predictive variable gradually was replaced with a focus on internal support and indications of adaptability, versatility, and creativity in solving problems. The differences in these attributes that we observed among the various state projects may have been partially the result of personal characteristics of state and local agency staff working on the PILIRR projects. However, it is also likely that elements of a given agency's organizational "culture" nurture or discourage such tendencies.

In the Q-sort exercise described in Appendix A, workshop participants reached some consensus on the value of experience. They felt that while experience and versatility were helpful, a good "model" to follow and good planning could effectively compensate for inexperience.

4.2.1 Florida

The impact of the three organizational/institutional factors varied considerably. At the state level, factors involving political and inter-agency relationships were important when the project was initially implemented, but once action shifted to the local pilots, experience and versatility became more important.

In Florida, the PILIRR grant was awarded at the end of the administration of a Democratic governor. He was replaced by a Republican, who had promised in his election campaign to streamline state government. One of his proposed measures was to eliminate Florida's Governor's Energy Office (FGEO), the agency that developed Florida's winning proposal. With the FGEO in organizational limbo, action on the PILIRR program was delayed for over six months.

This delay ultimately had little effect on the local demonstration projects, but the scope and content of the resulting program varied considerably from the model that was originally proposed. In particular, the FGEO's role became somewhat passive once local agencies were selected, with the local agencies being completely responsible for developing partnerships and resources. Although the FGEO continued to operate in a highly politicized arena, the focus of PILIRR activities at the local level insulated the program somewhat from continued impacts.

Existing relationships with other state agencies affected the design, but not the implementation process in Florida. The FGEO and that state's WAP agency [the Florida Department of Community Affairs (FDCA)] interact in various areas, including low-income weatherization. For example, the FGEO has certain review powers over the WAP program. However, the two agencies hold some fundamentally different perspectives about low-income weatherization.

Although the FDCA viewed the PILIRR approach as a good long-run strategy, it questioned the ability of the its WAP subgrantees to acquire needed skills in time to be able to implement a pilot project. Interviews also revealed some concerns about PILIRR's relationship to the WAP. For these

and perhaps other reasons, the FDCA declined to take an active role in the project, although PILIRR could have served as a test of existing subgrantee capabilities.

As a result, Florida's response to DOE's PILIRR RFP was prepared by the FGEO. However, in planning and implementing PILIRR, the FGEO elected to go outside the traditional low-income weatherization delivery system. Through the decisions by the FGEO on program design and the FDCA on participation in the program, the need for coordination during implementation became almost a moot issue.

As has been noted, the FGEO's role in the Florida local demonstration projects was primarily administrative. Therefore, the experience/versatility factor had most relevance for Tallahassee Housing Foundation (THF) and Greater Miami Neighborhoods, Inc. (GMN). THF's experience using community resources, especially in-kind contributions of labor and building supplies, certainly played a major role in its successful weatherization-related leveraging. It did not have to develop a model or experiment with an untried concept. THF's approach was an adaptation and expansion of its existing mode of operation, but focused on weatherization. Once its contract with FGEO was in place, it made steady progress toward its weatherization goals, with no conspicuous "failures" or redirection. In the case of THF, therefore, it appeared that both experience and a good (or proven) model were factors related to success.

An additional reason for THF's success was the staff's determination to obtain the resources THF needed, backed by its resourcefulness in finding support. For example, THF's traditional source of volunteer labor had been the local university, churches, and service clubs. Under PILIRR, THF also sought to involve major local employers. For example, THF staff approached IBM with a request for a donation of money, but soon convinced IBM management and employees to contribute their time also, to form an IBM volunteer team. That team, as well as several others formed from local businesses and government agencies, made major contributions during the first "Octoberfix" weatherization effort (Fall of 1987).

In Miami, GMN demonstrated an untested approach that had not been part of its existing home financing/community development model. While the local agency ultimately reached its weatherization goal during its housing rehabilitation activities, staff said that they felt the specific leveraging approach used was too indirect. In spite of the problem with its leveraging tactics, GMN continued to pursue other opportunities to leverage money for weatherization during its housing and community development activities. For example, toward the close of the monitoring period, GMN had begun negotiations with Jewish Family Services and Florida Power & Light to coordinate energy-efficiency enhancement with security improvements in the homes of the elderly. In this endeavor, the doors and windows of homes owned by low-income elderly are made more energy efficient as they are made more secure.

4.2.2 Iowa

Between the time Iowa submitted its proposal and the state received its grant, a significant state reorganization occurred. The Energy Policy Council, which had submitted the proposal, was eliminated and its functions were redistributed. Responsibility for conservation programs and PILIRR went to the Iowa Department of Natural Resources (IDNR), and responsibility for WAP and other grant programs went to the Iowa Department of Human Rights (IDHR). The original PILIRR plan placed most operational responsibility on the CAAs, and this was not altered by the reorganization. Although the mechanism underlying project implementation was not altered, the clear link to state administration of the WAP was eliminated.

The reorganization allowed the state WAP agency to minimize its involvement in the project, which reduced its influence on project design and implementation. The IDHR was represented in PILIRR by a supportive and experienced staff member who participated by attending the CAA meetings on the project. He offered useful insights during project design and implementation, but the IDHR's lack of a large involvement in the project and concerns about PILIRR's effect on WAP indirectly reduced the amount of coordination that was maintained between PILIRR and the WAP. The WAP agency's willingness to minimize its participation and the concerns about the

project's effects on WAP may have affected the willingness of the CAAs to aggressively participate in the project.

Furthermore, the project administrator in IDNR was assigned by his agency a contract management and primarily oversight role. This increased the decision-making responsibility of the CAAs and reduced the degree of project control that might have been exercised effectively at the state level. There was evidence that if the project design had led to better information flow to IDNR and IDNR had played a larger decision-making role the demonstration might have been more successful.

Originally, the Joint Venture Project (JVP) was to have considerable responsibility for project decision-making and design. During the first few months, the JVP director did function actively as project coordinator, and considerable progress was made in setting-up the protocols and procedures for the project. When the decision was made to shift that responsibility to a representative from the Hawkeye Community Action Program (HACAP) CAA, however, the authority of the coordinator was not as clearly linked to the association of CAAs. This almost certainly diminished the coordinator's role as the primary decision-maker.

In Iowa, the IDNR project manager had been involved in several prior innovative projects. Some of these experiences were useful in preparing the proposal and designing the project. His role in PILIRR, however, was largely limited to contract management, which reduced his direct involvement in project decision-making. The original project coordinator also had been involved in numerous innovative projects and had a reputation for applying flexible approaches. These experiences were useful in foreseeing potential pitfalls, but his involvement in the project was relatively brief.

One of the two CAAs to weatherize units under the project, HACAP, also had a reputation for innovativeness, which clearly contributed to its success. The other successful CAA was not identified as one of the state's most innovative CAAs, but its staff took a very active approach in implementing the project. Although there were several reasons for the other CAAs being unable to implement the project successfully, one contributing factor

appeared to be their inability to fit the project into their situation and their inability to try alternative approaches if the first attempt was unsuccessful.

4.2.3 Kentucky

During the PILIRR project, Kentucky's Energy Cabinet (KEC) went through a few organizational changes that had minimal impacts on the project. The KEC changed directors, but the change appeared to have no significant effect on the project's course. Personnel changes within the KEC had more effect. Though committed to KEC's involvement during the planning phase, the original commissioner assumed that implementation of the full-scale program would be handled by another organization. The new commissioner, however, felt that KEC should be involved in both the planning effort and implementation of the full-scale program. This personnel change and the attendant change in orientation may have delayed progress on the project, but continuity of the PILIRR project leader throughout these changes helped build project momentum.

In Kentucky, the responsibility for PILIRR resided in an agency, the KEC, which did not have responsibility for WAP. The KEC Conservation Division has responsibility almost exclusively for federal energy conservation programs. The KEC developed the PILIRR proposal with other agencies providing little or no input, including the Cabinet for Human Resources (CHR), which administers WAP. After the grant was received, staff at CHR were doubtful about the concept, expressing reservations and concerns similar to those of the DCA in Florida, and were frustrated with the lack of information they were receiving from KEC. Both KEC and CHR believed early on that PILIRR was a potential competitor with the conventional weatherization programs. This belief played a role in the behavior of these agencies much as it did in Florida.

As the project took shape, the KEC firmed up its plans to establish and operate an advisory body, the Task Force on Residential Energy Conservation Financing. This task force proved to be the primary mechanism for bridging the organizational gaps between key state agencies, as well as bringing other participants into the project. The task force particularly appeared to succeed at lessening some of the tension and obstacles that revolved around

the participation of CHR. CHR staff revised their position toward the PILIRR approach, to a position of waiting and seeing how well the approach worked and maybe adopting the more successful aspects.

The task force included representatives from the Kentucky Housing Corporation, Association of CAAs, financial institutions, and key utilities. Although the role of these organizations in the pilot was expected to be rather limited, most representatives felt the task force was successful in establishing effective communications, giving the participants a sense of the project, and allowing them to participate in its design and implementation.

The KEC achieved considerable synergy with an ongoing, innovative project, and this benefited the development and implementation of Kentucky's PILIRR project. The Seniors Weatherization and Training (SWAT) project was initiated about the time that the PILIRR project started. SWAT is a community-based partnership to provide in-home energy education counseling and low-cost weatherization measures to seniors. Services under the project are provided by senior volunteers, and the project established and relied heavily on a seniors network. As the PILIRR project evolved, it became integrated with SWAT and was even designated SWAT II, extending the provided services beyond the no-cost, low-cost measures covered under the original SWAT. Even though SWAT had not been in place much before PILIRR began, the experiences with and mechanisms established under SWAT were readily transferred to the PILIRR SWAT II.

KEC staff also drew on their experience with the HUD Solar Energy and Energy Conservation Bank projects. This project had established KEC contacts with lenders and the CAAs responsible for local WAP implementation. KEC had also been involved in a range of project involving outside participants such as the United Way, CAAs, and several utilities. There were innovative elements in these projects, but their main benefit to PILIRR was the availability of a network of cooperative outside parties for possible participation in PILIRR.

The CHR had limited prior experience in innovative projects. Staff had worked with utilities and local agencies in leveraging activities, but only on a limited basis.

In terms of flexibility and adaptability, KEC appeared to have the ability to design projects from the ground up within fairly broad bounds, and this facilitated their conduct of SWAT II. On the other hand, CHR's role had been fairly narrowly restricted by the WAP procedures, and the agency appeared to have limited ability to be flexible and innovative. Because this limitation was highly linked to the structure of WAP, this situation may change in Kentucky because CHR's access to large amounts of PVEA funds for weatherization may provide the latitude to develop more flexible approaches. CHR's changed attitude toward PILIRR over the course of the project may reflect this.

4.2.4 Oklahoma

Agency level reorganization also occurred in Oklahoma at the outset of the PILIRR project, when the grant-winning agency was combined with another state agency. However, this change had no ostensible effects on the project. A more significant impact occurred when the structure of the division directly responsible for the PILIRR project was modified. Responsibility shifted from the planning to the operations branch, and the staff responsible for the original concept no longer had direct input into its implementation. From a process standpoint, a hiatus occurred while a new staff person and system took over the project; this resulted in a delay of almost nine months while the concept was reviewed and developed, and implementation approaches were developed and approved.

Since Oklahoma's concept is tied to tax paying practices, original plans called for the program to be operating by "tax season" (January - April). The delays resulted in a "domino effect" that continued to push the project off its intended schedule. The loss of momentum also resulted in a rescoping of the original proposal (a component to train volunteer energy conservation education specialists was dropped).

Coordination among agencies was not an issue in Oklahoma. The nature of Oklahoma's project essentially eliminated the need for involvement by other state agencies.

In the Oklahoma project, marketing knowledge and experience was a key factor, since the approach depended on the state's ability to convince

businesses to participate in the low-income weatherization tax credit. The staff person in charge of implementation had considerable knowledge of marketing concepts and of fund raising but lacked experience in program development in a setting such as a state agency. His expertise was very valuable in developing marketing materials^(a) that were clear and professional-looking.

At one point, when several delays had occurred in his intended schedule, he commented on the difficulty of setting up this activity in the state government setting. The slow process of obtaining approvals of marketing material concepts and procuring equipment in a timely fashion clearly was frustrating. However, it also became apparent that delays were partially the result of intermittent internal support and difficulties with program planning. Progress was so slow that actual marketing activity was just getting under way at the end of the monitoring period (28 months after the grants were awarded).

4.2.5 Washington

Of the five PILIRR grant recipients, the Washington Department of Community Development (DCD) was the only state agency to escape major organizational changes or threats of change during the PILIRR project. Responsibility for the project's implementation also remained with its proposing group. It was the only state in which implementation proceeded without serious delays, and in which the original proposal was fully carried out. This organizational stability appeared closely linked to DCD's success in carrying out its project.

The co-location of PILIRR and WAP within the Washington DCD/DCS also made coordination a minor consideration since it facilitated the interface

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- (a) The primary marketing material consists of an eight-minute video that is shown to the management in large state businesses. The video is presented by Division of Community Affairs and Development staff, who also hand out written materials and answer questions. The video focuses on the status of weatherization in Oklahoma and the energy problems of low-income households, in the elderly. The video provides information on how to make donations for tax credit, but it does not elaborate on the financial (tax) and other business-relevant benefits for participating.

between the two programs in that state. However, DCS staff also recognized the need for channels of coordination with several other state agencies as well, and worked to develop them. The primary vehicle for the coordination was the Task Force set up at the outset of Washington's PILIRR project. The membership included two other state agencies (Employment Security and Energy), and a representative of the HUD.

The Task Force provided a ready means of promoting interagency cooperation and support as needed to implement the project. Groups such as the PILIRR Task Force are frequently used by DCS (and other Washington agencies) because of Governor Booth Gardner's strong emphasis on joint efforts and interagency cooperation.

The Washington DCS office staff have been involved with several recent programs that could be considered innovative--new types of social services and service delivery mechanisms, or new ways to implement existing services. A key part of the division's program development process is a formal planning system, which is described in more detail in Section 4.3. DCS staff have been heavily involved in developing new energy-related social programs that are funded by the state's PVEA fund (for example, the Weatherization Readiness Repair Program and the Energy Outreach Program for Migrant Workers). Both the planning process and previous experience in initiating new energy programs played a significant role in the quick start-up of the PILIRR project and demonstrations. However, DCS's experience most likely encompassed some of the other factors that have been discussed, particularly the value of adequate and timely coordination with other state agencies.

All three subgrantees involved in the demonstration in Washington's project had had limited experience with the challenge of weatherizing multi-family housing. Two of the local agencies had some experience in leveraging resources or negotiating directly with apartment owners; however, all had participated in local utility weatherization programs. Details on those efforts are discussed in Sections 4.4 and 4.5.

4.3 PROGRAM PLANNING AND DESIGN

PNL evaluators found that good planning was a key requirement in all the PILIRR projects. Two aspects of this factor were identified. The first encompasses overall project planning, which entails a structured, deliberate effort to determine what steps need to be taken to accomplish the project goal, which actors/stakeholders need to be involved (and how), and what schedule or milestone targets should be attempted.

Marketing-related planning is the second aspect of preparation that is essential to most of the PILIRR projects; this aspect is covered in the comprehensive discussion of marketing in Section 4.4. The discussion in this subsection deals with general project planning.

The proposals submitted to DOE contained the project concepts developed by the state, the implementation steps, and the milestones. However, in many cases, these initial plans contained elements that the states found inappropriate or impossible to implement as the projects unfolded. During the initial stage of the evaluation, an important focus was the adjustment of original project scope--as concept met reality. The analysis of the planning and design aspects of the PILIRR projects centers on these adjustments: what they were, and why they became necessary. This analysis gives some indication of the challenges of starting up an innovative program like PILIRR within the environment of state government.

4.3.1 Florida

Florida's original concept was to weatherize 200 low-income homes by creating a three-way partnership among a utility, a local housing organization, and either the Job Training Partnership Act (JTPA) program or a labor apprenticeship program. The utility was to provide promotion and weatherization materials; the JTPA or apprenticeship program would contribute qualified labor to install weatherization measures; and the local housing organization would act as the project's administrator, for which it would receive funding from the PILIRR grant. Two locales would be selected for demonstration efforts.

However, before this concept could be developed, the FGEO began to explore an alternative leveraging scheme. The new scheme was to focus primarily on training local weatherization agencies in fund raising and marketing skills so that many of these entities would be better able to draw on local resources. This concept envisaged a requirement that participating local agencies provide one-third of the cost of energy retrofits, with the remainder coming from Florida's PVEA fund. This was a somewhat radical change to the original concept, but FGEO felt that it was justified as a better use of the grant, with a more widespread and lasting impact.

Although the new proposal initially received tentative support from the state WAP agency (FDCA), that support subsequently evaporated. The explanation given was that the FDCA (and its subgrantees) felt that the requirement for matching funds would be too sudden and radical a shift from the straight grant system currently in place. The proposal to move the FGEO from the Governor's office to the FDCA, where it may then have assumed control of the WAP program, also appears to be a factor in the shift in support for the new proposal. In January, 1987, almost six months after the grant was awarded, the FGEO reverted to its original program design.

The attempt to modify the proposed PILIRR program had two overall effects. First, selection of demonstration sites for program implementation was delayed by over six months, and FGEO's role in the demonstrations changed from an active participant in developing a partnership to a more passive administrative role. Secondly, the "carrot and stick" approach to resource leveraging embodied in the attempted modification probably increased the WAP/non-WAP polarization that is somewhat present in low-income weatherization in Florida. For example, none of the WAP subgrantees showed interest in participating in the demonstration programs; both agencies selected were private nonprofit agencies with no ties to federally funded weatherization activities. This fact did not affect the success of the demonstration approaches, but any of FGEO's future attempts to "sell" resource leveraging for low-income weatherization to "mainstream" local weatherization agencies such as the subgrantees may require considerable bridge-building efforts first.

From the standpoint of planning and design, the Florida project demonstrates some of the difficulties of turning what may be a good idea into reality. In general, the reality involved political, policy, and organizational elements that usually must be taken into account at the outset through planning and coordination to obtain cooperation from important stakeholders. If cooperation does not appear promising, the proposed program's design may have to be modified.

4.3.2 Iowa

In Iowa, project planning took place through a PILIRR planning group consisting of the coordinator, participating CAAs, and state participants. The planning process was systematic and largely participatory. The planning group, however, had little input from essential outside parties such as landlords, lenders, and tenants; and the state participants were not very actively involved in providing advice or contributing to the decision-making. Therefore, this group differed considerably from the task forces in Kentucky and Washington (discussed later), and its effectiveness appeared to suffer as a result.

Iowa's original plan called for the state agency responsible for WAP to oversee the project. The state government reorganization, however, severed the project's direct link to the state WAP agency. This created some implementation problems, discussed earlier, that were never fully resolved. One specific problem identified by several participants was the lack of funding at the beginning to cover CAA administrative costs. Although the CAAs would have recouped their costs through weatherization charges, they perceived the project as risky: if no landlords participated, the CAAs would have been out the initial investment to start up the project. Possibly because the state PILIRR agency, the IDHR, was not responsible for WAP, the CAAs were not willing to cover startup costs out of existing funding.^(a) This issue was never satisfactorily resolved during the demonstration.^(b)

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- (a) The IDNR did offer \$500 to each CAA once the severity of the problem was recognized, but no CAA took advantage of this offer.
 - (b) In the follow-on PILIRR II project, funds are specifically allocated for additional coordination and coverage of CAA startup costs.

The original plan also gave the JVP director authority to act as the focal point for coordinating and implementing the project. When that function was moved to a representative from HACAP, the implicit authority of the coordinator became unclear. No significant adjustments were made to resolve the uncertainties inherent in the new arrangement.

Several adjustments were made in the Iowa project to accommodate new situations and information as the project progressed. For example, there was some debate about whether the project should attempt to work with local banks or with statewide or interstate banks. Early in the project, the participating CAAs decided that local banks would have more of a stake in and commitment to the local projects, and the focus was placed on eliciting their participation. Other significant adjustments involved marketing and are discussed in Section 4.4.

4.3.3 Kentucky

In Kentucky, planning was the major activity during the monitoring period. An advisory group was to be established to assist with project planning. The main architect of Kentucky's proposal became the PILIRR project manager and he focused his early efforts on exploring different mechanisms to use in the project, establishing the advisory body, and developing materials for its consideration. Though the approach outlined in Kentucky's grant proposal drew on previous experiences, it took a considerable amount of time to complete the initial planning phase and start getting feedback necessary to make appropriate design changes.

Three components of Kentucky's project that were central in project planning consumed considerable calendar time and labor hours. First, establishing the advisory group, selecting the members, and holding the first meeting took 15 months from the time DOE awarded the PILIRR grants. Much of the delay in implementing the task force, as well as the project as a whole, can be attributed to three factors: 1) indecision about project direction and changes in KEC management personnel and their preferences, 2) a conscious decision to concentrate staff resources initially on getting the SWAT project

off the ground,^(a) and 3) timing of the legislative session, which prevented participation of key personnel in the task force for about three months. Also, the task force was slow to materialize in part because of uncertainty about its proper role.

Second, KEC's original project design called for establishing a nonprofit organization that would have central responsibility for many of the project's operational aspects. The original hope was to have the state United Way organization serve this role. However, that organization had serious reservations about participating in this capacity, and after several months of negotiations, elected not to participate. The state housing corporation, KHC, then became KEC's choice to fulfill this role, but KHC's attempt to receive tax exempt status took over one year and prevented it from playing a central role in the pilot.

The third planning activity that had a major effect on project outcomes was that the project originally targeted elderly homeowners as its weatherization recipients but had little information on the group's characteristics. Section 4.4 discusses the marketing activities that were designed to target and reach this client group. In terms of planning effects, this marketing effort was quite thorough; however, it came late in the monitoring period, and its effectiveness and the match between the target audience and leveraging approach was not tested during the monitoring period.

Another factor involved in planning that may have affected the Kentucky project's progress was a focus on transferability. Several elements of the project were developed with an eye to their transferability to other states: for example, patterning the approach after the HUD Solar Bank program and relying on the state housing corporation. Virtually every state is familiar with the Solar Bank and has a state housing corporation. Although looking beyond the immediate state situation was desirable from a broader

(a) As noted earlier, the original SWAT project became highly integrated with PILIRR (later known as SWAT II). Ultimately, considerable synergy existed between the two efforts, but the focus on SWAT initially diverted resources from establishing the PILIRR project.

perspective, this focus may have narrowed the options that were investigated and inadvertently impeded progress within the state.

4.3.4 Oklahoma

In Oklahoma, it was difficult to differentiate between the effects of plan changes and the impacts of the organizational changes that shifted the PILIRR program from one branch in ODOC-DCAD to another. The reorganization and transfer of responsibility for the program from one branch to another clearly prevented a smooth transition to final planning and implementation. The problem was compounded when PILIRR was placed in limbo for several months while a staff person was being recruited and hired to manage the project.

Another factor also affected final design and implementation planning stage in this state. The legislation that set up the tax credit for donations to the weatherization fund limited use of the money to loans to qualifying households. Existing language did not permit outright grants for low-income weatherization. However, ODOC-DCAD staff felt this restriction could seriously limit the fund's usefulness. Therefore, ODOC-DCAD staff focused on promoting a change to the authorizing legislation for the first six to seven months after receiving the grant. Active efforts to get legislative action were dropped, however, when it appeared that the issue was becoming too politicized. The project proceeded, and resolution of the loan/grant issue was postponed.

Once the marketing development resumed, most of the planning that took place focused on designing and producing materials and planning tentative implementation schedules. The relative novelty of accomplishing these activities in a government setting made every step something of a learning experience for the staff in charge of PILIRR.

4.3.5 Washington

As was noted, the Washington DCD has mounted several innovative types of social service programs in recent years. A key part of the program development process is a formal step-by-step planning process, accompanied by computer-assisted budget and schedule preparation. The planning model was developed several years ago and is familiar to all WDCD staff who develop and

manage programs. It is a very detailed process that "walks" the user through the conception, planning, costs, role clarification, coordination needs, and management approval of a new program or activity. The process appears to work well as an orderly way to launch new activities.

Planning for the Washington PILIRR project, using this model, began when the state was notified that its proposal was one of the five selected for funding (May 1986). The WDCD was then able to begin implementation as soon as funds from DOE were received (August 1986). WDCD staff give much of the credit for the smooth launching of the PILIRR project to the planning model and the orderly process it has instituted.

4.4 MARKETING

One important theme that emerged in each state project was the need for a targeted, structured marketing effort. The resource leveraging of PILIRR projects--persuading partners to contribute resources that would be applied to low-income weatherization--implicitly required that the partners had to be sold on the benefits they would receive in return for their participation.^(a) These transactions, "the exchange of values between two parties" (Kotler 1972), were inherent in PILIRR and distinguished PILIRR from conventional government service delivery programs.^(b) These essential transactions

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- (a) In several projects, the occupants of low-income residences were passive recipients of the service and there was little need to sell them on the weatherization service. However, in these cases appropriate households had to be defined as part of the marketing design; although this step was part of marketing design, marketing was not directed at the households. In other cases, the owners of low-income residences (either occupants or landlords) had to contribute some resource to the weatherization and, in these cases, these participants were partners in the projects and the approach had to be marketed to them.
 - (b) By definition, PILIRR delivers a public service but relies on resource-leveraging partnerships to provide some of the resources required rather than the more usual approach of relying on the federal budget to provide all the funding required. It was this step away from traditional funding mechanisms and the role of transactions that triggered the need for a marketing strategy.

required a focus on marketing because "marketing is specifically concerned with how transactions are created, stimulated, facilitated, and valued" (Kotler 1972).

For the states implementing PILIRR, the variations across the state projects led to considerable differences in the type of marketing required and eventually implemented. The Oklahoma project, for example, was foremost a marketing campaign with a traditional focus on the private sector. In other projects, while marketing was a major project component, it was only one step in the overall leveraging mechanism. It involved selling a wide range of partners--state agencies, local groups, building owners, utilities--on the various benefits they would receive from contributing different types of resources to low-income weatherization. Within some projects, the range of partners varied substantially as did the partner needs that had to be addressed.

Even though marketing was recognized as a critical factor during project design, the states varied in the degree to which they correctly assessed its ultimate importance and in their levels of knowledge about marketing. Few state agencies have marketing experience because of the nature of most state service-delivery programs: 1) little flexibility in targeting the program to different audiences, 2) little flexibility in varying the product (usually a service) or price, 3) a fixed delivery mechanism, and 4) narrowly constrained scope and options for promoting products.

PILIRR, because of its flexibility and focus on resource leveraging and partnerships, demanded attention to marketing both in terms of selling the approach to partners and to funding contributors, and involving the building owners when they had to take specific steps to receive weatherization services. In each project, the importance of developing and implementing a coherent marketing approach became apparent as participants attempted to transform the project design into an operational set of activities.

From the outset, DOE anticipated the need for assistance to the states in framing marketing issues and designing coherent marketing strategies. To assist the states at the beginning of the project, PNL conducted an initial workshop that included a segment on public-sector marketing. A resource

document also was prepared and presented to the participants; the document provided information on marketing, resource-leveraging, and case studies of existing weatherization programs that use resource leveraging (Callaway et al. 1986).^(a)

As the projects progressed, it became evident that most state participants could benefit from additional marketing information; consequently, PNL prepared and provided the states a more focused marketing "white paper" describing public-sector marketing planning and implementation (see Appendix A).

In the subsections below, each state's marketing activities are discussed. Two main topics are covered:

- marketing experience and approaches used, which includes the states' marketing capabilities and experiences; their initial analysis of marketing requirements; and their initially planned marketing approach
- implementation, including the revisions and outcomes that occurred when these expectations and plans were tested against the realities of each state project.

Because of the central importance that marketing played in the PILIRR projects, each of these topics is discussed in more detail before the results of the evaluation are presented in Subsections 4.4.2 through 4.4.6.

4.4.1 Marketing Experience and Approaches

Although every state recognized from the beginning that it had to sell potential partners and resource contributors on the idea of contributing resources to the project, they varied in their ability to effectively plan the marketing required.

Lack of appropriate marketing experience and expertise impeded some states in defining the appropriate marketing scope, needs, and approaches. Many state participants had some training in traditional marketing, but most traditional marketing training addresses the private-sector environment and few state participants had any direct experience in public-sector marketing.

(a) The executive summary of this document appears in Appendix A.

In recent years, however, the increasing requirement for marketing strategies in the public sector has produced a growing body of literature devoted to public and nonprofit marketing. The "white paper" prepared by PNL provided a synopsis of this recent literature and was designed to help the states develop marketing approaches suitable to their public-sector context.

In both private- and public-sector marketing, the marketing goal must be clearly defined. This was a difficult task in several state projects. While the ultimate project goal was to deliver weatherization services to low-income households, the marketing goal was to sell the project to potential participants in order to obtain the required leveraged resources. Lacking extensive marketing experience and being more accustomed to traditional service delivery programs, several states were hampered in their ability to develop an appropriate set of marketing objectives and a plan to meet them.

The four traditional components of the marketing mix--product, distribution, price, and promotion--have a role in public and nonprofit marketing, but these components and other marketing concepts had to be tailored to the PILIRR application. For example, the ultimate product of the project was low-income housing weatherization, but the relevant product to a potential funding contributor was the benefit that accrued to him/her from making a resource contribution. That benefit might have been the value of public recognition of the contributor's goodwill, satisfaction of a requirement mandated by the state public utility commission, etc. As another example, the price component of the marketing mix would have been the type and amount of resources contributed by a partner, possibly voluntary labor or materials, rather than the more typical dollar cost of a specific product.

Essential in the marketing plan were defining and understanding the appropriate product, determining ways to deliver the product to the partner (distribution), determining the type of resource contribution (price), and promoting the product. Because the type of partners varied substantially, even within a single state, developing the appropriate "marketing mix" was a major challenge faced by each state.

The participants' understanding of the special needs of public sector marketing increased during the course of these projects, as did their ability

to plan and implement appropriate marketing strategies. Two years into the projects, the Q-sort/Nominal-interacting exercise conducted at the second project workshop revealed a consensus that a thorough analysis of the "market" situation was the factor most important to project success.

Participants also rated the necessity to identify and supply key partners the benefits they expected from their involvement as one of the top factors contributing to project success. In terms of classical marketing mix terminology, the benefits were essentially the "product" and supplying them was "distribution." The high ranking of these items affirmed the participants' recognition of the importance of an appropriate marketing mix and its correct targeting.

4.4.2 Marketing Implementation

Once the basic need and framework for each marketing effort were established, the project participants had to implement their marketing plan. During the Q-sort/Nominal-interacting workshop held two years after the projects began, the participants expressed their sense of the importance of implementing a comprehensive marketing strategy by ranking this project attribute among the top third in determining project success.

As noted earlier, in the design phase most states had a limited sense of what marketing activities would be most effective, how to implement their marketing plan, and what effects to expect. As project implementation progressed, however, feedback revealed the need for additional marketing expertise in some projects and led to refinements in the marketing approaches and tools originally applied. Partner needs were better clarified, and preliminary approaches for enlisting partner participation were revised and implemented based on the initial responses.

Implementing the project marketing plans produced various results. Marketing effectiveness in these projects was examined by determining how successful the states were in identifying partners and contributors, recruiting them, and acquiring the necessary weatherization resources.

In the following subsections, the evaluation results of each state's marketing component are discussed. In Florida, Iowa and Washington, where

local pilot projects were conducted, the material focuses primarily on the community level activities, where the PILIRR concept actually was implemented.

4.4.3 Florida

The nature of the PILIRR program in Florida resulted in two levels of marketing. First, the FGEO had to recruit local community agencies to participate in the project. The local agencies were determined through a nominally competitive selection process. However, before sending out its RFP, the FGEO held discussions with various local groups. Nevertheless, most of these groups did not proceed to apply for the FGEO PILIRR grant.

In the second level of marketing, the selected community agencies had to target potential partners, to identify incentives that might induce them to participate, and finally, to recruit these partners to obtain needed resources.

FGEO staff were not unfamiliar with marketing concepts but had used little proactive marketing in its normal activities. [However, political lobbying, which could be considered a form of marketing, is a normal component of the FGEO's role.] The FGEO also had participated in two recent efforts that contained some elements of marketing to the private sector: the Florida Solar Bank Program and the Governor's Energy Partners Program.

In its efforts to recruit community agency partners, there was little evidence that the FGEO overtly relied on any marketing component other than promotion, which took the form of \$30,000 grants. The agency was constrained to some degree by state regulations governing the process of RFPs. However, the FGEO did try to remove some possible barriers to participation by structuring the local demonstrations with fairly simple and straightforward requirements.

As we have noted, the local demonstration grants (as PILIRR dollars) could not be used directly for weatherization costs. The FGEO's guidelines stipulated that the grant could be used for administrative, public relations, advertising, overhead, support equipment and other organizational expenses. Selected community agencies were expected to weatherize 50 to 100 homes

during their contract with the FGEO. With an average cost of about \$1,300 per home (WAP), resource leveraging could yield between \$60,000 to \$100,000 or more.

In effect, therefore, the demonstration projects allowed for a level of administrative-like expenses that substantially exceeded the limits currently placed on federally funded weatherization activities (up to 10% of funding for salaries, training and technical assistance).^(a) Nevertheless, no WAP subgrantee organization or other local nonprofit agencies submitted a proposal to be considered by the FGEO in its selection process (although some apparently considered doing so).

Unfortunately, no systematic attempt was made to understand all the possible reasons for this lack of response to FGEO's "promotion." In interviews, FGEO and FDCA staff conjectured that subgrantees 1) were unwilling to risk potential failure, 2) viewed the PILIRR concept as something of a threat to "business as usual," and/or 3) lacked the necessary skills and relationships with the private sector to attempt resource leveraging.

The FGEO also clearly had no vested interest in subgrantees participating in the project and in fact had some bias toward other types of community organizations that use less traditional approaches to low-income weatherization. Although the FGEO attempted to promote participation by subgrantees in the short-lived effort to modify its PILIRR concept (see Section 4.3), local WAP agencies (and the FDCA) ultimately objected to the somewhat coercive nature of the modified approach. [Florida's attempted modification would have provided training in resource leveraging to subgrantees, but also would have required modest leveraging by all subgrantees as a condition for receiving supplemental state money for weatherization from the oil overcharge fund.]

Subgrantees may have been more open to the FGEO's solicitations if the modification had not been attempted. However, once two acceptable proposals

(a) \$30,000 would constitute 30% to 50% of the expected weatherization costs.

from other community organizations were selected, the Florida PILIRR project proceeded without further attention to these issues.

Both community agencies that participated in the demonstration phase were skilled in quasi-marketing techniques (although they may never have considered them to be "marketing"). Both THF and GMN rely almost completely on private and nonprofit (such as United Way) sources of funding to support their activities.^(a) Thus to a large extent, their very survival depends on devising appropriate marketing strategies and implementing them successfully.

In spite of the importance of marketing to THF and GMN, both organizations use somewhat informal, adaptive marketing approaches. Systematic planning in the classical sense was not apparent as these agencies developed their marketing plans for PILIRR and began to implement them. However, it was apparent that the elements of good market planning were usually covered.

THF used informal marketing to recruit volunteers and skilled construction contractors; to obtain new and used supplies from builders, building material suppliers and from the community; to negotiate special treatment in the local utility's weatherization program; and to obtain financial donations. THF's marketing approach was essentially a refinement of a process that had proved successful in its home rehabilitation and emergency repair activities. This marketing approach depends heavily on personal interactions and skillful persuasion tactics that are tailored to specific audiences. Most PILIRR-related marketing was conducted by the weatherization coordinator for THF, a staff person hired specifically for the demonstration project. [The coordinator's job also included inspection of prospective weatherization/rehabilitation properties to determine the magnitude of the work and materials and skills needed to accomplish it, media relations, and quality control.]

The coordinator had no formal marketing training, nor did other THF staff. An informal but systematic process was used to obtain needed

(a) However, GMN also receives a significant amount of money from local governments to assist and develop neighborhood community development corporations (CDCs).

resources, and usually included the following steps: 1) determining the resources needed, 2) identifying potential sources, 3) selecting (informal, ad hoc process) the arguments and tactics likely to work with a particular source,^(a) and 4) undertaking the marketing/recruiting/fundraising activity. This process was used throughout the demonstration, and any modifications to it tended to be refinements rather than strategic or tactical changes.

In the Miami demonstration, proactive marketing was less pronounced. GMN's approach consisted essentially of convincing its client CDCs to increase the level of energy efficiency to approved WAP levels in the homes they were building or rehabilitating. GMN offered a cash incentive (\$100 per home) to the corporations for these improvements. (However, this payment could be used only to recruit eligible low-income families to purchase or lease the improved homes.) This incentive strategy was combined with marketing efforts to obtain donated weatherization materials (and labor) from contractors and vendors, and to negotiate a special application of an existing weatherization assistance program with the local utility.^(b)

GMN's real marketing prowess was much more apparent in its activities to develop blended funding sources for innovative financing of neighborhood housing development projects. These activities ranged from active fundraising directed toward Miami's business community and nonprofit foundations, to government contracts (for example, with Dade County), to leveraging through existing tax mechanisms. The details on these activities are not directly relevant to the PILIRR demonstration conducted by GMN, but are mentioned to indicate the organization's guiding philosophy.

Particularly apparent is GMN's very proactive stance that seeks out a wide variety of philanthropic, tax-related and/or profit-motivated community resources for housing development and financing. The organization takes a very imaginative but business-like approach to resource acquisition and leveraging. While not all efforts are successful, it nevertheless has a

(a) A revealing comment was made by the coordinator during one interview. He said, "We don't beg . . . we try to figure out the reasons why they [potential partners] might feel good about helping us."

(b) Ultimately, this latter effort was not successful.

prevailing attitude that "the sky is the limit," which allows exploration of new opportunities and calculated risk-taking that was unusual among the PILIRR participants. Finally, as with THF, the GMN marketing (for PILIRR and its other activities) was very adaptive and intuitive, but based more on the organization's entrepreneurial operating mode than on formal planning.

Marketing implementation during the demonstration phase of the Florida project was informal, but the tactics used by the community organizations and their results are briefly described here.

The THF usually initiated the actual marketing effort with a phone call to a business or community group (for example). Potential sources typically were identified using the phone book or THF's network of contacts and supporters. Target groups or businesses were selected based on such characteristics as expressed community relations stance or need to provide community service. (Since Tallahassee is a relatively small and close community, this method was very adequate. In a large urban area, more sophisticated methods would likely be necessary.) For example, THF found both service clubs and college-related social groups such as fraternities to be excellent sources of volunteers. Large and small businesses with a reputation for community-mindedness were also sources of support and volunteers.

Once a group was targeted, recruitment usually started with "information meetings" conducted by the weatherization coordinator or other staff about THF and its efforts. After a presentation, the audience was requested to assist THF with donations of money or materials;^(a) the idea of volunteering to help on the projects was introduced gradually to the group if interest was shown.

THF used two tactics that seemed to be especially successful. First, an effort was made to recruit "teams" rather than individuals. Groups of eight to fifteen individuals from a given organization would be formed; each was assigned a specific home to be weatherized. Second, while long-term

(a) Typically, a group was asked to sponsor a specific house with its donations.

commitments to THF efforts are appreciated and often occur, THF recruiters request help for only one job. In most cases, the complete weatherization job and associated repairs could be completed in one or two days over a weekend. No long-term commitment was requested. Finally, THF recruiters stressed the fact that volunteers would be learning valuable home maintenance and repair skills that could be used in their own homes.

Media support was appreciated, cultivated, and used to great advantage by THF. Concentrated weatherization efforts on specific weekends (OctoberFix and SpringFix) were well covered by local television and newspapers in advance, during, and after the events as a result of THF's public relations efforts and the supporting relationship it had developed with the local media. THF made sure that individual businesses and groups contributing materials or volunteers were named in the news coverage. The fall and spring "Fixes" became important community service events, with high visibility participation by several major businesses and state agencies (Tallahassee is the seat of the state government), the governor and his aides, and state legislators.

Marketing by THF was epitomized by the personal touch. Although the organization publishes brochures and a newsletter, initial contacts to groups or businesses always included personal visits by staff. Such contacts were initiated either by THF in a phone call (see above) or as a result of interest in the organization from media coverage or word-of-mouth. Written material about the organization was provided after, not before, these personal contacts. Finally, THF staff used thank-you letters, published acknowledgement of efforts in the THF newsletter, and careful network maintenance to sustain the organization's community support.

4.4.4 Iowa

In Iowa, marketing was required at two key points: recruiting landlords and obtaining funds to support the loan buy-downs. In addition, the project had to be marketed to the CAAs. Though some key participants had marketing experience, more directly relevant experience would have benefitted the project. Iowa's PILIRR project required that landlords be convinced of the benefits that they would accrue from their participation. Fundraising was

largely unfamiliar to the participants, although several had limited experience in partnerships requiring various types of resource contributions. Finally, little attention was given to recruiting CAAs. Once a CAA declined to participate, there appeared to be little effort devoted to convincing it of the benefits of its participating or to modifying the project to make it more appealing.

Early in the planning process, the group of participating CAAs recognized that landlord recruitment would require a concerted marketing effort. Several promotional activities were planned, but the group's lack of marketing expertise was reflected in the fact that little attention was given to how to appeal to landlords' needs, how to package the weatherization service, and how to respond to landlord inquiries. Several promotional techniques were planned, but the primary one implemented was developing and mass mailing a 10-page brochure to landlords on the LIHEAP list. The returns from the initial mass-mailing were disappointing. Only about 2% of the landlords contacted their CAA to find out more about the project.^(a) Even though such a low response rate has been about average for similar projects nationwide, the results galvanized the participants in their concern about how to effectively market the project to landlords.

About 5 months into the project, the CAA group started talking about the marketing required to conduct fundraising. Some information was collected on possible funding sources, but little progress was made in implementing an approach.

The CAAs were able to get marketing personnel from Iowa Southern Utility (ISU) to review their marketing approach and make suggestions to improve it. ISU noted that the original brochure had several problems: 1) it contained excessive information; 2) it was too complex; and 3) it did not stress benefits to the landlords. ISU also suggested that the planned \$50 charge to landlords for an energy audit and \$30 charge for tenant education should be

(a) There was some evidence that follow-up after the landlords contacted their local CAA was not uniformly good, and some potential participating landlords may have been lost at this juncture also.

dropped. ISU recommended that a much simpler, direct 2-page pamphlet be developed for mass-mailing and that the CAAs increase and make more effective person-to-person contact. The simpler pamphlet was produced and mailed with better results. However, the person-to-person interactions after the initial response still was not as effective as anticipated.

Several factors impeded CAA participation in the project. Several participants noted that excessive paperwork requirements burdened the CAAs. Marketing to the CAAs could have been improved by streamlining the reporting process. Also as noted earlier, the CAAs felt that they faced a risk of losing the investment they had made in administrative costs if weatherization projects did not materialize. PILIRR II specifically addresses this issue by making administrative funds directly available.

As the state began to look forward to expanding the modified program, an effort was made to raise funds for PILIRR II. State PVEA funds were secured, as was a utility contribution. No funds have been raised, however, from other sectors. Readers interested in the progress and success of this expanded program should contact the Iowa DNR.

4.4.5 Kentucky

In Kentucky, the key KEC personnel had little prior marketing experience. They recognized that marketing would be important, but felt they had inadequate information or expertise to assemble a suitable marketing strategy.

In Kentucky's project, marketing was required in three different areas: recruiting state and local partners, fundraising to obtain monetary contributions, and recruiting elderly households to participate in the program. In its proposal to DOE, KEC emphasized mounting an aggressive fundraising campaign for the pilot project and playing a major role in it. Most of the fundraising responsibility was anticipated to revert to the selected nonprofit foundation once the full-scale project was implemented. However, KEC left the planning on how state and local partners would be recruited and how households would be encouraged to participate until the grant was received and initial activities began.

As more planning occurred, these other marketing areas took on greater importance. As early as 6 months into the project, KEC personnel were concerned about the adequacy of the marketing to other state agencies that had taken place. They noted that other agencies were asking whether the proposed approach would really work and whether the low-income recipients would actually be able to obtain the loans required. They also noted that getting around inertia at the state level was the biggest initial hurdle. To a large extent, the Task Force created by the KEC turned out to be a means for marketing the project to probable partners such as the WAP agency (CHR), utilities, financial institutions, and CAAs.

Early in the project, KEC also felt that reaching and recruiting the target audience for weatherization services (elderly homeowners) would be the easiest part of the project because a network of service providers was already in place. As project planning progressed, however, it became apparent that some basic questions had to be answered: How large was the target audience? What was their income? What type of programs would they respond to, etc.? About 9 months into the project, the project manager took a marketing course. Recognizing the importance of understanding this market, the KEC project manager then developed a comprehensive assessment of the target audience and a marketing strategy for presentation at the third Task Force meeting in May 1988.^(a)

During this planning stage, however, little progress was made in refining the fundraising approach. KEC continued to assume that the bulk of the fundraising in the full-scale project would be conducted by a nonprofit foundation.

Since the pilot project was barely started during the evaluation monitoring period, few observations could be made about marketing implementation and outcomes, particularly those involving fundraising and recruiting households. With regard to recruitment, the initial results have

(a) Nick Hall, Illinois Department of Energy and Natural Resources, applauded this effort, stating that KEC appeared to know more about its target audience at the project planning stage than did any other state of which he was aware.

suggested that households had a preference for SWAT I's low-cost/no-cost approach over SWAT II's, which required households to take out loans. Fund-raising mechanisms were untested during this period.

The one area where marketing results were available was in the marketing of the project to several partners through the Task Force. The Task Force has been an effective device for promoting the project to partners and potential partners. Several Task Force members felt that the Task Force had provided them with a better understanding of the project and several were willing to make initial commitments to provide resources for the project. KEC expected that ultimately the Task Force members would all make resource contributions to the project. Participation on the Task Force also must get some of the credit for an evolution of KCHR's attitude toward the project and the basic resource-leveraging concept. At the very beginning of the project, KCHR expressed serious doubts about the likelihood of PILIRR's success; once the Task Force started meeting, however, KCHR became more supportive and was willing to wait and see and maybe even adopt the more successful aspects of the project.

4.4.6 Oklahoma

Although marketing was the central activity of Oklahoma's PILIRR program, no specific approach was specified in the state's original proposal. As noted, marketing-related activities were not initiated until about eight months into the grant period after ODOC-DCAD hired an individual to act as marketing director.

The director developed a logical strategy to put together marketing materials and procedures, to identify target businesses, and to initiate marketing. PNL and DOE reviewed these plans during a site visit in June, 1987. The marketing director developed a schedule that called for the implementation phase to begin in September or October, 1987. Within several months, however, several changes were made to the plans, and the implementation schedule began to slip. A major factor contributing to the modifications was a lengthy in-house review process used to critique the marketing materials (primarily an eight-minute video presentation, discussed earlier).

As a result of this process, changes were made to the draft video script 1) to correct weatherization program information, 2) to modify the "promotional message" from a straightforward pitch emphasizing the magnitude of the need for low-income weatherization to a more subtle approach that also stressed the tax credit and community service advantages of participation, and 3) to allow the video to be used for either loan or grant-based assistance (i.e., two versions of the video). Although implementation was delayed by this process, the reviews most likely resulted in a more sophisticated product.

A key feature of the Oklahoma marketing planning and development was its fluid nature. Although the plan's basic elements did not change, the timing of activities was repeatedly adjusted to account for the pace at which approvals, contract negotiations for producing the materials, acquisition of equipment, etc., could be conducted within the state agency.

Features of the materials, and the media and manner of presentation were refined in an iterative fashion, as the staff became more familiar with issues surrounding low-income programs and found marketing opportunities to exploit. For example, the using public service announcements (PSAs) to promote use of the tax credit appeared to have been a somewhat vague notion at the outset of planning. Six months later, PSAs were an integral part of the marketing plan, and time was allocated to write and film persuasive messages to be used on free public service air time spots on television.

The marketing materials, which were originally expected to be completed by October, 1987, were finally completed in May, 1988. During that period, staff activities appeared to be almost exclusively devoted to production concerns associated with the eight-minute "boardroom" video, the PSAs, brochures, and handout materials for the boardroom presentations.

At one point, the marketing director was asked to reflect on the process to identify the easiest and most difficult aspects of marketing. He clearly thought the creative process of conceptualizing, articulating, and developing the materials was the most challenging. "The statistics and information collection [used to support the message] were easy . . . but the right [side] brain work has been a lot harder. The creative stuff is something that we

don't normally do a lot here." He expressed a conscientious effort to make the marketing work. "We want to spend the [PILIRR] money wisely, but it's got to be effective." He also indicated that the process of developing DCAD's marketing strategy was fairly difficult . . . "I've enjoyed it, but it's been a rigorous process". From the position of neutral observer, PNL evaluators also noted that normal bureaucratic processes, plus typically cautious modes of dealing with potentially sensitive political issues (i.e., soliciting private dollars to support public social programs), seemed to amplify the difficulties of this preparation work.

A final observation on the marketing planning process in Oklahoma is that implementation planning (as opposed to development planning) lagged far behind the preparation of suitable materials. Most of the marketing director's energy and time over the eleven-month development period appeared to be channeled to producing the marketing materials, getting approvals, and acquiring necessary support equipment.

Although steps had been taken to identify types of business that would be considered "Tier 1" in the marketing efforts, there was little evidence that staff had begun to acquire critical profile information to focus and tailor the marketing. Businesses were initially selected on the basis of size (more than 400 employees) and their interest in home energy issues. For example, utilities would fit this selection criteria. However, motivational and financial (size of tax liability) information was not carefully researched when marketing began.

The marketing director was also relatively unfamiliar with tax payment cycles and procedures as they applied to state corporate income tax. There was apparently little coordination or interaction with the State Department of Revenue, which possibly could have provided some of this information. [There were vague indications in several interviews that interagency sensitivities restricted ODOC-DCAD's activities in this regard. However, no firm evidence could be obtained.] Because PNL monitoring ended before actual responses to the marketing were available, the need for--and value of--this preparatory step remains conjectural.

As was the case with Kentucky, PNL had little opportunity to assess the implementation of marketing in Oklahoma because it started at the very end of PNL's monitoring period. The appeal by ODOC-DCAD staff appeared to be well-received by the business that had been visited, but there has been no subsequent evidence to indicate whether the efforts will result in participation. Interested readers should contact Paul Cookerly or Alice Johnson at ODOC-DCAD to obtain information about what worked, what modifications were made, and what the state plans to do to support the marketing effort.

4.4.7 Washington

The role that marketing played in Washington was somewhat different from the other states. Little actual marketing planning or implementation by either the state or its WAP subgrantee partners was apparent in the project's demonstration phase for the following reasons. First, the PILIRR demonstration subgrantees were selected on the basis of previous weatherization records, particularly in multifamily housing. While some negotiation and contracting was carried out to formalize the relationship, it would be difficult to consider this "marketing."

Each of the participating subgrantees already had candidate buildings identified as a result of previous contacts with the building owners when contracts were signed with the state. Since the Washington demonstration projects were largely funded through existing monetary sources (utility weatherization programs, state PVEA grant, and WAP), contributions were somewhat less critical than in Iowa, for example. However, the challenge faced by the Washington subgrantees was to find ways to maximize those contributions.

PNL found no evidence of formal planning to maximize those contributions. As was the case with most other community organizations involved in the PILIRR projects, the Washington subgrantees had little experience in marketing training or in understanding of classical marketing concepts. However, all displayed a good understanding of the financial dynamics of low-income multifamily housing ownership. In particular, the local agencies recognized that the owners of the candidate buildings were primarily small investors, with somewhat limited financial resources, who were neither

"slumlords" nor philanthropists. As a result, "marketing" more often took the form of business-like negotiation with the building owners to develop agreement on their level of contribution, to assist them to get loans as needed (for example, SNC helped to negotiate a no-interest loan using CDBG funds), to get other "in kind" commitments,^(a) and to agree upon mutually acceptable restrictions on rent increases.

At a more abstract level, the state agency responsible for PILIRR (WDCD/DCS) paid a great deal of attention to developing marketing concepts for its model because sustaining a PILIRR-like approach to weatherization (one of Washington's goals) would depend on developing marketing skills at the subgrantee level. Consequently, marketing was a major topic covered in the state's research as it developed the model and was also addressed by the Washington PILIRR Task Force. Two marketing products resulted: a generic brochure to be used by local agencies to recruit building owner participation, and marketing "how-tos" included in the PILIRR model notebook. Details of these efforts are provided below.

As noted, marketing implementation during Washington's local demonstrations consisted largely of efforts to convince building owners to contribute to the cost of weatherizing their buildings and to maximize that contribution. Some additional marketing/negotiation was used to tailor utility contributions (to insure that the utility program offerings and requirements meshed with those provided by other partners). The primary tactic used was one-on-one negotiations with careful attention to the needs and constraints of each party. Support by local news media was also marketed for and obtained in two of the three demonstrations.

In general, the in-kind contributions to PILIRR that resulted from marketing efforts were not quantified by the WDCD. These consisted of such actions as donating units for emergency shelter, energy auditing, media coverage, and tenant education efforts.

(a) For example, two of the subgrantees were able to get building owners to designate some of their units as emergency shelters for a stipulated period.

Direct financial contributions by building owners ranged from \$16,000 to \$23,000 each, for a total of \$60,000. Owner contributions thus constituted 16% of the cost of weatherizing the three building complexes. While these contributions were not a major portion of the weatherization costs, they represented substantial investments from the individual owners. As all three complexes qualified for regular WAP/LIHEAP free weatherization,^(a) the contributions also represented considerable leveraging success.

As another part of its marketing efforts, the WDCD prepared professional-appearing brochures for subgrantees to use for marketing. The brochure was prepared with the assistance of the PILIRR Task Force and went through several iterations before a final design and format were selected. The brochure will be available to subgrantees and other community organizations wishing to develop building owner participation for low-income multifamily housing weatherization.

In preparing the PILIRR model, state agency staff also conducted a literature search on marketing issues and procedures related to support for weatherization of low-income multifamily housing. In addition to materials provided by PNL, including the "white paper," studies of the characteristics of rental housing and landlords in the Northwest and of multifamily weatherization programs operated by the Bonneville Power Administration and the City of Portland were summarized and added to the model.

The state also used the PILIRR Task Force to study marketing issues and make recommendations. The latter activity produced valuable information on the perspectives of utilities and apartment owners, low-income clients, and other state agencies. All this material was integrated in the section on marketing in the model notebook prepared by WDCD for subgrantees and other nonprofit weatherization groups.

The marketing and recruiting suggestions contained in Washington's model for resource leveraging should be valuable guides for increasing building owner participation in the future. However, it is also likely that the type

(a) All units qualified by virtue of the low-income status of their renter occupants.

of marketing required for PILIRR is as much an art as a skill acquired through exposure to marketing principles. From this sense, the state's resource leveraging model for multifamily weatherization is expected to be an introduction and guide, not a formula for success.

4.5 PARTNERSHIPS AND RESOURCE LEVERAGING MECHANISMS

DOE's goal in the PILIRR Program, as noted earlier, was to determine the feasibility of instituting resource-leveraging partnerships to deliver low-income weatherization services. Who the partners were, how the partnerships were structured, and what resource-leveraging mechanisms were used were primary features that defined the resource-leveraging partnerships and determined their effectiveness.

These features varied considerably across the projects. Because of this variability and the small number of projects, generalizable conclusions could not be drawn about the effectiveness of the various options for resource-leveraging partnerships. By documenting what each state did and the outcomes, however, limited inferences could be made about what approaches worked in the existing context and might work in other similar situations.

4.5.1 Factors Considered in the PILIRR Evaluation

Because the purpose of the partnerships was largely to leverage resources, partnership details and the leveraging approach have to be considered together. Section 4.5 addresses the following topics as they applied to each project:

- definition of partners, partnerships, and leveraging
- establishment of partnerships and resource-leveraging mechanisms
- long-run feasibility of partnerships and resource-leveraging mechanisms

Each of these topics is briefly clarified below. The evaluation results from each state are then provided to complete the analysis portion of this report.

Definitions of Partners, Partnerships, and Leveraging

Consistent with DOE's perspective on partnerships, our initial model considered partners in the state partnerships to be those players who were not only participants, but also had some responsibility for project direction. When participants were interviewed, however, their definitions varied. Some participants considered all project participants to be partners; others maintained that a true partner had to hold responsibilities for the project's success and/or contribute needed resources. The latter definition was the most universally applicable to the different state projects.

The resource leveraging component of each project consisted of the mechanisms through which DOE's seed investment for project development and administration was converted to weatherization activities. In some cases, other public funds became part of the pot of resources applied to weatherization. In other cases, utilities, businesses, and individuals contributed resources; and in one state, weatherization recipients were expected to cover part of the costs. Volunteer labor and various types of in-kind contributions also constituted leveraged resources in some states. Our intent was to determine the methods used to leverage resources and the level and origin of all resources that resulted in conservation retrofits.

One fact that affected the definitions of partnerships and resource-leveraging was that these projects were essentially pilot or demonstration efforts. Expected partners in a full-scale implementation of these projects differed in some states from the partners who participated in the pilot project. The limited scope of the pilot projects also resulted, in some cases, in only limited testing of resource-leveraging mechanisms. For example, few of the projects went far in generating the proportion of private contributions contemplated for a full-scale project. Consequently, observations about how partners, partnerships, and resource-leveraging were defined are restricted primarily to experiences in the pilot projects; but, where possible, expected differences for full-scale projects have been identified.

Establishment and Long-Term Feasibility of Partnerships and Resource Leveraging

The process of implementing planned partnerships and resource-leveraging mechanisms varied across the five states. Successful implementation depended on a multitude of factors including adequacy of planning, recognition of partner needs and accommodation of those needs, soundness of the approaches, and extent to which the partnership arrangements and resource-leveraging mechanisms drew upon prior experience. These elements are discussed in varying detail for each state.

Since these were pilot projects, inferences about their sustainability depended to a large extent on the viability of the partnerships and resource-leveraging approaches. As noted earlier, the partnerships and resource-leveraging mechanisms used in the pilots were not always intended to be identical to those that would be implemented in full-scale projects. Consequently, the success (or lack of success) of the partnerships and resource-leveraging components in the pilots does not necessarily indicate how well the partnerships and resource-leveraging components of a full-scale project would work.

We collected information on problems that arose with the partnerships and resource-leveraging mechanisms and whether or how they were resolved. Based on our observations, we made tentative inferences concerning problems that might arise in the future. In some cases, we have commented on the extent to which they could be alleviated by various state actions.

4.5.2 State-by-State Results

The final part of the discussion of the results of the PILIRR Program covers the findings about partnerships and resource leveraging in each state. Greater details are provided for Florida, Iowa, and Washington, where pilot projects were implemented because actual resource leveraging had not occurred in the remaining two states at the end of the monitoring period.

Florida

In Florida's initial proposal, expected partners included community organizations, utilities, the state JTPA program, and the building trades

unions. As the project demonstration effort was implemented, however, several elements changed. The state's primary partners became the two community organizations (THF and GMN) that contracted to conduct the leveraging and weatherization, and other intended partnerships either never materialized or functioned only at the local level.

Several classes of partners were involved in the local demonstrations. In the Tallahassee pilot, THF considered its partners to be 1) the local public utility, 2) volunteers and the businesses and other organizations from which they came, 3) building trades professionals who donated their time, expertise, and surplus building materials, and 4) entities, such as vendors, individuals, building contractors, and local businesses and service organizations, which donated money and weatherization materials. The leveraging mechanism consisted of the use of volunteer labor, donated materials, and donated funding provided by these partners.

GMN's primary partners in the Miami demonstration were the CDCs through which low-income housing with enhanced weatherization features was developed. CDCs are legally recognized organizations that conduct a wide variety of community services, including housing rehabilitation and construction, job skills training and counseling, family services and promotion of community redevelopment and stabilization. GMN has joint venture contracts with a number of Miami CDCs to help them leverage financial resources and to provide construction expertise for their housing projects. GMN also helps these groups develop overall effectiveness as community change agents.

The groups involved in the Miami PILIRR pilot included a rural Dade County CDC that serves the housing, job-related, and family assistance needs of migrant farm workers; three ethnic neighborhood groups (Black, Cuban, and Haitian); and an organization associated with a large low-income townhouse project with ethnically mixed occupants. GMN also considered a local utility, a community college, and sundry building trades businesses as secondary partners.

GMN's leveraging mechanism was basically the same as was described for THF, although volunteers provided only a small portion of the weatherization

labor. (Most labor was done by individuals in job training programs or by private contractors for a fee).

There was one significant difference between the leveraging used by THF and by GMN. GMN used part of its \$30,000 grant from FGEO as incentive payments to the CDCs to encourage their use of WAP-level weatherization measures. As noted, these payments were not used directly for weatherization but paid part of the costs the CDCs faced to find qualified low-income families and train them for home ownership. (Training included home maintenance skills, budgeting, and energy awareness.) During implementation, GMN decided that this incentive was probably too low and too indirect a means of encouraging weatherization. GMN felt that the main cause of its problems in achieving WAP-level retrofits was related to the weatherization requirements. In the Miami climate, the most appropriate weatherization measures are those that reduce cooling, not heating needs and costs. Many cooling measures (such as shading, radiant barriers, fans, enhanced ventilation, and efficient air conditioning) are not covered in WAP specifications and/or are not considered allowable costs. As a result, GMN found that its partners lacked some interest in the WAP measures.

About 170 homes were weatherized in Florida with virtually no direct public expenditures. To a great extent, this success was the result of using proven leveraging techniques and/or existing partnerships. In Tallahassee, THF's model for emergency home repair readily lent itself to weatherization, and the administrative support provided by the FGEO grant enabled the local organization to expand and focus its efforts significantly. This was particularly well-demonstrated in THF's two concentrated weekend weatherization efforts (OctoberFix and SpringFix), when over half its total weatherization jobs were completed.

Using volunteer labor and donated materials is perhaps the most notable aspect of THF's successful approach. Both of these leveraging mechanisms typically are avoided in traditional weatherization program, but THF's experience indicates that under the right conditions, both might be used successfully.

THF's use of a volunteer labor force had two unusual aspects. First, volunteers were initially asked to make only a short-term commitment (one weekend). Second, individuals usually participated as part of a team or crew on a specific project house. Although many THF volunteers return to help on additional jobs, THF attributes its recruiting success to the limited commitment that is requested and its crew approach. By assigning a group of individuals from a single organization to a specific project, a good deal of "people" coordination work was minimized, and group spirit and commitment were usually easy to generate. For example, several volunteer groups involved in the 1987 OctoberFix took special interest in "their" project families and worked to collect money, food for Thanksgiving, and other necessities for them after the weatherization work was complete. Some jobs required two weekends to be completed, but little attrition in the affected crews occurred.

While the use of volunteers by THF was not highly regimented, it was very well organized. The weatherization coordinator made sure that when the volunteers arrived at a project site, all weatherization activities and repairs had been identified, necessary materials were onsite, and a construction professional was available to lead the volunteer crew. Training was provided as needed onsite, and quality of work was monitored carefully. Newspaper coverage was often arranged (particularly for the concentrated weatherization weekends) and volunteers were recognized for their contribution in the THF newsletter and in thank-you letters to their organizations.

THF obtains building materials largely through donations from its strong network of building contractors and building material suppliers in the Tallahassee area. These individuals donate substantial amounts of surplus materials and usable "seconds," which are stored in THF's warehouse until needed. With the warehouse, THF is able to acquire materials as they become available and to stockpile them until they are needed for weatherization or repairs.

In most cases, the local utility insulated PILIRR homes at no cost to THF as a special extension of its conservation programs. The municipal utility apparently viewed this partnership as a community relations/good

faith effort that would provide longer-term good-will benefits in future efforts to gain approval for a new generating plant.

The utility partnership was the only specific relationship that had existed when THF contracted with the FGEO to perform the PILIRR demonstration. Prior experience, then, was a significant aspect of THF's ability to leverage resources. However, THF's successful partnerships also appear to be the result of the organization's skill in balancing its own needs with those of its partners.

For the most part, GMN's network of partnerships was also established at the time it initiated its PILIRR demonstration. Most of the joint venture partnerships with the CDCs used in PILIRR were set up in 1985 or 1986, and all had housing projects (new construction and rehabilitation) in progress. Some of the leveraging used by GMN was based on targeting existing utility conservation incentive programs to qualified low-income households. Although the utility partnership provided a fair amount of weatherization, GMN had more difficulty than it had anticipated in meshing its activities with the utility. In particular, the utility was reluctant to restructure its programs in ways that it felt would give special treatment to certain classes of customers (low-income households). A second problem area was the disparity among measures covered by the utility, measures required for WAP, and measures considered desirable by the CDCs. As a result of this problem, less targeted utility-provided weatherization was achieved than had been anticipated, and other resources had to be used. Also, GMN felt that the number of units that the CDCs agreed to weatherize was reduced because of the restrictions on cooling-relevant measures.

As a result of the success of the pilot projects in Tallahassee and Miami, the FGEO was able to obtain additional funding from the state's PVEA to continue and expand the PILIRR approach to low-income weatherization in Florida. Both THF and GMN will continue to be involved, and FGEO will also be working with a nonprofit group called the Florida Low-Income Housing Coalition to train other community groups to use the THF/GMN leveraging approaches.

It appears likely that the PILIRR approach can be sustained in Florida if the state can continue to provide adequate financial support and coordination. Three areas of potential problems may need attention, however, if the effort is to succeed at an expanded level. First, the role of the traditional local weatherization groups (the CAAs or subgrantees) in any PILIRR-like leveraging programs needs to be resolved at the state level between the FGEO and the FDCA. While partnership/leveraging apparently can help meet the weatherization needs of the state's low-income population, it should probably do so in coordination with traditional grant-based programs rather than as an independent activity.

Second, the PILIRR demonstrations did not achieve a long-term commitment from Florida utilities to target low-income homes for conservation efforts. Particularly in Miami, the utilities' level of participation and assistance was somewhat disappointing to FGEO and GMN. Continued negotiation, perhaps combined with some pressure through the state utilities commission (a common approach in other states), may help to build a more substantive partnership with the utilities.

Finally, sustaining meaningful weatherization through partnerships and resource leveraging in Florida may require the allowable weatherization measures to be broadened, particularly in the southern parts of the state. The focus on heating needs of the traditional programs has been a problem in many "sunbelt" states, where the comfort and energy costs of low-income households are often tied more closely to cooling-, rather than heating-efficiency retrofit measures. GMN's experience indicates that it may be easier to generate enthusiasm (translating to more committed partners) from both community organizations and local utilities with a more balanced focus.

Iowa

In Iowa, most participants defined partners as "anyone who was required to make the project work." This clearly included the CAAs, IDNR, and the landlords. Several participants felt that utilities should be considered partners if they contributed services or funds and that the lending institutions were partners also. There were some reservations about categorizing banks as partners because their involvement was primarily a business

decision. On the other hand, one bank actively promoted the project, getting one of its clients to add another building to the PILIRR project.

The partnership in the pilot projects involved the IDNR and the participating CAAs, landlords, and banks. ISU's marketing expertise also made them an essential member of the partnership.

The leveraging mechanism consisted principally of the buy-down of interest on weatherization loans obtained by landlords. Two problems arose with this mechanism. One was that the buy-down did not always fit easily into lender practices and procedures. The second was that the approach required landlords to take out loans, thereby excluding a segment of landlords who would be interested in weatherizing their units but preferred not to obtain a loan. Other leveraging included marketing support provided by ISU.

Iowa's partnership approach was well planned, but several factors affected its implementation. The state government reorganization eliminated the expected direct link to the state WAP agency, and this may have caused difficulties in meeting the needs of the CAAs and insuring their full participation. Landlords needs were not well anticipated and, after failure of the initial promotion, new approaches were devised. The needs of banks were only partially addressed, and no attempt was made to recognize their participation.

Iowa's partnership and leveraging approaches were basically sound but were largely operating in uncharted waters. Participants had very limited prior experience recruiting landlords for projects where the landlords had to make a financial investment. The envisioned partnership mechanism underestimated the importance of selling the project to landlords. Although the CAAs had worked together in the past, they were not accustomed to the type of central coordination that would have been effective in PILIRR and they had not worked much with the IDNR. The effect of risk on CAA participation was underestimated in the beginning, and the perceived risk undermined CAA participation. Finally, lists of bankers developed in a prior project were initially of some use, but they proved to be outdated once the project was implemented.

Sustaining a PILIRR-like resource-leveraging partnership in Iowa most likely will depend on several factors. For example, several aspects of the partnerships should be reviewed. The partnership between the CAAs and the state agency implementing PILIRR should be better defined. If the state continues to administer the program, greater state oversight might help decision-making and resolve problems. The state WAP agency could benefit the program by becoming more of a partner. The needs of the CAAs in performing their function should be clarified and met.

Iowa's resource-leveraging approach faced difficulties recruiting landlords and obtaining other funding. Some of the initial marketing problems have been resolved, but it appears that only more active CAA outreach will attract landlords to the project. Fundraising capabilities were largely untested during the pilot project. Some success was met in getting utilities to participate and secure PVEA funding for PILIRR II, but the long-run feasibility of the approach will require broader based partnerships and sources of resources.

Kentucky

In Kentucky, the KEC project manager defined partners as anyone who worked with KEC in PILIRR but felt that some transaction had to be involved so that the partners were both giving and receiving something from the partnership. He did not feel that partners had to have responsibility for the project in the planning phase, and this was borne out by the charter of the Task Force, which was created to advise but not direct. Other participants had varying views on the role of partners. Several felt that their role should include project responsibilities and not be limited to providing advice. This created no significant problems in the short-run, but these differences may create some tension in the long-run.

Using the most generous definition, the partnership included KEC, all Task Force members, and all other participants who had something to gain and offer the project. Once the pilot was in place, it included the local groups participating and all building owners who took out loans for their share of the weatherization cost. Using a narrower definition that requires that a

partner have some significant project responsibility, it included KEC, local groups participating, and the nonprofit foundation whenever it became involved.

Kentucky's approach was intended to achieve resource-leveraging by raising charitable contributions that would be used to buy-down loans obtained by building owners (usually an elderly homeowner). In the pilot project, which was not completed during the monitoring period, KEC pledged \$15K if the local group can raise an equal amount, and building owners were required to contribute from 50% to 80% of the cost of weatherization, primarily by taking out low-interest loans. In the pilot, the local group's contribution will be applied to buying down the loan principal. Because the pilot was not completed during the monitoring period, the extent of leveraging achieved could not be assessed. It was also not clear what leveraging would occur in a full-scale project if one were established. KEC also has considered including direct grants in a full-scale program, which would change the leveraging ratio.

As has been discussed, the KEC spent a considerable amount of time planning the partnership and leveraging mechanisms. Many alternative situations and contingencies were examined and strategies devised to deal with them. For example, several possible nonprofit foundations were identified in case KEC had problems getting the selected one onboard. Similarly, several types of financial arrangements with elderly homeowners were considered in an attempt to add flexibility and allow more elderly to participate in the program.

The strength of the PILIRR project's approach benefitted substantially from its affinity to the SWAT I project. That project was developed based on available information about 40 similar seniors network projects around the country.

The partnership and leveraging components of Kentucky's project had some potential problems. Ultimately, the Task Force may provide an effective avenue for partner involvement in project design and planning, but it was uncertain whether the advisory role offered to Task Force members would be an adequate quid pro quo to elicit the desired commitment of their resources to

the project. Similarly, it is probable that the difficulty of getting elderly homeowners to take out the loans necessary for their participation has been underestimated. Marketing information and the opinions of some project participants would suggest that the elderly are unlikely candidates for a loan program. No definitive determination can be made, however, until the results are available from at least the pilot project. Finally, the steps necessary to establish the participation of a central nonprofit foundation (the KHC) that would take on major project responsibilities were not completed during the monitoring phase. The effectiveness of this approach remains untested and no clear alternative was available.

The sustainability of Kentucky's approach cannot be evaluated very well because little experience was gained on the functioning of the partnerships and resource-leveraging mechanisms in Kentucky during the monitoring period. As noted earlier, three problems arose during the planning and early stages of the pilot: 1) potential uncertainty about commitment of partners who served primarily in an advisory capacity during planning, 2) doubts about acceptability of the loan approach to seniors, and 3) inability to complete steps establishing the central role of the KHC.

The issue involving partners' planning roles was somewhat resolved by the time the pilot began, but not enough progress had occurred in implementing the partnerships to determine how successful they would be. For other projects, it would be advisable to bring partners into the very early planning stages. The other two issues were even less resolved at the end of the monitoring period. The outcome of the pilot should shed some light on the question of seniors' receptiveness to loan programs. The viability of KHC as the central nonprofit will depend largely on its ability to raise funds successfully. If the KHC maintains its commitment to the project and is successful, housing corporations in other states might be an ideal vehicle for conducting similar projects.

Oklahoma

In Oklahoma, the leveraging mechanism was considered to be both the state tax credit legislation and the marketing effort that would stimulate its use. "Partners" would be the business and individuals who use the

credit, thus contributing to the state low-income weatherization fund. The principal problem with the tax credit leveraging mechanism is likely to be the current restriction on the money generated by it, i.e., as loans, rather than grants. This problem will be alleviated if the ODOC is successful in modifying the authorizing legislation.

The delays in developing and implementing the actual marketing efforts in the Oklahoma program prevented the partnership and resource-leveraging aspects to be analyzed in that state. At the end of PNL's monitoring period, the marketing activities were just getting under way. We recommend that DOE review the results of the PILIRR-funded marketing efforts in a year or so to determine the impacts of and potential for this approach. Likewise, it would be premature to discuss the sustainability of that state's leveraging approach.

Washington

The WDCD in Washington considered its partners be the three subgrantee agencies (CAAs), and the state agencies and other organizations represented on its PILIRR Task Force. At the local level, the CAAs considered as partners the individuals and organizations that contributed funding or in-kind resources to accomplish the multifamily energy retrofits. Therefore, building owners, the WDCD, and local utilities were considered the major partners. In addition, a local television station was cited by Clark County CAA for its assistance in documenting their project, and the Spokane Neighborhood Centers also credited the contributions of the Washington Energy Extension Division (help in auditing their building) and a local CDBG steering committee (providing the owner with a deferred 0% interest loan).

Two types of resource leveraging occurred in the Washington project. The first and most direct was obtaining private-sector contributions (from building owners and utilities) amounting to about 30% of total retrofit costs. Also, a form of leveraging was achieved by pooling money from federal, state, and local public sources in the Washington projects. While DOE did not specifically include this type of leveraging in its definition at the outset of the PILIRR program, cost-sharing in this manner increases the

"mileage" of public money from any one source and may be a likely interim form of the leveraging federal dollars (see Figure B.1 in Appendix B).

In the Washington projects, buildings to be retrofitted were identified at a very early stage of implementation from WAP/LIHEAP applicant lists on file.^(a) As a result, preliminary building selection was easily accomplished. Furthermore, the CAAs were familiar with the level of support provided by the utility partners (through existing programs), so arrangements to obtain that support were relatively simple. Partnership development, therefore, centered on the negotiations with the building owners to arrive at a mutually agreeable contributions to retrofit costs. The CAAs' objective in each location was to maximize the amount obtained from building owners without setting impossible conditions for participation. The negotiations took from two to three months to complete, and included discussions not only of the total amount to be contributed, but its use (for example, preparatory repairs versus weatherization measures), occupant education efforts, certain rental controls,^(b) and any in-kind resources to be provided.

Once these conditions were agreed upon, the partnerships proceeded without any real difficulties. Owner cash contributions ranged from a low of \$6,275 (one of two buildings treated in Pierce County) to a high of \$23,500 in Clark County. (Those amounts constituted 14% and 25% of the respective total retrofit costs of those buildings.)

In the Washington demonstration projects, there was some indication that the level of building owner contributions was sensitive to a "threshold." In other words, there is a point between total subsidization of weatherization costs (as in the current WAP program) and near-total support

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- (a) Each CAA had several multifamily buildings on file that had not been placed on an active waiting list because of the high cost or complexity of the retrofit.
 - (b) Owners committed to maintain the dwelling units as residential housing and agreed to certain restrictions on rent increases, eviction, occupancy, and material maintenance for a specified period of time. These requirements were intended to insure that program funds would benefit low-income tenants and were contained in a Multi-Family Housing Owner/Agency Agreement that was developed in conjunction with the WDCD.

by the private sector (as in the Iowa model) where partial support by the public sector is just high enough to encourage meaningful participation by the private sector. For example, the buildings in Pierce County were electrically heated and therefore qualified for a generous incentive program operated by a large investor-owned utility. (Up to 70% of the cost of many measures are paid by the utility.) However, the remaining costs apparently had been considered still too high by the building owners until an opportunity to lower those costs became available through PILIRR. That is, the building owners were willing to contribute 10% to 20% of total costs, but not 30% to 40%.

The Washington experience suggests that it might be worthwhile for CAAs to investigate the level of the "buy-in" threshold with other multifamily building owners, as an initial step toward shifting more of the cost of retrofitting low-income multifamily housing to building owners.

At the state level, the partnership embodied in the Task Force was well planned, and contributed to the overall coordination of the demonstration projects and the model development. The Task Force also provided a means to achieve a significant level of interorganizational cooperation and sharing of views. Membership on the Task Force was arranged early in the planning stage of the Washington PILIRR project, so that the group was ready to begin meeting by the third month of the grant period. The first meeting provided an orientation to the PILIRR project and included a discussion of various public programs that could interface with PILIRR. Each of three subsequent meetings was held in one of the CAA offices, allowing Task Force members to tour all three weatherization projects. While the local CAA-run weatherization projects were quite autonomous, the Task Force partners helped provide a common focus and a forum to discuss generic resource leveraging issues and problems. During all meetings, members worked to develop a consensus on marketing approaches, rental control, innovative financing, and other related issues. The Task Force's recommendations in these areas became substantive contributions to the Washington PILIRR model developed by WDCD. All participants--particularly the utility and apartment owners' association representatives--agreed that it had been a worthwhile and effective activity.

As in Florida, Washington has chosen to allocate PVEA money to sustain and expand resource leveraging for low-income weatherization projects. The state legislature approved the use of the state's \$12.6 million Low-Income Housing Trust Fund for the Energy Matchmaker Program, which provides a dollar-for-dollar matching grant to communities for weatherization resources obtained from utilities, foundations, civic groups, landlords, businesses, and others. Copies of the PILIRR model were distributed to all state CAAs and any other groups with interest in participating in the Matchmaker Program. Therefore, resource leveraging in some form most likely will continue in Washington, although it will not have the exclusive focus on multifamily housing that occurred in the PILIRR project.

The SNC organization in Spokane, however, intends to continue targeting large multifamily housing in its use of the Matchmaker program. In the early stages of new program, SNC made a concerted effort to link the HUD-supported Rental Rehabilitation program with its Matchmaker-funded energy retrofit activities. However, the two activities currently contain conflicting requirements and orientations that have made coordination a challenge. SNC staff provided some comments on these difficulties that are quite insightful and may be of use to other organizations interested in meshing low-income weatherization with low-income housing rehabilitation. Their comments are summarized in Appendix F.

One final observation on the sustainability of the PILIRR approach in Washington (and other states) should be made. Weatherization programs offered by electric utilities have become very widespread in the Pacific Northwest as a result of a regional power plan that emphasizes conservation, the BPA's suite of conservation programs (which are implemented by publicly owned utilities), and programs offered by privately owned utilities. Although funding dwindled in the face of a substantial region-wide surplus of electricity, programs targeted to low-income households are still available through most regional utilities.

Use of these utility subsidies has become a popular way to meet the matching requirements of the Matchmaker program. However, the utility programs can be used only for homes heated with electricity. Gas utilities

and fuel oil companies, in general, do not offer similar weatherization subsidies. What appears to be happening in regions such as the Northwest is that electric utilities are shouldering a large portion of the burden of low-income weatherization of electrically heated homes, while public money (WAP, LIHEAP and PVEA) is used to retrofit gas- and oil-heated homes. The electric utilities are becoming concerned about what they view as a possible inequity in the allocation of public money for low-income weatherization.^(a) If this concern becomes serious, it could increase the difficulty of creating partnerships with electric utilities in the Northwest and elsewhere.

(a) Conversation with Michael O'Bryant, Pacific Power and Light, Inc., November 9, 1988.

5.0 CONCLUSIONS AND OBSERVATIONS

This section presents our evaluation conclusions about the individual state projects and the overall demonstration. It also discusses lessons learned from the demonstration that may significantly affect the success of similar programs or other types of partnerships.

5.1 SUCCESS OF STATE PROJECTS

DOE initiated this project to demonstrate the ability of states' to institute resource-leveraging partnerships to stimulate support for low-income residential energy improvements from a range of sources. Even with the limited number of states participating and with the diversity of approaches taken, the demonstration achieved its goal. Several states successfully established partnerships that delivered resources supporting low-income housing retrofits.

Three of the five states established partnerships that led to retrofits during the monitoring period (October 1986 - August 1988). The characteristics of these state projects are summarized below:

- Florida's partnership involved the Florida Governor's Office; two community organizations; and local businesses, weatherization contractors, organizations, utilities, unions, and individuals. Resources resulting from leveraging included volunteer labor, materials, audits, and cash. This project was very much focused at the local level and targeted owner-occupied low-income housing and housing provided for low-income families.
- Iowa's partnership involved the Iowa Department of Natural Resources and, to a lesser extent, the Department of Human Rights (which administers WAP); local Community Action Agencies; utilities; and landlords of multifamily buildings. Resources leveraged included landlord investments in retrofit, state PVEA funds (in the follow-up program), and marketing assistance. This project concentrated on reaching landlords through participating CAAs.
- Washington's partnership included the Washington Department of Community Development, responsible for WAP; participating CAAs; landlords of multifamily buildings; and utilities. Resources leveraged included landlord investments in retrofit, state PVEA funds and other funds, and utility funds and in-kind assistance. This project had a focus similar to Iowa's project.

Kentucky established its partnership during the monitoring period but did not accomplish its retrofits until after monitoring was completed. Characteristics of the project are presented below:

- Kentucky's partnership included the Kentucky Energy Cabinet; other state agencies and state-level organizations (primarily in an advisory capacity); statewide businesses and organizations (in the full-scale project); local community organizations, businesses, and individuals; and senior owner-occupants or their sponsors. Resources leveraged included funds contributed at the state level (anticipated in the full-scale project), local funds contributed, and owner investments. This project was focused on senior homeowners and would rely ultimately on private contributions at the state and local level.

Oklahoma was unable to successfully establish its approach during the monitoring period. Characteristics of the project included the following:

- Oklahoma's partnership included the Oklahoma Department of Commerce, which administers WAP, and individual or corporate taxpayers who contributed to a state weatherization loan fund eligible for a tax credit. Leveraged resources would be the contributions to the loan fund. This project was focused on marketing participation in the loan fund to potential corporate contributors.

In addition to successfully establishing resource-leveraging partnerships, DOE was also seeking to demonstrate the private sector's commitment to low-income weatherization. In the four states that established their partnerships during the monitoring period, private sector participation occurred. Each achieved utility participation and contributions. Three of the states relied on the building owner to make an investment in the retrofit of their building; such investments would likely not have occurred during this period without PILIRR. The share of weatherization resources from strictly private sector sources, including building owners, ranged from about 30% to nearly 100% in the three states that accomplished retrofits during the monitoring period. Oklahoma, the state relying most on leveraging private sector resources, unfortunately was unable to implement its approach completely during the monitoring period. Overall, these projects demonstrated that, at the pilot project level, private sector support could be stimulated to support low-income residential energy improvements. Several of the states

also looked beyond the pilot project to full-scale implementation of the process developed during the demonstration.

One of the criteria DOE used in evaluating the state proposals was evidence of sustainability, that is the ability to maintain and support the proposed project after the pilot project ended. Florida, Iowa, and Washington actually obtained resources to extend their projects. Neither Kentucky nor Oklahoma proceeded far enough in the pilot during the monitoring period to establish a full-scale follow-on. The three states that have begun their follow-on projects are relying heavily on PVEA funding to substitute for the grant funds provided by DOE during the pilot. PVEA funding was a valuable asset to the projects where it could be obtained. The Florida, Iowa, and Washington pilot projects demonstrated the potential for full-scale implementation, although each revealed certain operational issues that were not fully resolved and deserve further attention when the large-scale projects are implemented.

In Kentucky, project designers also gave special consideration to the transferability of their approach to other states. The state planned to use the state housing corporation, also present in other states, as the central funding organization. Unfortunately, the delays in implementing the project prevented a full test of this mechanism, so the viability of this approach remains uncertain.

5.2 GENERAL OBSERVATIONS ABOUT THE CONDUCT OF THE DEMONSTRATION PROGRAM

When DOE initiated the demonstration program, very little information was available on the details of conducting such a program. Three main observations that should be taken into account in future demonstrations can be made now based on feedback from the participating states and information gathered from evaluation monitoring.

First, the unique requirements of these projects meant that the states needed special technical assistance. The resource-leveraging aspect in particular made several unfamiliar technical demands on the states, such as the need to identify 1) potential funding sources (such as corporations, utilities, and foundations), 2) ways to elicit their support, 3) basic

marketing skills and approaches required, and 4) sources of information on similar projects. The need to institute interagency and interorganization planning mechanisms also required skills and expertise not frequently used by participating agencies. In future demonstration programs, it would be advisable for DOE (or other sponsor) to allocate sufficient resources to provide technical assistance as the need develops. Some of the technical assistance requirements can be anticipated from the outset, but others will emerge as the projects progress.

Second, a considerable amount of information exchange occurred among the states, but even more would have been beneficial. Monthly conference calls among all the states and DOE were helpful, but their information content was limited. The initial and final workshops were also quite helpful, but the first came before any significant progress had occurred and the final one came too late to help most of the states. One or more intermediate workshops where states could exchange information on targeted issues and problem areas would benefit future demonstrations.

Third, the amount of time to implement the pilot projects was underestimated in most cases. Three of the five states could have benefited from more time to institute their projects. The time required varied considerably depending on how unfamiliar the approach was to the state participants and on the magnitude of problems that arose. In some cases fundamental exogenous problems or serious disruptions added considerably to the schedule. In other cases, however, the increased technical assistance and information exchange among the states might have shortened the time required.

5.3 LESSONS FOR ESTABLISHING RESOURCE-LEVERAGING PARTNERSHIPS

There is limited validity in extrapolating the results from this evaluation to other cases where resource-leveraging partnerships are being considered. This is primarily because this evaluation is based on results for only five state projects, selected in part because DOE considered them to be reasonably good candidates for success. Nevertheless, the projects' diversity helps ensure that any lessons that emerged with some consistency across the states could be anticipated to be relevant to PILIRR-type projects that

might be initiated in the future. This section discusses several lessons that emerged repeatedly and should be considered in future efforts to establish resource-leveraging partnerships.

5.3.1 Resource-Leveraging Partnerships Are Not "Business-As-Usual"

Resource-leveraging partnerships involve processes and mechanisms that are unfamiliar to most state planners and project managers. The essential lesson here is that the project is more likely to succeed if it does not push the "state-of-the-art" too far in too many areas at once. Trying new or unfamiliar approaches entails risks and uncertainties. Although some risk and uncertainty are inevitable because the resource-leveraging partnership approach is still relatively unconventional, the likelihood of project success will be reduced more as more untested or unfamiliar components are added to the project. The following points summarize these issues:

- Risk and uncertainty must be kept to an acceptable level by not including too many innovative features in a new program. Although steps can be taken during the program to anticipate and control risk and uncertainty (discussed in the remainder of this section), they are no substitute for reducing these factors to acceptable levels at the beginning.
- The resource-leveraging mechanism is likely to involve uncertainties about the level of resources that can be generated and face institutional risks associated with those institutions that must approve the method or execute it.
- Partnerships face the risk that partners may not be able to deliver on their commitments or that the partnerships may lack long-term stability.
- Until institutionalized as ongoing programs, resource-leveraging partnerships are vulnerable to the uncertainties of organizational disruptions and reorganizations.

5.3.2 Thorough, Early Planning Is Required

Because they are unfamiliar and relatively complex endeavors, resource-leveraging partnerships demand careful, thorough planning before and continued planning during the early-implementation phase. Planning for such projects requires that an unusual amount of attention be paid to understanding who are the key players and accommodating their involvement. A special effort must be devoted to making sure that the key players are involved in

the planning activity. The planning should also provide a means for anticipating potential problems and for devising ways to alleviate them. While the early planning should be fairly thorough, mechanisms must also be established to recognize the need for and to make mid-course corrections. These issues are summarized below:

- Needs for technical information or expertise should be recognized early. Potential sources should be identified and the needed support acquired.
- The resource-leveraging approach selected must consider the technical and resource requirements of the approach and the political and institutional environment in which it will function.
- Project planners must get beyond their parochial view and acknowledge the forces and actors likely to have a major influence on the project, establish mechanisms to marshal the needed support, and develop ways to ameliorate potential political or institutional problems.
- The organizations and individuals who should be involved in planning should be brought into the project early. They may or may not be the eventual partnership members.
- A task force should be established at the level, either state or local or both, where the most planning is required. The task force should communicate to potential participants or supporters about the project, help get a buy-in of partners and participants, and provide a good source of information for planning and conducting the project.

5.3.3 "Marketing" Is Important

The project must be marketed in several ways. Support must be solicited from agencies and individuals who might not be partners, yet could have a major effect on the project outcome. Potential partners must be informed of the project and convinced that their involvement will provide benefits they value. A marketing strategy must be developed and implemented. Key marketing issues, then are:

- Project planners and managers must recognize that resource-leveraging partnerships inherently require a high degree of marketing aimed at diverse audiences.
- Personnel who can supply the needed marketing expertise need to be identified and their support enlisted.

- The unique needs of public sector marketing must be recognized. Some of the marketing required, such as that needed to enlist the involvement of other state agencies, will have to take account of political or institutional factors and behavior.
- The different target audiences must be identified. In particular, the most suitable recipients of the ultimate product--low-income weatherization in our case--must be identified. The most likely contributors must be identified.
- Suitable approaches must be developed to elicit the involvement of the various target audiences. Potential benefits of participation to the participants, partners, and contributors must be determined and used to solicit their participation.
- Attention should be given to obtaining marketing support from a suitable potential partner, such as a utility, as its project contribution.

5.3.4 Some Final Considerations for State Agencies

Finally, agencies and individuals who implement resource-leveraging partnerships must have a special mix of skills, and the authority and responsibility required to carry out the program. Because of the demands of innovative programs, the program manager must be creative, flexible, and persistent. The agency implementing the program must have sufficient and appropriate authority to conduct the activities required to pull together state and local government participants. New, innovative programs, especially in their pilot stage, are particularly vulnerable to the vagaries of the budget process and government reorganizations. Although they cannot be insulated completely from exogenous disruptions, managers establishing new resource-leveraging partnerships need to recognize that special steps may be required to shield the program from disruptions.

- For low-income weatherization resource-leveraging programs, care must be taken to coordinate activities with the state agency implementing WAP if it differs from the one implementing the resource-leveraging program. A state official with adequate authority needs to insure that adequate cooperation is achieved. The resource-leveraging program manager needs to take the steps required to coordinate the two activities.
- Having prior experience with similar programs is less important as a characteristic of the program manager than having demonstrated the ability to be creative. The program manager must be creative without alienating the allies potentially required for successful

implementation. The manager must also be committed to seeing the program through to successful implementation and must have a high degree of persistence.

- The implications of program requirements must be understood, and the program modified if necessary, to insure that the agency and manager have adequate authority and responsibility to effectively implement it.
- The special vulnerability of pilot programs, especially complex, innovative ones, needs to be recognized and steps need to be taken to reduce the impacts of risky and uncertain events. It is advisable to take steps such as tying the program closely to an on-going program with a good likelihood of continuing support; establishing strong support at the executive and higher administrative levels; and maintaining a portfolio of strategies for dealing with possible contingencies.

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APPENDIX A

PILIRR WORKSHOPS AND OTHER TECHNICAL ASSISTANCE

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A.1 FIRST PILIRR WORKSHOP, AUGUST 1986

At the outset of the monitoring period for the PILIRR Program, a one-and-a-half day workshop for PILIRR grantees held in Washington D.C. The workshop was attended by DOE/SLAP headquarter staff Rich Brancato, Susan Heard, Nancy Tate, and Ernestine Gibson; DOE field office personnel from the Richland, Washington, Kansas City, Missouri, and Atlanta, Georgia offices; representatives from the five states that received PILIRR grants; and PNL staff.

After opening remarks by Rich Brancato and a keynote address by Donna Fitzpatrick, Assistant Secretary for Conservation, the state representatives gave brief presentations to describe their winning proposals. Each presentation was followed by a short comment period during which questions and concerns were brought up by workshop attendees. PNL staff followed with summarized information from the survey and marketing/promotion research prepared previously. These presentations completed the first portion of the workshop.

During the second part of the workshop, workshop attendees divided into small groups to focus on clearly defining the problems faced by each state as they implement their pilot programs, using the comments received during the earlier presentations. On the second day of the workshop, small group sessions were held to discuss possible solutions/approaches to deal with the problems identified the previous day. Problems were classed into three categories: marketing, political/institutional, and partnership-related issues, and group contributions were recorded. These comments were then used in a final discussion by all attendees of issues and potential problems to be dealt with during implementation of the state programs.

The workshop closed with a discussion of ways that DOE could assist the states during program implementation, and of ways that states and DOE could maintain the network initiated by the workshop.

A.2 SECOND PILIRR WORKSHOP, JUNE 1988

The second workshop for participants of the PILIRR Program was held in Olympia, Washington in June of 1988. This workshop was designed primarily as a de-briefing activity, rather than for technical assistance. (Initial plans to hold an interim assistance workshop were changed when it became clear that the uneven progress of the state and local participants had placed the various state projects at significantly different stages of implementation at the midpoint of the program. Instead, a closing workshop was arranged.)

The workshop contained three elements. First, each state presented information about the status of its project, including successes, problems, and important considerations for future efforts. Second, PNL used a nominal group technique (see below) to examine various factors felt to influence the design and implementation of resource-leveraging partnership programs. Finally, PNL used a group experiential process to design a hypothetical new program, incorporating the lessons learned from the states' actual experiences. The latter two elements are described below. Information provided by the states in the first portion of the workshop has been incorporated into the evaluation.

A.2.1 Q-Sort/Nominal Interacting Process

One phase of the workshop used a Q-sort/nominal-interacting process to stimulate discussion of factors likely to affect the success of resource-leveraging partnerships for low-income retrofit. Use of this technique in the workshop was intended to begin group consideration of what factors were universally important or unimportant, or would vary in importance from project to project. It was also intended to help facilitate subsequent discussions about the design of successful resource-leveraging partnerships.

Overview

The Q-sort/nominal-interacting process offers a relatively simple, yet structured, procedure for assessing alternatives in a group decision-making setting. The procedure has the advantages of promoting group interactions, developing consensus, and providing clear indicators of group assessments. We selected it to provide a technique for encouraging the state participants to share their views on factors affecting project success and reaching consensus on the factors' relative effect on project success. It also provided useful information for the monitoring and evaluation of the state projects.

The process involved the group of PILIRR participants in individual rankings of factors in terms of the factor's importance (the Q-sort process). After each individual performed an initial priority rating of each factor, the rankings were pooled and displayed without identifying how specific individuals rated the factors. The group then discussed the collective ratings (nominal-interacting phase). This provided an opportunity to (1) exchange factual information and data and (2) develop an objective perspective on the rankings.

Typically, the participants would have then ranked the factors again, taking into account information provided by other participants, and then discussed the revised results. The second round should have exhibited some movement toward consensus and allowed individuals to modify their rankings based on group information. Time constraints, however, prevented implementation of a second round of the process. Consequently, we report here only the results from the single round and cannot determine whether participants would have modified their views based on the discussion.

Implementation of the Process

We developed a set of factors that appeared to be related to the success of the PILIRR projects. The factors, Table A.1, evolved from the hypotheses and research questions that formed the basis for our evaluation. The proposed factors were circulated to the workshop attendants prior to the workshop and their comments and suggestions were solicited. No participant submitted comments prior to the workshop. During the workshop there was a

TABLE A.1. Factors Likely to Affect the Success of Resource Leveraging Partnerships for Low-Income Retrofit

1. Analyzing the market situation thoroughly.
2. Planning and implementing a comprehensive marketing strategy.
3. Involving key program staff who have experience with resource leveraging or other "innovative" programs.
4. Involving key program staff who have experience with Weatherization Assistance or other similar grant programs.
5. Involving WAP or LIHEAP agencies in planning and implementation.
6. Conducting comprehensive program pre-implementation planning.
7. Identifying what key partners need to get from program involvement and meeting those needs.
8. Establishing a process to anticipate and solve problems in a timely way.
9. Operating the program in a locale where strong support exists for low-income conservation programs.
10. Utilizing a resource leveraging approach that has been successfully applied before.
11. Utilizing partners that have established working relationships through prior joint projects.
12. Specifying in detail what retrofit measures are acceptable and how installers will be qualified to perform retrofits.

brief discussion about the meaning of some of the factors, but there were no recommendations to eliminate, modify, or add factors.

At the workshop, each participant was given a set of cards with an individual factor listed on it. Participants were asked to sort each card into one of five piles depending on how important they thought the factor was in determining the success of PILIRR-type projects. The participants were asked to base their ranking on their own experience and any other information they had already gathered.

The ranking cards were collected and the votes for each factor were displayed as shown in Figure A.1. The letters indicate individual

FACTORS		1.	2.	3.	4.	5.	6.	7.	8.
CATEGORIES									
High-Very High Importance		N E B M L F O K A I D	F A K I M N E D	N E B J O F M	N E B J G D O M	G J O	A K N F D M L J	I K G F O M B	A L F D M E
Intermediate Importance		J	G B L O	I G D	K F	A K F D L M	G I B E	A D N L J E	K N J B
Low-Very Low Importance		G	J	A K L	I A L	I B N F	O		G I O
Round 1 K.S. Test	D	0.51	0.28	0.21	0.28	0.103	0.28	0.33	0.13
	p	<0.01	>0.2	>0.2	>0.2	>0.2	>0.2	0.1	>0.2
Consensus?		Yes	No	No	No	No	No	Tendency	No
Importance Score		23	20	17	18	12	20	20	16
Importance Rank		1	3	6	5	B	3	3	7

FIGURE A.1. Q-Sort Display

TALLY SHEET

ROUND 1

FACTORS		9.	10.	11.	12.
CATEGORIES					
High-Very High Importance		I F B	F M	B	L N B
Intermediate Importance		G M	A B	A J D O	K E
Low-Very Low Importance		K A N E L D O J	I J K D L O J N E	I G K N E F M L	A G I F J O D M
Round 1 K.S. Test	D	0.28	0.36	0.28	0.28
	p	>0.2	0.05	>0.2	>0.2
Consensus?		No	Yes	No	No
Importance Score		8	6	6	8
Importance Rank		9.5	11.5	11.5	9.5

FIGURE A.1. (contd)

participants, though the identity of each participant was not revealed to minimize outside influences on rankings.

The information in the figure was presented to the group and the participants were asked to make any comments they would like on the results. Discussions on each factor lasted from 2 to 10 minutes and were typically quite lively and informative. The next section discusses the results in the figure and summarizes the discussions.

Results

After the participants ranked the importance of each factor, the group discussed the ranking of each factor in turn. The participants were instructed that they could make any comments related to the factors and how and why they had been rated as they were. The discussion was not limited to how each participant rated a factor, however, but any relevant information on that factor.

The first factor consisted of conducting a thorough analysis of the market situation. Figure A.1 shows that 11 of the 13 participants placed this factor in the highest importance category.^(a) The value of D shown in the figure indicated consensus at a significance level of >99% (Souder 1975).^(b) Participants generally felt that it was very important to identify what the market looked like for the weatherization approach under consideration. Several participants indicated it was important to understand what weatherization was occurring through private sector activities so that efforts could be tailored to take advantage of what the private sector was

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- (a) The participants were asked to rate each factor in one of 5 categories during the session. After the workshop, we found that several participants had used only 3 categories. To make the results commensurable and consistent, we regrouped all responses into 3 categories. This reduced the discrimination across some rankings, but did not change the overall results significantly.
- (b) The test of significance for consensus is based on the Kolmogorov-Smirnov one sample test of significance. D is calculated as the maximum difference between the cumulative total of votes in the importance categories and the cumulative total expected for a rectangular distribution, divided by the total number of votes. We require at least twice as many votes in one category as in any other category and a probability level of 0.1 to indicate consensus.

doing and the private sector could be influenced in ways that might increase private sector program effectiveness. Identification and assessment of the target audience for the project was considered important. It was also noted that the market situation would vary from project to project so some level of analysis would be required for each project. Other participants felt that market analysis would be very helpful in establishing incentive levels required to enlist project participants since there were both the risks of setting the incentive too low and too high.

The second factor involved the planning and implementation of a comprehensive marketing strategy. Figure A.1 shows that all but one participant put this factor in the high-very importance or the intermediate category, but the number of votes in either category was insufficient to indicate consensus. Generally, this factor was felt to be secondary to the first one, suggesting that understanding the market was more important than implementing an approach to respond to it. The participants were fairly polarized in their views on marketing: some felt that developing standard marketing strategy components (product, price, promotion, and place) were critical to project success while others felt that public agencies need not utilize "slick" marketing approaches.

The third factor related to the importance of involving staff who have had experience with resource leveraging or other "innovative" program approaches. Though the majority of participants rated this factor in the highest importance category (see Fig. A.1), about an equal number placed it in the intermediate and lowest categories so there was not a consensus. Participants indicated it was important to have experienced people to solve problems and implement the programs, but that a good "model" for the program could go far in making it successful. It appeared that several participants felt that good planning could compensate for inexperience.

Factor four involved having staff on the project who have had experience with conventional weatherization assistance programs or similar grant programs. The responses were almost identical to those for the third factor (see Fig. A.1), though the group vote was closer to consensus that this factor was of high-very high importance. Generally, the group felt that this

type of experience was not essential for program success, but that it would be beneficial. Some participants pointed out that experience with different types of weatherization or grant programs was fairly widely available and that drawing on it might improve communication among project team members. Also, because of existing overlap among programs, PILIRR projects could better integrate into the existing weatherization environment by utilizing staff who were familiar with other related programs.

The fifth factor related to specifically involving the existing WAP or LIHEAP agencies in the planning and implementation of PILIRR projects. Figure A.1 shows that the votes were more spread out and evenly divided on this factor: about 30% of the group felt this factor was either in the highest or lowest importance category and a little under half felt it was of intermediate importance. No consensus emerged. The state experiences represented a range, with most having the WAP agency involved primarily in an advisory capacity and one using the same agency to administer both WAP and PILIRR. There was a general sentiment that PILIRR should be treated as a supplement to the conventional WAP, rather than as a substitute, and that survival of the existing WAP agency and program should not be threatened by PILIRR. There was some concern that WAP agencies have developed "tunnel vision" over the years and this would interfere with their constructive involvement in PILIRR projects. Finally, several comments indicated a strong feeling that participation by the local agencies implementing conventional weatherization programs was probably more critical to project success than participation by the state agency.

The sixth factor was the role of comprehensive program pre-implementation planning. Eight of the 13 participants rated this factor in the highest category, but this was insufficient to indicate consensus (Fig. A.1). Though the group rating suggested most participants felt that comprehensive program pre-implementation planning was relatively important, most of the discussion centered on potential pitfalls in planning. Some participants suggested that planning was a luxury, could reduce flexibility, and should not be allowed to delay implementation. The apparent difference between the level of importance expressed through the voting and the discussion may be explained in part by one comment made during the discussion, namely, that

doing a good job analyzing the market situation (Factor 1) might constitute the most important planning activity and doing that well might reduce the need for extensive additional planning.

Factor 7, identifying and meeting the needs of partners, was rated highly as shown in Figure A.1. No one placed it in the lowest category, and over half the participants ranked it as having high-very high importance. Statistically, the ratings were bimodal, split between the highest and the intermediate importance categories, and were tending toward consensus. The group felt that extending recognition to partners for their contribution was important, especially symbolically. The importance of supporting local partners with resources to meet administrative needs also arose as an important requirement. Most of the projects relied heavily on local agencies for implementation and several representatives from local groups were present during this session.

The eighth factor, establishing a process to anticipate and solve problems in a timely way, was rated similarly to the sixth factor, which more explicitly dealt with planning activities (Fig. A.1). Two of the participants who had rated factor six as of intermediate importance placed this factor in the lowest category, while other participants shifted between the two upper categories. On balance, compared to factor 6 there were two more votes in the lowest category and two fewer in the highest category for this factor, and there was no tendency toward consensus. The discussion followed the theme of the discussion on factor six: several participants felt that over-planning was a distinct possibility and that it was not worth planning for all contingencies. Establishing a task force was mentioned as one way to institutionalize a problem-solving mechanism (two states have set-up task forces), and the group felt that a task force was useful because it implied ownership of the project by task force members.

The group mostly felt that strong support for low-income conservation programs, factor 9, was not particularly important. Consensus did not occur (see Fig. A.1), but the largest proportion of votes was in the lowest

category. Most participants felt that a well designed and implemented program could get around a lack of strong support for low-income conservation programs.

Since the PILIRR projects represent innovative approaches to low-income weatherization and DOE is concerned about the transferability of PILIRR approaches to other states, it was informative that a consensus existed suggesting that it was not necessary to utilize proven approaches in PILIRR projects (factor 10). Figure A.1 indicates that 9 of the participants felt that this factor was of low-very low importance in determining PILIRR project success. The participants suggested that just because an approach worked one place, one could not assume it would work somewhere else. The group noted, however, that a proven track record might make the approach easier to sell to others and reduce risk.

The eleventh factor involved utilizing partners who had worked jointly on prior projects. Figure A.1 shows that consensus did not exist on the importance of this factor, but that the group felt it was not very important. Comments during the discussion suggested that there was a perceived risk of turning-off partners by "going to the well too often."

The final factor, factor 12, involved how much detail was provided in the specifications for the conservation measures accepted in the program and specifications for qualification of weatherization installers. Though consensus did not exist, most participants rated this factor as relatively unimportant. This issue appeared to be one that came up in only certain states' programs, so some participants had not encountered it. The issue involved the tradeoff between flexibility (less detailed specifications) and guarantees of project outcomes (more detailed specifications). There was fairly general agreement that recipients of weatherization services should be allowed flexibility in the measures installed if they were making a contribution toward installation. There was also general agreement that PILIRR installer qualification could benefit from qualified-installer lists established by other programs or from qualification procedures established by other programs.

Other issues emerged from the workshop discussion that deserve mention. First, several participants stressed the importance of the role played by the local agencies in implementing PILIRR projects and the need to provide resources to these agencies so they can participate effectively. Three of the state projects relied heavily on local organizations or agencies to implement their approach and no lead agency fully anticipated the burdens placed on the local participants. The primary need was related to covering the administrative activities of the projects. Second, there were several comments that suggested that requirements of existing weatherization assistance programs reduced the flexibility and creativity that could be employed in delivering weatherization services. Less restrictive requirements for the acceptable weatherization measures could improve the benefits of weatherization programs. For example, current WAP requirements fail to meet the cooling load control requirements in hot climates and may even be counter-productive. Third, there were concerns expressed about how leveraging should be measured and about the legitimacy of using public funds to match public "seed" funds. In some cases, "double-counting" appeared to exist because two or more agencies would count the same contributions under their own leveraging program.

DISCUSSION

Ideally, the Q-sort/nominal interacting process would have been repeated at least one more time to determine if additional consensus had developed based on the group discussion. Time constraints prevented conducting a second round. In addition, a second round was considered less important in our application because we primarily wanted to stimulate discussion and only secondarily wanted to establish whether consensus existed. The discussion after the first round successfully led to an exchange of perceptions and a few participants commented that they would change some of their votes as a result of the discussion. On factors such as factor 2 (planning and implementing a comprehensive marketing strategy), the discussion led to better clarification of the meaning of the factor; consequently, the divergence of opinion might have declined in a second vote. Similarly, on factor 12

(detailed specifications) consensus might have emerged from a second round after all participants became more aware of the issue.

We also ranked the factors based on a simple scoring of each factor: each high-very high importance rating received a value of 2, each intermediate importance rating received a value of 1, and each low-very low rating received a value of 0. Figure A.1 shows the score and ranking based on the score. The reader should note that the factors used in the workshop were selected based on our judgment about what factors had been important. All factors were anticipated to be relatively important and the group ranking that took place at the workshop was indicative of how important each factor was relative to the others considered. Consequently, a low rating for a given factor would not imply that the factor was unimportant, but only less important than the other factors evaluated.

The first factor was ranked the highest, indicating that the group felt that analyzing the market situation thoroughly was the most important step to be taken to insure PILIRR project success. As noted earlier, group consensus was reached on this factor. Factors 2, 6, and 7 were tied as the next important factors. Factors 2 and 6 were clearly related to project planning, and factor 7 also involved planning through identification of the needs of potential partners and implementation to meet those needs. Factors 4 and 3 were ranked fifth and sixth, respectively. Factors 4 and 3 both related to involving experienced staff in the project. Factors 8 and 5 were ranked seventh and eighth, and both dealt with planning. Factor 5 also involved specifying that the WAP or LIHEAP agencies participated in planning. Factors 9 and 12 were tied for the next spot. Factor 9 involved operating the project where strong support existed for low-income conservation programs. Factor 12 involved the amount of detail in the project specifications. The last two factors were numbers 10 and 11, both related to utilizing approaches or arrangements that had been tested previously. There was consensus on factor 10, suggesting that it was relatively unimportant to use leveraging approaches that had been demonstrated successfully before.

These rankings presented a fairly consistent picture of what the participants considered to be most important in determining the success of

PILIRR projects. Preeminent was the need for understanding the market in which the project was being offered. This theme was mentioned several times during evaluation interviews with project participants. Those states that had done a thorough market analysis were very satisfied that they had and those states that hadn't stressed that they would emphasize market analysis the next time they undertook a similar project. The second most important group of factors involved thorough planning. The number of entities involved in the PILIRR projects and the variations and complexities of the leveraging and partnership mechanisms appeared to necessitate more thorough planning than would more standardized programs. Planning was needed to determine which partners to involve, how to involve them, and how to develop a marketing strategy. The next most important factors were related to the experience of staff involved in the project. Of the factors considered, it appeared only moderately important to involve staff who had prior experience that was related to the PILIRR project. The next highest ranked set of factors involved other planning issues. The group felt that trying to set up mechanisms to anticipate and solve problems was less important than other planning issues, primarily because there was so much uncertainty involved with trying to anticipate a range of probable difficulties. The group also felt that bringing the WAP agency into the planning process was of lesser importance, though the participants felt that the WAP agency should be integrated with the project. The need for an environment supportive of low-income conservation programs was rated as relatively unimportant as was the need for detailed weatherization specifications. It appeared that the group felt both these factors would affect project outcomes, but that thorough planning could deal with both. The two least important factors related to the need to have a proven track record for the mechanisms employed in the project. Since DOE's intent was to encourage development of innovative mechanisms, it was encouraging that the group response suggested that innovation did not pose major problems.

Overall, the Q-sort/nominal interacting workshop worked well in this application. The process indicated that the PILIRR participants felt strongly that understanding the weatherization market (including potential contributors and the target audience) was the most important factor in

operating a successful PILIRR project. The group also indicated that early planning was essential and could compensate for other potential difficulties, such as those associated with implementing an innovative resource leveraging approach. Though it would have been desirable to conduct a second round of the process, the first round effectively revealed participant opinions, experiences, and insights.

A.2.2 Group Program Planning Exercise

The final activity of the PILIRR Workshop consisted of a group effort to use experience gained over the past two years to develop a plan for a hypothetical leveraged weatherization program. This exercise was designed 1) to continue a focused discussion of factors that are important in the design and implementation of partnership/resource leveraging weatherization programs; and 2) to emphasize the importance of careful "up front" planning to minimize problems and "roadblocks".

To facilitate group participation and interchange, a "storyboard" approach was used in this exercise. In this technique, the comments and contribution of individual members of a group are preserved on colored index cards, which can then be arranged on a large surface (wall, pegboard, etc.) by topics, chronologically or in any manner that adds structure and comprehensibility to the discussion. While this approach to preserving comments of a group is similar to use of a flipchart or other recording mechanism, it has the advantage of allowing the group and/or facilitator to rearrange items as needed to improve the overall coherence of the record. In addition, the technique makes it possible for all group members to view all comments simultaneously. This tends to stimulate further comments, and helps keep the discussion focused.

The PNL facilitator imposed some initial parameters to the hypothetical program to guide the "planning" process. These included the following:

Type of Program	Local development and control with coordination by and assistance from the state
Program Goal	To expand resources for weatherizing low-income multi-family buildings

Target Audience	Low income renters in multi-family buildings
Leveraging Approach	To encourage owner participation by offering subsidized or guaranteed loans to building owners for weatherization of qualified buildings; in most cases, supplemental funding using traditional federal (weatherization and housing rehabilitation) funds and utility support would be provided as well
Funding Sources	Multi-source (e.g., oil escrow money, WAP, HHS, HUD and utility funding, building owner contributions) funding pool
Delivery Organization	Local agencies (WAP subgrantees, community action or other non-profit agencies)

The group consisted of participants from both state and local agencies. Therefore, the comments reflected the perspectives of both a local agency responsible for developing and implementing the program, and a state agency coordinating and assisting numerous local efforts.

The discussion (and comment cards) were organized under four categories, corresponding with the nominal planning phases that seem to be appropriate for this type of program. The four categories were: 1) Needs, Opportunities and Objectives; 2) Partners and Resources; 3) Implementation; and 4) Thinking Ahead. The comments and discussion generated for each category are discussed below.

Needs, Opportunities and Objectives

There were three sub-headings under this planning phase. The first was Assessment of the Problem, which entailed identifying some of the key reasons to address the problems associated with weatherizing low-income multi-family buildings with a PILIRR-like program. The group identified the following:

- landlord attitudes about building maintenance and energy use
- age and condition of low-income multi-family building stock
- "redlining" practices by lending institutions
- scale of problem (size of low-income population in rental multi-family units).

The second sub-topic was Opportunities and Constraints. This discussion ranged over a number of considerations. The constraints mentioned included:

- changing tax (and lending market) conditions
- (perceived) landlord attitudes about tenants (as people out for a "free ride")
- insufficient control (by the local non-profit agency) over rental practices of building owner
- the need to bring buildings up to code if they receive weatherization (may vary by locale)
- legal issues (liability of local agency if building has code problems)
- the cost of weatherizing large buildings
- difficulties of identifying and communicating with building owners
- difficulties of auditing multi-family buildings
- public (and agency) reluctance to subsidize landlords

Opportunities included:

- availability of utility assistance (due to utility load management goals and/or need to reduce bill collection problems and cutoffs)
- possibility of using contractors and bankers to help recruit buildings (building owners)
- opportunities to combine weatherization with building rehabilitation activities
- untapped local resources (volunteers, local businesses and service organizations, etc.)

The final sub-topic was Initial Program Design. The discussion under this heading was relatively brief, since the parameters that were provided tended to cover most of the points that would be included in a preliminary program design. The topic was included primarily to encourage participants to think about the necessary steps involved in designing an effective program. There were several other topics that were included for this purpose as well (see below).

Partners and Resources

The second main heading deals with the planning to identify, evaluate and obtain commitments for the driving force for resource leveraging programs--the partners and the resources they help to provide. The group showed a good deal more understanding of the preparation and skills needed to establish useful partnerships than was apparent at the onset of the PILIRR program. There was more realism in assessing partnership and resource options, as well as more creativity in identifying sources of non-financial support, reflecting the lessons learned over the past two years.

Three sub-headings were used under this topic: Task Force; Resources; and Partners. The Task Force was included because there was evidence that the use of a broadly-based policy/planning body at the state or local level was often a key to successful coordination of partners and resources. Task forces of varying formality were used at the state level in Kentucky and Washington, and in several local pilot projects as well. These bodies helped to coordinate resources and participation; they often acted as sounding boards for planning issues; and they effectively helped to broaden support for the PILIRR approach to weatherization. The group identified the following organizations to be included on a Task Force for the hypothetical program under consideration:

- Utilities
- Housing Organizations
- Apartment Owner Association
- Financial Institutions
- Building Construction Contractors
- Tenant Representatives
- Legal Aid/Low Income Advocacy Groups

The contribution of the Task Force was also discussed. Experience with the PILIRR advisory groups prompted workshop participants to include the following:

- Planning
- Endorsement and support
- Identifying (and helping to reduce) possible problems or sources of friction among program participants (partners and resource providers)
- Assistance with market assessment and marketing techniques
- Keeping the program focused

Participants with experience with task forces also commented that to use these advisory groups effectively, the lead agency must provide a certain amount of staff support (for preparing materials, organizing meetings, etc.).

The discussion on Resources included the following ideas and comments:

- Utilities will often provide building information for segmenting the "market" (identifying opportunities for building owner participation); referrals; insulation and other materials; audits and marketing assistance
- It may be important to "network" with agencies (state and local) that are responsible for other major federal programs for low income populations (to identify ways to coordinate or share available public resources)
- Marketing support and advertising can be obtained through the local media at no cost (community bulletin boards, public interest programs and public service announcements); universities and colleges with film-making and marketing programs can also be a source of free or low-cost marketing products.
- Both loan principal subsidies and interest rate buy-downs should be considered to encourage building owner participation; the incentive may need to be tailored to specific needs or circumstances (flexibility is a key element)

The potential Partners identified for the hypothetical program included:

- Utilities
- Building Owners
- Civic and church groups
- Construction companies and builder organizations

- Local media
- Social service agencies
- Major business or corporations in community
- Public Housing Authorities

Implementation

The third planning phase deals with the elements of program implementation. The discussion was organized under the sub-headings of Partner Roles, Marketing Strategies, Problem Anticipation and Program Details. The discussion of partners' roles was fairly brief due to time restrictions. There was also general agreement that the roles of the partners are often shaped by the specific local conditions of a program; those details were lacking in this exercise.

Marketing Strategies generated the bulk of the discussion in the time that remained. Because of the nature of the PILIRR approach, marketing (in various forms and manifestations) has been a consistently critical element across all state projects and local pilots. Since the group focused on only one type of leveraging program, targeted toward a specific need (multi-family buildings), the marketing issues and strategies that were discussed during the planning exercise were only a subset of those that were identified for the PILIRR program as a whole. A number of points were brought up; these have been loosely grouped as follows:

Identification of Target Buildings/Building Owners

- Drive-by surveys are an inexpensive way to identify and segment buildings.
- Social service agencies can also be used to identify buildings with concentrations of qualified tenants.
- Utilities will often help to identify buildings with a history of excessive energy use.
- Several participants recommended that the first targets of a leveraged weatherization program for multi-family buildings should be those where success is a realistic possibility. While a local group is gaining experience, structures selected for treatment should be those that a) can be weatherized fairly easily (i.e.,

avoid buildings with major structural defects and rehabilitation needs) and b) will give the program good visibility in the community (e.g., a building with a high concentration of elderly or handicapped) to generate broad community support for the program.

Building Owner Recruitment

Much of the most intensive marketing must be directed toward building owners of targeted buildings. (This may not always be the case, however. For example, the local agencies selected for Washington's pilots had all received inquiries from building owners seeking assistance through the WAP program or utility-sponsored weatherization efforts.) The workshop participants identified the following points to use to convince building owners to participate:

- Keep participation simple (limit forms, procedures etc., to the greatest extent possible).
- Provide some flexibility in choice of conservation measures.
- Emphasize the reduced operating and maintenance costs.
- Emphasize improved tenant relations and increased property value.
- Provide assistance with building code requirements.
- Tailor financing/incentives as needed.
- Negotiate in-kind contributions whenever possible (donation of units for emergency shelter was one popular contribution).
- Focus on benefits to the building owner (see above).
- Expect and provide face-to-face negotiation.

Discussions on Problem Anticipation and Program Details were very limited due to time constraints. The group briefly discussed the need to try to anticipate in the planning effort the types of problems that could be encountered in program implementation. It was suggested that the task force might be able to assist with this part of the planning, since it provides the broadest perspective of the needs, concerns, etc. of the various partners and other participants in the program. Program details pertain to the forms, procedures, and sign-offs needed to operate the program, and budgets and schedules for tracking costs and progress.

Thinking Ahead

The final phase of plan development was briefly discussed. Thinking Ahead refers to the need to set up some type of program evaluation process at the planning stage, to track the need for program modifications, to collect adequate information to determine program effectiveness, and to systematically incorporate important lessons gained in setting up this type of program. Establishing the intent to evaluate, and the means to do it effectively at the planning stage makes it easier to improve a program, and to provide evidence to decision-makers, partners and resource-providers about its value.

A.3 PUBLIC SECTOR MARKETING WHITE PAPER

The following material is an excerpt from a white paper on marketing planning and implementation for public agencies. It was specifically prepared to assist Iowa with its PILIRR marketing plan. A full copy of this paper can be obtained from either of the authors of this report.

A.3.1 Overview of Marketing White Paper

The marketing white paper discusses the requirements of a marketing plan for public programs, with special focus on the PILIRR project of Iowa. It focuses particularly on the marketing activities required to recruit land-lords for the Iowa project.

The discussion constitutes a synthesis of information on public and non-profit organization marketing. It addresses what elements should be in a marketing plan for such organizations, but only touches on implementation of the plan.

Describing a marketing plan for PILIRR projects poses special challenges. Adjusting traditional marketing techniques to serve the marketing needs of public and non-profit organizations is a relatively new activity; the extension of relatively new marketing techniques to PILIRR projects requires that additional adjustments be made.

One unique feature of the PILIRR projects that affects development of appropriate marketing plans is the fact that PILIRR is a demonstration

program. The state and local agencies instituting PILIRR projects are not doing so primarily because of an initiative at the local level--instead, they are participating in a demonstration of a concept initiated and funded by the U.S. DOE. Consequently, many traditional marketing issues are less relevant than they would otherwise be.

Specifically, the implementing organizations do not necessarily view PILIRR as they would a new service that they intend to integrate into their long-term product mix. This fact, of course, does not prevent the organizations from behaving as if PILIRR were like any other new initiative, but they are only committed to the demonstration of their PILIRR mechanism. Possible consequences are: 1) less of an effort devoted to analyzing what opportunities PILIRR offers and what problems it addresses, 2) less concern about how the products from the PILIRR project are positioned in the market, and 3) less concern expressed for the long-term viability of the projects.

The other feature that affects marketing plan development is the fact that PILIRR itself can be looked upon as a marketing program. PILIRR basically consists of the provision of incentives to a consumer to encourage actions that lead to low-income residential retrofit. Though the consumers and incentives differ from one state project to the next, each project has this sort of process at its core. Since incentives are a common form of promotion used in marketing efforts, one could argue that PILIRR is, in one sense, actually a marketing strategy that uses incentives to encourage resource-leveraging partnerships that produce retrofits. (Note that in marketing plans incentives are usually short-term inducements to encourage product purchase rather than long-term elements of the product pricing strategy as they are applied in PILIRR. Taking the view that PILIRR consists of a marketing strategy involving incentives, one could consider the PILIRR project plan as the marketing plan. This perspective, however, is too limiting.

Taking the above perspective fails to recognize that at the state and local level the major product of the PILIRR projects are the means developed and implemented that lead to resource-leveraging partnerships. From the state and local perspective, the product being marketed is the incentives,

arrangements, and mechanisms that lead to participation in the project. From the perspective that PILIRR is a marketing strategy, on the other hand, the product of PILIRR is, instead, the low-income retrofits themselves. Though this distinction is subtle and rather academic, it is important because every marketing plan needs to define the product and the goals and target audiences associated with the product's marketing. From the state perspective, the product consists of the PILIRR elements and the marketing plan should be developed around marketing those elements.

The other perspective is a valid one, nevertheless, but it is more appropriate at the DOE level where PILIRR projects present alternatives to other means for delivering low-income retrofit services. DOE's needs are to assess alternative ways to bring about low-income retrofit and DOE could take the view that the various state PILIRR projects represent marketing plan options that can be compared with other mechanisms for achieving low-income retrofit.

The white paper walks through the steps required in a marketing plan. It addresses in turn 1) the situational analysis, 2) problems and opportunities, 3) marketing goals and objectives, 4) marketing strategy, 5) budget, 6) action plan, and 7) monitoring. Because of the nature of the PILIRR projects, as discussed above, the situational analysis receives less attention than other steps. The marketing strategy constitutes the major component of a plan and receives the most attention here. Items dealing with implementation, such as budget and monitoring, receive limited attention. The discussion in each section is presented first in fairly general terms, followed by specific information based on the Iowa project.

APPENDIX B

OVERVIEW OF METHODOLOGY DEVELOPMENT

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OVERVIEW OF METHODOLOGY DEVELOPMENT

B.1 MAJOR FACTORS INFLUENCING METHODOLOGY

Several major considerations were taken into account during the development of the evaluation methodology. One initial issue we had to address was the context in which the partnership approach was being implemented.

The anticipated partnerships offered an alternative to more traditional weatherization programs that simply rely on state and local administration of direct federal funding. Figure B.1 depicts, based on DOE's perspective, the level of non-federal funding and non-federal responsibility across a spectrum of conservation program leveraging activities. At one extreme, no leveraging occurs, but some responsibility is shared by other participants, as in the traditional federally funded weatherization program. When weatherization programs are spun off, the federal government provides no funding and has no program responsibility. In partnerships, non-federal entities share in both providing resources and taking responsibility for the project. Because they were key ingredients in the partnership recipe, our evaluation had to address both the level of resources provided and responsibility assumed by the partners.

FIGURE B.1. Spectrum of Conservation Program Leveraging

In addition to the nature of partnerships, several other factors played a role in the design of a suitable evaluation methodology. Many were related to the evaluation needs and goals of DOE. Others were dependent on the characteristics of the overall project and research constraints. We conducted a thorough review of the literature to identify applicable methodologies and designed our approach to meet the evaluation needs and constraints.

The major influence on our selection of an appropriate methodology was the needs of the client. We had several discussions with the DOE client to establish the evaluation goal and associated research objectives. Consistent with DOE's evaluation goal, the study needed to emphasize assessing each state's success in developing and implementing processes to establish resource-leveraging and partnership activities. Of lesser importance was assessing the outcomes associated directly with the retrofits accomplished.

To translate the overall goal into operational steps, we established a set of research objectives. These objectives were presented in Chapter 1 and are summarized below:

- develop a thorough understanding of each state's planning process
- describe the process through which the partnerships are implemented
- identify state agency characteristics and organizational factors that affected planning and implementation
- identify state activities that encouraged and sustained the partnerships
- develop an understanding of the advantages, disadvantages, and implications of the leveraging mechanisms utilized

As noted earlier, PNL was also asked to provide limited technical assistance to the state participants as the need arose. This additional role was inconsistent with the classical "scientific" evaluation model in which the evaluator has no involvement in the project being evaluated. The methodological consequence here was that our methodology had to provide for thorough documentation of any interventions so they would be counted as project inputs and their effects tracked.

DOE imposed very few restrictions on how the states implemented their resource-leveraging and partnership activities; consequently, the state approaches differed substantially. As a result, these projects had to be treated as case studies.

Two characteristics of data availability significantly affected methodology development. First, the majority of available project data consisted of qualitative information. Second, no explicit control cases were available with which to compare the state projects.

The resource-leveraging partnership approach to low-income housing retrofit constitutes an innovative departure from conventional federal weatherization practices. The innovative nature of the approach also affected the design of the evaluation. deLeon (1984) has argued that the differing participant objectives critically affect if and how an innovation should be implemented.

The need for reliability, validity, and generalizability of our results also affected methodology development and selection. Kirk and Miller (1988, p. 19) note that "'reliability' is the extent to which a measurement procedure yields the same answer however and whenever it is carried out; 'validity' is the extent to which it gives the correct answer." Because we were analyzing a small number of unique projects and qualitative methods required in this analysis inherently lack the statistical rigor of quantitative methods applied to large samples, we had to build in procedures during data collection, analysis, and interpretation to help insure that findings were replicable and accurate.

B.2 CHARACTERISTICS OF THE EVALUATION METHODOLOGY

The main methodological consequence of the study goal was the necessity to concentrate evaluation activities on characterizing processes rather than measuring outcomes. As a result, the evaluation methodology leaned primarily toward process evaluation, and less toward impact evaluation.

DOE defined the purpose of the evaluation in terms of assessing the success of each of the state projects (DOE 1986). This essentially required determining whether the projects demonstrated the feasibility of the concept.

Evaluations are often categorized based on whether they are formative or summative evaluations (Scriven 1967). Because of the evaluation goal and DOE's needs, this evaluation did not fit precisely into either category. The nature of the evaluation was partly consistent with the formative evaluation orientation because the focus was more on the processes than the outcomes. However, there was no solid intention to use the results to modify or improve the program as in a formative evaluation, nor to reach major decisions about program scope as in a summative evaluation (Patton 1987, p. 44).

In response to DOE's desire to track the projects as they progressed, we conducted routine monitoring from the beginning of and throughout each state project.

Though it contained all three elements, our evaluation methodology fell more toward the exploratory end of the hierarchy described by Yin (1984) than toward the descriptive or explanatory. This was largely a direct result of the evaluation goal articulated by DOE. A second factor also led us to select a more exploratory approach. Maynard-Moody (1983) presented arguments that the method selected to assess effectiveness should reflect the degree of certainty that can be associated with goals and causality associated with evaluated projects. Because the experimental nature of the state projects introduced uncertainties in outcome measures and cause-effect relationships, a more exploratory or revelatory evaluation methodology was suitable.

Given the evaluation's process orientation, we developed a methodology based on the collection and analysis of primarily qualitative data. To evaluate the state projects we relied principally on verbal information about project characteristics and progress, and participant planning and objectives. Quantitative data that were available related to project inputs and resource flows, but provided minimal information about quantifiable outcomes. The lack of control cases prevented an experiment-based evaluation. For comparison purposes, our methodology used the project plan developed by each state at the start of the project as a baseline for tracking each project.

The evaluation methodology we utilized recognized, within study limits, the unique requirements of evaluating an innovative policy. We focused on the decision-makers and the decision-making processes involved where the

innovation was implemented. We explicitly attempted to take into account the objectives of the various participants.

APPENDIX C

LIST OF INTERVIEWEES

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Florida

Mr. Bill Harris, Former Staff, Florida Governor's Energy Office, Tallahassee, Florida

Mr. Hank Erickson, Staff, Florida Governor's Energy Office, Tallahassee, Florida

Ms. Daryl O'Connor, Staff, Florida Governor's Energy Office, Tallahassee, Florida

Mr. Allen Daly, Former Staff, Tallahassee Housing Foundation (THF), Tallahassee, Florida

Mr. Steven Sharp, Executive Director, Tallahassee Housing Foundation, Tallahassee, Florida

Mr. Bob Seaton, Tallahassee Utilities, Tallahassee, Florida

Ms. Claudia Freese, Florida Low-Income Housing Coalition, Tallahassee, Florida

Ms. Michele Hartson, Florida Low-Income Housing Coalition, Tallahassee, Florida

Mr. Ray Smith, Administrator, Florida Department of Community Affairs, Tallahassee, Florida

Mr. Bob Tannenbaum, Greater Miami Neighborhoods, Inc., Miami, Florida

Ms. Carol Bellack, Greater Miami Neighborhoods, Inc., Miami, Florida

Mr. Robert Pollack, Director, Greater Miami Neighborhoods, Inc., Miami, Florida

Mr. Tim Eastling, U.S. Department of Energy, Atlanta Support Office, Atlanta, Georgia

Ms. Sandy Perry, Florida Power and Light, Miami, Florida

Mr. Jerry Joseph, Centro Campesino Farmworker Center, Inc., Miami, Florida

Mr. John Nofziger, Little Haiti Housing Association, Miami, Florida

Iowa

Mr. Owen Heiserman, Former Director, Iowa Community Action Agencies Joint Venture Project, Des Moines, Iowa

Mr. Frank McNiff, Supervisor, Energy Conservation Section, Energy Bureau, Iowa Department of Natural Resources, Des Moines, Iowa

Ms. Judy Sullivan, Hawkeye Area Community Action Program, Cedar Rapids, Iowa

Mr. Jerry Bennett, Division of Community Action Agencies, Iowa Department of Human Rights, Des Moines, Iowa

Kentucky

Ms. Lana Rogers, Director, Division of Conservation, Department of Energy Production and Utilization, Kentucky Energy Cabinet, Lexington, Kentucky

Mr. Don Challman, Division of Conservation, Department of Energy Production and Utilization, Kentucky Energy Cabinet, Lexington, Kentucky

Mr. Pat Bishop, Kentucky Cabinet for Human Resources, Frankfort, Kentucky

Ms. Glenna Reed, Kentucky Cabinet for Human Resources, Frankfort, Kentucky

Mr. John Cole, Kentucky Cabinet for Human Resources, Frankfort, Kentucky

Ms. Beccy Prather, Kentucky Housing Corporation, Frankfort, Kentucky

Mr. Butch Quire, Kentucky Association of Community Action Agencies, Frankfort, Kentucky

Mr. Donald Mossman, United Way of Kentucky, Lexington, Kentucky

Mr. Richard Karlen, Louisville Gas and Electric Company, Louisville, Kentucky

Mr. Jack Rivel, Federation of Appalachian Housing Enterprises, Lexington, Kentucky

Mr. Terry Carter, Bowling Green Municipal Utilities, Bowling Green, Kentucky

Oklahoma

Mr. Paul Cookerly, Division of Community Affairs and Development, Oklahoma Department of Commerce, Oklahoma City, Oklahoma

Ms. Alice Johnson, Division of Community Affairs and Development, Oklahoma Department of Commerce, Oklahoma City, Oklahoma

Mr. Gary Miller, Division of Community Affairs and Development, Oklahoma Department of Commerce, Oklahoma City, Oklahoma

Mr. Sherwood Washington, Director, Division of Community Affairs and Development, Oklahoma Department of Commerce, Oklahoma City, Oklahoma

Ms. Patty Glover, Oklahoma Association of Electric Cooperatives, Oklahoma City, Oklahoma

Mr. John Harper, U.S. Department of Energy, Dallas Support Office, Dallas, Texas

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APPENDIX D

DETAILED INFORMATION ON SELECTED COMMUNITY
DEMONSTRATION PROGRAMS:

TALLAHASSEE HOUSING FOUNDATION: COMMUNITY-BASED WEATHERIZATION

SPOKANE NEIGHBORHOOD CENTERS MULTIFAMILY CONSERVATION PROGRAM

APPENDIX D

This appendix contains more detailed information about two of the local demonstrations that were conducted for the PILIRR program, in Spokane, Washington, and in Tallahassee, Florida. Materials were developed by the local agencies that participated in the demonstration which may be of value to other community-based groups interested in partnership development and resource leveraging to accomplish low-income weatherization.

D.1 TALLAHASSEE HOUSING FOUNDATION: COMMUNITY-BASED WEATHERIZATION

At the close of its demonstration project, the Tallahassee Housing Foundation prepared a "how-to" manual describing its volunteer-based efforts to weatherized the homes of low-income clients. The various sections in this manual have been highlighted in this appendix. Readers interested in obtaining the manual itself should contact the Tallahassee Housing Foundation, P.O. Box 10022, Tallahassee, Florida 32302.

Public Relations: Getting the Word Out

This section provides insights on the marketing of a community-based weatherization program, using various media resources such as newspapers, radio and television, newsletters, presentations, etc.

Weatherization Repairs

The efficient management of resources needed to complete weatherizations and related repairs is discussed in this section. The manual covers inspection of homes, selection of homes to treat, repair techniques, and safeguarding the weatherization improvements.

Volunteer Recruitment and Coordination

This section discusses the methods THF has found useful to attract volunteers to perform the repair and weatherization work and sound methods for coordination the work of amateurs. Topics including recruitment, recognition, liability, coordination and use and misuse of volunteers are covered.

Resource Development

In addition to volunteers, this type of approach requires the acquisition of repair materials using community resources. This section covers material sources, collection and storage of materials, tools, and fund raising.

Repair Strategies

This section discusses various strategies to complete the weatherization work, covering neighborhood incentive grants, self-help, adopt-a-house, and community repair day. Any of these approaches were used by THF at various times during their PILIRR demonstration project.

How to Start a Nonprofit Organization

This is a very useful section in which THF shares its experiences as a community-developed nonprofit organization. Points covered include the role of the housing organization in the community, getting started, optional activities such as lobbying, mobilizing human and financial capital, and joint ventures and leveraging.

The remainder of the manual provides a resource list covering information and technical assistance sources, and an appendix with sample repair processing documents.

D.2 SPOKANE NEIGHBORHOOD CENTERS MULTIFAMILY CONSERVATION PROGRAM

Summary

This paper describes the development and implementation of a program which weatherizes multifamily buildings using a combination of low-income weatherization dollars, private funds from owners, and in some cases Rental Rehabilitation funds. It is written from a local agency perspective and covers problems, solutions, current status and future directions of the program.

Development

The decision by Spokane Neighborhood Centers (SNC) to develop the Multifamily Conservation Program (MFC) resulted from our awareness of the need for maintaining low-income multifamily housing stock. This need is evidenced by the abandonment of these buildings by owners as energy, tax, and maintenance costs rise, decreasing or eliminating profitability. Locally, in the last ten years, energy costs have risen 350% for electricity and 44% for gas (1). The tax reform act of 1986 eliminated most of the incentives that made these properties attractive to owners as tax shelters.

This housing sector has been neglected in prior energy conservation programs. The number of multifamily units weatherized by low-income programs is far below where it should be in relation to the percentage of low-income housed in these buildings (2). Although SNC had weatherized some large multifamily buildings in the past, the cost and complexity of these projects minimized our ability to serve this sector adequately.

As SNC became aware of innovative financing techniques being attempted elsewhere it became apparent that a program using some type of leveraging could expand resources to the extent that these buildings could be weatherized.

Initially, a shared savings program looked attractive. It would leverage additional funds, minimize owners risk, and allow owners to get their buildings weatherized with no up front capital outlay (3). The original plan was for SNC to provide audits, bid specifications, project management, etc. Owners would reimburse for services and energy conservation measures with money realized through reduced operating costs due to energy savings.

It was during this planning stage that SNC became involved in a pilot project, Partnerships in Low-Income Residential Retrofit (PILIRR). This project was funded by DOE and involved six states and several local agencies within each state. The goal of this project was to research and demonstrate leveraging public and private resources, particularly building owner and utility contributions, to weatherize

low-income multi-family housing. The SNC project under PILLIR was weatherization of a five-story apartment building. SNC accomplished weatherization using \$20,000 from a loan the owner was able to obtain using CDBG funds loaned by his neighborhood steering committee. SNC expended an additional \$80,000, the major portion being DOE PILLIR funds and the remainder DOE/HHS regular weatherization monies.

While involved in weatherizing this building SNC came in close contact with a number of persons and agencies with experience in Multifamily weatherization programs, most notably, George Peterson from the Minneapolis Energy Office, who was hired as a consulting engineer to assist in heating system modifications. As a result of networking facilitated by Mr. Peterson and the PILLIR project, we made some changes in our plans.

The primary change in direction at this time was to move away from shared savings as the financing mechanism and to consider some other form of assistance. It appeared that programs using this approach were facing large administrative costs in tracking energy usage, fuel costs, weather, etc.(4). The cost of this tracking, even if it allowed the firm providing services to make a profit, must come from somewhere. The energy savings would be diminished by this cost, however small it might be.

The options remaining included providing loans, subsidizing loans, or granting a portion of the installation costs (3). Loans or loan subsidies had some of the same problems as shared savings in that administrative costs continue to accrue after the weatherization has been accomplished. Also, SNC had no experience in originating or servicing loans, and we were unsure of the rules regarding use of DOE funds for this purpose. Our decision was to research principal reduction, granting some percentage of the weatherization costs as measures were implemented.

During the PILLIR project SNC was exposed to the latest research in technical answers to weatherizing multifamily buildings, particularly heating system retrofits. Several different organizations had been actively working to determine cost-effective measures one could implement on these types of heating systems (5,6). SNC would need to determine the cost-effectiveness of these new retrofits in our climate.

During this period the Washington State Department of Community Development made available oil overcharge funds. The funds were in a state trust fund, "the Matchmakers Fund" and were available for weatherization to agencies able to generate a 1:1 match. SNC made the decision to apply for \$250,000 to be used in a multifamily program. The program design was to provide a full service weatherization package to owners and grant a portion of the actual installation costs. The grant would be provided with Matchmaker funds. SNC would provide auditing, retrofit assessment, bid specifications, finance packaging, and project management.

At this point SNC made the decision to seek outside expertise in development of the program. The complexities inherent in the financial and technical aspects of this type of program warranted this approach. With this in mind SNC developed an RFP seeking assistance in market and financial analysis, marketing, and technical training.

SNC evaluated the proposals(received) and selected a firm to assist in financial and marketing assistance. The contract signed for marketing and financial assistance asked for the following:

- Task 1) Review regulations and program guidelines.
- 2) Write financial plan
- 3) Assist in drive by survey

In reviewing regulations the following determinations were made:

A) SNC may use Matchmakers funds on buildings with less than 66% of the tenants certified as low-income, provided the subsidy amount is reduced proportionally to the percentage of low income occupants. SNC feels this is of significance to any low-income weatherization program attempting to weatherize multifamily buildings. This allows access to a much larger market.

B) Matchmaker funds may not be used to make loans. These funds are to be expended under DOE rules which do not allow this.

C) The Federal low income tax credit appeared too cumbersome for a program with projects of this size.

Financing options delineated in the financial plan were more limited than anticipated. The hope had been to have well defined option packages for different market segments. This would have included working with the utility and various private lenders to offer financial arrangements tailored to individual projects.

SNC saw the utility as most appropriate for loan origination and servicing. The utility had experience with small loans, had worked extensively with SNC in the past, and was more cognizant of energy conservation issues than private lenders. A partnership with the utility seemed to make most sense and have the greatest chance of success. Unfortunately, at this time the local utility was undergoing reorganization which resulted in a reduction in its ability to take on new projects or programs. The utility decided not to participate in any way in the program.

All but one of the lenders did not want to consider loans smaller than \$20,000. One suggested that we spend the entire amount, \$500,000, on a single project. All of the lenders wanted first mortgages (position) as security. In this regard it was suggested that SNC locate buildings changing hands so that energy conservation measures could be written into the mortgage. Also, several of the lenders surveyed said they would be willing to loan without a first mortgage as security, provided SNC could provide a loan guarantee. In general, the banks would consider these loans commercial requiring expensive origination

costs (appraisals, etc.). Most lenders resell loans to secondary markets. If loans are not conventional they are not saleable, and require a lender to keep an in house portfolio, something banks are hesitant to do. Some banks will make unconventional loans and keep them in-house but consider this a community service. Even in this situation lenders want a loan guarantee-"We want to serve the community but if our risk is too great then we are not serving our shareholders". That lenders would not be interested at all was a possibility we had not considered.

On the positive side, the banks were willing to teach SNC underwriting procedures to the extent of being able to screen potential program participants. Finally, all lenders would consider energy savings in their cash flow estimates.

The drive-by survey proved to be a most enlightening procedure. SNC has completed about 100 surveys and plans on continuing until around 200 are complete. The selection process for buildings to be surveyed is worthy of note. SNC has an energy assistance program which serves greater than 10,000 clients annually. Records of these clients are entered into a database. One of the fields in the database is the number of units in their complex. SNC selected from this database all those clients that lived in complexes with four or more units. These records were then sorted primarily on zip code and secondarily on address. The resulting list was revealing in that buildings showed up as groups of clients that had received assistance. This process selected buildings containing low-income tenants. In fact, the percentage of low-income tenants could be estimated by comparing the number of clients against the number of units.

The drive by survey gave SNC a realistic look at present building stock in terms of age, size, heating fuel, heating system, opportunities for energy conservation improvements, and range in cost for retrofitting. Most jobs looked as if they would be in the \$5,000-\$20,000 range, although there were a few in the \$50,000-\$60,000 range. Some of the jobs would cost less than \$5,000. The relatively small cost for many of the jobs has significant implications for the program since only one lender would consider loans of less than \$20,000. Most buildings seemed to have a person around who was very willing to discuss and show the building to us. These interactions gave SNC a good sketch of how the building performed thermally and often an initial contact with a potential program participant.

The direction we were headed then, at the completion of the market and financing survey, was to take each job separately, and arrange whatever financing was possible. The other, more long term goal, was to try to secure loan guarantee funds. It appeared that lenders would lend on these loans, as a community service, if a guarantee were available.

Current Project Status

Many of the buildings involved in the first phase of the program resulted from contacts made through the drive by survey; SNC also had

been waiting to begin work on several others until procedures were finalized enough to proceed. It was decided to move forward with these buildings, one at a time, with a subsidy level of 33%. This subsidy level seemed high enough to get a favorable market penetration and low enough to allow significant leveraging. SNC has since decided to raise the subsidy to 50% to increase participation.

There is another leveraging option that had been considered and turned out to be, at least for the time being, quite significant. This is combining SNC funds with HUD Rental Rehabilitation and owner funds to accomplish projects.

The Rental Rehabilitation program is administered by another agency in Spokane. It is funded by HUD and passed through the City of Spokane. The program guidelines are as follows:

- 1) Will loan up to 50% of the project costs
- 2) Interest rate is 3% annually
- 3) Payments deferred 10 years or more
- 4) Term ranges from 5 to 20 years

Combining the RR and MFC funds results in a very attractive package for owners. With Rental Rehab paying 50% of the project costs and SNC paying 50% of the energy related costs the owner is left with a minimal expenditure in relation to the total. A typical project of \$20,000, with \$8,000 in energy conservation and related repairs would breakout as follows:

RR funds	\$10,000	3% Loan	50% of total project costs
MFC grant	\$4,000	Grant	50% of energy related costs
Owner	\$6,000	Market rate loan	Balance of project costs

The problems of this partnership have more to do with procedures and regulations than marketability to owners. Problems have included logistics, different priorities, and differences in established procedures as they relate to bid specification, contractor selection, and payment schedules. As the RR program is oriented towards rehab the scope of projects has tended to expand to the point that owners are hesitant to proceed. The original concept of installing energy conservation improvements that would "pay for themselves" is lost in this arrangement.

Presently, SNC is evaluating how RR partnerships can be utilized in the future. It appears that as the time and energy demanded of owners goes up, the participation rate goes down. SNC would like to have this combination reserved as an option for large projects and/or cognizant owners.

At this point SNC has 15 buildings with 271 units in progress. The buildings range in size from a fourplex to a 72 unit complex. SNC is using the SUNDAY software package for simulations and combining this with spreadsheet and word processing programs to produce a report for owners and lenders.

Lessons Learned

SNC went through a learning process when working with the consulting firm. It was our assumption that by working with established professionals in the field we would have some certainty of success. The possibility that we would run into an obstacle so early on in the process was a shock. The realization that the project was not saleable to lenders without significant alterations, ie., a loan guarantee, was discouraging for both SNC and the consultants. Defining tasks is critical to any contractual arrangement and the unknown outcome of the study made this especially difficult.

The other segment of the consulting, that dealing with the drive by survey, was extremely helpful and worthwhile. The reality of going on site to potential buildings was very educational, fun, and a definite reality check. This approach of reviewing the existing stock is highly recommended as a method of getting baseline data on buildings that are potential program participants and marketing the program at the same time.

The lessons learned in dealing with lenders were clearly related to becoming aware of their policies. The limit in what they would consider in terms of loans came as a surprise but now seems reasonable.

In terms of working with another agency SNC has learned how difficult it can be to work with two sets of procedures, different priorities, and twice the number of people normally involved. The learning curve was significant and frustration was felt by all parties. The positive side of this is that weatherization of these buildings can be accomplished with a very reduced investment from the owner.

Future Plans

At this time SNC plans to engage in significant low-cost marketing to increase participation. This will include articles in the Apartment Owners Association newsletter, a PSA in the local newspaper, and more drive-by surveys.

SNC plans to pursue the possibility of a loan guarantee with both the Washington State Housing Trust Fund and appropriate foundations. This will allow realization of the original goal of "one stop shopping", with SNC facilitating the financing of projects.

SNC would like to expand its knowledge of current Multifamily retrofit technologies by purchasing assistance from the firms that responded to the RFP. We would also like to investigate other software for simulations, financial analysis, and reports. Future prospects also include lowering the subsidy amount and charging for the technical assistance SNC provides, once the program has enough of a reputation to permit this.

Ultimately, the goal is to impact the operating expenses of this building sector to the degree that low-income multifamily housing is preserved, affordable, safe, and warm.

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