IDENTIFYING COMMUNITY ENERGY CONSERVATION PROGRAMMING NEEDS WITH QUALITATIVE NEEDS ASSESSMENT APPROACHES

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ABSTRACT

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The purpose of this research was to explore the feasibility of utilizing qualitative needs assessment methods (including key informant interviews and community forums) in identifying the energy conservation programming needs and the problems impeding conservation in a community.

An empirically based category development procedure revealed both program needs and problems to be expressed in terms of the same general concepts: Information, Knowledge, Awareness, and Belief; Planning, Regulation, Coordination, Leadership, and Political Action; Incentives and Costs; Physical Fixes; Lifestyle Changes; and Assistance to the Needy. Results of analyses of category-coded data showed that the dimensions of Information-Awareness and Planning-Regulation were perceived as high priorities in terms of both programs and problems. Incentives and lifestyle changes were more salient as problems than program dimensions, while comments related to physical fixes and assistance were voiced infrequently.

Comparisons between interviews and forums showed that the two methods produced similar prioritizations of program needs and problems. However, a comparison of importance ratings revealed that programs were rated more severely at the forums. This was attributed to the greater confidentiality of the forum rating procedure. In addition, no differences were found between rankings of individual and small group responses.

To Susan - Through thick, thin, and then some.

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For some reason, it is customary to thank those closest to you last in these little ceremonies, and here I follow custom. But you know, Susan, Mom and Dad, and Baba, how much your strength has meant to me during this strenuous period. Thank you.

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CHAPTER I

INTRODUCTION

The central purpose of the present chapter is to assess the feasibility and the likely benefits of utilizing social scientific needs assessment methods in the area of community energy conservation program planning. The initial section of the chapter is devoted to a critical review of present governmental planning efforts. The drawbacks of over-emphasizing centralized energy planning are discussed, and the review results in the identification of two exemplary community energy planning efforts. An analysis of these planning efforts is followed by the identification of several parameters which contributed to successful project planning and implementation. These parameters are shown to be within the purview of the needs assessment approach.

The next section of the chapter focuses on the nature of needs assessment methods and their applicability to the energy conservation planning area. Conceptual and methodological issues related to needs assessment approaches are reviewed, and the relative merits of various methodologies are discussed. This discussion leads to the identification of those needs assessment methods likely to be appropriate to community energy conservation program planning.

The chapter concludes with the construction of a rationale for the present study, and a statement of the specific objectives which guided this research.

The Problem

The Energy Crisis

From the eighteenth century through the first half of the twentieth century, Americans have enjoyed a steady decline in the real cost of energy. This steady decline in real energy costs has resulted in sustained economic growth and a correspondent increase in the standard of living for most citizens (Cook, 1976). The reversal of this real-price decline in the early 1970's coincided with a radical shift in the world-wide distribution patterns of the petroleum industry, as U.S. oil production dropped sharply and foreign suppliers attained much greater control of production rates and prices (Blair, 1977; Schurr, Darmstadter, Perry, Ramsay, & Russel, 1980).

With the capricious price increases and the instability of supplies which resulted from foreign control of oil reserves came the illusion that these phenomena merely reflected the political climate of the day, and that the "energy crisis" was a short-term (albeit unpleasant) situation. In reality, however, the timing and extent of the energy shortfalls of the 1970's had been accurately predicted in the 1950's by several resource economists (Hubbert, 1956; Schumacher,1973). Four observations had formed the basis for these early predictions: (1) the supply of oil and natural gas was finite and nonrenewable; (2) growth in demand for these resources was exponential in nature; (3) this growth would be difficult to halt, since oil and natural gas had become the major energy sources for more developed countries, and were supported by complex, well-entrenched infrastructures; and (4) as the easy-to-obtain resources were depleted, the extraction of oil and natural gas would become more difficult resulting in an exponential decrease in the net

energy return obtained from their use (Bartlett, 1978; Cook, 1976; Hayes, 1979; Hubbert, 1956; Koenig, 1978).

As it became clear during the 1970's that the rise in the real cost of energy was not a temporary phenomenon, consensus among energy analysts shifted. The energy "crisis" came to be perceived as a set of complex, interrelated problems which would beset the nation far into the future. And, it became clear that these problems were all based on the existing dependence of more developed countries on nonrenewable resources controlled by foreign suppliers (Schurr, et al., 1980). From this understanding, a major policy decision logically followed: petroleum and natural gas supplies should be conserved to provide the lead time needed to develop alternative domestic sources of energy (Cook, 1976).

Energy Conservation

A primary determinant of the increasing federal commitment to energy conservation has been the widespread recognition of the enormous energy savings potential offered by focused conservation programming and technologies. A number of energy analysts from the social and physical sciences (Berg, 1973; CONAES, 1978; Hayes, 1976; Ross & Williams, 1977; Schipper & Darmstadter, 1977; Socolow, 1977; Staubaugh & Yergin, 1979; Williams & Ross, 1980) have suggested that the level of energy consumption needed to support modern American life styles could be reduced by as much as 40 to 50%. More importantly, these analysts have argued that such reductions may be accomplished through more effective utilization of existing physical and behavioral technologies, and need not result in reductions in comfort and convenience. Examples of promising "physical fixes" which would increase energy conservation include weatherization of existing buildings, industrial cogeneration, improved

fuel efficiency, and waste recycling (Yergin, 1979). Behavioral technologies which have been demonstrated in field research to encourage conservation include the use of monetary and social incentives and providing specific feedback on residents' energy consumption (Becker, Seligman, Darley, 1979; Shippee, in press; Winnet & Neale, 1979).

However, despite the availability of these technologies, the implementation of conservation technologies at the local, community level has not proceeded smoothly. The optimism which traditionally has accompanied the success of pilot demonstration programs has been tempered by the realization that a number of institutional, political, and social conditions continue to impede their actual implementation. These impediments have included: (1) the popular identification of conservation with undue sacrifice; (2) a traditional reliance on complex, "high technology" solutions, and the consequent lack of attention paid to simple, yet effective conservation technologies; (3) the lack of an organized constituency for conservation, to compete with advocates of other energy sources; (4) the fact that conservation in general requires a large number of decisions by a large number of individuals; and (5) the view that there is a strong, direct, simple causal relationship between the absolute level of energy consumed on the one hand, and GNP, jobs, and quality of life on the other (Yergin, 1979).

In addition to these impediments to energy program implementation, recent policy-analytic research (e.g., Berman & McLoughlin, 1978; Pressman & Wildavsky, 1973; Tornatzky, Roitman, et al., 1979; Williams & Elmore, 1976) has identified a second set of barriers to implementation per se. This research has thoroughly refuted the traditional assumption that the centralized issuance of a policy directive or the centralized

development of a technology proceeds automatically to local level implementation. Such failure is frequently the result of the insensitivity of centrally located decision-makers to specific local conditions. With regard to the energy policy area, centralized energy planning (i.e., at the federal or state level) has frequently suffered from a lack of awareness of local delivery systems, interorganizational networks, personnel resources, support groups, and the like, which could facilitate program implementation.

However, policy related impediments extend beyond the mere failure to implement centrally developed technologies at local levels. Overemphasis on centralized planning has frequently resulted in the disregard of local needs and conditions in the conceptualization and design of programs. The outcomes of centralized planning have thus often reflected a poor fit between centrally planned programs and the real needs of communities (Clark, 1975; Dwyer, 1979; Lovins, 1977; Ridgeway, 1979; Schumacher, 1973). In short, over-reliance on centralized program conception and development not only creates implementation problems, but may result in programs which are not feasible or appropriate for local utilization.

The increasingly obvious disadvantage of relying on federal or state governments to produce a coherent energy policy which strongly supports conservation, coupled with the obvious advantages of conservation planning and action at the local level, have recently combined to spawn several local and regional energy planning efforts (Bronfman, et al., 1980; Dwyer, 1979; Ridgeway, 1979; Spangler, 1979). However, although decentralized energy planning is beginning to attain political

legitimacy, community energy planning methods are still in the beginning stages of development.

Energy Conservation Planning at the Community Level

Before the OAPEC oil embargo of 1973-74, energy planning was the exclusive province of energy supply companies, automobile manufacturers, mining and heavy industry operations, appliance manufacturers and the federal agencies which regulate these industries (Cook, 1976; Dwyer, Note 4; Yergin, 1979). In short, energy was not considered to be a major factor in the planning efforts of local level governments, industries, and human services. Steeply rising energy costs have now forced public and private sector organizations to consider energy as an important factor in planning.

Due to the recency of these developments, few examples of successful local energy planning efforts have emerged in the literature. Two communities which have received significant attention are Davis, California and Seattle, Washington. A brief review of the conservation strategies, planning processes, and methods of policy implementation which have been successful in these communities serves to highlight some of the issues central to local energy planning.

Davis, California. The foundation for conservation activity in Davis is a series of codes, ordinances, and enabling documents enacted by the City Council. These include provisions for: (1) centralized planning of housing development, according to environmental impact, economic mix, and other progressive criteria; housing needs are systematically assessed by means of an annual survey; (2) tough energy conservation codes for buildings developed by local researchers specifically for local conditions; (3) energy conscious land-use and transportation planning,

covering such areas as street width, lot sizes, planting of foliage, and bus and bicycle transportation; (4) requiring source separation of waste materials to facilitate recycling; and (5) revival of formerly popular energy efficient practices such as in-home cottage industry and farmers' markets.

In sum, the City Council has provided a solid foundation for energy conservation through the support of community planning efforts and through the enactment of ordinances suited to local conditions. It should also be noted that this legislative activity was accompanied by careful research, citizen input in decision-making, citizen education, and skillful political interaction by council members with local groups affected by ordinances, such as builders and land developers.

Seattle, Washington. The development of energy conservation planning in Seattle was largely a result of the failure of the city owned utility to prepare an environmental impact statement regarding the proposed expansion of generating capacity. This failure enabled a citizen's committee, composed of representatives from various segments of the community, to receive a mandate from the city government to conduct such an impact analysis. The result of this effort was a high quality research product, legitimized by broad representation on the citizen's committee, and by official mandate. Consequently, a solid political foundation was laid for program development and the research led to a comprehensive energy plan with numerous provisions for conservation.

Since this planning document developed from an impact analysis involving the municipal utility, the role of the utility became central to the plan. For example, the utility was required to develop and use renewable resources, to conduct ongoing environmental assessments, and

to provide such services as home energy checks and home weatherization financing. Other elements of Seattle's comprehensive plan included provisions for establishing a municipal energy office to provide consumer education and technical consultation, the development of energy conservation standards for structure related codes, and the requirement of disclosure of previous energy use figures to prospective buyers or renters of residential units.

Theoretical Planning Parameters for Successful Community Energy Planning

As noted earlier, few reports of community energy planning efforts are currently available, and almost no empirical research evaluating these efforts has been reported. Consequently, it cannot be claimed that any particular set of planning parameters are necessary and sufficient for successful local program development and implementation. Rather, at the present stage in the development of energy conservation program planning, a number of reasonable hypotheses exist, and each deserves research attention. Therefore, the following set of parameters which were rationally derived from the Davis and Seattle case studies should be viewed as a tentative set of planning guidelines as opposed to a set of empirically validated planning principles.

With this cautionary note in mind, the tentative parameters are the following:

(1) To be successful, community energy conservation program planning efforts should identify those organizations likely to influence, and be affected by, conservation programming. This identification should take place early in the planning process, and should include relevant organizations in areas such as building, housing, transportation, land use and development, utilities and utility regulation, energy related product

manufacture and supply, energy product regulation, energy related research, education, human services, and citizen action.

(2) Attempts should be made to channel input from these organizations into program planning. Involvement of these organizations in planning is likely to enhance program legitimization. Once involved, these organizations are likely to lend their support to programming efforts, thus increasing the likelihood of high levels of acceptance and utilization.

(3) The identification of community organizations which might be involved in program planning and implementation should be supplemented by an empirical data gathering effort. This effort would attempt to obtain and interpret perceptions of needed energy programs and services from knowledgeable community sources. These data would then be utilized to shape community programs to fit community needs.

(4) Such information might include the following:

(a) energy related demographic data, such as land use patterns, housing starts, etc.;

(b) reports concerning existing attempts to deal with energy problems, such as weatherization services, energy audit programs, energy "hotlines," etc.;

(c) information concerning the specific barriers to conservation which currently exist in the community;

(d) ideas from knowledgeable residents concerning the design and implementation of specific programs.

Formal data gathering procedures designed to obtain this type of information have been developed by social scientists working in human service fields such as mental health, public health, education, and

child development. These methods have generally been referred to as needs assessment methods, and a substantial literature devoted to these methods has appeared in recent years. The sections that follow will review the needs assessment literature, and will focus primarily on the applicability of a general needs assessment approach and particular needs assessment methodologies to community energy conservation program planning. As such, the review will be selective rather than comprehensive. Issues relevant to practical applications will receive in-depth attention, at the expense of a general review of the needs assessment area.

Needs Assessments

Needs assessments have attained widespread legitimacy as ideal methods for "tapping the wisdom of the populace" in program planning (Burke, 1979), and are perceived by many to be the logical first step in planning (Kimmel, 1977). This characterization of needs assessments as rational means for channeling citizen input into the programming process seems relatively straightforward. However, a multitude of conceptual and methodological issues bely this apparent simplicity. These issues will be discussed in the following sections. Prominent conceptualizations of the needs assessment approach will first be reviewed and a second section will be devoted to needs assessment methodologies.

Conceptual Issues

Needs assessments have been discussed according to various conceptual frameworks, each emphasizing different aspects of the assessment process.

Blum (1974) defined needs assessment in terms of (1) the application of a measuring tool or assortment of tools to a defined social area; and (2) the application of judgement to assess the significance of the

information gathered in order to determine priorities for program planning. Warheit, Bell, and Schwab (1977) extended this definition, emphasizing that needs assessment tools should be directed not only towards identifying current needs, but also towards the assessment of current service utilization patterns. These authors also shared a perspective advanced earlier by Siegel, Attkisson, and Cohn (1974) which conceived of a needs assessment as one component of a larger research and planning process. Other characteristics of needs assessment jointly recognized by Warheit, et al. and Seigel, et al. included reports concerning the structure, functioning, and goals of the sponsoring agencies, sociodemographic profiles of the community, and evaluations of existing service programs in terms of outcomes and community impacts.

The needs assessment manuals prepared by Warheit, et al. (1977) and Siegel, et al. (1974) have also jointly advocated the use of multiple methods in the conduct of needs assessment. Among the methods discussed by these authors were interviews with key informants, community forums, surveys, and the use of social indicators.

This multi-method orientation was echoed by Baumheier and Hellar (1974), who noted that:

> A need is a multifaceted, multidimensional concept, which includes problems, the availability of resources, the efficiency, accessibility, and continuity of the service delivery system, and so on. None of the data sources tapped through any of the various research techniques alone can provide a truly valid indicator of need. (p. 15)

In addition to shared perception concerning the advantages of a multi-method approach, consensus also exists concerning the superiority

of "problem-focused" methods as opposed to general "needs-enumeration" surveys. For example, after surveying thirty needs assessment projects, and conducting site visits at six additional projects, Baumheier, et al. (1974) concluded that "the most effective needs assessment efforts have provided information about the etiology of specific problems and the relationships among problems." (p. 67) A similar conclusion was reached by Kimmel (1977) following a comparison of five state-wide manpower needs assessment projects. Kimmel found that informal, "open-ended" methods addressed directly to specific problems faced by clients were more likely to produce information which was subsequently used by decision-makers, when compared to more formal survey methods which produced lengthy needs listings. To further illustrate the validity of this perspective, Shapek (1975) reviewed a needs-enumeration survey of U.S. mayors and councilmen and traced the interrelationships among needs. Shapek found that a problem-focused approach would have obtained the same information as a formal survey, but the former approach resulted in more usable information.

One of the major neglected areas in the conceptualizations cited above is the problem of operationally defining "need" for the purpose of specific needs assessment projects. This topic was the focus of a paper by Nguyen, Attkisson, and Bottino (1976). These authors observed that need is a relative concept, which has meaning only in terms of the met or unmet needs of a specific, functioning system or systems. They proceeded to define "unmet need" as the condition which exists when "a problem in living or an undesirable social process is recognized, for which a satisfactory solution requires a major mobilization of additional resources and/or a major reallocation of existing resources." (p. 34)

These authors have also concurred with a perspective advanced by Warheit, et al. and Siegel, et al., which advocates convergent analyses. Such analyses would integrate the various findings produced by a recommended multi-method assessment strategy.

In sum, the various conceptual discussions of needs assessment share considerable similarities. Most authors concur that multi-method research designs are advisable, and that both the measurement and interpretation aspects of needs assessments are crucial. There is also considerable agreement that need is a relative concept which must be related to specific, functioning systems (i.e., communities and their resources). Finally, there is consensus that needs assessments are more likely to produce interpretable and useful data when they are focused on specific problem areas.

Needs Assessment Methods

Along with the literature devoted to conceptual discussions of needs assessments, significant attention has also been paid to assessment methodologies. These methodologies have been classified according to a host of different conceptual schemes (Alchin, 1977; Blakely, 1979; Kelly, 1979; Kimmel, 1977; Seigel, et al., 1974; Warheit, et al., 1977). The present review will employ a typology which is specifically designed to determine the appropriateness of utilizing various needs assessment methods in community energy planning contexts.

Qualitative and quantitative needs assessment methods. Needs assessment methods can be conceptualized as being either qualitative or quantitative. In general, two factors distinguish qualitative needs assessment methodologies from quantitative methodologies. The first of these is the impressionistic quality of the data obtained by the former.

Qualitative assessment methods seek to obtain detailed descriptions of community needs, while quantitative methodologies seek to obtain data which is in numerical form.

The second dimension on which these methods differ concerns the degree to which response structures are predetermined. Qualitative methods obtain data which is relatively unstructured by preconceived categories. In short, they depend on the subject of study to shape an interpretive framework. In Lofland's words, "in order to capture participants in their own terms, one must learn their categories for rendering explicable and coherent the flux of raw reality. That, indeed, is the first principle of qualitative analysis." (p. 7)

In order to accomplish this "capturing of participants in their own terms," qualitative methods often employ detailed descriptions and direct quotations which create a meaningful context for the data. However, qualitative methodologies do not preclude the application of quantitative techniques as an aid to data interpretation. That is, the distinguishing feature between the methods is the character of the data gathering methods (i.e., structured v. unstructured) and not the presence or absence of quantitative interpretive analyses performed after data is collected. Prominent examples of qualitative methods include open-ended interviews, case studies, public hearings, community forums, and secondary analyses of existing reports (e.g., sociodemographic analyses, community resource analyses).

Unlike qualitative methods, quantitative methods rely explicitly upon the use of instruments that provide standardized response frameworks. These instruments utilize predetermined response categories which are employed to limit data to certain preset response or analytic categories.

In general, these methods are based on conceptualizations which are relatively structured, and which are not amenable to modification after the data is collected. (For extensive discussions of the distinctions between the two methodologies, see Patton, 1980 and Cook & Reichardt, 1979.) Examples of quantitative methods frequently employed in needs assessments include surveys which utilize structured formats, incidence-prevalence research, collection of service utilization data, and epidemilogical research (Warheit, et al., 1977).

With regard to these two methodological approaches (qualitative and quantitative), the structured sample survey method cogently illustrates the strengths and weaknesses of the quantitative approach, while the open-ended interview illustrates the advantages and disadvantages of qualitative methodologies. In the following sections, these two methods will be used as prototypes to explore the relative advantages and disadvantages of quantitative and qualitative needs assessment approaches in community energy planning contexts.

Needs assessment surveys. Needs assessment surveys have been employed to collect information in a variety of milieus, such as mental health (Schwab, Bell, Warheit, & Schwab, 1978), rehabilitation services (Cochran, 1979), social welfare (Collins & Lukens, 1973), general human services (Gundersdorf, 1975), and other human service areas, including services to the elderly (RMC Research Corporation, 1974), rural services (Denver University, 1973) and child development (Idaho Office of Child Development, 1974).

Common survey methods employed in needs assessments are mailed questionnaires, telephone interviews, and person-to-person interviews. Surveys are generally conducted using probability sampling techniques

in order to maximize the generalizability of results. And, they utilize for the most part structured ("closed response") formats.

To fulfill probability sampling requirements, relatively large sample sizes are required (Baumheier & Hellar, 1974). And, in order to meet acceptable standards for reliability and validity, sophisticated procedures including instrument pre-testing, item analyses, and collection of additional data for cross-validation often are included in the needs assessment procedures. For these two reasons, the survey approach is relatively expensive as an assessment method. Typical expenses include those allocated for interview training, data processing, mailings, and telephone follow-ups.

Although surveys are commonly viewed as providing the most scientifically valid and reliable information regarding the needs and service utilization patterns of individuals (Warheit, et al., 1977), their use is likely to be inappropriate in the early stages of research and planning (Delbecq, 1976). This is largely due to the relative rigidity of the sample survey methodology. Documenting this weakness, Kimmel (1977) noted that in a large scale needs assessment of health and rehabilitation services, almost 50% of the problem areas most frequently mentioned by respondents were not addressed in the fixed alternative instrument items. However, these observations emerged in response to open-ended questions. Because of the expense of processing large scale surveys, and the relatively greater weight attached to the data obtained in the fixed alternative items by the researchers, the information resulting from the open-ended items were frequently not interpreted and were not adequately utilized.

Open-ended interviews. Representative of qualitative methodologies are various open-ended interviewing procedures. Specifically, these methods include unstructured and semi-structured interviews (Patton, 1980). In the former, no preset format is used to structure the interaction between interviewer and respondent. For the latter, the same set of open-ended questions is used for all respondents to attain a measure of comparability between their responses, and thus a certain amount of predetermined structure is present. However, the interviewer is not limited to predetermined "probe" questions as in more highly structured interview formats.

In unstructured and semi-structured interviews, detailed, in-depth and impressionistic material is obtained. The interviewer may explore interesting hypotheses with the respondent as they occur naturally during the conversation. Another asset of the open-ended interview procedure is that the investigator can often obtain immediate feedback concerning the potential validity of hypotheses.

While the unstructured nature of the open-ended interview method is its major strength, it also contributes to its two major weaknesses. When using open-ended interview methods, the biases of the scientist may easily become inseparable from the data, unless precautions are taken. (Such precautions might include the coding of responses by several judges who are tested periodically for inter-coder reliability, the use of tape recorders to obtain complete accounts of conversations, etc.) Secondly, the rich data obtained by the use of in-depth interviewing are more difficult to analyze quantitatively, when compared to results obtained by prestructured methods.

Implications for community energy needs assessment. In summary, the above sections have attempted to identify the advantages and disadvantages of qualitative and quantitative needs assessment methods as they might emerge in community energy conservation planning contexts. The qualitative approach, as illustrated by the open-ended interview, attempts to obtain impressionistic data which can later be structured during analysis. Quantitative methods, as illustrated by the structured survey, are based on predetermined conceptualizations and emphasize the collection of data which is in numerical form. Categories which are used to structure responses on quantitative instruments are not amenable to modification after data collection.

Reviewing the relative merits of each approach, it can be cogently argued that each methodology has its place in an overall needs assessment project. For example, it was suggested that qualitative methods are better suited to early stages of research, due to their capacity to minimize data loss. That is, qualitative methods permit the researcher to develop an adequate conceptualization of the problem area prior to the conduct of a relatively expensive structured survey. Once such a framework has been developed, quantitative methods may then be applied to obtain more reliable and valid data.

In view of the relative recency of community energy planning efforts, it would seem appropriate to focus attention on those qualitative needs assessment approaches best suited to early stage, innovative planning. The remainder of this section is, therefore, devoted to an in-depth discussion of four often used qualitative needs assessment methodologies. The first two methods are especially suited to eliciting perceptions of community residents concerning specific

problems, and obtaining their suggestions for programs to alleviate those problems. These methods are extensions of the general open-ended interview approach, and are commonly referred to as the key informant interview and the structured community forum. The two additional qualitative methods have been frequently employed in needs assessments to provide an in-depth understanding of the community context in which programming takes place. These methods are referred to in the literature as secondary analyses of demographic data, and analyses of existing programs and services.

Key informant interviews and community forums. These two methods have been widely used in the needs assessment field during the early stages of problem conceptualization (for example, see Buhl, Warheit, & Bell, 1978; Baumheier & Hellar, 1974).

In the key informant approach, individuals who are likely to be familiar with the needs of the community relative to a specific problem area are interviewed. To obtain the key informant sample, the researcher reads local newspapers, attends meetings, examines existing community studies, and uses various other informal information gathering strategies to identify those organizations which have influence in the problem area, and which are most affected by the problem. The researcher then arranges to interview key individuals in these organizations (Alchin & Decharin, 1979).

Although the key informant interview may be highly structured (Warheit, et al., 1977), relatively unstructured formats are more appropriate. Since the sampling method is "purposeful" rather than random, generalizability is limited, and, therefore, the advantages of highly structured formats are negated. At the same time, the sample is

intended to contain individuals with a great deal of experience and understanding of the problem, and open-ended questions are most suitable for such a sample.

In the community forum approach, individuals are brought together to publicly discuss the problem area. Depending on the objectives of the forum, participants might include client groups, service staff, agency directors, etc. If the primary purposes of the forum are to legitimize a research and planning effort in the community and to enhance program participation, large, open to the public meetings have been recommended (Siegel, et al., 1974). If, however, the main objective is to obtain a better understanding of the problem area, a smaller key informant sample has been advocated (Delbecq, 1976). This sample should include representatives from community organizations with influence in the problem area of concern. Forum discussions are then more likely to be substantive and problem focused, especially if the sessions are structured to enhance this focus. And, if such a key informant sample is used, the forum may also serve to increase communication among community groups with similar interests, and to aid in the identification of individuals likely to figure in later stage program development and implementation (Broskowski, 1976; Warheit, et al., 1977).

While several methods are available in the literature for structuring forums, one of the most prominent organizational strategies is the Nominal Group Technique, or NGT (Delbecq, Van de Ven, & Gustafson, 1975). This method was designed to increase the capability of a group to focus on the generation and prioritization of ideas, and as such is ideally suited for use in needs assessment community forums (Delbecq, 1976; Siegel, et al., 1974; Warheit, et al., 1977).

With this method, participants first generate independent responses to an open-ended question posed by the session leader. Participants are then divided into small groups. During the small group sessions, their ideas are presented, and recorded by group facilitators. These ideas are then clarified by the small group members, followed by the rating or ranking of each idea by each participant.

NGT thus combines the advantages of focused concentration (provided by the independent task) with the sharing of knowledge and experience, increased capacity for synthesis of ideas, and enhanced motivation provided by the small group activities. In short, the method is designed to produce the maximum amount of high quality data with the least amount of interpersonal conflict, when contrasted with other group techniques. There is empirical evidence to support this contention. In a recent experimental comparison, NGT was shown to be superior to more traditional individual and group brainstorming approaches, in terms of number and quality of ideas generated and in terms of participant satisfaction (Delbecq, et al., 1975).

In sum, it can be cogently argued that interviews with key informants, and community forums which utilize the structure of the NGT techniques, are admirably suited to the early stages of a needs assessment. They are relatively quick, inexpensive approaches for obtaining the perceptions of respondents concerning such issues as the nature of a problem area, obstacles to problem solution, programs which would alleviate current problems, the feasibility of such programs, and the likelihood of program acceptance in the community. In addition, community forums have the dual advantages of increasing communication between parties interested in similar issues, and aiding in the

identification of individuals and community organizations likely to be helpful in subsequent program development and implementation.

However, these methods are not without their disadvantages. As noted above, unstructured and semi-structured interviews are susceptible to the biases of the interviewer, and produce data which is difficult to quantify. With specific regard to community forums, Warheit, et al. (1977) list the following as disadvantages: (1) the difficulty of obtaining a broad cross section of knowlegeable citizens to participate; (2) the possibility that the meeting may heighten the expectations of those in the community in ways that cannot be met; (3) the likelihood that the session will deteriorate into a generalized grievance session; (4) the difficulty of analyzing the data systematically; and (5) the lack of any guarantee that the input received is accurate or representative of all groups in the community.

Although this appraisal has some validity, it should be noted that the first three disadvantages listed are relatively minor. Careful and well planned efforts by researchers can produce broad based samples for both forums and interviews, and reduce the likelihood of unrealistic expectations being generated. Furthermore, the Nominal Group Technique described above has been shown to be effective in preventing the degeneration of community forums into grievance sessions (Delbecq, 1976). The fourth and fifth disadvantages listed above may present greater challenges to researchers. However, it is possible to design procedures to minimize these problems, with regard to both forums and interviews. For example, it is feasible to utilize category coding systems to quantify the data obtained during NGT sessions or key informant interviews. And, a carefully conceived sampling plan can enhance the

generalizability of the data obtained via the forum and interview methods.

In sum, for the early stages of a needs assessment project, key informant interviews and community forums are likely to facilitate extensive idea generation and the development of a problem area conceptualization appropriate to the early stages of research. If well planned, these techniques will result in a conceptual framework which can later serve as the foundation for more focused and rigorous quantitative methods.

Secondary analyses of demographic and sociodemographic data. A major impetus to the legitimization and widespread use of needs assessments for planning purposes was the legislation providing for the establishment of community mental health centers (CMHC's) and the requirements of such legislation that community "needs" be documented and related to potential catchment areas (Kamis, 1979; Warheit, et al., 1977; Federal Register, July 18, 1980). The lobbying activity which led to the CMHC legislation represented a fundamental shift in the beliefs of mental health planners. Previously, it has been commonly believed that the causes of mental illness resided in the individual. As a result of a number of studies conducted in the 1950's and 1960's (Hollingshead & Redlich, 1958; Srole, et al., 1962) many administrators have recently shifted to the orientation that various social and environmental factors (such as income, employment levels, population density, and environmental pollution) are likely causes of mental health problems. Furthermore, it is now accepted that deficiencies in these areas are legitimate community mental health needs requiring attention (Kamis, 1979). As a parallel development, there have been increased efforts to

develop and refine demographic and sociodemographic indicators which measure these factors (Bloom, 1976). Such measures have also attained widespread usage in needs assessments beyond the mental health area. Fields such as public safety, education, recreation, and other service areas (Cochran, 1979) commonly utilize social indicators for program planning purposes. Depending on the objectives of the needs assessment, they may play a major or a minor role in attempts to describe and understand a problem area.

The relationships between energy consumption and demographic variables such as socio-economic status, education, occupation, and age (Olson, 1976), type of housing (Gladhardt, et al., 1976), number of children in the household (Ridgeway, 1979), and land use and transportation patterns (Kaufman & Koenig, 1979; Ridgeway, 1979) have been extensively documented in a number of different community settings. Given these findings, it would seem essential for preliminary needs assessment efforts in the energy conservation planning area to include some secondary analyses of demographic variables characteristic of the community under examination. Furthermore, such analyses seem especially suited to the energy area. Energy relevant demographic data are usually intended for other planning purposes and, as a result, it has often been difficult to draw conclusions for energy policy from existing analyses of these data (Dwyer, 1979).

In short, secondary analyses in this area would attempt to identify likely energy service needs for particular geographic areas, analagous to "catchment areas" in the community mental health field. They would also be used to describe the community context for program needs identified through other qualitative assessment methods.

Analyses of existing programs and services. In order to present a comprehensive picture of community needs in a particular problem area, authors in the assessment area have recommended the analysis of data which summarize the status of existing services. Variables such as extent of service utilization, range of services provided, accessibility of services, financial charges, and extent of inter-agency collaboration (Siegel, et al., 1974) are recommended for study. The primary purpose of such an effort is to ascertain the degree to which certain programming needs may be already met by existing services. Siegel notes that a useful product of these analyses is the preparation of a directory to local programs and services. This directory may then be distributed in the community to increase awareness of services and their subsequent utilization.

Criticisms of the Needs Assessment Approach

Thus far, conceptual and methodological issues related to needs assessments have been reviewed in order to determine appropriate assessment methodologies for the energy conservation area. However, a fundamental issue has yet to be addressed: that is, what is the worth of the needs assessment approach per se?

Although we have thus far reviewed assessment issues as discussed by their proponents, it should be realized that this field is hardly free from controversy. In order to properly evaluate needs assessment as a tool in community energy planning, recent criticisms of the assessment approach must be addressed.

In a recent federally sponsored study, Kimmel (1977) reviewed the major critiques in the literature. Among the criticisms summarized by Kimmel were the following: (1) the literature devoted to needs

assessment constitutes a "semantic jungle," definitions are vague and/or contradictory, and discussions are confused; (2) there is no single or preferred approach to needs assessment, and each method has its flaws; (3) no systematic procedure exists for synthesizing the results obtained by various methods; and finally, (4) few assessment methods involve causal analyses; assessments would be better termed "needs descriptions."

Although these criticisms led Kimmel to conclude that the case for needs assessments was not encouraging, a more in-depth analysis of these problems does not result in the identification of any insurmountable limitations of needs assessment methods (Kamis, 1979). Rather, these criticisms point to several areas requiring additional attention. For example, the improvement of methods for synthesizing the results of assessments, and the application of causal analyses to assessment data are two procedures which would ameliorate two major problems characterizing previous needs assessment efforts.

However, an additional criticism is potentially more serious. According to Kimmel:

> Needs assessment is characterized by a look away from existing programs and away from an agency's goal, outward towards the community . . . . This preoccupation keeps the literature and the practice of needs assessment distracted from the operations and requirements of real public choice processes and from the economic, political, and bureaucratic constraints under which all program planning, budgeting, and policy-making occur. (p. 22)

And,

> Contrary to the assumptions of needs assessors there are no tidy and orderly sequences in which decision makers first assess need, then inventory resources, then identify gaps and then choose . . . . Most decision making takes the form of trying to find actions which are politically feasible through marginal changes in the existing pattern of resources. (p. 55)

In sum, Kimmel has argued that needs assessments are ill-suited to utilization, due to their incongruence with program planning requirements and budgetary constraints. Of course, it might be argued that one source of this incongruence is the inexperience of social scientists unused to the policy milieu, an inexperience which is fast being remedied (Kamis, 1979; Murrel, 1976, 1977, & 1980; Neuber, 1980; Patton, 1978). However, there is a more troubling message implicit in this criticism. Underlying this argument is the assumption that existing program planning processes adequately address citizen's needs. Increasing citizen input upsets the "balance of interests," so the argument goes, and creates confusion. Hence, planning is best left to the experts.

However, this assumption may well be counterproductive to effective planning. As noted by Baumheier and Hellar (1974) and by Burke (1979), "expert" participants in community planning processes enter into decision making as representatives of constituencies with certain goals or hidden agendas of their own. Therefore, "a major contribution of needs assessment to the resource allocation process is to juxtapose an open, public agenda against the hidden or specialized agendas of the decision makers" (Baumheier & Hellar, 1974, p. 3).

Supporting this argument from the perspective of systems theory, Broskowski (1976) noted that all systems tend towards stability and resist change. And, they tend to monitor only those sectors that are likely to require modification, or are most amenable to modification. Thus, in the short run, established planning systems tend to suppress diversity because homogeneity can be more efficiently managed. However, in the long run, homogenization and specialization can prove maladaptive

for planning systems. In short, needs assessments are of great value precisely because they supply diverse information from previously untapped sources, thus leading to the "confusion" decried by their critics.

In other words, it is likely that the short-term confusion generated by citizen input will be offset in the long-term by more effective program planning. From a long-term perspective, programs which have been identified as high priority by local residents or representatives of local organizations are more likely to have an exact fit with local conditions and resources than programs which are based solely on the experiences of agency planners.

Needs assessments can also be expected to lead to several favorable secondary effects. For example, the secondary by-products of needs assessments (such as the identification of service delivery systems, and the facilitation of communication between organizations which participate in community forums) are likely to result in greater levels of service utilization due to the increased diffusion of important information. And, stimulating the interest of assessment informants in the problem area is likely to lead to increased independent programming efforts, and thoughtful support for existing programs.

In short, the above reasoning suggests that the utilization of needs assessment results in a multitude of beneficial outcomes. However, Kimmel's unidimensional treatment restricts "utilization" to the implementation of specific programs which are influenced by the assessment. In contrast, a multidimensional conceptualization such as that proposed here suggests that successful needs assessments can result in a number of diverse outcomes. Furthermore, these outcomes are not necessarily

restricted to the community in which the assessment was conducted. For example, in accordance with a multidimensional conceptualization of assessment utilization, potential benefits of assessments are:

(1) A more appropriate fit between proposed programs and services, and local needs and conditions;

(2) The initiation of a local problem-solving process involving concerned citizens and organizations;

(3) Some movement towards increasing efficient citizen and organizational participation in community planning;

(4) The generation of researchable ideas for social scientists who are committed to community problem-solving;

(5) The identification of organizations and existing services likely to support programming efforts.

In sum, when considered in the context of these criteria, observations concerning the lack of utilization of needs assessments appear rather short-sighted, since their attention is restricted to the unidimensional outcome of program development.

Summary and Research Objectives

In the initial portion of this review, it was suggested that centralized federal and state energy planning has been relatively unsuccessful when compared to planning and program implementation processes initiated and controlled at the level of local communities. The effectiveness of such community planning efforts was illustrated by brief case histories of Davis, California and Seattle, Washington. From these histories, the following parameters of successful community planning were derived:

(1) To be successful, community energy conservation program planning efforts should identify those organizations likely to influence, and be affected by, conservation programming. This identification should take place early in the planning process, and should include relevant organizations in areas such as building, housing, transportation, land use and development, utilities and utility regulation, energy related product manufacture and supply, energy product regulation, energy related research, education, human services, and citizen action.

(2) Attempts should be made to channel input from these organizations into program planning. Involvement of these organizations in planning is likely to enhance program legitimization. Once involved, these organizations are likely to lend their support to programming efforts, thus increasing the likelihood of high levels of acceptance and utilization.

(3) The identification of community organizations which might be involved in program planning and implementation should be supplemented by an empirical data gathering effort. This effort would attempt to obtain and interpret perceptions of needed energy programs and services from knowledgeable community sources. These data would then be utilized to shape community programs to fit community needs.

Following the identification of these parameters, it was suggested that the parameters were within the purview of the needs assessment approach. To determine the specific applicability of particular needs assessment methods to the energy planning area, the needs assessment literature was selectively reviewed. Conceptual issues were first discussed and the advantages of problem-focused, multi-method research strategies were highlighted. Methodological issues were then

discussed utilizing the qualitative versus quantitative framework developed specifically for this review.

It was argued that the nature of current community energy planning processes called for the use of qualitative assessment methodologies. These methods were believed to lead to a better understanding of new and relatively unexplored problem areas, such as energy programming. Several of these methods appropriate to the energy area were then described (e.g., key informant interviews, community forums, secondary analyses, etc.). After addressing recent criticisms of the assessment approach, it was concluded that the qualitative needs assessment methods could contribute useful information to community energy planning.

However, the feasibility of applying needs assessment methods in the energy planning area has not been assessed. Therefore, the present project seeks to determine if needs assessment procedures such as community forums and interviews can be effectively implemented in an actual community planning context. Furthermore, a feasibility study is necessary to clarify certain methodological issues which pertain to the needs assessment approaches reviewed. For example, although key informant interviews and structured community forums are recognized as appropriate in early stage assessment, do these qualitative methods lead to similar outcomes? (Aponte, 1976). It might be argued that if these methods contribute equally reliable, equally valid, and equally useful data, then whichever method is easiest and least expensive to implement would be preferable.

In sum, the specific objectives of the present research are the following:

(1) To design and utilize a sampling procedure that will lead to the identification of a sample of community organizations which are most likely to influence, and be affected by, community energy policies and programs within a specific community setting. This sampling procedure should attempt to include organizational representatives from areas such as building, housing, transportation, land use and development, utilities and utility regulation, energy related product manufacture supply, energy product regulation, energy related research, education, human services, and citizen action groups.

(2) To gain an understanding of the energy programming needs of a local community through the actual conduct of a needs assessment project. For the reasons noted above, qualitative approaches (i.e., key informant interviews and structured community forums) should be utilized to identify perceived energy program needs. This assessment strategy would be intended to facilitate the eventual development of programs and services designed to fit the unique conditions of the community. A secondary purpose of the community forum component would be to enhance communication between the organizations in the sample. In this way, further involvement in energy program planning would be facilitated.

(3) To compare the results from the interview and forum methods, to determine their relative merit. This comparison is both of methodological interest and of practical importance. If these methods were to result in similar outcomes, evidence would be provided which would support the development of a more cost beneficial needs assessment strategy for the energy area.

(4) To describe the community context for the identified program needs through the secondary analysis of demographic data relative to

energy use. This analysis would be supplemented by the preparation of a directory which would describe the present energy programs and services in the community. These products would be intended to provide a more in-depth understanding of community conditions and resources, and to facilitate greater utilization of existing programs and services.

CHAPTER II

METHOD

Overview

The present study utilized four methods to obtain a comprehensive view of the energy programming needs for the local area. These methods were interviews with key informants, structured community forums, examination of demographic data related to energy consumption, and preparation of a Directory describing the existing energy conservation programs and services in the community. The study was conducted in greater Lansing, a community in South Central Michigan which includes the cities of Lansing and East Lansing.

Greater Lansing is a moderate-sized community, with a population of 182,750. Climatically, the area is similar to other north central communities, with moderately severe winters and mild summers. The life of the community is dominated by three large organizations: the Michigan State Government complex, the Oldsmobile Division of General Motors, and Michigan State University. In addition, the surrounding countryside contains a number of highly developed and successful agricultural operations.

Needs Identification Interviews with Key Informants

Sample

A non-random sample of 66 persons affiliated with private and public sector community agencies and organizations with some degree of involvement in local energy conservation programs served as the respondent sample for this phase of the research. A non-random sampling procedure was employed to maximized the breadth of perspectives on energy programming included in the present study, and followed the "purposive sampling

method" which is best suited to the identification of key informants for exploratory research (Patton, 1980: Warheit, et. al., 1977).

The initial phase of the sampling plan involved the identification of categories of community organizations likely to have a role in energy-related programs and local energy conservation policy formation. This was accomplished through informal interviews with community leaders and university researchers who were familiar with energy-related programming in greater Lansing. Using this procedure, seven categories of organizations were identified: (1) state government; (2) local government; (including Lansing, East Lansing, and county units of government); (3) private service organizations; (4) utilities and other energy-related businesses and associations; (5) citizen action groups and neighborhood associations; (6) education and research organizations; and (7) labor organizations.

The second phase of the sampling plan involved the selection of individual organizations from each of the seven organizational categories. This was accomplished by the creation of a comprehensive listing of local agencies and organizations judged to have considerable interest and influence with regard to energy-related issues. The primary criterion in selecting these organizations was that organizations with a broader scope (i.e. more centralized, higher level organizations) were included when possible. For example, a school district office was selected for the sample, as opposed to an individual school. However, all organizations which were known to have a high degree of interest and involvement in local energy issues were selected, regardless of scope. Therefore, in one instance a local builder with a demonstrated interest in conservation was included in the sample, in addition to the local builder's association.

The comprehensive list of organizations identified in this phase of the sampling procedure appears in Appendix A.

The final phase of the sampling involved the identification of the individual respondents within each organization who were most interested in, and knowledgeable about, local conservation issues. This was accomplished using the following three-stage procedure: First a research assistant telephoned each organization. The assistant briefly described the project, and asked to be connected with an individual "who would be a good person to talk to about this project". The person identified by this process became the initial organizational contact. The assistant then spoke with the initial contact, described the project briefly, and indicated that a letter describing the project in further detail would be mailed to the initial contact. These letters (see Appendix B) were mailed to 104 initial contacts. The letters included a request for an interview with the initial contact (see questionnaire, Appendix B). One week following the first mailing, all initial contacts were again telephoned, and asked if they were willing to be interviewed. Interviews were then scheduled with initial contacts. In some cases, initial contacts referred the project director to other organizational personnel who were thought to be more appropriate as respondents. No attempt was made to control for the organizational level of the key informants, since it was expected that persons interested in energy issues might be located at any level. However, the organizational level of the respondent was recorded and utilized in subsequent data analyses.

Of the original 104 contacts, 66 persons agreed to be interviewed, representing 60 organizations. Six organizations contributed two respondents each to the interview sample. From these duplicate interviews, only

one interview for each organization was used in the data analyses. The remaining six interviews were used to train coders.

Procedure for Conducting the Interview

The interview protocol utilized in this project was a semistructured, or "interview guide" interview (Patton, 1980). This format was utilized to obtain roughly comparable information from all informants, and to allow for the exploration of "interesting leads" by the interviewer. Consequently, a guidesheet, rather than a rigid interview protocol was employed. Interviews averaged 45 minutes in length. The same open-ended questions were asked of all informants, in the same order. However, different follow-up questions and "prompts" were used for different respondents, at the discretion of the interviewer. All interviews included in the analyses were conducted by the project director, and were tape recorded. Sixty-four of the sixty-six interviews were conducted on-site at the respondent's organization. At the request of two of the respondents, two interviews were conducted off-site. At the beginning of each interview, the informant read and signed a consent form (Appendix C), and questions concerning the interview were addressed. During the interview, notes were taken in addition to the tape recording. The first interview was conducted on October 29, 1979, and the final interview was conducted on February 6, 1980. The complete interview guidesheet appears in Appendix D and is summarized in Appendix E.

The Interview and Scoring Procedure: Overview

The remainder of this section of the chapter will be devoted to a detailed description of the interview and the methods used to interpret the interview data.

In general, two qualitative methods were used to transform the data to a format amenable to quantitative analysis: (1) the development of several category-coding systems; and (2) the development of several rational rating scales. These systems and scales were employed by several teams of research assistants who coded and rated the interview responses.

Questions which were suitable for coding were organized into "issue areas" (Appendix F). Each issue area contained those items which were anticipated to be codeable using the same set of categories, and these issue areas were used as the basis for the development of the coding systems. However, due to response patterns in the data which became evident during the development of coding categories, and due to the necessity of developing a coding system which organized the data into both highly reliable and highly useful categories, the expected one-to-one correspondence between issue areas and coding systems was not realized. Instead, a more complex overall coding scheme evolved (Appendices G-I). Compared to the category-development procedures, the development of the rating scales was fairly straightforward.

With regard to the data-handling procedure, all coding and rating was done directly from the interview tapes. Discrete coding or rating units were represented for coders by the first three words and last three words of each unit, and by the tape recorder counter start-and-finish numbers for each unit, which were written on an "Opscan" computer scoring sheet (see Appendix J).

Coders entered the appropriate code number on the Opscan sheet, next to the coding unit. Explicit criteria were developed for the

demarcation of discrete coding units, and a description of these criteria and their development appears in Appendix K. In the remainder of this section, the interview questions will be discussed in terms of their content, the rationale for their inclusion in the protocol, and the methods used to code or rate them.

Issue Areas

The first issue area, Conservation Programs, contained three items designed to obtain data concerning the present and future energy conservation programs of each organization (items 2a, 2b, and 2c, Appendix F). Also included in this issue area was an item designed to obtain the respondents' ideas for needed energy conservation programs in the community (question 4a, Appendix F). The three remaining items in this issue area occured later in the interview, and referred back to the respondents' previous statements regarding conservation programs. For item $5a_1$, the interviewer restated the respondents' ideas about needed programs in order to obtain their perceptions concerning the importance of these ideas. In item 7a, the interviewer reviewed the list of existing programs housed in the organization. Finally, these organizational programs were restated by the interviewer so that the informant could rate each program in terms its perceived effectiveness (item $7b_1$).

The items covering the organizations' ongoing and planning-stage programs (2a and 2b, Appendix F) were included in order to obtain data necessary for the preparation of the Energy Programs and Services Directory. These items also permitted an assessment of relationships which might exist between the extent of an organization's involvement in energy conservation, and the types of ideas generated by a member

of that organization for energy program needs. Items 2c and 4a elicited the informants' ideas concerning needed conservation programs (both internal and external to the organization) and were central to the needs identification objective of this research. The item which involved a restatement of the respondents' ideas for needed programs (item $5a_1$) was included in order to obtain a quantifiable prioritization of these ideas. This prioritization was accomplished using a five point rating scale, anchored at the end points (1 = very important, 5 = not very important). Item 7a, which reviewed the organizations' ongoing programs, was included simply to insure that complete program lists were obtained. Finally, the interviewer restated these organizational programs (item $7b_1$) so that the respondents' first-hand knowledge about the factors which contributed to the success and failure of programs could be tapped. A five point scale (anchored with the statements 1 = extremely effective, 2 = very effective, 3 = moderately effective, 4 = somewhat effective, 5 = not at all effective) was utilized to obtain effectiveness ratings. Respondents used a similarly anchored five point certainty scale to rate their certainty of these ratings.

Two additional items concerning energy programming needs were also included (questions 4b and 4c, Appendix E). Item 4b was an attempt to obtain respondents' perceptions concerning the conservation efforts of community residents and employees of greater Lansing organizations. This item was designed as a two-part question. The first part ($4b_1$) was phrased in terms of the extent of conservation effort perceived by the informant, while the second part ($4b_2$) focused on the respondents' perceptions of the conservation strategies which had been employed locally in the residential, industrial, commercial, and transportation sectors.

Interpreting data concerned with the extent of effort (item $4b_1$) required the development of a rating scale, and is therefore discussed later in this section. However, the second part of question 4b was suited to category coding, and this item comprised the second issue area, entitled Conservation Strategies People Have Used.

The third question which was used to obtain information concerning needed programs was directed towards identifying the problems encountered locally by those attempting to conserve energy (item 4c, Appendix F). This item also produced data amenable to category coding, and was the subject of the third issue area, entitled Problems People Run Into When Trying To Conserve. Again, utilizing the restatement-of-ideas procedure, a five-point scale (1 = very important, 5 = not at all important) was used to obtain respondents' ratings of the relative importance of problems which impeded local conservation (item $5b_2$, Appendix E).

The fourth issue area involved the reasons given by respondents for the effectiveness of those organizational programs which they had rated as highly effective during the interview. This issue area contained a single item (question 7c).

The fifth issue area was concerned with energy program funding, and contained three items, all codeable (questions 3a, 3b, and 3c). These items elicited information about the organization's present energy program funding sources, the respondents' expectations for continuation of funding, and the respondents' knowledge of other potential energy funding sources. These items were included in the interview in order to obtain a comprehensive picture of program funding patterns. This

information was considered to be highly useful for future energy programming efforts.

The sixth and final issue area contained four items designed to obtain a rough organizational profile of the organizations in the sample (items 1a-1d). These items obtained data concerning the respondents' organizational levels, and the number of employees and/or members within each organization, the categories of these employees and members, (i.e., the basic organizational structure), and the age of each organization. These items were included to obtain data which could be used in a number of exploratory analyses, testing for possible correlations between organizational variables and other data points (such as types of conservation programs housed within the organization, types of programs judged to be effective, etc.).

Category coding systems. In order to interpret the issue area data, five category coding systems were developed. These coding systems were developed directly from the interview data by the project director and three research assistants (the "category development team"). Due to the exploratory nature of the study, no attempt was made to predict or preset the coding categories prior to the category development phase.

Following Warwick and Lininger (1975) the criteria listed below were utilized in the development of categories:

(1) Categories were designed to be exhaustive. All data (barring a few exceptions) were codeable within the coding systems.

(2) Categories were designed to be mutually exclusive. Data were codeable with a high degree of inter-rater reliability.

(3) The categories were designed to provide useful information, suited to the aims of the study.

The following procedures were used to apply these criteria to the data and develop the various category coding systems: Twelve interview tapes were selected for category development. (These tapes were judged by the project director to be both representative of the data and rich in terms of breadth and number of comments.) The project director and three research assistants listened to three of the twelve tapes, and independently generated ideas for categories. The team then met to discuss their categories. It became immediately apparent that issue areas I (Conservation Programs) and III (Problems People Run Into When Trying To Conserve) presented the greatest difficulty in terms of meeting the criteria for category development outlined above, and it was decided to focus category development efforts on these two issue areas. The team pilot-tested five systems, using an iterative procedure involving independent generation of categories, team discussion of the categories, and preliminary testing for reliability. The system which best satisfied all three development criteria had the following five categories:

1 = Information, Knowledge, Awareness, Belief

2 = Planning, Regulation, Coordination, Leadership, Political Action

3 = Incentives to Encourage Conservation, Cost of Conservation Actions

4 = Physical Fixes: Buildings, Vehicles, and Appliances

5 = Lifestyle Changes

A sixth category, entitled "Assistance: Programs/Problems Focused on the Needy" was later added, to handle a set of difficult-to-code responses which later surfaced. This six-category system was labeled "Coding System #1". The codebook prepared by the category development team,

containing examples for each category and defining the conceptual boundaries between categories, appears in Appendix G.

Once this system was designed and piloted, it became evident that the six categories could be used to code items from both issue area I (Conservation Programs) and issue area II (Problems People Run Into When Trying To Conserve). The System was applicable to both issue areas since problems which impeded community energy conservation could be reliably translated as "the lack of a (category x) program."

Following the development of this coding system, four additional research assistants were trained to use the system. Training was accomplished with practice tapes. All four coders then coded a final practice tape, and an inter-coder reliability index was computed using Kendall's Coefficient of Concordance (Siegel, 1956). A reliability coefficient of $\underline{W}$ = .91 resulted from this analysis. The coding choices were examined, and the four coders were divided into two pairs (according to the criterion of maximum agreement between pairs) to insure maximally reliable coding teams. A random-order coding schedule was prepared, and the coders proceeded to code items from issue areas I and III for all interviews. Throughout the coding schedule, a series of twelve reliability checks were performed. Ten of these twelve checks exceeded .80 pair-wise percentage agreement), and the overall mean percentage agreement was .84, with a mean of .857 for coder pair "A" and a mean of .821 for coder pair "B".

The interpretation of responses to question 4b (the single item in the issue area devoted to conservation strategies people have used) required the development of a second coding system. The exact wording of question 4b was as follows:

> To what extent do you think people in the greater Lansing area have really tried to conserve, in their homes, in their businesses, and on the road--what strategies do you think people have used?

Consequently, the basic categorization of responses was in terms of residential conservation, commerical and industrial conservation, and transportation conservation. This basic categorization was further refined following a review of the data to produce the following six categories:

1 = Relatively Low Expense Residential Conservation

2 = Relatively High Expense Residential Conservation

3 = Commerical and Industrial Conservation (Building and Lots)

4 = Transportation Conservation

5 = Financial Incentives and Capital Availability Are Required for Conservation

6 = Comment Reflects Respondent's Opinion About the Extent of Conservation Effort (but is not codeable in categories 1 - 5)

This coding system was labeled Coding System #2, and a codebook containing examples and definitions of conceptual boundaries was developed by the project director (Appendix H). Three practice tapes were used for training a pair of coders, and two practice tapes were used to establish reliability. Percentage agreement coefficients for these reliability checks were .714 and 1.00 respectively. A random-order interview coding schedule was established and eight pair-wise reliability checks were spaced evenly throughout the schedule. These checks produced an overall percent agreement coefficient of .94, with six of the eight checks producing 100% agreement between coders.

A third coding system was developed to interpret responses to item 7c (the single item in issue area IV, Appendix F). This item elicited from respondents the reasons for the effectiveness of those organizational programs which respondents had rated as effective during the interview. A review of the data produced the following categories for Coding System #3:

1 = Practical Nature of Program

2 = Efficient Program Planning and General Functioning of Organization

3 = Financial Incentive

4 = Automatic Effectiveness Once Program is Implemented

5 = Appealing Nature of Program

Two coders were again trained on practice tapes, using a codebook developed by the project director (Coding System #3, Appendix I). The system was pilot tested for reliability, and percent agreement coefficient for two pilot tests were both 1.00. Again, a random coding

schedule was utilized, and ten reliability checks were performed during coding. The results of these checks indicated that system #3 was highly reliable, with an overall mean percent-agreement coefficient of .93.

The fourth coding system was used to code responses to the three items in issue area V (items 3a - 3c) which were concerned with energy program funding. A review of the data produced the following categories for interpreting these item responses:

Item 3a: Present Sources

1 = Federal Government

2 = State Government

3 = Local Government

4 = Federal Government (indirect funding; e.g. a grant involving a funding chain from Federal to Local to Private Agency)

5 = Self-Supporting (Profits, membership fees, etc.)

6 = Foundations and Other Private Sources External to the Organization

Item 3b: Expectation for Continuation of Funding

1 = Yes

2 = Not Sure

3 = No

Item 3c: Other Possible Sources of Funding

1 = Federal Government

2 = State Government

3 = Local Government

4 = Federal Government (indirect funding; e.g. a grant involving a funding chain from Federal to Local to Private Agency)

5 = Self-Supporting (Profits, membership fees, etc.)

6 = Foundations and Other Private Sources External to the Organization

7 = Reallocate Existing Funds

The non-judgemental nature of responses to these items permitted utilization of a single coder. Therefore, responses to items 3a - 3c were coded by the project director, utilizing the above categories. A random sample of three tapes were recoded after a nine week interval, to check reliability. This recoding produced a percent-agreement coefficient of .86, indicating that the procedure satisfied an acceptable reliability criterion.

The fifth and final coding system was used to code responses to items 1a - 1d (issue area VI, "Organizational Profile", Appendix F). The following categories were derived after examining the data:

Item 1a: Level of Respondent

1 = Upper Level Management and/or Senior Member

2 = Middle-Level Management and/or Professional Staff

3 = Support Staff, Service Workers, "Line Operations", Sales, etc.

Item 1b: Number of Employees or Members

1 = Less than or equal to 10.

2 = More than 10, but less than or equal to 20.

3 = More than 20, but less than or equal to 50.

4 = More than 50.

Item 1c: Number of Categories for Employees or Members

1 = Less than or equal to 3.

2 = More than 3, but less than or equal to 5.

3 = More than 5.

Item 1d: Length of Time in Existence

1 = Less than or equal to 3 years.

2 = More than 3 years, but less than or equal to 5 years.

3 = More than 5 years, but less than or equal to 7 years.

4 = More than 7 years, but less than or equal to 10 years.

5 = More than 10 years, but less than or equal to 20 years.

6 = More than 20 years.

In addition to these categories, two additional typologies were used to complete the organizational profile, and were intended for the fifth coding system. The first typology consisted of the original seven organizational categories used to obtain the respondent sample (listed on p. 35 above). The second typology was a dichotomous system used to differentiate between "associations" (with large numbers of relatively inactive members) and "organizations"(with relatively active memberships). An example of an association would be the local realtor's association, with a staff of less than 10 and a membership of over 200. An example of an organization would be a planning department where all members are active employees. However, this typology failed to satisfy acceptable reliability criteria, and was abandoned.

Rating Scales. Three items from the interview protocol were not amenable to category coding, and required instead the development of rating scales for interpretation. The first of these items (4b) was designed to obtain respondents' impressions concerning the extent of conservation efforts in the greater Lansing area. Rating Scale #1, a dichotomous scale (1 = Relatively High Level and/or Widespread Effort, 2 = Relatively Low Level Effort) was employed by two coders and twenty-six reliability checks were spaced throughout the rating schedule, to

assess inter-rater reliability. A mean percent-agreement coefficient of .89 resulted from the reliability analyses.

Two additional items required rating scales for interpretation. The first item concerned respondents' impressions with regard to the importance of energy issues to their organizations (item 6a, Appendix E). The second item was designed to obtain respondents' impressions of the roles they expected their organizations to play in future energy programming (item 6b, Appendix E). For item 6a, the following three point rating scale was developed and utilized to score responses:

1 = Very important to Important

2 = Moderately Important and/or mixed Impressions

3 = Not Very Important

Responses to item 6b were rated using the following three point scale:

1 = Active, Initiating Programs

2 = Moderately Active

3 = Not Very Active, Relatively Passive.

Again, 26 interviews were used for determining inter-rater reliability for each scale. The results of these 26 checks indicated acceptable reliabilities with percent-agreement coefficients of .81 and .85 emerging for scales #2 and #3, respectively.

Community Forums

Sample

Thirty-eight representatives from the community organizations which constituted the organizational sample for the interview phase of the study served as the sample for the community forum portion of the project. These participants represented a total of 28 organizations. Two forum

sessions were conducted, and 19 organizational representatives attended each session. Five organizations were represented at both forums. Eleven of the 19 participants at the first forum and 8 of the 19 participants at the second forum had previously served as interview respondents.

The distribution of participants across the seven organizational types appears in Appendix L. These distributions were comparable across forums, and each organizational category was represented by at least one participant at each forum.

In order to retain the diversity of perspectives on energy programming characteristic of the interview portion of the research, a non-random sampling method was again utilized for the selection of forum participants. To obtain the sample, all interview respondents were contacted by mail (Appendix M) and invited to participate in either forum session. Each organizational representative who volunteered to participate also was asked to select a fellow employee or member who shared an interest in energy issues to participate in the session not attended by the respondent. Two weeks after the mailing, all respondents received follow-up phone calls to confirm the forum arrangements.

Forum Procedure

The two community energy forums were sponsored by the Michigan State University Center for Urban Affairs, a university-affiliated community development organization. As stated in the letter sent to those individuals who indicated their willingness to participate (Appendix N) the two major objectives of the forum were: (1) to identify, discuss, and prioritize the energy conservation program needs for the Lansing-East Lansing community; and (2) to facilitate coordination and communication between organizations interested in energy programming.

In order to accomplish the first objective, the Nominal Group Technique, or NGT (Delbecq & Van de Ven, 1975) was utilized. The agendas for the two forum sessions appear in Appendix O.

Agenda activities B, C, and D represented the NGT procedures. These activities involved the independent generation of ideas concerning energy programming by respondents, and the subsequent clarification and prioritization of these ideas in small group sessions.

Responses obtained from activities B and C (independently generated ideas concerning needed programs and services, and problems) were elicited by the following items:

> What do you see as the major needs of the greater Lansing area with regard to energy programs and services; that is, what specific programs and services could make conservation easier for people? (These could be either public sector or private sector programs).
>
> What problems do you think people are running into when they actually try to conserve energy?

For activity D (the small group discussion of programs), participants were divided into three small groups. The composition of these groups was prearranged to attain maximum organizational heterogeneity. The groups were led by specially trained project team members. For each small group, one team member served as a group facilitator, while the other functioned primarily as a recorder.

The small group activities involved (in sequential order): (1) round-robin presentations of participants' independently-generated ideas for needed programs and the listing of these ideas on poster paper; (2) non-evaluative clarification and discussion of these ideas by the participants; and (3) the independent rating of each idea by the participants, using the same five-point "importance" scale which had been employed in the interview phase of the project.

A final instrument administered at the forums was a questionnaire designed to measure respondents' awareness of various community energy programs, the perceived degree of community utilization of these programs, and respondents' assesment of program effectiveness. (This questionnaire appears in Appendix P.

The remaining activities listed in the forum agenda were designed to encourage networking and knowledge exchange among the organizational representatives. Across both forums, varying activities were utilized in an attempt to maximize informal communication about local energy issues among participants.

Scoring Procedures

Virtually all of the items used for the community forums were identical to the items from the key informant needs identification interview. These items are identified in Appendix O.

Responses to the first three items (B, C, and D_1) were amenable to coding. These were the two "idea generation" questions concerned with needed programs and problems and the small group presentations of the independently generated ideas for programs. (The independently generated and poster-listed program ideas were both coded to assess the possibility that small group processes might affect the individually generated conceptions of needed programs.) Since the items which were used to elicit ideas for programs and problems were identical to the previously coded interview items, Coding System #1 (Appendix G) which had been used to code these interview items, was also used to code the forum responses. The logistical procedures for coding were virtually identical to those employed for coding the interview items, with only slight modifications necessary to accomodate written, as opposed to taped data.

Two research assistants who had served as coders during the first phase of data coding coded the forum data. For both independently generated and small group responses, inter-coder reliability was checked using the percent agreement method described above. Results of these analyses indicated acceptable reliability, with mean percent agreement figures of .91 and .88 for independently generated and small group responses, respectively.

With regard to respondents' ratings of small group program ideas on the five point importance scale, each rating was recorded on a computer scoring sheet, along with the category code for the rated idea, to be used in subsequent data analyses.

Finally, responses to items on the Existing Conservation Programs Questionnaire (Appendix P) were tallied and summed to obtain simple response frequencies.

Demographic Data and Energy Directory

The demographic data discussed in the present study was obtained from the Tri-County Planning Commission of South Central Michigan. Three staff members generously gave of their time to make the data available and to discuss their implications.

The Energy Programs and Services Directory was based on the responses to item 2a (Appendix D) which obtained information concerning existing energy conservation programs. This information was updated immediately prior to preparation of the final draft by means of informal telephone follow-up interviews with key informants.

CHAPTER III

RESULTS

Overview

The bulk of the data collected in the present study consisted of responses to open-ended items. These responses were coded or rated using empirically developed category systems. Response categories were then aggregated to produce either nominal level frequency scores or ordinal level rating scores. In general, nonparametric statistical techniques were employed to analyze the frequency data. Parametric methods were utilized to analyze rating scores.

One cautionary note is in order regarding the results of the statistical tests applied to these data. Since it was possible for individuals to generate multiple responses to particular open-ended items, the assumption of independent observations was consistently violated. Hence, the results of statistical tests applied to these data should be viewed cautiously. The use of statistical tests herein should be considered as a heuristic device through which meaningful relationships could be isolated from the large body of data collected in this study.

Sample Characteristics

Interview Sample

The interview sample was highly skewed on nearly all descriptive variables (Table Q1). It was characterized by significantly more males than females, $\chi^2(1) = 16.90$, $p < .0001$, and significantly

more upper and middle level organizational employees/members than lower level employees/members, $\chi^2(2) = 14.27$, $p < .001$. More large organizations were represented than middle-sized or small organizations, $\chi^2(3) = 31.51$, $p < .0001$, and a significantly greater number of older than younger organizations were represented in the sample, $\chi^2(5)$, = 19.00, $p < .0020$. However, different types of organizations (e.g., state government, local government, private service, energy related businesses and associations, etc.) were represented fairly equally in the sample, $\chi^2(6) = 3.76$, ns.

With regard to the importance of energy issues to organizations, a significantly greater number of informants reported energy conservation to be highly important to their organizations, $\chi^2(2) = 34.07$, $p < .0001$, and that they expected their organizations to play an active role in energy programming in the future, $\chi^2(2) = 43.48$, $p < .0001$. In addition, a significantly greater number of informants expected their energy funding to be continued rather than discontinued, $\chi^2(2) = 50.38$, $p < .0001$.

With regard to the organizations' existing energy programs, planning stage programs, and informants' ideas for new programs for the organization, all three frequency distributions were highly skewed ($\chi^2(4) = 172.42$, $p < .001$; $\chi^2(4) = 58.5$, $p < .001$; and $\chi^2(4) = 41.90$, $p < .001$, respectively). As can be seen in Table Q1, the preponderance of programs coded as Information, Knowledge, Awareness, Belief and as Planning, Regulation, Coordination, Leadership, and Political Action was responsible in all three distributions for the highly significant differences between category frequencies.

Forum Sample

The only descriptive information obtained for the forum sample concerned the sex of the participants and the types of organizations

which they represented (Table Q2). Significantly more men participated in the forums than women, $\chi^2(1) = 5.16$, $p < .0219$. Just as in the interview sample, different types of organizations were represented fairly equally in the forum sample, $\chi^2(6) = 4.00$, ns.

Energy Program Funding

An additional set of analyses concerned the funding sources for the organizations sampled in the interview portion of the study. Three interview items were used to obtain information concerning sources of funding. In the first item (3a, Appendix D) informants were asked to list the funding sources for present energy programs in their organizations. The second item (3b, Appendix D) obtained informants' perceptions concerning the likelihood of the funding to continue, while the third item (3c, Appendix D) obtained informants' ideas for other possible funding sources for their organizations.

These responses were coded using system #4 (p. 47). The results showed most programs to be funded from independent sources (i.e. self-supporting); indirect federal sources (e.g. Community Development Block Grants, Department of Energy funds channeled through the state energy office, etc.); direct federal sources; and state sources (Table Q3). Far fewer programs were supported by local government funding or by foundations. The differences between these category frequencies were statistically significant, $\chi^2(5) = 18.71$, $p < .01$.

As reported above, a significantly greater number of informants expected their energy funding to be continued rather than discontinued (Table Q1). With regard to the analysis of the third item (3c), a category-coding system was used which was nearly identical to the system used to code responses to item 3a. The system used to code

responses concerning other funding sources contained one additional category (Reallocating Existing Funds). The distribution of these responses was even more highly skewed than for item 3a, $\chi^2(6) = 77.13$, $p < .001$ (Table Q3). As can be seen from this table, by far the greatest proportion of responses were coded as suggesting either direct federal or state funding as potential sources of support for the energy conservation programs of the informants' organizations.

A final analysis was performed to determine from what sources different types of organizations obtained their funding. These results could not be analyzed using the chi-square statistic, since the expected values for all but one of the joint frequencies were less than five (Table Q4). Summarizing these results, it appears that state government agencies obtain the most direct federal and state funding. Local government agencies obtain their funding from direct and indirect federal sources, state sources, and local sources. Utilities and energy-related businesses and associations are primarily self-supporting as well, but also receive indirect federal funding. Finally, educational and research activities related to energy are for the most part supported by direct and indirect federal funding and by state monies.

Needed Programs and Perceived Problems Impeding Conservation

Interviews

Table 1 shows the frequency distributions of needed programs and problems impeding conservation. The extremely low number of responses coded in the Assistance to Needy category required that this category be combined with another category prior to chi-square analyses (Siegel, 1956). Due to the conceptual similarity between this category and Incentives-Costs, these two categories were collapsed to form a single category for all chi-square analyses. However, both the combined and original frequencies for these data are reported in the tables.

As shown in Table 1, a large proportion of comments pertaining to program needs was coded as Information, Knowledge, Awareness, and Belief (hereafter abbreviated as Knowledge-Awareness). Another heavily used category was labeled as Planning, Regulation, Coordination, Leadership and Political Action(hereafter abbreviated as Planning-Regulation). This clustering of program needs produced statistically significant differences among category frequencies, χ^2 (4) = 125.99, $p < .0001$. The distribution of comments concerning problems impeding conservation showed a similar pattern (Table 1). However, note that more comments were coded as related to Incentives-Costs and Lifestyle Change in the problems data set compared to the data set for needed programs. A chi-square test again revealed significant differences between category frequencies, $\chi^2(4) = 46.61$, $p < .0001$. The rank-order correlation between these two distributions (needed programs and problems impeding conservation) was high but not statistically significant, $r_s = .77$.

EXPLANATORY NOTES: FORMAT FOR TABLES 1 - 11

Tables 1 - 11 and Table 16 all utilize the same format. Due to the complexity of this format, the following notes are included to assist the reader.

1. Identifying collapsed rows and columns: In order to identify for the reader the rows and colums which have been collapsed for the purposes of the chi-square analyses, the identifying number of each row or column whose values have been combined with the values of another row or column appears within parentheses, preceded by a "plus" sign (+). This follows the identifying number of the row or column to which the values have been added.

Examples:

1 (+6). This notation means that the values of column 6 have been added to the corresponding values of column 1.

#3 (+#6). This notation means that the values of row #6 have been added to the corresponding values of row #3.

2. Identifying specific modified values: To identify specific values which have been modified, each original value is followed by the modified value, in parentheses.

Example:

12 (14). This notation means that the original value 12 has been modified to 14, for the purpose of the chi-square analysis.

3. Percentage values: Below each frequency value within the table is a percentage value, which represents the column percentage of that value. Below each marginal frequency value also appears a percentage value, which represents column percentages for row marginals and row percentages for column marginals. (Column percentages do not appear in

Table 1 and Table 2).

4. Additional information: The specific row and column combinations for each table are summarized at the bottom of the table, with any additional relevant information also included.

Table 1. Frequency Distributions for Needed Programs and Perceived Problems Impeding Conservation

		Interview Results			
	Category	Needed Programs	%	Problems	%
#1.	Information, Knowledge, Awareness, Belief	117	34.1	80	24.8
#2.	Planning, Regulation, Coordination, Political Action, Leadership	121	35.3	76	23.5
#3. (+#6)	Incentives to Encourage Conservation, Cost of Conservation Actions	41 (45)	12.0	79 (84)	24.5
#4.	Physical Fixes: Buildings, Vehicles and Appliances	33	9.6	17	5.3
#5.	Lifestyle Changes	27	7.9	66	20.4
#6.	Assistance: Programs/Problems Focused on the Needy	4 (0)	1.2	5 (0)	1.5
		343	100.0	323	100.0
		$E(\chi) = 68.6$ $\chi^2 = 125.994$ $df = 4$ $p < 0.00001$		$E(\chi) = 64.6$ $\chi^2 = 46.61$ $df = 4$ $p < 0.00001$	

For the purpose of the chi-square analysis, row #6 was collapsed into row #3.

To further explore the relationship between perceptions of program needs and perceptions of problems impeding conservation, a two-way (2 x 5) chi-square was performed to compare the distributions. The significant result of this test ($\chi^2(4) = 49.94$, $p < .0001$) indicated a difference between the patterns of the two distributions. An examination of the frequencies (Table 1) suggested that this difference was due to the higher proportion of comments related to Incentives-Costs and Lifestyle Change in the distribution of problems impeding conservation.

Forums

Recall that perceptions of program needs and problems impeding conservation obtained in the community forums were collected on two separate occasions (April 3 and April 10, 1980). To determine if these data could be combined for the purpose of statistical analysis, responses from the two forums were compared using correlational techniques.

With regard to responses concerning problems impeding conservation, the rank-order correlation of responses from the first forum with those of the second forum was significant , $r_s = .89$, $p < .05$. A similar correlational analysis performed on the needed program responses obtained during the small group sessions also proved significant, $r_s = .98$, $p < .05$. The correlation of the needed program responses obtained before the small group sessions ("independently generated" responses) from the first forum with those of the second forum was also quite high, $r_s = .80$. However, this latter correlation did not attain the traditional .05 level of significance. The magnitude of these three correlations indicated that pooling the results from the two forum meetings would be appropriate.

Since the forum sample included both participants who had been previously interviewed, as well as participants who had not been interviewed, correlational analyses were also conducted to determine whether these data could be pooled. Correlations were again uniformly high (r_s = 1.0, r_s = .89, and r_s = .80, for problems impeding conservation, small group program needs, and independently generated program needs, respectively). Based on these results, the data obtained from interviewed and non-interviewed participants were combined for subsequent analyses.

Table 2 shows that the distributions of responses concerning needed programs and problems impeding conservation in the forum data set exhibited similar patterns to the results obtained from the interviews. Just as in the interviews, much greater proportions of responses were coded as Information-Awareness and Planning-Regulation (for both forum methods of recording program needs, "independent" and "small group"). In addition, the forum responses concerning problems impeding conservation were also coded for the most part in the Information-Awareness, Planning-Regulation, and Incentives-Costs categories (Table 2). With regard to comparisons between needed program responses and problem responses obtained in the forums, both frequency distributions were ordered similarly, r_s = .89, $p < .05$, corresponding to the interview results. Also corresponding to the interview data set, there was a significant 2 x 5 chi-square between the program and problem category distributions, indicating that the patterns of these distributions were different, $\chi^2(4) = 10.99$, $p = .0268$. An examination of the frequency data (Table 2) revealed this difference to be due to greater homogeneity among problem category frequencies than among program category frequencies.

Table 2. Frequency Distributions of Needed Programs and Perceived Problems Impeding Conservation

		Forum Results					
	Category	Independent Problems	%	Independent Needed Programs	%	Small Group Needed Programs	%
#1.	Information, Knowledge, Awareness, Belief	73	37.4	84	32.3	43	35.0
#2.	Planning, Regulation, Coordination, Political Action, Leadership	52	26.7	102	39.2	59	48.0
#3. (+#6)	Incentives to Encourage Conservation, Cost of Conservation Actions	49 (51)	25.1	48	18.5	18	14.6
#4.	Physical Fixes: Buildings, Vehicles and Appliances	7	3.5	15	5.8	2	1.6
#5.	Lifestyle Changes	12	6.2	11	4.2	1	0.8
#6.	Assistance: Programs/Problems Focused on the Needy	2	1.0	--	--	--	--
		195	100.0	260	100.0	123	100.0
		$E(x) = 32.5$ $x^2 = 82.6154$ $df = 4.0$ $p < 0.00001$		$E(x) = 52$ $x^2 = 126.73$ $df = 4.0$ $p < 0.00001$		$E(x) = 24.6$ $x^2 = 107.041$ $df = 4.0$ $p < 0.00001$	

For the purpose of the chi-square analysis, row #6 was collapsed into row #3.

Relationships Between Perceptions of Needed Programs and Problems Impeding Conservation with Organizational And Informant Characteristics

Needed Programs

In order to determine whether informants' perceptions of needed programs were related to various characteristics of informants or their organizations, a series of two-way chi-square analyses were performed. Each of these chi-square matrices crossed the levels of an organizational or informant characteristic with the needed program response categories (see Table 3-6). Expected values for the levels of the demographic characteristics were preset, according to the proportional representation of each level in the sample.

These chi-square analyses revealed several significant relationships between certain organizational and informant characteristics with the types of energy programs perceived to be needed. Specifically, informants mentioned different types of programs if they were from different types of organizations (Table 3), $\chi^2(16) = 37.01$, $p = .0030$; if they were from large organizations rather than middle-sized or small organizations (Table 4), $\chi^2(8) = 24.20$, $p = .0030$; if they were from older rather than younger organizations (Table 5), $\chi^2(16) = 49.36$, $p = .0001$; and if they perceived that their organization was likely to play an active role in the energy area in the future (Table 6), $\chi^2(4) = 12.26$, $p = .0160$. No significant differences were obtained for informants according to sex, organizational job/task level, number of categories of employees/members in the organization (an index of bureaucratization) or the importance which they perceived energy issues to have for their organization at the present time. Also, informants who perceived a greater extent of

conservation effort in the community did not differ from those who perceived a lesser extent with regard to their perceptions of program needs.

Problems Impeding Conservation

Two-way chi-square analyses were again performed on the relationships between informants' perceptions of problems impeding conservation and the various informant and organizational characteristics. Expected values for informant and organizational characteristics were preset as in the previous program analyses. Again, several organizational characteristics proved to be significant. Interestingly, four of the five significant characteristics in these problems analyses were also significant in the previous needed programs analyses. These were: type of organization (Table 7), $\chi^2(16) = 38.94$, $p = .0020$; number of employees/members (Table 8), $\chi^2(12) = 27.81$, $p = .0070$; age of the organization (Table 9), $\chi^2(20) = 41.83$, $p = .0040$; and the expected future role of the organization (Table 10), $\chi^2(8) = 20.74$, $p = .0090$. The degree of bureaucratization (operationalized as the number of categories of employees/members identified by the informant) had not proved to be a significant factor for program needs, but was significant for responses concerning problems (Table 11), $\chi^2(8) = 41.78$, $p = .00002$. Coreesponding to the needed programs data set, no significant differences in perceived problems were obtained as a function of informant's sex, organizational job/task level, the importance of energy programs for the organization, or for differences in the perceived extent of conservation effort in the community.

Importance Ratings of Program Needs and Problems Impeding Conservation

Respondents' ratings of their own responses on a five-point importance scale (1 = important, 5 = not very important) were recorded for

Table 3. Needed Programs by Type of Organization

	Needed Program Category	Type of Organization 1 (+6) State Govt.	2 Local Govt.	3 Private Service	4 Utilities, Energy Org.	5 (+7) Cit. Act., Neighborhood Assoc.	6 Educ., Research	7 Labor	
#1.	Information, Knowledge, Awareness, Belief	19 (35) 35.2	20 40.0	24 43.6	16 33.3	16 (22) 23.9	16 33.3	6 28.6	117 34.1
#2.	Planning, Regulation, Coordination, Political Action, Leadership	19 (43) 35.2	19 38.0	11 20.0	12 25.0	30 (36) 44.8	24 50.0	6 28.6	121 35.3
#3. (+#6)	Incentives to Encourage Conservation, Cost of Conservation Actions	12 (14) 22.2	4 (4) 8.0	8 (11) 14.5	5 (5) 10.4	6 (11) 9.0	2 (2) 4.2	4 (4) 1.2	41 (45) 12.3
#4.	Physical Fixes: Buildings, Vehicles and Appliances	2 (4) 3.7	3 6.0	5 9.1	8 16.7	11 (13) 16.4	2 4.2	2 9.5	33 9.6
#5.	Lifestyle Changes	2 (6) 3.7	4 8.0	4 7.3	7 14.6	3 (6) --	4 8.3	3 14.3	27 7.9
#6.	Assistance: Programs/ Problems Focused on the Needy	0 (0) 0	0 0	3 5.5	0 0	1 1.5	0 0	0 0	4 1.2
		54 (112) 15.7	50 14.6	55 16.0	48 14.0	67 (88) 19.5	48 14.0	21 6.1	343 100.0

Expected values were preset.

$\chi^2 = 37.014$ df = 16 $p = .00267$

For the purpose of the chi-square analysis, row #6 was collapsed into row #3, column #6 was collapsed into column #1, and column #7 was collapsed into column #5.

Table 4. Needed Programs by Size of Organization

	Needed Program Category	Number of Employees/Members 1 Less Than or Equal to 10	2 (+1) 11-20	3 21-50	4 Greater Than or Equal to 51	
#1.	Information, Knowledge, Awareness, Belief	10 33.3	21 (31) 41.2	30 35.7	56 31.5	117 34.1
#2.	Planning, Regulation, Coordination, Political Action, Leadership	13 43.3	19 (32) 37.3	29 34.5	60 33.7	121 35.3
#3. (+#6)	Incentives to Encourage Conservation, Cost of Conservation Actions	0 (0) 0	6 (6) 11.8	11 (12) 13.1	24 (27) 13.5	41 (45) 12.0
#4.	Physical Fixes: Buildings, Vehicles and Appliances	3 10.0	3 (6) 5.9	5 6.0	22 12.4	33 9.6
#5.	Lifestyle Changes	4 13.3	2 (6) 3.9	8 9.5	13 7.3	27 7.9
#6.	Assistance: Programs/Problems Focused on the Needy	0 0	0 0	1 1.2	3 1.7	4 1.2
		30 8.7	51 (81) 14.9	84 24.5	175 51.9	343 100.0

Expected values were preset.

$\chi^2 = 24.1951$ df = 8 $p = .00264$

For the purposes of the chi-square analysis, row #6 was collapsed into row #3, and column #1 was collapsed into column #2.

Table 5. Needed Programs By Age of Organization

		Age of Organization						
		1	2	3	4 (+3)[2]	5	6	
	Needed Program Category	Less Than or Equal to 3 Years	4-5 Years	6-7 Years	8-10 Years	11-20 Years	Greater Than or Equal to 21 Years	
#1.	Information, Knowledge, Awareness, Belief	21 34.4	9 23.7	11 34.4	14 (25) 33.3	23 50.0	39 31.5	117 34.1
#2.	Planning, Regulation, Coordination, Politcal Action, Leadership	30 49.2	15 39.5	10 31.3	9 (19) 21.4	8 17.4	49 39.5	121 35.3
#3. (+#6)	Incentives to Encourage Conservation, Cost of Conservation Actions	2 (2) 3.3	4 (5)	4 (4) 12.5	10 (14) 23.8	6 (7) 13.0	15 (17) 12.1	41 (45) 12.0
#4.	Physical Fixes: Buildings, Vehicles and Appliances	5 8.2	5 13.2	4 12.5	6 (10) 14.3	5 10.9	8 6.5	33 9.6
#5.	Lifestyle Changes	3 4.9	4 10.5	3 9.4	3 (6) 7.1	3 6.1	11 8.9	27 7.9
#6.	Assistance: Programs/ Problems Focused on the Needy	0 0	1 2.6	0 0	0 0	1 2.2	2 1.6	4 1.2
		61 17.8	38 11.1	32 9.3	42 (74) 12.2	46 13.4	124 36.2	343 100.0

Expected values were preset.

$\chi^2 = 49.3553$ df = 16 p = .00011

For the purpose of the chi-square analysis, row #6 was collapsed into row #3, and column #3 was collapsed into column #4.

Table 6. Needed Programs by Perceived Future Role of Organization in Energy Programming

	Needed Program Category	Perceived Future Role: 1 Active, Initiating Programs	2 (3) Moderately Active	3 Not Very Active (Passive)	
#1.	Information, Knowledge, Awareness, Belief	88 33.2	14 (28) 35.0	14 45.2	116 34.5
#2.	Planning, Regulation, Coordination, Political Action, Leadership	99 37.4	9 (17) 22.5	8 25.8	116 34.5
#3. (+#6)	Incentives to Encourage Conservation, Cost of Conservation Actions	26 (28) 9.8	10 (17) 25.0	5 (7) 16.1	41 (45) 12.2
#4.	Physical Fixes: Buildings, Vehicles and Appliances	27 10.2	4 (5) 10.0	1 3.2	32 9.5
#5.	Lifestyle Changes	23 8.7	3 (4) 7.5	1 3.2	27 8.0
#6.	Assistance: Programs/Problems Focused on the Needy	2 .8	0 0	2 6.5	4 1.2
		265 78.9	40 (71) 11.9	31 9.2	336 100.0

Expected values were not preset.

$\chi^2 = 12.2592$ df = 4 p = .01586

For the purpose of the chi-square analysis, row #6 was collapsed into row #3, and column #3 was collapsed into column #2. Row totals and grand total differ from other tables due to 1 missing case.

Table 7. Problems by Type of Organization

		Type of Organization							
		1 (+6)	2	3	4	5 (+7)	6	7	
	Problem Category	State Government	Local Government	Private Service	Utilities, Energy-Related Organizations	Citizen Action, Neighborhood Associations	Education, Research	Labor	
#1.	Information, Knowledge, Awareness, Belief	18 (27) 41.9	8 11.0	6 14.0	15 29.4	18 (24) 31.0	9 25.7	6 30.0	80 24.8
#2.	Planning, Regulation, Coordination, Political Action, Leadership	7 (15) 16.3	22 30.1	7 16.3	7 13.7	21 (25) 36.2	8 22.9	4 20.0	76 23.5
#3. (+#6)	Incentives to Encourage Conservation, Cost of Conservation Actions	9 (15) 20.9	20 (22) 27.4	18 (19) 41.9	9 (10) 17.6	14 (18) 24.1	5 (5) 14.3	4 (4) 20.0	79 (84) 24.5
#4.	Physical Fixes: Buildings, Vehicles and Appliances	2 (4) 4.7	5 6.8	2 4.7	5 9.8	0 (1) 0	2 5.7	1 5.0	17 5.3
#5.	Lifestyle Change	6 (17) 14.0	16 21.9	9 20.9	14 27.5	5 (10) 8.6	11 1.4	5 25.0	66 20.4
#6.	Assistance: Programs/ Problems Focused on the Needy	1 2.3	2 2.7	1 2.3	1 2.0	0 0	0 0	0 0	5 1.5
		43 (78) 13.3	73 22.6	43 13.3	51 15.8	58 (78) 18.0	35 10.8	20 6.2	323 100.0

Expected values were preset.

For the purpose of the chi-square analysis, row #6 was collapsed into row #3, column #6 was collapsed into column #1, and column #7 was collapsed into column #5.

Table 8. Problems by Size of Organization

		Number of Employees/Members				
	Problem Category	1 Less Than or Equal to 10	2 11-20	3 21-50	4 Greater Than or Equal to 51	
#1.	Information, Knowledge, Awareness, Belief	2 7.1	17 44.7	19 19.6	42 26.2	80 24.8
#2.	Planning, Regulation, Coordination, Political Action, Leadership	7 25.0	6 15.8	20 20.6	43 26.8	76 23.5
#3. (+#6)	Incentives to Encourage Conservation, Cost of Conservation Actions	12 (14) 42.9	7 (7) 18.4	23 (23) 23.7	37 (40) 23.1	79 (84) 24.5
#4.	Physical Fixes: Buildings, Vehicles and Appliances	0 0	1 2.6	7 7.2	9 9.6	17 5.3
#5.	Lifestyle Changes	5 17.9	7 18.4	28 28.9	26 16.2	66 20.4
#6.	Assistance: Programs/ Problems Focused on the Needy	2 7.1	0 0	0 0	3 1.9	5 1.5
		28 8.7	38 11.8	97 30.0	160 49.5	323 100.0

Expected values were preset.

$\chi^2 = 27.8062$ df = 12 $p = .00662$

For the purpose of the chi-square analysis, row #6 was collapsed into row #3.

Table 9. Problems by Age of Organization

		Age of Organization						
		1	2	3	4	5	6	
	Problem Category	Less Than or Equal to 3 Years	4-5 Years	6-7 Years	8-10 Years	11-20 Years	Greater Than or Equal to 21 Years	
#1.	Information, Knowledge, Awareness, Belief	21 39.6	5 20.8	5 14.3	10 21.7	11 33.3	28 21.2	80 24.8
#2.	Planning, Regulation, Coordination, Political Action, Leadership	12 22.6	6 25.0	10 28.6	13 28.3	4 12.1	31 23.5	76 23.5
#3. (+#6)	Incentives to Encourage Conservation, Cost of Conservation Actions	11 (11) 20.8	8 (8) 33.3	14 (16) 40.0	8 (8) 17.4	8 (8) 24.2	30 (33) 22.7	79 (84) 24.5
#4.	Physical Fixes: Buildings, Vehicles and Appliances	1 1.9	0 0	0 0	5 10.9	1 5.9	10 7.6	17 5.3
#5.	Lifestyle Changes	8 15.1	5 20.8	4 11.4	10 21.7	9 27.3	30 22.7	66 20.4
#6.	Assistance: Programs/ Problems Focused on the Needy	0 0	0 0	2 5.7	0 0	0 0	3 2.3	5 1.5
		53 16.4	24 7.4	35 10.8	46 14.2	33 10.2	132 40.9	323 100.0

Expected values were preset.

$\chi^2 = 41.8349$ df = 20 p = .00362

For the purpose of the chi-square analysis, row #6 was collapsed into row #3.

Table 10. Problems by Perceived Future Role of Organization in Energy Programming

	Problem Category	Perceived Future Role: 1 Active, Initiating Programs	2 Moderately Active	3 Not Very Active (Passive)	
#1.	Information, Knowledge, Awareness, Belief	66 28.0	9 19.1	5 15.2	80 25.3
#2.	Planning, Regulation, Coordination, Political Action, Leadership	52 22.0	14 29.8	4 12.1	70 22.2
#3. (+#6)	Incentives to Encourage Conservation, Cost of Conservation Actions	54 (59) 22.9	7 (7) 14.9	17 (17) 51.5	78 (83) 24.7
#4.	Physical Fixes: Buildings, Vehicles and Appliances	12 5.1	5 10.6	0 0	17 5.4
#5.	Lifestyle Changes	47 19.9	12 25.5	7 21.2	66 20.9
#6.	Assistance: Programs/Problems Focused on Needy	5 2.1	0 0	0 0	5 1.6
		236 74.7	47 14.9	33 10.4	316 100.0

Expected values were not preset.

$\chi^2 = 20.736$ df = 8 p = .00851

For the purpose of the chi-square analysis, row #6 was collapsed into row #3.

Table 11. Problems by Number of Categories of Employees/Members

		Number of Categories of Employees/Members			
	Problem Category	1 Less Than 3	2 3-4	3 Greater Than 5	
#1.	Information, Knowledge, Awareness, Belief	27 30.7	23 22.5	30 22.6	80 24.8
#2.	Planning, Regulation, Coordination, Political Action, Leadership	17 19.3	24 23.5	35 26.3	76 23.5
#3. (+#6)	Incentives to Encourage Conservation, Cost of Conservation Actions	21 (22) 23.9	32 (32) 31.4	26 (30) 19.5	79 (84) 24.5
#4.	Physical Fixes: Buildings, Vehicles and Appliances	3 3.4	2 2.0	12 9.0	17 5.3
#5.	Lifestyle Changes	19 21.6	21 20.6	26 19.5	66 20.4
#6.	Assistance: Programs/Problems Focused on the Needy	1 1.1	0 0	4 3.0	5 1.5
		88 27.2	102 31.6	133 41.2	323 100.0

Expected values were preset.

$\chi^2 = 41.7757$ $\quad$ $df = 8$ $\quad$ $p = .00002$

For the purpose of the chi-square analysis, row #6 was collapsed into row #3.

three items: (1) perceived problems impeding conservation obtained during the interviews; (2) perceived program needs obtained during the interviews; and (3) perceived program needs obtained at the conclusion of the community forum small group sessions. The "responses" which informants rated during the interviews were actually the interviewer's summary restatements of the informants' open-ended responses regarding needed programs and problems impeding conservation. Therefore, to check for possible bias on the part of the interviewer in summarizing or restating these responses, the restated responses were correlated with the informants' original responses. For both needed programs and problems impeding conservation, the correlations between restatements and original responses were high and statistically significant (r_s = .89, $p < .05$, and r_s = 1.00, $p < .01$, for needed program and problem responses, respectively). These results indicated acceptable reliability for the interviewer restatement procedure.

Each set of importance ratings (interview problems, interview program needs, and forum program needs) was analyzed using a three condition one-way analysis of variance. In each analysis, the category coding groups of Information-Awareness, Planning-Regulation, and Incentives-Costs served as cells of the design. (The Physical Fix and Lifestyle Change categories were excluded from these analyses since they were utilized so infrequently by respondents.)

For the problems and needed program importance ratings obtained during the interviews, no significant differences emerged from the analyses of variance. A significant F value did result from the analysis of the forum needed program importance ratings, $F(2,308) = 3.87$, $p < .02$ (Table 12). A Scheffe multiple range test (Nie, Hull, Jenkins,

Table 12

Analysis of Variance:
Needed Program Importance Ratings

Forum Results (Small Group Ratings)

I. Summary Table

Source	df	MS	F	p
Between Groups	2	2.6951	3.868	.0219
Within Groups	308	.6968		

II. Mean Importance Ratings as a Function of Coding Categories

Categories	Information-Awareness	Planning-Regulation	Incentives
Means	1.85	2.12	2.06
Number of Responses	.31	146	34

Steinbrenner & Bent, 1975) revealed a significant difference between the ratings for Information-Awareness and Planning-Regulation at the .05 level, but no other contrasts were significant. Information-Awareness programs were rated as more important than Planning-Regulation programs (Table 12).

To determine the relationship between interview and forum ratings of needed programs, a two-way (method x coding category) analysis of variance was performed on the respective importance ratings. This analysis revealed a significant main effect for data collection methods, $F(1,613) = 38.30$, $p < .001$ (Table 13). In general, forum participants ranked programs as less important than did interview informants. The analysis of variance also revealed a weak method by category interaction, $F(4,613) = 2.29$, $p = .508$. Scheffe tests performed on these simple effects indicated that differences contributing to the interaction were most pronounced between forum and interview ratings of the Planning-Regulation and Physical Fix responses. As a final point of comparison, the relative homogeneity of rating scores between interview and forum methods was analyzed using Levene's test (Keppel, 1973). Interview program need ratings proved to be more homogeneous across content categories then forum program need ratings, $F(1,8) = 17.41$, $p < .01$.

Individual Responses vs. Group Responses: Needed Programs and Problems

In order to assess the effects of group influence on the generation of ideas for needed programs and problems impeding conservation, several correlational analyses were performed. In the first set of analyses, needed programs and problem response frequencies obtained by the interview were correlated with the independently generated program and problem responses obtained in the forums. These two correlations were both

Table 13

Analysis of Variance

Needed Program Importance Ratings

Interview x Forum Results

I. Summary Table

Source	df	MS	F	p
Main Effect	5	5.893	9.549	.001
Coding Category	4	1.070	1.718	.144
Method (i.e., interviews vs. forum)	1	23.865	38.303	.001
Interaction	4	1.427	2.291	.058
Explained Variance	9	3.908	6.273	.001
Residual Variance	613	.623		

II. Mean Importance Ratings as a Function of Method and Need Program Coding Categories

		CATEGORIES									
		Information-Awareness		Planning-Regulation		Incentives		Physical Fix		Lifestyle Change	
		$\bar{X}$	N	$\bar{X}$	N	$\bar{X}$	N	$\bar{X}$	N	$\bar{X}$	N
METHOD	Interview	1.16	117	1.53	108	1.64	39	1.74	27	1.47	15
	Forum	1.85	131	2.12	146	2.06	34	3.00	3	1.00	3

significant (r_s = 1.0, p < .01, and r_s = .94, p < .01, for needed programs and problems, respectively). These results indicated strong similarity between the patterns of responses generated by the two "individual" methods (interviews and forum independent idea generation).

The second comparison was performed between the independently generated and small-group generated ideas obtained at the forums (problems were not discussed by the small groups). A rank-order correlation of r_s = 1,0, p < .01 emerged, indicating that independently generated needs were highly correlated with needs identified in the small groups.

Finally, a comparison was performed between the individually generated needs obtained in the interviews and the forum small group needs. A Spearman correlation of r_s = 1.0, p < .01 was obtained.

The above rank-order analyses suggest that individual and group generated response frequencies for both needed programs and problems impeding conservation were highly similar.

Program Effectiveness Ratings and Reasons for Effectiveness

Program Effectiveness

To obtain an assessment of informants' perceptions of the effectiveness of energy programs, informants were asked to rate the effectiveness of current or recently terminated energy programs in their own organizations (item 7b, Appendix D). For these ratings, a five-point scale was utilized (1 = Extremely Effective, 2 = Very Effective, 3 = Moderately Effective, 4 = Somewhat Effective, 5 = Not at All Effective). Informants were also asked to indicate their degree of certainty concerning these judgements. These responses were also obtained on a five point scale (1 = Extremely Certain, 2 = Very Certain, 3 = Moderately Certain, 4 = Somewhat Certain, 5 = Not at All Certain).

These data were then analyzed in two steps. First, a weighted average was computed for each pair of effectiveness-certainty ratings. The formula for this computation was $\frac{E + C}{C}$, with E = effectiveness rating, and C = certainty rating. The computation thus enabled the weighting of each effectiveness rating by the felt certainty of the informant concerning his/her rating.

In the second step, a one-way, four condition analysis of variance was performed to determine if different types of programs differed in rated effectiveness. Due to the lack of a sufficient number of responses, two content categories were dropped from this analysis (Lifestyle Change and Assistance to Needy). The remaining four categories constituted the cells of the design. The analysis of variance indicated significant differences between the judged effectiveness of different program types, $F(3, 157) = 6.445$, $p = .0004$ (Table 14). A Scheffé multiple range procedure (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975) indicated that significant differences in effectiveness ratings occurred between Information-Awareness and Incentive programs and also between Physical Fix and Incentive programs. With regard to the ordering of the mean effectiveness rating scores, Physical Fix programs were rated as most effective, followed by Information-Awareness, Planning-Regulation, and Incentive Programs.

Reasons for Effectiveness

The second interview item which addressed the issue of program effectiveness obtained informants' perceptions of the reasons for the effectiveness of those programs which they had rated as effective.

The data for this item were not subjected to statistical analyses due to the lack of a sufficient number of joint frequencies (matrix

Table 14

Analysis of Variance:

Needed Program Certainty-Weighted Effectiveness Ratings

I. Summary Table

Source	df	MS	F	p
Between Groups	3	2.1511	6.445	.0004
Within Groups	157	.3338		

II. Mean Certainty-Weighted Effectiveness Ratings as a Function of Coding Categories

Categories	Information-Awareness	Planning-Regulation	Incentives	Physical Fix
Means	2.23	2.33	2.78	2.00
Number of Responses	74	51	50	18

cells) whose expected value exceeded five. (Of a total of twenty joint frequencies in the chi-square matrix [which crossed categories of reasons for effectiveness with categories of programs coded as effective], only four joint frequencies had expected values greater than five.) However, the direction of the results is apparent from an examination of the response percentages. As shown in Table 15, three-fourths of the reasons were coded as either related to the Practical Nature of the Program or to the Efficient Program Planning and General Functioning of the Organization. Furthermore, of the programs rated as effective, 44% had been coded as Information-Awareness programs, while 34% were Planning-Regulation programs. Of the reasons given for the effectiveness of Information-Awareness programs, 50% were related to the Practical Nature of the Program, and 30% were categorized as Efficient Program Planning and General Functioning of the Organization. On the other hand, of the reasons given for the effectiveness of Planning-Regulation programs, 33% were related to the Automatic Effectiveness of the Program Once the Program is Implemented, and 33% pertained to the Effective Program Planning and General Functioning of the Organization.

Perceived Extent of Local Conservation Efforts and Strategies People Have Used to Conserve

Item $4b_1$ (Appendix D) elicited informants' perceptions concerning the extent of local conservation efforts. Responses were coded dichotomously (1 = relatively high level and/or widespread effort, 2 = relatively low level and/or not widespread effort). Chi-square analyses revealed that the key informant sample was fairly evenly divided in its opinions concerning the extent of local conservation efforts, $\chi^2(1) = 2.05$, ns, with 24 responses coded as high level and 35 responses coded as low level. Also, as reported above, two-way chi-square analyses revealed that informants who perceived a greater extent of conservation

Table 15

Perceived Reasons for Effectiveness of Programs

Reasons for Effectiveness	Number of Responses	Percent of Total Responses
Practical Nature of Program	24	34%
Efficient Program Planning and General Functioning of Organization	22	31%
Financial Incentive	7	10%
Automatic Effectiveness Once Program is Implemented	13	18%
Appealing Nature of Program	5	7%
		100%

did not differ from other informants in their responses concerning needed programs or responses concerning problems impeding conservation.

Item $4b_2$ (Appendix D) obtained informants' perceptions concerning strategies used locally to conserve. Coding system #2 (p. 45) was used to code these responses. A two-way chi-square analysis (strategies by perceived extent) was performed to determine if respondents' perceptions concerning strategies were related systematically to their perceptions of the extent of conservation efforts in the community. These results approached significance, $\chi^2(5) = 9.91$, $p = .0781$. However, as shown in Table 16, This difference is probably not meaningful. The difference which appears to account for the majority of the variance stems from the high frequency of comments reflecting respondents' opinions about the extent of conservation efforts, rather than specific strategies *per se*.

Existing Energy Conservation Programs Questionnaire

This questionnaire (Appendix P) was administered to participants at both community forums. The purpose of the questionnaire was twofold: (1) to pilot-test the questionnaire for other research, in terms of feasibility of administration, clarity of instructions, acceptability of format, etc.; and (2) to obtain preliminary data from a small sample of relatively well informed community residents concerning the extent of familiarity with and reported effectiveness of the most visible community energy conservation programs. No difficulties arose in the administration of the questionnaire, and it was therefore considered to be an acceptable data gathering instrument for later program planning purposes. The data collected at the forums were not subjected to statistical analyses, but were simply tallied and summed (Appendix P).

Table 16

Strategies Used to Conserve by Perceived Extent of Conservation

Strategies	Extent: High Level and/or Widespread	Extent: Low Level and/or Not Widespread	
#1. Low Expense Residential	21 18.8	23 17.6	44 18.1
#2. High Expense Residential	24 21.4	18 13.7	42 17.3
#3. Commercial and Industrial	6 5.4	1 0.8	7 2.9
#4. Transportation	19 17.0	20 15.3	39 16.0
#5. Financial Incentives, and Capital are Required	19 17.0	28 21.4	47 19.3
#6. Comment Reflects Opinions on Extent	23 20.5	41 31.3	64 26.3
	112 46.1	131 53.9	243 100.0

Expected values were not preset.

One-way chi-square (strategies)

$\chi^2 = 44.63$

df = 5

p < .0001

Two-way chi-square (Strategies x Extent)

$\chi^2 = 9.91$

df = 5

p = .0781

Demographic Data and Energy Directory

These data and the Energy Directory are presented in Appendices R-V and Appendix W. Due to the qualitative nature of these results, they are reviewed in the following chapter.

CHAPTER IV

DISCUSSION

Perceived Energy Conservation Program Needs

One of the major findings of the present study concerned the pattern of perceived needs for energy conservation programs in the community. Clearly, the informants sampled in the present study emphasized the need for programs which would provide information about energy conservation and would increase "energy awareness" in the community. Informants also frequently mentioned new programs or modifications of existing programs which would involve improvements in planning, regulation, coordination; leadership, and political action activities.

Some of the Information-Awareness program needs which were mentioned most frequently were the following:

(1) Systematic dissemination of practical information, by using local energy directories, information clearinghouses, and telephone "hotlines". For example, one informant remarked that "price lists should be maintained of standard energy conservation items, with comparisons among suppliers. It could be like a consumer market type of thing".

(2) Public relations approaches. As one informant claimed, "there are lots of good things going on, but nobody knows about them . . . . We need more public service announcements, regular newspaper how-to-do-it columns . . . ."

(3) Hands-on demonstrations and workshops. For example, several informants suggested constructing solar greenhouses using the "hands-on"

workshop approach, and then using the greenhouses for public tours. (This type of project was actually in effect at the time of the interviews, sponsored by a local energy action organization, Urban Options of East Lansing).

(4) Residential energy audits (home inspections). A number of informants expressed the need for such programs. Several informants suggested that local organizations, such as neighborhood associations or church groups, could train their members to do audits in their neighborhoods. This would provide a low-cost, easily coordinated service, and would enhance the "sense of community" and trust in the energy auditors.

(5) Programs providing information on product safety, and quality of workmanship and construction. A number of informants expressed concern about "rip-offs" with shoddy construction and installation, faulty manufacture, generally dangerous devices, etc. Some informants expressed this concern in terms of increased information, while others called for more and better regulation.

(6) Integration of energy education into existing formal education settings. A number of informants suggested better utilization of public school and college programs. According to one informant, "we could have lots of kid projects . . . they could do block surveys, like how many houses had snow on the roof [indicating sufficient insulation] or had all their storm windows up. . . . Teachers could publicize what they found."

(7) Information on incentive and assistance programs. For example, one informant noted that "it's just crazy that with a 55% tax credit for solar in this state, more people don't do something . . . . Why don't we hear about programs like that?"

With regard to programs involving planning, regulation, coordination, leadership, and political action, the following examples illustrate informants' concerns:

(1) Planning: "All the programs are surface programs where the government can point to and say 'aha, we saved energy right there . . . we need to make investments in the things that need to be done over the long run, like land-use planning and building designs."

(2) Regulation: "Two years ago Indiana cut back on its energy use 25% . . . our area in Michigan . . . did not put any teeth into asking the heavy users to make any significant cutback." And, ". . . local building codes right now are a bare minimum. . . we need something better."

(3) Coordination: "A lot of agencies. . . go off in separate directions . . . a person might go to six offices where he might be better served by going to one." And, ". . . it seems like everybody's reinventing the wheel . . . for every program there must be ten trying to do the same thing, then some of them die out and new ones pop up."

(4) Leadership: "I would think we don't have what we need higher up in the state . . . some of these energy offices have a new director every couple of months. . . we need some consistency in the programs, a long-term view."

(5) Political Action: " If everybody would get together and stand up to the oil companies, they wouldn't be able to raise prices so fast." And, ". . . we need some kind of citizen intervenor in the rate cases, so the consumer can have a voice in what's going on."

Perceptions of Problems Impeding Conservation

A second major finding concerns informants' perceptions of problems which currently impede conservation. Although the frequency distributions of comments pertaining to needed programs and problems impeding conservation were ordered somewhat similarly (r_s = .77, ns, and r_s = .89, p .05, for interview and forum data, respectively), chi-square tests revealed significant differences between the patterns of programs and problems for both interview and forum data sets. As shown in Tables 1 and 2, these differences can be summarized in terms of the greater homogeneity of comments across categories in the frequency distributions of problems, as compared to the distributions of programs. Also evident in these tables is the fact that this difference in homogeneity is due to the greater use of the Incentives-Costs and the Lifestyle Change categories in coding problems, as contrasted with needed programs.

In considering the possible explanations for the greater salience of Lifestyle Change and Incentives-Costs for problems rather than programs, the concept of program feasibility plays a central role. First, programs which directly address lifestyle changes (e.g. forced car-pooling, strict enforcement of thermostat set-backs, banning less durable goods in the market) are frequently perceived as alien to a democratic society. However, the perception that energy conservation involves individual, non-programmatic lifestyle change is currently popular and hardly controversial.

By the same token, although high energy costs are readily perceived as a problem, the feasibility of implementing incentive programs was questioned by many informants. For example, several informants explicitly stated that they would rather see the "free market" provide incentives for conservation rather than specific government programs.

And, others mentioned the difficulty of implementing incentive programs at the local level. Conversely, activities related to information dissemination and improvements in planning and regulation are readily seen as areas for program development.

Although the reasons for conceptualizing programs in different contexts than problems are apparent, it should be noted that these differing contexts for program vs. problem conceptualizations in themselves present obstacles to effective local programming. In other words, if the problems related to lifestyle changes and incentives are as prevalent as indicated by informants, then it would seem adviseable for planners to address the difficult task of designing programs which deal directly with such problems.

Clearly, many informants held expectations that increasing information and awareness would lead fairly automatically to lifestyle changes. Unfortunately, there is a considerable body of research which describes the general failure of "information only" approaches in increasing conservation behaviors (Shippee, 1980; Winett & Neale, 1979). And, although planning and regulation activities are likely to provide supportive infrastructures for conservation, there is considerable evidence that infrastructure support is necessary but not sufficient for increasing conservation behaviors (e.g. Becker, Seligman, & Darley, 1979). It is likely, therefore, that the problems relating to Incentives-Costs and Lifestyle Change which were identified by informants need to be directly addressed by innovative program solutions. Examples of such solutions suggested by informants include the following:

"How about having a list of neighborhood conservation homes sent out with utility bills, so people could visit their neighbors. . .

Homeowners could be given a discount on their utility bills to show their neighbors around their energy-efficient homes."

"Landlords need tax abatements for conservation. . . their property tax assessments should have special exceptions for conservation. . . we can't have them paying more for doing a good job."

"Utilities should put their low-cost capital to further conservation . . . for example, there could be a purchase-lease deal worked out where money could be borrowed by the utility to buy co-generation equipment, and the equipment could be leased to utility customers."

"Wichita supports a zero-interest insulation finance plan. . . why not Lansing?"

The above comments are but a few of the many suggestions offered by informants for innovative programs. A more in-depth understanding of the specific concerns of informants related to Incentives-Costs and Lifestyle Change problems is provided by the following passages:

"People are conserving in energy units, but their bills are increasing. . . it's just demoralizing."

"Being such a mobile society . . . they look at it as 'why should I do it now [insulate, weatherize, etc.] when I'll be moving soon."

"I live in a place where heat is included in the rent . . . these people aren't dialing down . . . they think, why should they, someone else pays for it."

"We're not exactly poor, but we can't afford, say, new storm windows, and we don't qualify for the government poverty guidelines."

"You've got a long payback period, you need capital up front, and money's hard to get these days."

"You talk to two builders, one says 'I built that home real energy-

efficient . . . but that's all covered up. The person coming down the street, it's the mortgage payments that count . . . there's no way of knowing the difference in value.'"

Although we have thus far stressed the dimensions of Incentives-Costs and Lifestyle Change in this section (reflecting the greater use of these categories in coding "problem" responses compared to "needed program" responses) it should be recalled that the data revealed roughly equivalent concern for problems related to Information-Awareness and Planning, Regulation, Coordination, Leadership, and Political Action (Tables 1 and 2). To provide a more in-depth understanding, the following comments illustrate various problems related to Information, Knowledge, Awareness, and Belief:

"There's no incentive to teach energy in schools, since the push is big now for basic skills . . . teachers say, 'we don't have time for standard science, how can we teach energy?'"

"If you say to a person, 'you could get an energy audit for $50', they say that's a lot of money, but most of them don't realize they could recoup that in less than a year."

"Some people don't even have the basic skills for caulking a house or weatherstripping a door."

"The kids get conflicting messages . . . we tell them one thing in school, they go home and their parents say it's a bunch of hogwash . . . it's all the fault of the politicians, the oil companies, or whoever."

"Everyone has his or her tack on the problem, with little overview . . . the problem is really the definition of the problem . . . the whole energy business is seen as an electricity problem, because we think of energy as wires running into our house . . but specifically,

where do we need to conserve? We don't need to conserve . . . energy as a whole . . . we need to conserve petroleum . . .use lower-grade sources for space heating, that kind of thing."

"It's an interconnected systems kind of question . . . people tend to reduce it to funny little things and get confused about what to do."

"Utilities say, 'sure, conserve, but that's not enough'. People are confused about what to do."

"It's developing so fast with new products all the time, that one day I can tell a person that the best thing you could do to your basement would be furring strips and styrofoam sheeting, the next day I can find out that there's a spray-on product . . . that's cheaper."

Turning to the comments involving Planning, Regulation, Coordination, Leadership, and Political Action, the following are illustrative:

"N.E.C.P.A. [National Energy Conservation Policy Act, the recently adopted Federal conservation law] has a three-tiered auditing program, local governments, schools, and hospitals . . . no reason for something that complex . . . we could do it with a simple program."

"Local governments haven't come close to doing anything because they haven't felt enough pressure from their constituents . . .and when they have felt the pressure, they pass the buck to the Federal government. Everybody's still finger-pointing . . .'it's your fault', 'no, it's your fault'".

"Our biggest problem is getting Federal dollars down to the local level . . . that's the biggest problem government faces."

"The Federal government has been mandating more and more requirements . . . the cost of one of these new busses is $122,000 apiece, of course

bus fares are going up . . . we'll be lucky to keep mass transit going."

"I could ride a bike, but there's no bike path . . . I was hit by a car once riding a bike, and I don't want to risk that again!"

"These furnace guys buy a boxcar load of 100,000 BTU furnaces . . . you could buy a 75,000 BTU instead, which would be adequate . . . but it's a slow process since so many oversized units are in stock."

"Everytime we look left or right we've got environmental problems and I think they all have to be addressed, not a specific one [i.e. just energy, in isolation] because it's always 'catch-up game, band-aid fixes' when we do that."

"Somehow we've got to live together . . . anytime we polarize, nothing happens . . . it's easy to criticize, but it's much more difficult to resolve problems. . . we have to have a total look at things."

These comments reflect the serious concerns of community leaders, energy activists, and other concerned individuals with problems impeding conservation. Earlier, their ideas for needed programs were illustrated. To summarize a central theme running throughout these comments, the two dimensions of program needs and problems impeding conservation clearly overlap. However, as evident both from an examination of these verbatim comments and from the statistical analyses summarized in the previous discussion, the dimensions of program needs and problems impeding conservation appear to be sufficiently independent to warrant separate and equal attention in future energy conservation needs assessments.

Organizational and Informant Characteristics

Two types of analyses of organizational and informant characteristics were performed in this study. The first type consisted of one-way chi-square analyses of each characteristic. The second type involved two-

way chi-square analyses in which levels of each characteristic were crossed with response categories to determine if differences on characteristics were associated with differences in response patterns.

The first set of analyses revealed that the sample was highly skewed on most characteristics. In other words, different levels of most characteristics were disproportionately represented in the sample. In sum, there were more men than women, more upper and middle-level employees/members than lower-level employees/members, more large than middle-sized or small organizations, and a greater number of older than younger organizations represented in the sample. With regard to the importance of energy issues to organizations, a significantly greater number of informants reported energy conservation to be highly important to their organizations, and that they expected their organizations to play an active role in energy programming in the future. And, a significantly greater number of informants expected their energy funding to be continued in the future rather than discontinued.

However, it should be noted that the skewed nature of these distributions were a direct result of the purposive sampling method employed. In essence, these differences provide evidence for the successful employment of the method. For example, organizations were selected according to their likely involvement in energy programming, and informants were members of these organizations who had indicated their interest in local energy issues. Therefore, it is not surprising that a significant number of informants reported that their organizations considered energy to be a highly important issue to their organizations. And, the greater proportion of senior level employees/members perhaps reflects the greater visibility of their interests in the organization. It should also be

noted that the fairly even distribution of different types of organizations (occuring in both interview and forum samples) indicates that the purposive sampling procedure successfully resulted in the selection of a broad cross-section of community organizations.

In the second set of these analyses several significant relationships between organizational and informant characteristics and the response categories utilized by informants emerged. These significant relationships occured in both the needed program and problem data sets. Specifically, informants mentioned divergent programs and problems if they were from organizations differing on the dimensions of type, size, age, and expected future role in the energy area. Degree of bureaucratization proved to be a distinguishing characteristic in the case of the problems data set, but not for the programs data.

In general, no clear patterns characterized the relationships between specific levels of organizational or informant characteristics with the needed program responses category frequencies. However, some specific observations were of interest. For example, although all types of organizations clearly stressed Information-Awareness and Planning-Regulation programs, informants from state government and private service organizations were relatively more sensitive than other informants to needs for Incentives. In contrast, informants from utilities and citizen action organizations perceived relatively greater needs for Physical Fix programs. Citizen action groups also emphasized Planning-Regulation programs to a greater degree than other organizations. With regard to the age of organizations in the sample, a curvilinear relationship was obtained. That is, both the oldest and youngest organizations emphasized the Information-Awareness and Planning-Regulation categories, while

informants from middle-aged organizations distributed their comments more evenly among categories. Concerning the relationship between the perceived future role of the organization in the energy area and perceived program needs, informants who expected their organizations to play a more active role placed fairly equal emphasis on Information-Awareness and Planning-Regulation, while less active organizations emphasized Incentives and Information-Awareness programs more than would be expected.

The relationships between problem responses and specific levels of organizational and informant characteristics were also characterized by the lack of a coherent conceptual pattern. However, there were some specific relationships of interest. Some of the most noteworthy comparisons occurred between the response patterns of the needed programs vs. the problems data set. For example, state government informants perceived a much smaller proportion of problems than needed programs to be related to Planning-Regulation. This was also the case for informants from utilities and energy-related businesses, but no others. Also, while informants from local government offices and private service organizations perceived a strong need for Information-Awareness programs, these informants placed much less emphasis on the lack of Information-Awareness as a problem when compared to other types of organizations. Instead, informants from local government offices and private service agencies placed much more emphasis on problems related to Incentives-Costs. In general, informants from most types of organizations tended to de-emphasize problems related to Information-Awareness and Planning-Regulation while they strongly emphasized these two categories in the needed programs data set. The notable exception to this generalization were the citizen action and labor organizations. The informants from

these organizations identified both Information-Awareness and Planning-Regulation as problems, and they also proposed a relatively large number of programs for these problem areas.

This entire set of observations should be considered in the context of the remarks made previously concerning the influence of perceived program feasibility on informants' responses. These observations also add considerable depth to an understanding of the community energy picture. For example, the tendency of state government, utilities, and energy-related businesses and associations to emphasize Planning-Regulation as a dimension of program needs, but not to recognize Planning-Regulation as a problem dimension has implications for community needs assessment and program planning. Specifically, a reasonable hypothesis for these results would be that bureaucratic incentives (e.g. organizational expansion, increased access to resources, etc.) encourage informants from these organizations to suggest program needs related to Planning-Regulation, but at the same time prevent these informants from acknowledging problems related to improvements in the planning, regulation, and coordination of programs. If this hypothesis proved to be true, the further implications for energy activists would be clear: in order to successfully address problems related to improvements in the planning, regulation, and coordination of energy programs, one must explicitly take bureaucratic incentives into account, by using appropriate persuasion techniques, facilitating inter-organizational resource sharing, etc.

Energy Program Funding

The analyses of items which obtained information concerning existing energy program funding and other possible funding sources (items 3a and 3c, Appendix D) suggest two observations of special interest.

First, as shown in Table Q3, funding patterns for existing government programs form an intricate web, with both state and local agencies receiving support from a variety of sources. Second, by far the greatest number of suggestions for other potential sources of funding were coded as direct federal and state funding, with the majority of comments relating to direct federal support (Table Q3). This suggests an unwillingness on the part of community organizations to undertake the difficult task of obtaining new funding from local and regional funding sources. For instance, few informants suggested that conservation programs should become self-supporting, or that they should become line items on local budgets.

Informants' Verbosity

One possible alternative explanation for the pattern of needs for energy conservation programs and problems obtained from the project interviews was that the verbosity of informants might somehow have mediated responses to the interviewers' questions. Recall that the number of actual responses to particular items was allowed to vary across informants. It could therefore be hypothesized that the types of programs and/or problems identified by informants was determined by participants' verbosity, rather than by actual perceptions of community needs.

This alternative explanation was assessed in a two-stage analysis. In the first stage, informants were blocked by a three way median split into "low verbosity", "medium verbosity", and "high verbosity" respondent groups. In the second stage, each informant was assigned two verbosity rating scores, one for needed programs responses and the second for problems responses, with 1 = low, 2 = medium, and 3 = high verbosity. Since each rating score actually represented a range of frequencies, a two-way

chi-square analysis was employed (3 levels of verbosity by 5 levels of response categories). In both needed programs and problems data sets, response categories were demonstrated to be unrelated to verbosity, $\chi^2(8) = 8.06$, ns, and $\chi^2(8) = 10.67$, ns, for needed programs and problems respectively.

Importance Ratings

A major dependent variable included in the present study was the importance rating by informants of their own responses concerning needed programs and problems impeding conservation. Category-coding of responses enabled the assignment of importance rating scores to each content category. These importance rating scores were subjected to several analyses.

In the first set of analyses, the importance rating scores for the two major interview data sets (needed programs and problems) were subjected to one-way analyses of variance, with each cell consisting of rating scores for a particular content category. These analyses revealed no significant differences between categories. However, an additional analysis revealed that forum participants' importance ratings of different types of responses differed significantly. Specifically, these participants rated the Information-Awareness program ideas generated at the forums to be more important than Planning-Regulation programs (see Table 12).

In a final analysis, needed programs importance ratings obtained in both methods (interviews and forums) were contrasted in the same analysis. Interestingly, a significant difference between the two needs assessment methods emerged, and the method category interaction approached significance. And, interview ratings of needed programs proved to be significantly more homogeneous across content categories when compared to

the ratings of program needs obtained at the close of the small-group sessions held during the community forums.

Before discussing the likely explanations for these findings, the results of the various comparisons between data collected from individuals and data collected in the forum small group settings will be reviewed.

Individual vs. Group Methods

Independent vs. Small Group Responses: Forums

One of the primary methodological issues assessed in the present study concerned a comparison between perceptions elicited in the independent forum activity with the responses recorded in the small group forum sessions. To briefly review the forum activities, the community forum procedure first called for participants to generate needed programs and problems independently. Then, respondents were instructed to report program responses during the small group sessions. The ideas for needed programs were thus recorded twice: first independently, and then during the small group sessions. (Responses concerning problems impeding conservation were only recorded during the independent activity.)

Although the round-robin small group procedure was intended to elicit complete and faithful reporting from participants, it could be hypothesized that the dynamics of the small group sessions would lead to systematic differences between individually generated and group generated ideas for needed programs. For example, perhaps a group context might lead to the suppression of responses not likely to be favored by the group. Alternatively, the presence of others might lead to a tendency to report only those responses felt to be acceptable by the group.

The literature on the Nominal Group Technique (e.g. Delbecq et al., 1975) did not contain any reports of empirical tests of the group context

hypothesis. It was therefore decided to test this hypothesis using data from the present study. Independent responses concerning needed programs were correlated with the needed program responses listed on the small group posters. The results of this analysis strongly contradicted the hypothesis that the small groups influenced the needed program responses, since the Spearman correlation produced by this analysis was highly significant, $r_s = 1.0$, $p < .01$.

Interviews vs. Forums: Frequency Data

A related methodological issue concerned the comparison of frequency data from the two different methods (interviews and forums). As described above, a two-way analysis of variance performed on importance rating scores obtained by the two methods had revealed significant differences between interviews and forums. However, rank-order correlational analyses of the frequency distributions of category-coded interview and forum responses revealed significant similarities between the results of the two methods. In other words, needed program data from the interviews and the forums were highly correlated ($r_s = 1.0$, $p < .01$ for correlations between interview responses and forum independent responses, and also between interview responses and forum small group responses.) Further, interview and forum responses concerning problems impeding conservation were also highly correlated ($r_s = .94$, $p < .01$.) In sum, while the interview-forum comparison using importance ratings had revealed significant differences between methods, interview-forum comparisons employing rank-order correlations of response frequency distributions revealed close correspondence between the results obtained by the two methods.

"Public" vs. "Private" Methods for Rating Program Importance

The discrepancy between program rankings and importance ratings poses an intriguing question: Why were there significant differences between methods for importance ratings but not for the ranking of category frequencies? The high correlations for all possible individual vs. group comparisons provided evidence to refute the hypothesis that group influence played an important role. A more likely hypothesis suggests that the difference in importance ratings may have resulted because of differences between the importance rating procedures utilized in the two methods. Recall that in the forums, a relatively confidential or "private" rating procedure was employed, while a more "public" rating procedure was utilized in the interviews. As a result, interview informants who rated their own responses verbally in the presence of the interviewer were less likely to use the "not very important" end of the importance scale. This was probably a function of the perceived social inappropriateness of denigrating ones' own ideas. As one informant remarked when asked to rate his own ideas, "Well, of course all of our ideas are quite important!" Forum participants, on the other hand, rated all of their small groups' ideas using a paper-and-pencil procedure which was relatively confidential or "private". As a result, forum participants could utilize the "not very important" response without incurring negative social consequences. The findings which revealed greater heterogeneity of rating scores across content categories for the forums when compared to the interviews is consistent with this interpretation.

Support for this explanation also emerged from the significant main effect for method and the method x category interaction for the importance ratings. The main effect indicated that all programs were rated as less

important in the forums. In addition, recall the Scheffé test results which indicated significantly lower ratings for Planning-Regulation than Information-Awareness programs during the forums, and significantly lower ratings by forum participants of Planning-Regulation programs when compared to interview informants. In other words, given the privacy of the forum rating procedure, participants were relatively free to assign low importance ratings to Planning-Regulation programs.

Program Effectiveness

The interviews with key informants provided a unique opportunity for discussing issues involving program effectiveness with professionals who have close daily contact with ongoing energy conservation programs. Two items were used to obtain this information. The first of these asked informants to rate their organizations' programs in terms of effectiveness. These responses were weighted by informants' certainty ratings of their effectiveness judgements. The second item called for informants' perceptions concerning the reasons for the effectiveness of programs they had rated as effective.

Analyses of responses to the first item revealed that Physical Fix programs were rated as most effective, followed by Information-Awareness, Planning Regulation, and Incentive programs. The statistically significant differences between effectiveness ratings were due to sizeable differences between Physical Fix and Incentive program ratings, and betwen Information-Awareness and Incentive programs. However, these results are somewhat qualified by the relatively small number of Physical Fix and Incentive programs which were ongoing in the organizations and therefore amenable to rating (Table Q1).

Informants' perceptions of the reasons for program effectiveness

were coded using an empirically-based category system (Appendix I). Insufficient response frequencies did not permit statistical analyses of these data. However, the results were aggregated according to the relative percentages of responses falling into the categories (Table 15). These results indicated that nearly three-fourths of the reasons given for program effectiveness were coded as pertaining to either the Practical Nature of the Program or Efficient Program Planning and General Functioning of the Organization. Of the reasons given for the effectiveness of Information-Awareness programs, 50% were related to the Practical Nature of the Program, and 30% were categorized as Efficient Program Planning and General Functioning of the Organization. On the other hand, of the reasons given for the effectiveness of Planning-Regulation programs, 33% were related to the Automatic Effectiveness of the Program Once the Program is Implemented, and 33% pertained to the Effective Program Planning and General Functioning of the Organization.

The meaningfulness of these results must be qualified by the small size of the response sample, especially for responses coded as Physical Fixes. With this caveat in mind, the following tentative conclusions may be drawn:

(1) There is a tendency to perceive Physical Fixes as highly effective. Once a building is insulated, once a computerized thermostat control system is installed, and once a furnace flue damper is in place, energy savings are perceived to follow automatically.

(2) Incentive programs are perceived to be the least effective of existing programs. "Off-the-cuff" comments from informants indicated at least two reasons for this perceived ineffectiveness. First, tax incentive and loan incentive programs are perceived as "too little, too late".

Second, they are perceived as poorly designed and implemented.

(3) A large proportion (75%) of the reasons given for program effectiveness related to either the practical nature or the efficient planning and functioning of the program. In other words, only 25% of the reasons given were divided among the three remaining categories: Financial Incentive, Automatic Effectiveness, and Appealing Nature of the Program.

(4) Finally, an anomaly present in these data needs to be addressed. That is, if Physical Fix programs are perceived to be so effective by those familiar with them, why were they not suggested with greater frequency by interview informants and forum participants?

There are several likely explanations. First, as evident in the distribution of current energy program-types in the organizational sample (Table Q1), relatively few Physical Fix programs were mentioned by informants to be ongoing, while relatively large numbers of Information-Awareness and Planning-Regulation programs were mentioned. It is likely, therefore, that informants were oriented to suggest the kinds of programs run by their own organizations. Second, out of bureaucratic self-interest, informants might have sought to increase the number of programs which their organizations would be able to handle. Third, the term "program" more readily connotes the centrally coordinated Information-Awareness, Planning-Regulation, and Incentive types of operations than Physical Fix operations, and it is possible that the use of the term "program" in the interview and forum items led informants and participants to ignore Physical Fix options.

Strategies People Have Used to Conserve

Informants' comments concerning local conservation strategies were

of interest on two counts. First, the relatively high proportion of comments relating to residential conservation as opposed to other sectors may indicate greater concern for this sector, and would therefore be of interest to local planners. However, the wording of item 4b (Appendix D) may have influenced informants to stress the residential sector, since it was mentioned first in the list of possible sectors to be considered.

A more important observation concerning the necessity of using the category "Financial Incentives and Capital are Required [to adopt conservation strategies]" to code responses to item 4b, even though the items did not include any reference to incentives or capital. Note that nearly one-fifth of the responses to this item were coded using this category. It should also be noted that these responses were phrased in terms of problems rather than programs. This would support the previous argument that the lack of sufficient incentives to conserve is perceived as a salient problem dimension, and conversations concerning local efforts to conserve gave respondents the opportunity to complain about this problem.

Demographic Data

A sample of the available demographic data relevant to energy program planning is presented in Appendices R-V. These appendices describe the availability of energy consumption data for this vicinity (Appendix R), population estimates (Appendix S), household estimates (Appendix T), housing units (Appendix U) and a small sample of

the most up-to-date land-use data currently available (Appendix V).

Unfortunately, discussions with four local planners revealed that conducting the types of secondary analyses originally envisioned as part of the present study would be well beyond the scope of the available project resources.[1] The following characteristics of the currently available demographic data account for this situation:

(1) Data relevant to energy planning is generally "buried" in other data sets, since the importance of such data is a recently perceived phenomenon. Such data are therefore rarely aggregated in units that are useful to local program planning needs. For example, a one-bedroom townhouse may use up to three times the electricity of a single-bedroom apartment in a large multi-unit structure. Yet these units are not disaggregated in any existing data base. To cite another example, traffic flow data which is aggregated in terms of total vehicles per stretch of road per unit time presents a grossly inflated view of the the parking facility needs of a community when compared to vehicle origin-and-destination data. However, the former data units are far more commonly collected.

(2) Since these data are collected in large aggregations, they are expensive and are collected infrequently. Therefore, they are usually out of date (often by as much as 5-10 years) and have questionable value for planning in a field characterized by rapid changes in

price and availability of supplies, unpredictable technological developments, frequent shifts in federal and state policies impacting on local policies, etc.

(3) Obtaining energy consumption data frequently requires negotiating consent agreements with supply companies and customers. Such agreements are often difficult to obtain, are violated unexpectedly, etc. Also, much of this consumption data is in the hands of a large number of decentralized sources (e.g. fuel oil and bottled gas suppliers) whose records are often incomplete or not compiled in a standardized form. Thus, the logistics of collecting such data present formidable obstacles to the researcher.

(4) Energy supply data is seldom explicitly related to the kinds of work supplies are best suited for. That is, energy is measured in BTU values across different types of supplies (e.g. electricity and natural gas), but these supplies are efficiently applied to different kinds of end uses (e.g. lighting and mechanical applications for the former, industrial process heating and residential heating for the latter). Relating supplies to work quality and work demand requires detailed and rather technical analyses of demographic data.

For these reasons, it was decided that an in-depth analysis of demographic data relevant to energy planning would be far beyond the scope of the present study.

Energy Programs and Services Directory

The original intent of the present study with regard to the Energy Programs and Services Directory was to organize and simplify the data collected on current energy programs into a format which would be most useful to the general public. It was also proposed to make this infor-

mation widely available. However, due to the inablity of the project to obtain sufficient funding to support such a venture, and due to the start-up of a similar project supported by state agency funding at the outset of the present study, it was decided instead to target the Directory to a smaller, more select audience. Therefore, the Energy Programs and Services Directory (Appendix W) includes a considerable amount of background information on the organizations sampled in the present study, and is expected to be used primarily by the types of organizations and informants selected in the sample, i.e. units of local government, community planners, citizen action groups, human service organizations, etc. To this end, the Directory is structured according to the key organizations involved in local energy programming, and is intended to provide a short but comprehensive overview of the local energy programming picture. The Directory will be disseminated through the assistance of the Center for Urban Affairs, the research-and-service affiliate of the Michigan State University College of Urban Development.

Implications of the Present Research for Needs Assessment Methodology

Clearly, the results of the present study may be utilized to address the methodological questions which were posed earlier (p. 32).

First, the richness of detail and in-depth understanding provided by the open-ended interviews proved to be invaluable in developing the conceptual categorizations of the present study. However, the actual idea-generation procedures of the interviews and forums produced essentially identical results in terms of the prioritizations of response categories. Therefore, a direct recommendation for future needs assessment effort is that a smaller number of open-ended interviews than undertaken in this project (e.g. 10-20 rather than 66) be conducted to provide

the material for conceptual category development. A direct outcome of this strategy would be an increased benefit/cost value for future energy program needs assessments.

Second, the "public" rating procedure of the interviews seemed to have a reactive effect on informants. One solution to this procedural problem would be to redesign this rating protocol to be more confidential. However, it would seem that the additional time spent during interviews to obtain such confidential ratings would be better spent intensifying the in-depth discussion of issues with key informants. A preferable solution would be to obtain confidential importance ratings at structured community forums. Based on the present project such a procedure would have secondary advantages as well. For instance, the rating procedure utilized at the community forums seemed to provide participants with a sense of closure, and contributed to substantive discussions and informal "networking" at the close of the forums.

Therefore, it is suggested that importance ratings of responses generated during needs assessments can be readily and efficiently obtained using a confidential small group procedure such as that employed in this project.

Implications for Future Energy Needs Assessments

Given the modifications suggested above, the procedures utilized in the present study would appear to provide an excellent basis for future needs assessments in the energy area. These modifications would further maximize the cost-effectiveness and the data quality of the methods utilized in the present study. Three additional procedural improvements based on the insight gained through the conduct of this research are also suggested for future energy needs assessments.

First, the relatively technical, multi-disciplinary nature of energy issues requires considerable background for developing adequate conceptualizations for research and for conducting meaningful data analyses. Therefore, it is suggested that resources be obtained for providing those involved in category development and coding open-ended data with basic training in the energy field. From the experience gained in the present project, a 4-6 week training program would probably be sufficient.

Second, it is suggested that open-ended interview and community forum procedures such as those utilized in the present study would be of greater value if used as precursors to a more highly structured survey approach. Such an approach could provide data which would be more directly useful for answering program-planning questions, especially if the survey items reflect the earlier gathered data.

Finally, it is suggested that systematic efforts be made from the very beginning of the project to plan for the utilization of results in actual program planning. Such efforts would involve discussions with local policy makers at the early stages of the research, to determine what information would be most useful to them and how such information might best be collected.

On the whole, the cost effectiveness and data quality associated with the methods utilized in the present study argue favorably for their further use (with the recommended modifications) in the energy conservation program planning area.

Summary and Conclusions

Although the present study utilized a complex set of procedures and amassed a considerable amount of data, the major focii of the project

may be reduced to three brief questions:

(1) Is a specific set of qualitative methodologies (i.e. purposive sampling method, semi-structured interviews with key informants, and structured community forums utilizing the Nominal Group Technique) a feasible and efficient means of obtaining perceptions concerning the energy conservation program needs and problems impeding conservation in a community?

(2) What are the perceptions of informed professionals concerning the program needs and problems impeding conservation in the community?

(3) How do the program needs and problems obtained through the use of semi-structured interviews compare with the needs and problems obtained through the use of structured community forums?

The qualitative methodologies utilized in the present study proved to be relatively efficient and easy to administer. As a result of the project experience, several procedural improvements were suggested. These included providing more training in energy issues for those involved in category coding and data coding, and planning for utilization of project results during the early stages of the study.

Both program needs and problems impeding conservation were expressed in terms of the same general concepts. The concept categories were Information, Knowledge, Awareness, and Belief; Planning, Regulation, Coordination, Leadership, and Political Action; Incentives and Costs; Physical Fixes; Lifestyle Change; and Assistance to the Needy. There was some similarity in the prioritization of these needs and problems. For example, Information-Awareness and Planning-Regulation were emphasized both as problems and as needed programs, when compared to other categories. However, this emphasis was much greater in the case of needed programs.

Incentives-Costs and Lifestyle Change were considerably more salient as problems impeding conservation than as dimensions of program needs. Physical Fixes and Assistance to the Needy were mentioned relatively infrequently in both program and problem contexts.

Comparisons between interviews and forums showed that the two methods produced essentially identical prioritizations of program needs and problems. However, a comparison of program importance ratings revealed differences between the two methods. Forum participants utilized the importance rating scale more fully than interview informants, and consequently there was a greater use of the lower end of the importance scale at the forums. It is likely that this difference resulted from the greater confidentiality of the forum rating procedure. From the insight gained in this project, it was concluded that interviews and forums may be effectively used in conjunction. However, a smaller sample of interviews than utilized in the present study would likely be adequate for providing a conceptualization of the problem area. Forums were found to be a more efficient means of obtaining prioritizations and ratings of program needs and problems. In addition, the forums provided activists from different organizations the opportunity to share ideas and to create or renew communication networks between organizations.

In conclusion, it should be realized that as in the case of all productive research, the present study has raised additional questions requiring further research. These include:

(1) Why are Physical Fix programs perceived to be highly effective, yet are much less popular than Information-Awareness and Planning-Regulation programs when it comes to the generation of program ideas?

(2) Given the considerable literature documenting the inadequacy of Information-Awareness and Planning-Regulation programs in increasing conservation behavior, and given the results of the present study showing these to be the most popular types of programs, what other kinds of innovative programs can be implemented which address Incentives-Costs and Lifestyle Change areas? How can such innovative programs be designed to receive enthusiastic community support?

(3) The present study was conducted with a sample of individuals who have identified themselves as highly concerned and involved with energy issues. Furthermore, the present study was conducted in a medium-sized north midwestern community with a relatively severe winter climate. Would the results of this study be replicated in a different community with different respondents, a different climate, or communities of varying sizes?

Clearly, a considerable amount of additional research is required to address these issues.

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FOOTNOTE

Footnote

[1]It should be noted that at the time of the present research, the Tri-County Regional Planning Commission of South Central Michigan was attempting to obtain a large federal grant to prepare an energy planning demographic data base, and to conduct the types of secondary analyses originally envisioned as part of the present study. Conversation with planning commission staff mambers led to the decision that such secondary analyses would be beyond the resources available to the present research.

APPENDICES

APPENDIX A

KEY INFORMANT INTERVIEW SAMPLE

APPENDIX A

KEY INFORMANT INTERVIEW SAMPLE

TYPE OF ORGANIZATION (Generic Names)[a]	POSITION OF RESPONDENT IN ORGANIZATION
State Government	
State Senate	Senator
State House of Representatives	Representative
State Energy Office	Program Manager
State Public Service Commission	Technical Advisor, Energy Conservation Specialist
State Housing Development Authority	Energy Conservation Manager
State Office on Aging	Energy and Transportation Specialist
State Community Services Office	Program Development Specialist
State Department of Social Services	Director, Assistance Programs
State Consumer Council	Consumer Counselor

[a]Generic organizational names were used whenever possible, to protect confidentiality.

TYPE OF ORGANIZATION (Generic Names)	POSITION OF RESPONDENT IN ORGANIZATION
Local Government	
Regional Planning Commission	Program Director (staff)
Regional Office on Aging	Energy Counselor
Regional Transoprtation Authority	Public relations and Marketing Specialist
County Energy Commission	Chairperson
County Department of Social Services	Director
City Department of Building, Public Safety, and Community Development	Director
City Planning Department	Director, Transportation Division
City Departments of Administrative Services	General Manager
City Department of Planning, Housing, and Community Development	Group Leader
City Department of Building and Zoning	Director
City Energy Program	Coordinator

TYPE OF ORGANIZATION (Generic Names)	POSITION OF RESPONDENT IN ORGANIZATION
Private Service Agencies	
Private Service Agency #1 (minorities)	Director
Private Service Agency #2 (minorities)	Program Director
Private Service Agency #3 (minorities)	Office Manager
Private Service Agency #4 (minorities)	Assistant Director
Council of Churches	Executive Director
Housing Agency	Consumer Counselor
Community Development Agency	Director
Human Services Association	Legislative Analyst
Tenants' Information Association	Director
Community Action Weatherization Program	Director
Utilities and Other Energy-Related Businesses and Associations	
Utility Company	Public Relations Director
Utility Company	Senior Energy Management Specialist
Fuel Oil Company	Office Manager
Energy Conservation Device Company (Supplier and Installer)	Owner
Solar Home Building Company	President
Builders Association (local)	President
Home Building Company	Salesman
Realtor's Association (local)	President
Landlord's Association (local)	President

TYPE OF ORGANIZATION (Generic Names)	POSITION OF RESPONDENT IN ORGANIZATION
Citizen Action and Neighborhood Associations	
Consumers'Organization (state)	Legal Director
Public Interest Organization (state)	Energy Program Director
Energy Citizen Action Group (local)	Member
Energy and Appropriate Technology Citizen Action Group (local)	President
Student Housing Group (local)	Maintenance Committee Chairman
Neighborhood Association	Staff Member
Neighborhood Association	President
Education and Research	
University-Based Envirenmental Research Center	Director
University-Based Human Ecology Energy Research Program	Researcher
University-Based Science and Mathematics Teaching Center	Director
University-Based Cooperative Extension Service	Energy Specialist
Community College	Energy Studies Professor
Public School System	Director, Environmental Education
Public School System	Assistant Superintendent

TYPE OF ORGANIZATION (Generic Names)	POSITION OF RESPONDENT IN ORGANIZATION
Labor Organizations	
Labor Newspaper (UAW)	Editor
Building Trades Council (state)	Investigator
Teachers Union (state)	Legislative Analyst
Professional Educator's Association (state)	Legislative Analyst
United Auto Workers Union Local	Chairman, Education Committee

APPENDIX B

LETTER TO INITIAL CONTACTS

MICHIGAN STATE UNIVERSITY

DEPARTMENT OF PSYCHOLOGY
SNYDER HALL

EAST LANSING • MICHIGAN • 48824

October 12, 1979

Dear

We are about to begin an energy conservation project that has as its objectives (a) increasing the involvement of local citizens in planning for energy conservation; (b) increasing the responsiveness of local government to the needs of citizens, with regard to energy conservation programs; and (c) facilitating cooperation and communication between members of local organizations (e.g., business groups, labor unions, neighborhood associations, financial organizations, etc.) who are concerned with energy conservation programs and services.

Among the products of this work will be the following:

(1) A series of community forums, which will involve the exchange of ideas about conservation programs between members of local organizations, and the development of communication-cooperation networks;

(2) The publication of an Energy Services Directory, which will contain listings of all Greater Lansing organizations which are involved in energy conservation programs, with brief descriptions of the organizations and their services;

(3) A final report which will summarize the results of interviews with members of local organizations and other local citizens. These interviews will obtain information concerning current energy conservation programs in Greater Lansing, what people are currently doing to conserve energy, and what services or programs would facilitate conservation. This report will also summarize an analysis of demographic data (e.g., energy consumption patterns, housing and business site patterns, etc.) that will give a picture of the distribution of local energy use which will aid in designing effective conservation programs.

The purpose of this letter is to acquaint you with our project and to find out whether you or another member of your organization would be willing to be interviewed as part of the project. (Total interview time will be about one half-hour). Therefore, we would appreciate your answering the three questions on the attached sheet and returning the questionnarie to us.

Sincerely,

David Roitman
Telephone: 353-5015
355-0861

Questionnaire

1) Would you or another member of your organization be willing to be interviewed for this project? (Total interview time: half-hour).

YES_____ NO_____

2) To arrange for an interview, what number should be called?

Tel. No._____

Best time to call _____

3) Please check the appropriate statement(s) for your organization:

___a) My organization would probably be interested in participating in the community forums.

___b) My organization would probably want to receive the Energy Services Directory.

___c) My organization would probably want to receive the final report of the project, including summary reports of the interviews and demographic data.

APPENDIX C

KEY INFORMANT CONSENT FORM

CONSENT FORM

1. I understand the intent of the interview in which I am now serving as a respondent, and all questions which I have concerning the procedures have been answered to my satisfaction.
2. I realize that I may freely choose to discontinue my participation at any time.
3. I understand that all results will be treated with strict confidence and that my name will not be used in any reports or discussions of this interview.
4. I realize that I will be able to obtain any reports which include reference to the interview in which I am participating.
5. I realize that all interview tapes for the project in which I am participating will be erased upon completion of the final report.
6. I hereby freely give my consent to participate as a respondent in the interview.

SIGNATURE OF RESPONDENT _____

DATE OF INTERVIEW _____

APPENDIX D

KEY INFORMANT NEEDS IDENTIFICATION INTERVIEW GUIDESHEET

APPENDIX D

KEY INFORMANT NEEDS IDENTIFICATION INTERVIEW

GUIDESHEET

Introduction

"Basically, what we're trying to do is get a feel for peoples' ideas about energy conservation programs. This isn't easy to pin down, because it's a new area with a lot of things going on, with people in both the public and private sectors doing different things about conservation. Right now, we're going around talking to people from a lot of different groups--utility conpanies, builders' associations, city planning departments, neighborhood associations--and we're trying to get a broad picture of what people want and what people think will work.

If it's all right with you, I'd like to tape-record our conversation. We'll probably talk about a lot of different ideas, and it would be hard for me to write everything down."

AFTER RESPONDENT GIVES O.K., TAKE OUT TAPE RECORDER AND SET UP.

"O.K., before we begin, do you have any questions?"

ANSWER QUESTIONS

"O.K., now I'd like to read this, and if you agree with all of the statements on it, just sign your name at the bottom."

GIVE RESPONDENT CONSENT FORM. AFTER SIGNATURE, START TAPE RECORDER.

(1) Organizational Profile

O.K., first I need to have some general information about your organization--just a quick overview, about five minutes.

a) What is your official position in (NAME OF ORGANIZATION)?

b) About how many employees or members do you have?

c) Briefly, what are the general categories of employees or membership for this organization--management, service staff, board

of directors, steering committee, etc.

d) About how long have you been in existence?

e) In general, how is the organization funded?

f) Can you give me a very brief overview of the decision structure--in other words, what's the chain of command, what kinds of decisions are made at different levels of the organization, things like that...

g) Now can you give me a really broad overview of your activities --just a couple of sentences on the purpose and goals of the organization.

BEFORE CONCLUDING THIS SECTION, MAKE SURE THE RESPONDENT HAS CLARIFIED THE RELATIONSHIP BETWEEN THIS ORGANIZATION AND OTHER CLOSELY RELATED ORGANIZATIONS, AND BETWEEN THIS DIVISION AND THE LARGER ORGANIZATION.

(2) Energy Programs of the Organization

a) Now, I'd like to know if your organization is doing anything right now to make energy conservation easier for people--in other words, do you have any specific existing programs that encourage conservation?

TAKE NOTES

b) Does your organization have any specific programs related to energy conservation that are in the planning stages that you could tell me about?

c) Do you personally have any ideas for specific programs which could be run by your organization that you think would help people to conserve, other than those you've mentioned?

(3) Funding for Organization's Energy Programs

a) How does your organization obtain funding for your present conservation programs?

b) Do you expect this funding to continue in the future?

c) What other specific sources do you think could be tapped by your organization for funding conservation programs?

(4) Respondents' Ideas Concerning Energy and the Community

a) What do you see as the major needs of the greater Lansing area with regard to energy conservation programs and services; that is, what specific programs and services could make conservation easier for people? We're talking about the private sector now.

TAKE NOTES

b_1) Now I'd like your opinion about to what extent do you think people in the greater Lansing area have really tried to conserve, around their homes, in their businesses, and on the road.

b_2) What strategies do you think people have used? This is just your impressions.

c) O.K.,now, what problems do you think people are running into when they actually try to conserve energy?

TAKE NOTES

(5) Respondents' Ratings of Their Ideas in Terms of Importance.

O.K., I've been writing down the general areas you've covered and I'm wondering if you could rate the areas in terms of their importance. I'll read the needs and the problems which you mentioned, and I'd like you to rate each one on a scale of one to five, with one being "very important" and five being "not very important". In other words, I'd like you to rate them, not rank them; you could rate each need or problem with a one if you felt they were all very important, or only one of them with a one. First for the needs which you mentioned:

a_1) READ NEEDS ONE AT A TIME

a_2) RECORD RATINGS

Now for the problems:

b_1) READ PROBLEMS ONE AT A TIME

b_2) RECORD RATINGS

(6) Importance of Energy Issues to the Organization

a) O.K., now I'd like to know your impression of how important the whole energy conservation issue is to your organization; i.e.,how is it perceived by the people who make the decisions in your organization?

b) What role do you see your organization taking in the energy conservation area in the future? Do you think you'll be initiating programs? Do you think your role will be more or less passive?

(7) Program Effectiveness

a) Now I'm going to review the existing programs which you mentioned earlier in the interview.

READ LIST FROM NOTES

Are there any other programs related to energy conservation which you can think of?

ADD TO LIST

b_1) O.K., now I'd like you to rate each of these programs in terms of how effective they are in helping people to actually conserve energy, rather than to just think about it or talk about it. I'd like you to use this rating system:

SHOW RATING SCALE CARD AND EXPLAIN. ANSWER QUESTIONS.

EFFECTIVENESS	CERTAINTY
1 = Extremely Effective	1 = Extremely Certain
2 = Very Effective	2 = Very Certain
3 = Moderately Effective	3 = Moderately Certain
4 = Somewhat Effective	4 = Somewhat Certain
5 = Not At All Effective	5 = Not At All Certain

b_2) RECORD EFFECTIVENESS AND CERTAINTY RATINGS FOR EACH EXISTING PROGRAM.

c) Now, what is it about the programs which you rated as most effective that makes them effective?

READ PROGRAMS RATED "1" ONE AT A TIME.

APPENDIX E

SUMMARY OF INTERVIEW GUIDESHEET

APPENDIX E

SUMMARY OF INTERVIEW GUIDESHEET

(1) Organizational Profile

a) Level of respondent
b) Number of employees/members
c) Categories of employees/members
d) Age of organization
e) Funding sources
f) Decision structure
g) Activities, purposes, goals

(2) Energy Programs of the Organization

a) Current programs
b) Planning-stage programs
c) Respondent's ideas for additional programs for organization

(3) Funding for Organization's Energy Programs

a) Present sources
b) Expectation for continuation of funding
c) Other possible sources

(4) Respondents' Ideas Concerning Energy and the Community

a) Needed programs
b_1) Extent of current conservation efforts
b_2) Strategies people have used to save energy
c) Problems people run into when trying to conserve

(5) Respondents' Ratings of their Ideas in Terms of Importance

a_1) Interviewer's restatement of respondent's ideas for needed programs
a_2) Respondent's rating of ideas for needed programs
b_1) Interviewer's restatement of respondent's ideas about problems
b_2) Respondent's rating of ideas about problems

(6) Importance of Energy Issues to the Organization

a) Present importance to the organization
b) Future role of the organization

(7) Program Effectiveness

a) Interviewer's review of organization's programs (listed)
b_1) Interviewer's restatement of organization's programs (one at a time)
b_2) Perceived effectiveness of organization's programs
c) Reasons for effectiveness of organization's programs

APPENDIX F

ISSUE AREAS AND ITEMS SUITABLE FOR CODING

APPENDIX F

Issue Areas and Items Suitable for Coding

Issue Area I--Conservation Programs

Items

- 2a. Current programs
- 2b. Planning-stage programs
- 2c. Respondent's ideas for additional programs for organization
- 4a. Needed programs for the community
- $5a_1$. Interviewer's restatement of respondent's ideas for needed programs (for importance rating)
- 7a. Interviewer's review of organization's programs (listed)
- $7b_1$. Interviewer's restatement of organization's programs (one at a time, for effectiveness rating)

Issue Area II--Conservation Strategies People Have Used

Items

- $4b_2$. Strategies people have used in trying to conserve energy

Issue Area III--Problems People Run Into When Trying to Conserve

Items

- 4c. Problems people run into when trying to conserve
- $5b_1$. Interviewer's restatement of respondent's ideas about problems (for importance rating)

Issue Area IV--Reasons for Effectiveness

Items

- 7c. Reasons for effectiveness of organization's programs

Issue Area V--Energy Funding

Items

- 3a. Present sources
- 3b. Expectation for continuation of funding
- 3c. Other possible sources

Issue Area VI-- Organizational Profile

Items

1a. Level of respondent
1b. Number of employees/members
1c. Categories of employees/members
1d. Age of organization

APPENDIX G

CODING SYSTEM #1

APPENDIX G

CODING SYSTEM #1

General Instructions

- The categories in this coding system will be used to code the following items:

  (2a) Current programs
  (2b) Planning-stage programs
  (2c) Respondents' ideas for additional programs for the organization

  (4a) Needed programs
  (4c) Problems people run into when trying to conserve

  ($5a_1$) Interviewer's restatement of needed programs
  ($5b_1$) Interviewer's restatement of problems

  (7a) Interviewer's review of organization's programs
  ($7b_1$) Interviewer's restatement of organization's programs for effectiveness ratings

- The symbol "rp" is used to indicate a repeated idea or program. Check to make sure that the idea or program is really a repeat. If you disagree, fill out an index card (see below).

- Index Cards: Everytime you have a question, problem in coding, observation, etc., fill out an index card with the following information:

  TAPE NUMBER QUESTION NUMBER UNIT NUMBERS

  YOUR COMMENT

  Then attach the index card(s) to the interview Opscan sheets. We will go over your comments and questions at out meetings.

- As a general rule, don't hang your hat on buzz words--

  TREAT EACH COMMENT AS A GESTALT

APPENDIX G (cont'd.)

Categories

#1. Information, Knowledge, Awareness, Belief

#2 Planning, Regulation, Coordination, Leadership, Political Action

#3. Incentives to Encourage Conservation, Cost of Conservation Actions

#4. Physical Fixes: Buildings, Vehicles, and Appliances

#5. Lifestyle Changes

#6. Assistance: Programs/Problems Focused on the Needy

#9. Not Codeable

- Use #9 for:

-"rp's" (repeats)

- any response to a specific question which does not address that question

- any response which you have considerable difficulty in coding, and which you think cannot be coded.

BUT: If you don't understand the comment, don't code it--

Fill out an index card on it.

APPENDIX G (cont'd.)

Category #1: Information, Knowledge, Awareness, and Belief

Examples

-residential audits
-demonstration projects
-workshops
-hotline
-referral service
-consulting, advising
-lectures
-outreach
-advertising
-confusion among experts
-lack of credible sources
-lack of self-help skills
-complexity of the problem
-lack of understanding
-distrust of corporations
-consumer price surveys
-counseling clients
-seminars
-films
-TV and radio publicity
-Publicizing existing programs
-ride boards
-pamphlets
-newsletters
-reference materials
-training in schools
-people need help determining priorities
-people need help understanding benefits of conservation
-publicize role-models
-get conservation hardware more acceptable

Rules

* CODE "lack of information about financial incentives" and "need to publicize financial programs" HERE, NOT in #3.

* CODE information about codes and standards HERE, NOT in #2.

* CODE HERE comments relating to lack of knowledge of comparative energy efficiency values of products or residences, UNLESS comment refers specifically to labeling, certification, truth in heating, disclosure, or fraud. These are primarily REGULATION issues; CODE these in #2, NOT HERE.

* CODE HERE if the comment relates to the failure to perceive an incentive which really exists. For example:
- People don't think about weatherizing until it's too cold to do the work. CODE HERE. But:
* If the comment relates to a failure to perceive an incentive, PLUS the lack of a real incentive, CODE in #3. For example:
- People are using less energy, but their bills keep going up. Why should they conserve? CODE in #3.

APPENDIX G (cont'd.)

Category #2: Planning, Regulation, Coordination, Leadership, Political Action

Rules and Examples

* CODE all organizational activity involving LEGISLATION and REGULATION HERE, unless the comment primarily involves INCENTIVES or INFORMATION. For example:
- We have a bill in session on lifeline rates. CODE in #3
- I think the utility incentive struture ought to be changed. CODE in #3
- Office staff should be better trained for energy counseling. CODE in #1
- Builders don't care about energy conservation, because the market value of a house doesn't depend on its energy efficiency. DODE in #3

* CODE HERE all comments related to putting pressure on government or other institutions to achieve change. For example:
- Lobbying
-Advocacy
-Research on codes
-Sponsoring legislation

* CODE HERE comments related to planning. For example:
- building, mechanical, plumbing codes
- land use planning
- zoning ordinances
-gasoline rationing
-urban sprawl
- recycling solid waste
- solar access

* CODE HERE problems which are primarily related to political action, legislation, and regulation. For example, CODE HERE:
- inconsistencies in regulations
- codes aren't strong enough
- not enough funding for mass transit

* CODE HERE problems related to leadership. For example:
- Government officials have a crisis orientation; the're always taking the short term view, since they're worried about re'election.

* CODE HERE system physical fixes which involve planning and/or regulation of systems by organizations. For example:
-mass-transit planning comments
- cogeneration and district heating

* CODE physical fixes which do not primarily involve planning and'or regulation in #4. See #4 for examples.

* CODE HERE needs and problems related to program coordination.

APPENDIX G (cont'd.)

Category #3: Incentives to Encourage Conservation, Cost of Conservation Actions

Examples

- Tax credits
- Low interest loans
- Housing Improvement Program (HIP)
- Tax exempt energy bonds
- Loans for weatherizing

Rules

* CODE HERE comments which relate to disincentives as well as incentives.

* DO NOT CODE HEATING ASSISTANCE PROGRAMS HERE--CODE in #6.

* CODE information about financial incentives in #1, NOT HERE.

* CODE financial incentives which are related to physical fixes or regulation HERE, NOT in #4 or #2. For example:
-subsidize bus passes
- have utilities change appartments to individual metering
-lifeline rates
- eliminate free downtown parking

* DO NOT CODE "need for program funding: here. If it is a need for information program funding, CODE in#1; if it is a need for system physical fix funding, CODE in #2; if it is a need for physical-fix program funds, code in #4,etc.

* CODE "reinforcements to conserve" HERE, UNLESS it is clear that the comment primarily relates to information.

* DO NOT CODE HERE comments which imply incentives or disincentives, but which primarily relate to "life-style", "mind-set", "self-perception", etc.

APPENDIX G (cont'd.)

Category #4: Physical Fixes: Buildings, Vehicles, and Appliances

Examples

- Weatherization (i.e. insulation, weatherstripping, caulking, double-glazing windows, sealing cracks, etc.)
- Delamping - using flourescent bulbs
- More efficient engines - remodelling or retrofitting
- R&D on voltage regulators - maintenance

* DO NOT CODE HERE comments which primarily relate to the planning or regulation of large systems (communities, organizations) ; CODE these in #2. For example:
- more bike paths - more busses on Sunday
- centralize urban planning - need more high-density planning

* DO NOT CODE HERE comments which relate primarily to life-style changes. CODE these in #5. For example:

-car pooling - turning off lights
- planning trips around town - dialing down thermostat
- less use of recreational vehicles

* DO NOT CODE HERE comments about providing information on physical fixes. CODE these in #1. For example:
- hands-on weatherization workshops -teaching automobile maintenance

* DO NOT CODE HERE residential or program audits. These are primarily information programs. However, CODE audits of institutional buildings HERE; they are the first stage of a physical fix.

* DO NOT CODE HERE comments about shortages of supplies for physical fixes. These are problems requiring better program coordination and management, and should be coded in #2. For example:
- There are so many people switching from oil to gas, the utilities can't handle the rush.
- There's a shortage of skilled people to retrofit buildings.

* CODE HERE safety and danger in installation, Unless regulation is specifically mentioned or implied.

* CODE HERE research and development (R&D) unless the comment primarily involves coordination, dissemination, demonstration, etc.

APPENDIX G (cont'd)

Category #5: Lifestyle Changes

Examples

-changing habits and values
-not willing to make sacrifices
-too independent (to carpool or use mass transit
-we need an energy ethic
-people waste energy by leaving lights on
-apathy
-lack of discipline
-conflicts within the family about energy use
-social pressure keeps people from conserving

Rules

* CODE the actual failure to perceive an incentive in #1, KNOWLEDGE.

* CODE comments about the lack of INFORMATION that could enable people to perveive the benefits of conservation in #1.

* CODE HERE comments relating to lifestyle changes needed to adapt to physical fixes and physical fix systems. For example:
-car pooling
-moving closer to where I work
-leave the house earlier to take the bus
-making telephone calls instead of driving

* CODE HERE comments primarily related to individuals and society
But:

* DO NOT CODE HERE comments related to actions by specific organizations --CODE THESE IN #2. For Example:
-Because we rely on Olds, State Gov't...we have a natural hub around which we can car pool.

* DO NOT CODE HERE information programs which are geared to influencing life style changes-CODE IN #1.

* CODE comments about the DISPOSITION OF INDIVIDUALS not to perceive the benefits of conservation HERE. For example, CODE HERE -people take the short term view.

APPENDIX G (cont'd)

Category #6: Assistance: Programs/Problems Focused on the Needy

Examples

-We need more financial assistance for poor people, the elderly, so they can have their homes fixed up.

- A lot of the people who rent around here are senior citizens, if their landlord doesn't want to insulate, who's going to pay for it?

-I feel sorry for all the people who can't pay their heating bills this winter--they're going to need more help than the government is prepared to give.

* Only CODE HERE if the comment relates to a NEEDY POPULATION (poor, elderly, handicapped, etc.) If this is not specified, CODE IN #3.

APPENDIX H

CODING SYSTEM #2

APPENDIX H

CODING SYSTEM #2

General Instructions

- The categories in this coding system will be used to code the following item:

  ($4b_2$) Strategies people have used to save energy

Categories

#1 Relatively Low Expense Residential Conservation

#2 Relatively High Expense Residential Conservation

#3 Commercial and Industrial Conservation (Buildings and Lots)

#4 Transportation Conservation

#5 Financial Incentives and Capital Availability are Required for conservation

#8 Comment reflects respondent's opinion about EXTENT OF CONSERVATION EFFORTS, (but it is not codeable in categories #1 - #5)

#9 Not codeable

APPENDIX H (cont'd)

Category #1: Relatively Low Expense Residential Conservation

Rule

* CODE HERE if there is a high probability that this strategy costs less than $50.

Examples

-weatherization
-caulking
-dialing down
-plastic storm windows
-sealing cracks
-using appliances less
-insulate hot water pipes
-appliance maintenance
-weatherstripping
-furnace retrofit devices (e.g. vent dampers, flue restrictors)
-dressing warmer
-turning off lights
-not using all rooms
-furnace maintenance, tune-up, reconditioned

Category #2: Relatively High Expense Residential Conservation

Rule

* CODE HERE if there is a high likelihood the strategy cost more than $50.

Examples

-insulation
-glass storm windows (or storm windows, if material is unspecified
-new furnace
-solar greenhouse
-repair leakage in roof
-windmills
-photovotaic cells and solar
-building energy efficient residential developments
-remodelling
-insulated shutters or curtains
-installing fireplace or wood stove
-replacing windows
-renting insulation equipment
-gardens
-remodel for conservation

APPENDIX H (cont'd)

Category #3: Commercial and Industrial Conservation (In Buildings and Lots)

Examples

-"most offices are a lot colder"
-mall parking lots are cutting down on lighting
-office buildings are dialing down
-Oldsmobile has a conservation program for its buildings

Category #4: Transportation Conservation

Examples

-bus ridership is up
-walking more
-buying gas efficient car
-car pooling
-biking
-city is buying more busses

Category #5: Financial Incentives are Required for Conservation

Examples

-People won't conserve until they feel it in their pocketbooks
-people are beginning to conserve, mainly because of the cost of heating their homes
-it's been cyclical. . . people tried to conserve on their driving when they saw gasoline prices rising rapidly
-we haven't felt the impact yet

Rule

* Comments CODED HERE state or clearly imply that there is a direct relationship between the cost of energy and conservation actions.

APPENDIX H (cont'd)

Category #8: Comment Reflects Respondent's Opinion About EXTENT OF CONSERVATION Efforts, But is Not Codeable in Any Other Category

Examples

-My guess is that the average guy is doing far less than he could be doing
-People are just about doing the bare minimum
-I think people were conserving more last year than this year, but energy use is probably down a lot since before the oil embargo
-There's a political awareness of conservation built up in our town

Category #9: Not Codeable

Rules

* CODE HERE if comment is not relevant to any preceding categories, or if comment is an "rp" (repeated comment)

* CODE HERE if comment is COMPLETELY LIMITED to the RESPONDENT AND RESPONDENT'S FAMILY'S conservation-related behavior. E.g. Well, I don't know about anyone else, but I've cut down on my driving, and so has my wife

  BUT:

  Well, I know we've added new storm windows. . . and I guess a lot of people we know have also--CODE in #2

  We've been driving a lot less for our business travel, and trying to share rides whenever we can--CODE in #4

APPENDIX I

CODING SYSTEM #3

APPENDIX I

CODING SYSTEM #3

General Instructions

- This coding system will be used to code the following item:

  (7c) Reasons for effectiveness of organization's programs

Categories

#1. Practical Nature of Program

#2. Efficient Program Planning and General Functioning of Organization

#3. Financial Incentive

#4. Automatic Effectiveness Once Program is Implemented

#5. Appealing Nature of Program

#9. Not Codeable

Category #1: Practical Nature of Program

Examples

-accessible
-hands-on
-accurate
-relevant to our situation
-concrete
-specific
-one-to-one
-requested by the user
-substantive
-availability
-specific

Rule

* IN GENERAL, these are program characteristics, not organizational characteristics.

APPENDIX I (cont'd)

Category #2: Efficient Program Planning and General Functioning of Organization

Examples

-clear objectives
-useful conceptual framework
-built of previous work
-well organized
-functioned effectively
-high agency commitment, so the job gets well done
-highly qualified staff
-past successes
-we're not trying to sell something
-we have a clear identity; people recognize our service
-ability to mobilize resources
-its a very stable program. . . maintains a continuity of purpose
-there's pressure from the top to really take it seriously
-the guy teaching the course took it seriously. . . that had a lot of impact

Category #3: Financial Incentive

Examples

-industry sees that it's a way they could make money
-people want to lower their energy bills

Category #4: Automatic Effectiveness Once Program is Implemented

Examples

-there's an absolute reduction in energy consumption
-measurable, quantifiable
-we're finding tremendous inefficiencies and remedying them
-based on the Federal figures, we're realizing these efficiencies
-the mandatory nature of the program
-the rule-making nature of the organization; its authority, power, and control
-it's a minimum standard; there's no option
-technological fixes are immediately effective

APPENDIX I (cont'd)

Category #5: Appealing Nature of Program

Examples

-exciting
-popular
-saleable
-it's in high demand
-there was a high interest level and participation
-it attracted new people
-it's popular in the legislature, so it's easy to introduce energy legislation

APPENDIX J

SAMPLE CODING SHEET

	P=2	
r		[redacted]
r		
r		
Or		
Or		
C		
U		
Q4	206 - 214	You mentioned some sources ... sort of thing
	214 - 217	The courses ... State aid
	218 - 219	So the other maintenance ... drop the budget
	219 - 226	You mentioned NECPA ... 1500 dollars (Foundation)
Q5	226 - 230	You expect this funding ... be available
Q6	230 - 232	Are there any others ... immediate knowledge
Q7	232 - 238	What do you see as ... mass transit system
	238 - 241	And the energy aspect ... physical planning stuff
	241 - 243	Car-pooling ... people who car-pool
	243 - 246	Sometimes highways ... why shouldn't they
	246 - 256	You can get changes in zoning ... Transportation-Conservation
	256 - 264	I think there's things ... Oldsmobile's Board of Water Light
	286 - 293	OK, your last couple of things ... doing less recreational
	293 - 298	And two, you could ... how active they're being
	299 - 302	More Urban Options ... passive solar
	303 - 305	And they also conduct ... in your home
	305 - 310	And they're tied in ... have an energy audit
	310 - 330	Who would you like to see ... I think that's possible
	349 - 362	You've really got a gold mine ... simple things like that
Qr	Unit	Key Words

APPENDIX K

CRITERIA AND PROCEDURES FOR DEMARCATION OF DISCRETE CODING UNITS

APPENDIX K

Criteria and Procedures for Demarcation of Discrete Coding Units

The criteria and procedures for the demarcation of discrete coding units were developed by the category development team, which included the project director and three research assistants. First, each of the four team members listened to the same three interviews (three of the "category development" set of tapes) and each team member set the tapes up into discrete units independently, using the same format. The team members then compared their decisions and discussed the criteria which they had implicitly used to establish boundaries between units.

The section of the interviews concerned with organizational variables (questions 1a through 1g) presented no "set-up" (demarcation) difficulties. However, serious problems were encountered in setting up the "idea generation" sections of the interviews, especially the sections which dealt with the first three issue areas---Needed Programs, Conservation Strategies, and Problems. The basic procedure seemed relatively straightforward: Each question called for the respondent to discuss an issue area by listing relevant ideas, e.g. "ideas for needed conservation programs". However, three major difficulties were encountered.

First, the exploratory nature of the interview allowed for discussions relevant to one issue area (e.g. Needed Programs) to be discussed

in another section of the tape (e.g. Problems) if it came up in conversation. In which section of the Opscan sheet should it be set up? And, how should ideas repeated from one section to another (or within a section) be handled?

Secondly, it was difficult for persons unfamiliar with energy programs and issues to know where one idea started and another stopped. For example, should an idea about a home energy audit program be broken into two coding units if both mail-out and in-person audits were proposed? Or, if more financial assistance programs were suggested by a respondent, should an idea concerning loans be considered as separate from one concerning grants?

Finally, it was also difficult for the research assistants to decide when the respondent had stopped talking about a program, if the program idea followed from the discussion of the problem.

The difficulties were resolved as follows. First, the ideas concerning Needed Programs, Conservation Strategies, and Problems People Faced in Trying to Conserve were broken out of whatever section of the tape in which they occured, and were placed on the Opscan sheet in the appropriate issue area. However, there was one exception to this rule: Problems People Faced in Trying to Conserve were not broken out of the section of the interview dealing with Conservation Strategies (question $3b_2$) since in this case the interviewer consistently repeated, at the beginning of the next question (3c) the problems the respondent had mentioned during question $3b_2$, and asked if there were any additional problems which came to mind. Rather than continually repeating these problems in the coding units, it was decided to

leave them in the Conservation Strategies section. In fact, the unexpectedly high frequency of Problems mentioned by respondents when asked about Conservation Strategies was an interesting finding of the study.

Concerning the problem of repeated ideas, it was decided that the set-up person would indicate repeated ideas with a symbol on the Opscan sheet ("rp") so they would not be coded twice. However, coders would be encouraged to check the work of the set-up person; if a unit designated "rp" did not seem to be a repeated idea, coders would bring the unit to the attetion of the set-up person, and the set-up would be double-checked.

Finally, it was realized that the unfamiliarity of the research assistants with energy issues presented a serious difficulty to their assisting in the set-up work: the amount of training required would easily exceed the duration of the assistants' contracts. Consequently, although it had been hoped that the assistants would aid in the set-up work, it was decided that the Project Director would set up all units. However, the research assistant who was most familiar with energy issues was trained in the set-up procedure and was employed to check a random sample of the tape set-ups, to verify that the Project Director was consistently following the set-up procedure. This assistant checked twelve of the sixty-five tapes, and disagreements were discussed with the project director.

APPENDIX L

COMMUNITY FORUMS: DISTRIBUTION OF PARTICIPANTS BY ORGANIZATIONAL TYPE

APPENDIX L

COMMUNITY FORUMS: DISTRIBUTION OF PARTICIPANTS BY ORGANIZATIONAL TYPE

Organizational Category	Number of Participants at Forum #1 (April 13)	Number of Participants at Forum #2 (April 10)
1) State Govt.	5	3
2) Local Govt.	4	3
3) Private Service Organization	3	1
4) Utilities and Other Energy-Related Businesses and Associations	2	3
5) Citizens Action Groups and Neighborhood Associations	2	1
6) Education and Research Organizations	2	5
7) Labor Organizations	1	3
	Total = 19	Total = 19

APPENDIX M

COMMUNITY FORUMS: LETTER OF INVITATION

MICHIGAN STATE UNIVERSITY

CENTER FOR URBAN AFFAIRS
COMMUNITY DEVELOPMENT COMPONENT
TELEPHONE: (517) 353-9555

1801 WEST MAIN STREET
LANSING • MICHIGAN 48915

January 11, 1980

Thank you for your participation thus far in our Energy Conservation Project. We hope you will be able to attend the two upcoming Community Energy Forums, which will be sponsored by the Center for Urban Affairs. These forums will follow a workshop format and will be geared to accomplish two major goals: (1) to find out what you think the action priorities are for energy conservation programming in the greater Lansing area; and (2) to facilitate cooperation and coordination among organizations with similar program interests.

The dates for the forums have not been finalized yet, because we would like to find out which dates and times would be most convenient for you. We would therefore appreciate your filling in the information requested on the enclosed form. It will be helpful to us if you get your response in the mail by January 18.

You will be notified as soon as the time, place and overall agenda for the forums are set.

Thank you for your help and we look forward to your attendance at the forums.

Sincerely,

David Roitman

David Roitman
Project Coordinator

Enclosure

DR/ah

INSTRUCTIONS

Please cross out the dates and times during which you CANNOT attend the Community Energy Forums.

Your name _____

Phone number

Please return this form in the enclosed postage-paid envelope before January 18, 1980.

David Roitman
Department of Psychology
Michigan State University
Snyder Hall
East Lansing, MI 48824

	MORNING	AFTERNOON	EVENING
Monday, March 17			
Tuesday, March 18			
Wednesday, March 19			
Thursday, March 20			
Friday, March 21			
Monday, March 24			
Tuesday, March 25			
Wednesday, March 26			
Thursday, March 27			
Friday, March 28			
Monday, March 31			
Tuesday, April 1			
Wednesday, April 2			
Thursday, April 3			
Friday, April 4			

APPENDIX N

COMMUNITY FORUMS: LETTER TO PARTICIPANTS

MICHIGAN STATE UNIVERSITY

CENTER FOR URBAN AFFAIRS
COMMUNITY DEVELOPMENT COMPONENT
TELEPHONE: (517) 353-9555

1801 WEST MAIN STREET
LANSING · MICHIGAN 48915

February 20, 1980

The Center for Urban Affairs of Michigan State University is sponsoring two Community Energy Forums to be held on Thursday, April 3, 1980 and on Thursday, April 10, 1980 between the hours of 1:00 p.m. and 4:00 p.m. The Forums will take place at the community meeting room of the Marshall Street Fire Station, which is located at the southwest corner of the intersection of Marshall Avenue and Oakland Street (see enclosed map).

The two major objectives of these forums will be to (1) identify, discuss and prioritize the energy conservation program needs for the greater Lansing area; and (2) facilitate coordination and communication between organizations which are interested in similar energy programs. In addition, this will be an opportunity to publicize any of your organization's energy programs.

We hope you will be able to attend these meetings. If you cannot attend, please ask another member of your organization to attend. If the forums are to succeed, there needs to be a broad representation of the greater Lansing community, and we hope your organization will be represented. Please return the enclosed form indicating whether you or another member of your organization will be able to attend.

It is unfortunately all too evident that our national, long-term energy problems will become increasingly serious in the coming years. Given the current lack of a strong Federal conservation program, the need for local initiatives is extremely important if we are to minimize the hardships which will occur as energy supplies become more scarce. We feel that identifying and prioritizing the program needs in this community, and facilitating coordination and communication between organizations, will be a useful step towards dealing with energy problems on the local level. We hope you agree and we hope to see you at the Energy Forums.

Sincerely,

David Roitman
Program Coordinator

Enclosure

APPENDIX O

COMMUNITY FORUMS: AGENDAS

April 3, 1980

Agenda For Center for Urban Affairs

Community Energy Forums

TIME (in minutes)	ACTIVITY
	A. Introduction
3	1. Objectives of Forum
5	2. Overview of Forum Procedures
15	B. Needed Programs and Services
10	C. Perceived Problems
	D. Small Group Discussions of Programs
20	1. Listing
60	2. Clarification and Discussion
10	3. Break
10	4. Rating
10	5. Tallying [and Existing Programs Questionnaire]
	E. Networking
15	1. Program Presentation
5	2. Breakdown into Small Groups, Based on Program Interests
5	3. Listing of Names, Organizations, and Telephone Numbers
5	4. Selection of Contact People
10	F. Program Publicity: Displays, Brochures, etc.

April 10, 1980

Agenda for Center for Urban Affairs

Community Energy Forums

TIME (in minutes)	ACTIVITY
	A. Introduction
10	1. Introduction of Participants
3	2. Forum Objectives
2	3. Brief Overview of Forum Procedures
15	B. Needed Programs and Services
10	C. Perceived Problems
	D. Small Group Discussions of Programs
20	1. Listing
60	2. Clarification and Discussion
10	3. Rating
10	4. Tallying (and Existing Programs Questionnaire)
25	E. Informal Networking
5	F. Report of Program Tally Results

APPENDIX P

COMMUNITY FORUMS: QUESTIONNAIRE

NOTE: Response frequencies summed across forums are entered in this Appendix.

Questionnaire: Existing Energy Conservation Programs (PAGE 1)

INSTRUCTIONS: Column #1 contains a list of current energy conservation programs. For each program, please answer the questions which appear in capital letters at the top of each column, by placing a check on the line next to the appropriate answer. NOTE: For any particular program, use Column #4 ONLY if you answered "Yes" in Column #3.

Column #1 LIST OF PROGRAMS	Column #2 I HAVE HEARD OF THIS PROGRAM	Column #3 I (OR SOMEONE I KNOW) HAVE (HAS) TRIED TO OBTAIN SERVICE FROM THIS PROGRAM	Column #4 I (OR SOMEONE I KNOW) WAS SATISFIED WITH THE SERVICE PROVIDED
Board of Water and Light Conservation Information	Yes 19 Not Sure 4 No 6	Yes 6 Not Sure 4 No 15	Yes 4 Not Sure 3 No 4
Capitol Area Community Services Weatherization Program	Yes 19 Not Sure 1 No 8	Yes 9 Not Sure 2 No 14	Yes 5 Not Sure 5 No 2
C.A.T.A. Park-and-Ride Program	Yes 18 Not Sure 1 No 9	Yes 1 Not Sure 4 No 18	Yes 2 Not Sure 4 No 1
CDBG, HIP/NIP, or Section 312 Residential Financial Assistance In EAST LANSING	Yes 11 Not Sure 2 No 16	Yes 2 Not Sure 1 No 19	Yes 2 Not Sure 4 No 4
CDBG, HIP/NIP, or Section 312 Residential Financial Assistance In LANSING	Yes 13 Not Sure 1 No 14	Yes 6 Not Sure 2 No 15	Yes 2 Not Sure 6 No 5
Conservation-Related Building Code Information in EAST LANSING (or Housing Code)	Yes 7 Not Sure 3 No 20	Yes 1 Not Sure 2 No 15	Yes 1 Not Sure 5 No 2
Conservation-Related Building Code Information in LANSING (or Housing Code)	Yes 9 Not Sure 1 No 18	Yes 3 Not Sure 2 No 16	Yes 2 Not Sure 5 No 2
Consumers Power Conservation Information	Yes 15 Not Sure__ No 2	Yes 15 Not Sure 1 No 10	Yes 9 Not Sure 3 No 6
Consumers Power Home Insulation Loans	Yes 12 Not Sure 2 No 9	Yes 4 Not Sure 4 No 16	Yes 2 Not Sure 5 No 5
(OVER)	(OVER)	(OVER)	(OVER)

Column #1 LIST OF PROGRAMS	Column #2 I HAVE HEARD OF THIS PROGRAM			Column #3 I (OR SOMEONE I KNOW) HAVE (HAS) TRIED TO OBTAIN SERVICE FROM THIS PROGRAM			Column #4 I (OR SOMEONE I KNOW) WAS SATISFIED WITH THE SERVICE PROVIDED		
Cooperative Extension Service Conservation Information	Yes 21	Not Sure 1	No 7	Yes 14	Not Sure 1	No 8	Yes 14	Not Sure 4	No 0
Department of Social Services Emergency Assistance Home Repair	Yes 19	Not Sure 1	No 8	Yes 5	Not Sure 2	No 17	Yes 1	Not Sure 4	No 2
East Lansing Energy Consciousness Team Information	Yes 11	Not Sure 2	No 16	Yes 5	Not Sure 1	No 16	Yes 2	Not Sure 2	No 9
Housing Assistance Foundation Conservation Information	Yes 8	Not Sure 3	No 17	Yes 4	Not Sure 2	No 15	Yes 2	Not Sure 4	No 1
Ingham County Energy Office Home Energy Audit	Yes 22	Not Sure 1	No 6	Yes 8	Not Sure 1	No 9	Yes 14	Not Sure 3	No 2
Michigan Energy Administration Home Energy Audit (Project CONSERV)	Yes 21	Not Sure 0	No 6	Yes 10	Not Sure 5	No 9	Yes 9	Not Sure 6	No 5
Michigan Energy Administration Energy Hotline	Yes 23	Not Sure 0	No 5	Yes 8	Not Sure 2	No 7	Yes 13	Not Sure 5	No 0
M.S.H.D.A. Special Conservation Mortgage Rate	Yes 10	Not Sure 2	No 17	Yes 6	Not Sure 3	No 13	Yes 5	Not Sure 3	No 4
Lansing Community College Conservation and Solar Education (Courses)	Yes 21	Not Sure 1	No 6	Yes 10	Not Sure 0	No 10	Yes 10	Not Sure 2	No 2
Lansing Community College Energy Conservation Forums	Yes 19	Not Sure 2	No 7	Yes 9	Not Sure 2	No 12	Yes 9	Not Sure 4	No 3
Michigan Economics for Human Development Weatherization Program	Yes 11	Not Sure 0	No 18	Yes 3	Not Sure 2	No 18	Yes 4	Not Sure 2	No 2

Questionnaire (PAGE 3)

Column #1 LIST OF PROGRAMS	Column #2 I HAVE HEARD OF THIS PROGRAM			Column #3 I (OR SOMEONE I KNOW) HAVE (HAS) TRIED TO OBTAIN SERVICE FROM THIS PROGRAM			Column #4 I (OR SOMEONE I KNOW) WAS SATISFIED WITH THE SERVICE PROVIDED		
State of Michigan Home Heating Tax Credit	Yes 25	Not Sure 0	No 2	Yes 11	Not Sure 1	No 11	Yes 10	Not Sure 3	No 3
State of Michigan Solar Energy (Alternative Energy) Tax Credit	Yes 23	Not Sure 0	No 3	Yes 6	Not Sure 1	No 15	Yes 6	Not Sure 3	No 4
Tri-County Area Agency on Aging Senior Energy Advisor Program	Yes 14	Not Sure 0	No 13	Yes 4	Not Sure 1	No 15	Yes 3	Not Sure 3	No 2
Tri-County Planning Commission Ride-Sharing Promotion Program	Yes 2	Not Sure 0	No 18	Yes 0	Not Sure 2	No 15	Yes 0	Not Sure 3	No 2
Urban Options Home Energy Conservation Hands-On Workshops	Yes 15	Not Sure 0	No 10	Yes 12	Not Sure 0	No 7	Yes 12	Not Sure 1	No 2
Urban Options Glass Recycling Program	Yes 12	Not Sure 2	No 11	Yes 7	Not Sure 1	No 11	Yes 7	Not Sure 2	No 1

APPENDIX Q

INTERVIEW SAMPLE CHARACTERISTICS AND FORUM SAMPLE CHARACTERISTICS

APPENDIX Q

Table Q1

Interview Sample Characteristics

Characteristic	Level	Frequency	%	χ^2	df	p
Sex of Informant	Males	45	76	16.29	1	<.0001
	Females	14	23			
Organizational Level of Informant	Upper	27	46	14.27	2	<.001
	Middle	26	44			
	Lower	6	10			
Size of Organization (Number of Employees/ Members)	$X \leq 10$	5	8	31.51	3	<.0001
	$10 < X \leq 20$	5	8			
	$20 < X \leq 50$	18	32			
	$50 < X$	31	52			
Age of Organization (in years)	$X \leq 3$	9	15	19.00	5	.0020
	$3 < X \leq 5$	6	10			
	$5 < X \leq 7$	6	10			
	$7 < X \leq 10$	7	12			
	$10 < X \leq 20$	9	15			
	$20 < X$	22	37			
Type of Organization	State Govt.	9	16	3.76	6	.7090, ns
	Local Govt.	12	15			
	Private Service	9	16			
	Utilities & En. Businesses & Associations	9	14			
	Citizen Action & Neighborhood Associations	9	19			
	Education & Research	6	14			
	Labor	5	6			
Perceived Importance of Energy Issues to Organization	Very Import.	40	69	34.07	2	<.0001
	Moderately Import.	12	21			
	Not Very Import.	6	10			

APPENDIX Q - Table Q1 (cont.)

Characteristic	Level	Frequency	%	χ^2	df	p
Future Role of Organization	Active	43	74	43.48	2	<.0001
	Moderately Active	8	14			
	Not Very Active	7	12			
Expectation For Continuation of Funding	Yes	39	81	50.38	2	<.0001
	Not Sure	7	15			
	No	2	4			
Current Energy Programs	Information-Awareness	114	44	172.42	4	<.0001
	Planning-Regulation	72	27			
	Incentives	29 (34)	11			
	Physical Fix	32	12			
	Lifestyle Change	6	2			
Planning Stage Programs	Information-Awareness	44	32	58.50	4	<.0001
	Planning-Regulation	53	38			
	Incentives	11 (18)	12			
	Physical Fix	19	14			
	Lifestyle Change	4	3			
Respondents' Ideas For New Programs For the Organization	Information-Awareness	26	46	41.9	4	<.0001
	Planning-Regulation	19	34			
	Incentives	5	9			
	Physical Fix	1	2			
	Lifestyle Change	5	9			

APPENDIX Q

Table Q2

Forum Sample Characteristics

Characteristic	Level	Frequency	%	χ^2	df	p
Sex of Participant	Males	26	68	5.16	1	.0219
	Females	12	32			
Type of Organization	State Govt.	8	21	4.00	6	.6792, ns
	Local Govt.	7	18			
	Public Service	4	11			
	Utilities & Energy Businesses & Associations	5	13			
	Citizen Action & Neighborhood Associations	3	8			
	Education & Research	7	18			
	Labor	4	11			

Table Q3

Energy Program Funding Sources and Ideas for Other Possible Sources of Funding

Energy Program Funding Sources			Ideas for Other Possible Sources of Funding		
Funding Source	N	%	Funding Source	N	%
1. Direct Federal	20	19	1. Direct Federal	29	51
2. State Government	21	20	2. State Government	14	25
3. Local Government	10	10	3. Local Government	2	3
4. Indirect Federal	23	22	4. Indirect Federal	4	7
5. Self-Supporting	25	24	5. Self-Supporting	2	3
6. Foundations	5	5	6. Foundations	4	7
	104	100%	7. Reallocating Existing Sources	2	3
				57	99% (discrepant due to rounding)
$\chi^2 = 18.71$			$\chi^2 = 77.13$		
$df = 5$			$df = 6$		
$p < .01$			$p < .001$		

Table Q4. Energy Program Funding Sources by Type of Organizations

Funding Sources	Types of Organizations: State Government	Local Government	Private Service	Utilities, Energy-Related Organizations	Citizen Action, Neighborhood Associations	Education, Research	Labor	
1. Direct Federal	7[a] 41.2[b]	3 13.6	4 22.2	1 10.0	1 7.1	4 22.2	0 0	20 19.2
2. State Government	7 41.2	5 22.7	3 16.7	0 0	2 14.3	4 22.2	0 0	21 20.2
3. Local Government	0 0	5 22.7	3 16.7	0 0	0 0	2 11.1	0 0	10 9.6
4. Indirect Federal	1 5.9	8 36.4	4 22.2	0 0	5 35.7	5 27.8	0 0	23 22.1
5. Self-Supporting	2 11.8	1 4.5	1 5.6	9 90.0	6 42.9	1 5.6	5 100.0	25 24.0
6. Foundations	0 0	0 0	3 16.7	0 0	0 0	2 11.1	0 0	5 4.8
	17 16.3	22 21.2	18 17.3	10 9.6	14 13.5	18 17.3	5 4.8	104 100.0

[a]Frequency

[b]Column percentage

195

APPENDIX R

AVAILABILITY OF ENERGY USE DATA FOR THE GREATER LANSING AREA

APPENDIX R

Availability of Energy Use Data for the Greater Lansing Area

I. Natural Gas

A. Industrial Use: Data may be obtained directly from Consumers Power Company.

B. Residential Use: Customer consent is required.

II. Fuel Oil

A. All Uses: There are about two dozen individual fuel oil suppliers in the area. Records are dispersed and non-uniform. A list of suppliers is available from the Michigan Energy Administration, Data Section.

III. Electricity

A. The Lansing Board of Water and Light has electricity use data for its customers. Customer consent is required for release.

IV. Transportation Data

A. Data on traffic flow and mass transit is available from several sources: Capital Area Transportation Authority, Tri-County Planning Commission, and the Lansing Department of Planning (Transportation Division).

NOTE: Telephone numbers and addresses for organizations are listed in the Energy Directory, Appendix W.

APPENDIX S

POPULATION ESTIMATES

INGHAM COUNTY POPULATION ESTIMATES

	April 1 1970 Census	July 1 1978 Estimate	July 1 1979 Provisional Estimate	1970 - 78 CHANGE NUMBER	1970 - 78 CHANGE PERCENT	1970 - 79 CHANGE NUMBER Provisional	1970 - 79 CHANGE PERCENT Provisional
Alaiedon Twp	2487	2825	2882	338	13.60	395	15.88
Aurelius Twp	1987	2415	2510	428	21.58	523	26.34
Bunker Hill Twp	1464	1680	1702	216	14.77	238	16.31
**Dansville Vill	486	459	452	-27	-5.52	-34	-6.79
*Delhi Twp	13795	16052	16429	2257	16.32	2634	19.09
East Lansing City	47540	50483	50554	2943	6.19	3014	6.34
**Ingham Twp	1012	1278	1296	266	26.29	284	28.16
Lansing City (pt)	130354	130561	129414	207	.16	-940	-.72
Lansing Twp	11127	10825	10609	-302	-2.71	-518	-4.65
Leroy Twp	1347	1834	1870	487	36.20	523	38.89
Leslie Twp	1718	2003	2048	285	16.64	330	19.23
Leslie City	1894	2148	2189	254	13.45	295	15.58
Locke Twp	1370	1585	1590	215	15.70	220	16.10
Mason City	5468	5965	5985	497	9.10	517	9.47
*Meridian Twp	23817	29248	30443	5431	22.80	6626	27.82
Onondaga Twp	1981	2052	2112	71	3.59	131	6.63
**Stockbridge Twp	1336	1685	1724	349	26.19	388	29.07
**Stockbridge Vill	1190	1272	1258	82	6.90	68	5.78
Vevay Twp	1916	2709	2805	793	41.42	889	46.42
Webberville Vill	1251	1492	1555	241	19.29	304	24.33
**Wheatfield Twp	1177	1532	1511	355	30.18	334	28.43
White Oak Twp	875	1043	1077	168	19.30	202	23.17
Williamston City	2600	3048	3049	448	17.25	449	17.30
Williamstown Twp	2847	3834	3931	937	34.67	1084	38.09
	261039	278028	278995	16989	6.51	17956	6.88

*Population has been adjusted to reflect special census
**1979 Provisional estimate affected by non-response to TCRPC request for building permit information

Source: TRI-COUNTY REGIONAL PLANNING COMMISSION
2722 E. Michigan Avenue, Lansing, Michigan 48912 517 487-9424

December 1979

EATON COUNTY POPULATION ESTIMATES

	April 1 1970 Census	July 1 1978 Estimate	July 1 1979 Provisional Estimate	1970 - 78 CHANGE NUMBER	1970 - 78 CHANGE PERCENT	1970 - 79 CHANGE NUMBER Provisional	1970 - 79 CHANGE PERCENT Provisional
Bellevue Twp	1127	1356	1385	229	20.35	258	22.91
Bellevue Vill	1297	1315	1301	18	1.46	4	.32
Benton Twp	1754	2269	2353	515	29.37	599	34.18
Brookfield Twp	1113	1322	1333	209	18.85	220	19.77
Carmel Twp	1539	1925	1989	386	25.12	450	29.25
Charlotte City	8244	8157	8061	-87	-1.05	-183	-2.22
Chester Twp	1205	1411	1473	206	17.11	268	22.25
*Delta Twp	17396	22948	24090	3552	35.23	6694	38.48
Dimondale Vill	970	972	1026	2	.27	56	5.86
Eaton Rapids City	4494	4585	4567	91	2.05	73	1.64
Eaton Rapids Twp	2066	2788	2873	722	34.99	807	39.09
Eaton Twp	2104	3011	3124	907	43.13	1020	48.50
Grand Ledge City	6032	6931	7358	899	14.91	1326	21.98
Hamlin Twp	1621	2010	2025	389	24.04	404	24.97
Kalamo Twp	1310	1557	1562	247	18.88	252	19.27
Lansing City (pt)	1192	2754	2782	1562	131.10	1590	133.43
Mulliken Vill	454	474	489	20	4.49	35	7.86
Olivet City	1629	1530	1526	-99	-6.03	-103	-6.27
Oneida Twp	2635	3146	3164	511	19.40	529	20.10
Potterville City	1280	1491	1471	211	16.56	191	14.99
Roxand Twp	1217	1391	1400	174	14.32	183	15.07
Sunfield Twp	1213	1360	1390	147	12.15	177	14.67
Sunfield Vill	497	530	535	33	6.67	38	7.69
Vermontville Twp	877	1042	1065	165	18.92	188	21.51
Vermontville Vill	857	780	773	-77	-8.91	-84	-9.77
Walton Twp	1256	1654	1670	398	31.75	414	33.01
Windsor Twp	3513	4760	4925	1247	35.51	1412	40.20
	68892	83469	85710	14577	21.16	16818	24.41

*Population has been adjusted to reflect special census.

Source: TRI-COUNTY REGIONAL PLANNING COMMISSION

2722 E. Michigan Avenue, Lansing, Michigan 48912 517 487-9424

APPENDIX T

HOUSEHOLD ESTIMATES

HOUSEHOLD ESTIMATES

INGHAM COUNTY

	HOUSEHOLDS							POPULATION PER HOUSEHOLD		
	April 1 1970 Census	July 1 1978 Estimate	July 1 1979 Provisional	1970-78 CHANGE NUMBER	1970-78 CHANGE PERCENT	1970-79 CHANGE NUMBER Provisional	1970-79 CHANGE PERCENT Provisional	1970 Census	1978 Estimate	1979 Provisional Estimate
Alaiedon Twp	694	859	889	165	23.92	195	28.10	3.58	3.29	3.24
Aurelius Twp	543	722	760	179	33.10	217	40.07	3.65	3.34	3.29
Bunker Hill Twp	368	464	477	96	26.21	109	29.64	3.98	3.62	3.57
**Dansville Vill	141	146	146	5	3.77	5	3.77	3.45	3.14	3.10
*Delhi Twp	4106	5841	6060	1735	42.27	1954	47.59	3.34	2.73	2.70
East Lansing City	10860	12641	12837	1781	16.41	1977	18.21	2.78	2.52	2.49
**Ingham Twp	271	384	396	113	42.03	125	46.32	3.73	3.32	3.27
Lansing City (pt)	42299	48027	48303	5728	13.54	6004	14.20	3.06	2.69	2.65
Lansing Twp	3705	4108	4069	403	10.69	364	9.84	2.98	2.61	2.59
Leroy Twp	376	564	584	188	50.14	208	55.37	3.58	3.25	3.20
Leslie Twp	477	613	636	136	28.70	159	33.38	3.60	3.26	3.22
Leslie City	589	713	733	124	21.06	144	24.45	3.20	3.00	2.97
Locke Twp	354	458	466	104	29.60	112	31.79	3.85	3.44	3.39
Mason City	1615	1986	2020	371	23.03	405	25.10	3.28	2.91	2.87
*Meridian Twp	6426	9425	10034	2999	46.67	3608	56.15	3.21	2.71	2.66
Onondaga Twp	463	592	616	129	27.89	153	33.12	3.68	3.37	3.33
**Stockbridge Twp	348	495	515	147	42.48	167	48.06	3.84	3.40	3.35
**Stockbridge Vill	359	421	422	62	17.38	63	17.66	3.17	2.90	2.86
Vevay Twp	534	896	950	362	67.79	416	78.03	3.58	3.02	2.95
Webberville Vill	355	474	504	119	33.58	149	42.01	3.52	3.15	3.09
**Wheatfield Twp	310	444	444	134	43.30	134	43.30	3.80	3.45	3.40
White Oak Twp	249	323	337	74	29.89	88	35.73	3.51	3.23	3.19
Williamston City	833	1153	1169	320	38.48	336	40.38	3.12	2.64	2.61
Williamstown Twp	767	1124	1167	357	46.63	400	52.19	3.71	3.41	3.37
	77042	92873	94534	15831	20.55	17492	22.70	3.10	2.73	2.70

Source: TRI-COUNTY REGIONAL PLANNING COMMISSION
2722 E Michigan Avenue, Lansing Michigan 48912 [illegible]

December 1979

*Population has been adjusted to reflect special census
**1979 Provisional estimate affected by non-response to TCRPC request for building permit information

HOUSEHOLD ESTIMATES

EATON COUNTY

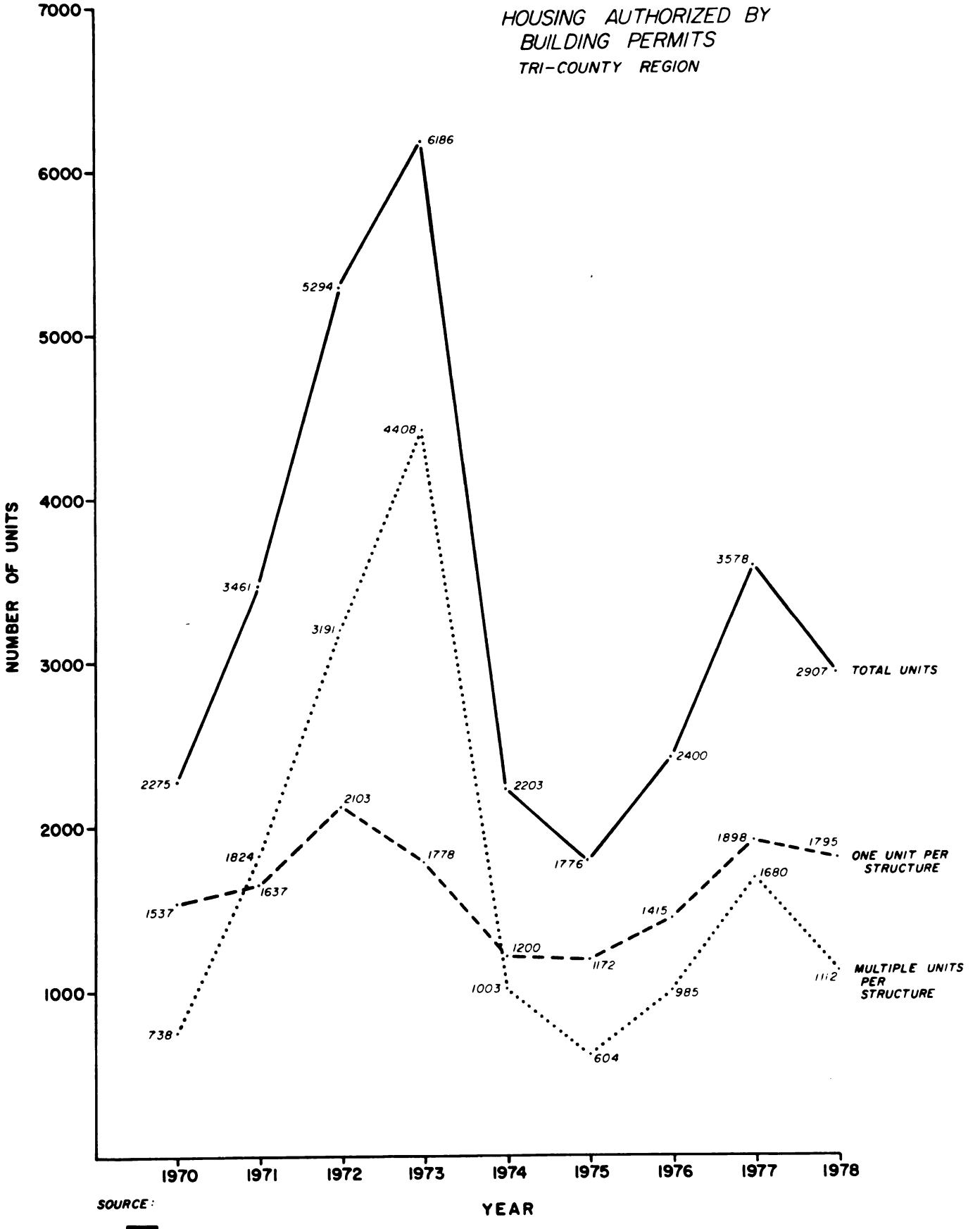
	HOUSEHOLDS							POPULATION PER HOUSEHOLD		
	April 1 1970 Census	July 1 1978 Estimate	July 1 1979 Provisional	1970-78 CHANGE NUMBER	1970-78 CHANGE PERCENT	1970-79 CHANGE NUMBER Provisional	1970-79 CHANGE PERCENT Provisional	1970 Census	1978 Estimate	1979 Provisional Estimate
Bellevue Twp	314	422	437	108	34.53	123	39.47	3.59	3.21	3.16
Bellevue Vill	412	461	462	49	12.13	50	12.37	3.15	2.85	2.81
Benton Twp	476	688	724	212	44.73	248	52.27	3.68	3.29	3.25
Brookfield Twp	325	420	429	95	29.38	104	32.06	3.42	3.15	3.11
Carmel Twp	427	584	611	157	36.96	184	43.32	3.60	3.29	3.25
Charlotte City	2684	2947	2952	263	9.81	268	9.99	3.04	2.76	2.73
Chester Twp	340	433	457	93	27.45	117	34.58	3.54	3.26	3.22
*Delta Twp	4634	7244	7750	2610	56.33	3116	67.25	3.75	3.24	3.18
Dimondale Vill	285	310	332	25	9.12	47	16.60	3.35	3.06	3.02
Eaton Rapids City	1429	1611	1625	182	12.74	196	13.76	3.13	2.83	2.80
Eaton Rapids Twp	578	849	887	271	46.93	309	53.47	3.56	3.27	3.23
Eaton Twp	583	900	945	317	54.40	362	62.20	3.61	3.35	3.30
Grand Ledge City	1878	2428	2646	550	29.29	768	40.94	3.21	2.85	2.78
Hamlin Twp	457	615	628	158	34.76	171	37.52	3.55	3.27	3.22
Kalamo Twp	354	461	469	107	30.50	115	32.69	3.67	3.35	3.31
Lansing City (pt)	344	1050	1071	706	205.37	727	211.58	3.47	2.62	2.60
Mulliken Vill	138	157	164	19	14.23	26	19.15	3.29	3.01	2.98
Olivet City	344	354	356	10	2.91	12	3.76	3.06	2.80	2.77
Oneida Twp	726	950	969	224	30.97	243	33.51	3.62	3.30	3.26
Potterville City	364	468	468	104	28.84	104	28.84	3.52	3.18	3.14
Roxand Twp	356	444	452	88	24.72	96	27.18	3.42	3.13	3.09
Sunfield Twp	339	419	435	80	23.84	96	28.42	3.54	3.21	3.17
Sunfield Vill	156	182	186	26	17.27	30	19.76	3.19	2.90	2.86
Vermontville Twp	247	323	335	76	31.05	88	35.76	3.55	3.22	3.18
Vermontville Vill	254	254	255	0	.17	1	.55	3.37	3.07	3.03
Walton Twp	366	525	536	159	43.47	170	46.65	3.41	3.14	3.10
Windsor Twp	1068	1598	1676	530	49.69	608	56.98	3.29	2.95	2.91
	19878	27097	28257	7219	36.32	8379	42.15	3.43	3.05	3.01

Source: TRI-COUNTY REGIONAL PLANNING COMMISSION
2722 E Michigan Avenue Lansing, Michigan 48912 517 487-9424

*Population has been adjusted to reflect special census.

APPENDIX U

HOUSING UNITS


HOUSING AUTHORIZED BY BUILDING PERMITS
TRI-COUNTY REGION
NUMBER OF UNITS
7000
6000
5000
4000
3000
2000
1000
1970
1971
1972
1973
1974
1975
1976
1977
1978
YEAR
6186
5294
3461
2275
4408
3191
738
2103
1824
1637
1537
1778
1200
1172
1003
604
2203
1776
2400
3578
2907
1898
1795
1415
1680
1112
985
TOTAL UNITS
ONE UNIT PER STRUCTURE
MULTIPLE UNITS PER STRUCTURE
SOURCE:
TRI-COUNTY REGIONAL PLANNING COMMISSION

CALENDAR YEAR TOTALS

HOUSING UNITS AUTHORIZED BY BUILDING PERMITS (PERMANENT STRUCTURES)*

	1970	1971	1972	1973	1974	1975	1976	1977	1978	TOTAL 1970-1978
Clinton County										
Single Family	206	221	524	484	294	225	313	367	254	2888
Two Family	8	12	12	12	6	50	2	2	16	120
Multiple Family	5	143	48	52	28	50	8	12	4	350
Eaton County										
Single Family	467	745	808	584	389	384	523	708	664	5272
Two Family	24	28	58	18	6	16	32	20	56	258
Multiple Family	52	352	630	593	118	211	431	463	260	3110
Ingham County										
Single Family	864	671	771	710	517	563	579	823	877	6375
Two Family	88	204	259	218	72	74	84	66	78	1143
Multiple Family	561	1085	2184	3515	773	203	428	1117	698	10564
Tri-County Total by Type of Structure										
Single Family	1537	1637	2103	1778	1200	1172	1415	1898	1795	14535
Two Family	120	244	329	248	84	140	118	88	150	1521
Multiple Family	618	1580	2862	4160	919	464	867	1592	962	14024
Tri-County Units GRAND TOTAL	2275	3461	5294	6186	2203	1776	2400	3578	2907	30080

*These totals do not include any permits issued for mobile homes.

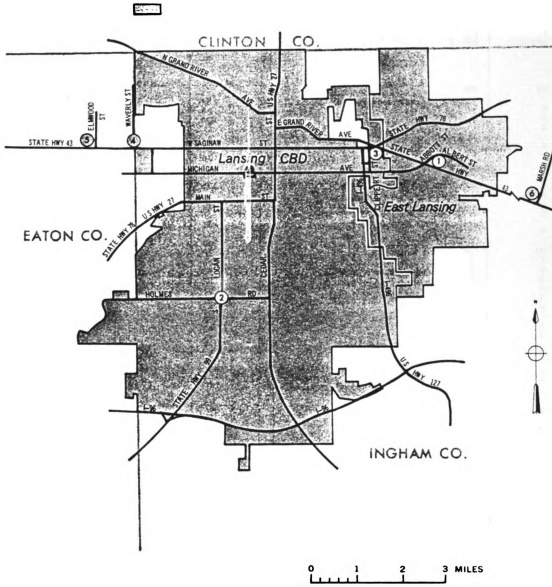
Source: TRI-COUNTY REGIONAL PLANNING COMMISSION 2722 E MICHIGAN AVE LANSING MICHIGAN 48912

APPENDIX V

MAJOR RETAIL CENTERS

LANSING-EAST LANSING, MICH.

Central Business District and Major Retail Centers



● Central Business District

① Major Retail Centers (See table 1 for boundary description of each center)

Central Cities

U.S. DEPARTMENT OF COMMERCE Social and Economic Statistics Administration BUREAU OF THE CENSUS

TABLE 1. Major Retail Centers in the Standard Metropolitan Statistical Area: 1972

1972 SIC code	Kind of business	Standard metropolitan statistical area	Lansing	Lansing central business district	Major retail centers (See descriptions below)	
					No. 1	No. 2
	Retail stores, total:[1]					
	Number	2 975	1 026	108	53	33
	Sales $1,000	991 467	429 001	45 019	16 531	32 972
	Payroll, entire year $1,000	114 894	54 997	9 291	2 995	3 745
	Paid employees for week including March 12, 1972	23 844	10 648	1 907	759	600
54, 58, 591	Convenience goods stores:					
	Number	1 035	380	28	11	13
	Sales $1,000	293 693	(D)	6 195	2 921	9 518
53, 6, 7; 594	Shopping goods stores (GAF[2]):					
	Number	759	269	60	35	9
	Sales $1,000	300 222	(D)	33 465	12 465	(D)
52,55,59, ex. 591, 4	All other stores:					
	Number	1 181	377	20	7	11
	Sales $1,000	397 552	174 941	5 359	1 145	(D)
	NUMBER OF ESTABLISHMENTS					
	Retail stores, total[1]	2 975	1 026	108	53	33
52	Building materials, hardware, garden supply, and mobile home dealers	168	41	3	2	2
525	Hardware stores	68	11	-	1	1
52 ex. 525	Other	100	30	3	1	1
53	General merchandise group stores	82	30	7	3	3
531	Department stores	21	12	2	1	2
533	Variety stores	38	13	5	-	1
539	Miscellaneous general merchandise stores	23	5	-	2	-
54	Food stores	375	125	7	1	4
55 ex. 554	Automotive dealers	229	68	3	-	2
55 pt. (554)	Gasoline service stations	461	169	2	-	5
56	Apparel and accessory stores	212	64	25	15	1
562, 3, 8	Women's clothing, specialty stores, furriers	75	20	9	7	-
562	Women's ready-to-wear stores	53	14	6	6	-
561	Men's and boys' clothing and furnishings stores	53	16	7	5	1
565	Family clothing stores	22	7	-	-	-
566	Shoe stores	51	15	8	2	-
564, 9	Other apparel and accessory stores	11	6	1	1	-
57	Furniture, home furnishings, and equipment stores	240	101	11	5	2
5712	Furniture stores	62	22	4	1	1
Other 571	Home furnishings stores	63	33	3	-	1
572, 573	Household appliance, radio, television, and music stores	115	46	4	4	-
58	Eating and drinking places	571	222	19	7	8
5812	Eating places	411	156	16	7	6
5813	Drinking places (alcoholic beverages)	160	66	3	-	2
59 pt. (591)	Drug stores and proprietary stores	89	33	2	3	1
59 ex. 591, 6	Miscellaneous retail stores[3]	548	173	29	17	5
592	Liquor stores	33	11	1	-	1
594	Miscellaneous shopping goods stores	225	74	17	12	3
5992	Florists	49	16	1	2	-

Standard Notes: - Represents zero. D Withheld to avoid disclosure. NA Not available.

[1]Excludes nonstore retailers (mail-order houses, direct selling, and merchandising machine operators) SIC 596.

[2]Stores in the general merchandise, apparel, furniture and appliance groups, and those making up the miscellaneous shopping goods category. These stores specialize in department store type merchandise.

[3]Includes data for those kinds of business in SIC 59 (except 591 and 596) not covered in any of the lines below.

MRC No. 1. Includes the area known as "Campus Center" and establishments in the area bounded by Albert St., north side of Ann St., east side of Charles St., Grand River Ave., and west side of Abbott Rd. (East Lansing city) (In tract 41)

MRC No. 2. Includes the planned center known as "Logan Shopping Center" and establishments in 3100 to 3800 blocks of South Logan St. and 921 to 1500 block of West Holmes Rd. (Lansing) (In tract 37)

BLE 1. Major Retail Centers in the Standard Metropolitan Statistical Area: 1972—Continued

e	Kind of business	Major retail centers—Continued (see descriptions below)			
		No. 3	No. 4	No. 5	No. 6
	Retail stores, total:[1]				
	Number	57	23	56	49
	Sales ..... $1,000..	97 592	11 918	30 666	24 737
	Payroll, entire year ..... $1,000..	11 979	1 598	4 275	3 189
	Paid employees for week including March 12, 1972	1 798	340	989	794
	Convenience goods stores:				
	Number	17	8	12	8
	Sales ..... $1,000..	16 553	5 883	(D)	(D)
)4	Shopping goods stores (GAF[2]):				
	Number	29	7	42	39
	Sales ..... $1,000..	34 577	4 848	28 543	23 103
	All other stores:				
)	Number	11	8	2	2
	Sales ..... $1,000..	46 462	1 187	(D)	(D)
	NUMBER OF ESTABLISHMENTS				
	Retail stores, total[1]	57	23	56	49
	Building materials, hardware, garden supply, and mobile home dealers ..	1	2	-	-
	Hardware stores	1	1	-	-
	Other	-	1	-	-
	General merchandise group stores	6	3	4	3
	Department stores	3	1	3	2
	Variety stores	2	1	1	1
	Miscellaneous general merchandise stores	1	1	-	-
	Food stores	7	3	5	4
)	Automotive dealers	4	1	-	-
4)	Gasoline service stations	6	4	1	-
	Apparel and accessory stores	12	2	20	23
	Women's clothing, specialty stores, furriers	1	1	6	10
	Women's ready-to-wear stores	1	1	5	7
	Men's and boys' clothing and furnishings stores	6	1	6	4
	Family clothing stores	-	-	-	1
	Shoe stores	4	-	7	7
	Other apparel and accessory stores	1	-	1	1
	Furniture, home furnishings, and equipment stores	2	1	6	5
	Furniture stores	-	-	-	-
)	Home furnishings stores	1	-	1	2
	Household appliance, radio, television, and music stores	1	1	5	3
	Eating and drinking places	8	3	5	4
	Eating places	5	3	5	4
	Drinking places (alcoholic beverages)	3	-	-	-
31)	Drug stores and proprietary stores	2	2	2	-
1, 6	Miscellaneous retail stores[3]	9	2	13	10
	Liquor stores	-	-	-	-
	Miscellaneous shopping goods stores	9	1	12	8
	Florists	-	-	-	-

dard Notes: - Represents zero. D Withheld to avoid disclosure. NA Not available.
ludes nonstore retailers (mail-order houses, direct selling, and merchandising machine operators) SIC 596.
res in the general merchandise, apparel, furniture and appliance groups, and those making up the miscellaneous shopping goods category. These specialize in department store type merchandise.
ludes data for those kinds of business in SIC 59 (except 591 and 596) not covered in any of the lines below.

No. 3. Includes the planned center known as "Frandor Shopping Center" and establishments in the area bounded by the north side of East Grand River Ave., west side of Ranney Park, Morgan Lane, south side of Michigan Ave., and North Clippert St. (Lansing) (In tracts 30 and 38.01)

No. 4. Includes the planned centers known as "Edgemont Shopping Center" and "West Saginaw Plaza" and establishments on West Saginaw from Edgemont Blvd. to Thomas L. Parkway. (Eaton County) (In tracts 34, 201.01, and 201.02)

No. 5. Includes the planned center known as "Lansing Mall" and establishments bounded by Elmwood, West Saginaw Highway, and West Mall Dr. (Eaton County) (In tract 203)

No. 6. Includes the planned center known as "Meridian Mall" and north property boundary establishments bounded by the north property line, Marsh Rd., East Grand River Ave., and the west property line. (Ingham County) (In tract 49.01)

TABLE 2. Major Retail Centers With 100 or More Retail Establishments: 1972

(Table 2 omitted because there were no major retail centers with 100 retail establishments or more in the Lansing-East Lansing SMSA in 1972)

TABLE 3. The Central Business District: 1972

Lansing

1972 SIC code	Kind of business	Establishments (number)	Sales ($1,000)	Payroll, entire year ($1,000)	Payroll, first quarter 1972 ($1,000)	Paid employees for week including March 12 (number)
	Retail stores, total[1]	108	45 019	9 291	1 998	1 907
52	Building materials, hardware, garden supply, and mobile home dealers	3	(D)	(D)	(D)	(D)
525	Hardware stores	-	-	-	-	-
52 ex. 525	Other	3	(D)	(D)	(D)	(D)
53	General merchandise group stores	7	17 001	3 874	718	744
531	Department stores	2	(D)	(D)	(D)	(D)
533	Variety stores	5	(D)	(D)	(D)	(D)
539	Miscellaneous general merchandise stores	-	-	-	-	-
54	Food stores	7	668	69	15	27
56 ex. 564	Automotive dealers	3	(D)	(D)	(D)	(D)
55 pt. (554)	Gasoline service stations	2	(D)	(D)	(D)	(D)
56	Apparel and accessory stores	25	7 744	1 442	333	277
562, 3, 8	Women's clothing, specialty stores, furriers	9	2 880	534	128	130
562	Women's ready-to-wear stores	6	2 680	495	118	119
561	Men's and boys' clothing and furnishings stores	7	3 360	633	143	99
565	Family clothing stores	-	-	-	-	-
566	Shoe stores	8	(D)	(D)	(D)	(D)
564, 9	Other apparel and accessory stores	1	(D)	(D)	(D)	(D)
57	Furniture, home furnishings, and equipment stores	11	3 485	642	211	125
5712	Furniture stores	4	(D)	(D)	(D)	(D)
Other 571	Home furnishings stores	3	1 750	326	115	69
572, 573	Household appliance, radio, television, and music stores	4	(D)	(D)	(D)	(D)
58	Eating and drinking places	19	4 202	1 360	321	406
5812	Eating places	16	4 039	1 315	309	374
5813	Drinking places (alcoholic beverages)	3	163	45	12	32
59 pt. (591)	Drug stores and proprietary stores	2	1 325	475	96	75
59 ex. 591, 6	Miscellaneous retail stores[2]	29	6 333	1 003	240	214
592	Liquor stores	1	(D)	(D)	(D)	(D)
594	Miscellaneous shopping goods stores	17	5 235	837	199	183
5992	Florists	1	(D)	(D)	(D)	(D)

Standard Notes: - Represents zero. D Withheld to avoid disclosure. NA Not available.

[1]Excludes nonstore retailers (mail-order houses, direct selling, and merchandising machine operators) SIC 596.

[2]Includes data for those kinds of business in SIC 59 (except 591 and 596) not covered in any of the lines below.

TABLE 4. The City: 1972

Lansing

1972 SIC code	Kind of business	Establishments (number)	Sales ($1,000)	Payroll, entire year ($1,000)	Payroll, first quarter 1972 ($1,000)	Paid employees for week including March 12 (number)
	Retail stores, total[1]	1 026	429 001	54 997	12 555	10 648
	Building materials, hardware, garden supply, and mobile home dealers	41	17 485	1 819	390	201
	Hardware stores	11	(D)	(D)	(D)	(D)
525	Other	30	(D)	(D)	(D)	(D)
	General merchandise group stores	30	(D)	14 241	3 105	2 738
	Department stores	12	90 950	13 397	2 904	2 497
	Variety stores	13	3 926	(D)	(D)	(D)
	Miscellaneous general merchandise stores	5	(D)	(D)	(D)	(D)
	Food stores	125	53 781	4 762	1 080	892
. 554	Automotive dealers	68	120 384	10 099	2 317	1 044
. (554)	Gasoline service stations	169	25 059	2 429	599	607
	Apparel and accessory stores	64	15 601	2 539	568	501
3, 8	Women's clothing, specialty stores, furriers	20	5 391	(D)	(D)	(D)
	Women's ready-to-wear stores	14	4 802	802	186	184
	Men's and boys' clothing and furnishings stores	16	(D)	905	195	152
	Family clothing stores	7	(D)	(D)	(D)	(D)
	Shoe stores	15	2 448	394	91	78
9	Other apparel and accessory stores	6	(D)	95	21	20
	Furniture, home furnishings, and equipment stores	101	27 590	4 150	1 038	626
?	Furniture stores	22	8 030	1 309	286	183
r 571	Home furnishings stores	33	9 360	1 278	353	206
573	Household appliance, radio, television, and music stores	46	10 200	1 563	399	237
	Eating and drinking places	222	37 550	10 043	2 324	3 089
?	Eating places	156	(D)	7 938	1 850	2 424
3	Drinking places (alcoholic beverages)	66	(D)	2 105	474	665
ot. (591)	Drug stores and proprietary stores	33	(D)	1 897	434	364
ix. 591, 6	Miscellaneous retail stores[2]	173	21 465	3 018	700	586
	Liquor stores	11	2 924	196	47	45
	Miscellaneous shopping goods stores	74	9 452	1 232	279	273
2	Florists	16	1 398	329	73	72

Standard Notes: - Represents zero. D Withheld to avoid disclosure. NA Not available.

[1] Excludes nonstore retailers (mail-order houses, direct selling, and merchandising machine operators) SIC 596.

[2] Includes data for those kinds of business in SIC 59 (except 591 and 596) not covered in any of the lines below.

TABLE 5. The Standard Metropolitan Statistical Area: 1972

1972 SIC code	Kind of business	Establishments (number)	Sales ($1,000)	Payroll, entire year ($1,000)	Payroll, first quarter 1972 ($1,000)	Paid employees for week including March 12 (number)
	Retail stores, total[1]	2 975	991 467	114 894	26 524	23 844
52	Building materials, hardware, garden supply, and mobile home dealers	168	53 065	5 101	1 081	710
525	Hardware stores	68	8 934	976	206	207
52 ex. 525	Other	100	44 131	4 125	875	503
53	General merchandise group stores	82	179 972	23 074	5 145	4 642
531	Department stores	21	161 421	20 653	4 595	3 959
533	Variety stores	38	(D)	1 789	409	499
539	Miscellaneous general merchandise stores	23	(D)	632	141	184
54	Food stores	375	186 866	15 683	3 648	3 100
55 ex. 554	Automotive dealers	229	248 582	20 925	4 837	2 293
55 pt. (554)	Gasoline service stations	461	69 974	6 761	1 653	1 764
56	Apparel and accessory stores	212	43 286	6 075	1 433	1 380
562, 3, 8	Women's clothing, specialty stores, furriers	75	18 175	2 377	585	644
562	Women's ready-to-wear stores	53	(D)	2 144	525	585
561	Men's and boys' clothing and furnishings stores	53	13 164	1 975	454	352
565	Family clothing stores	22	3 691	498	111	120
566	Shoe stores	51	7 361	1 104	255	240
564, 9	Other apparel and accessory stores	11	895	121	28	24
57	Furniture, home furnishings, and equipment stores	240	49 571	6 656	1 631	1 077
5712	Furniture stores	62	16 601	2 482	584	368
Other 571	Home furnishings stores	63	12 299	1 633	437	281
572, 573	Household appliance, radio, television, and music stores	115	20 671	2 541	610	428
58	Eating and drinking places	571	79 064	20 109	4 599	6 615
5812	Eating places	411	63 018	16 695	3 814	5 512
5813	Drinking places (alcoholic beverages)	160	16 046	3 414	785	1 103
59 pt. (591)	Drug stores and proprietary stores	89	27 763	3 802	902	787
59 ex. 591, 6	Miscellaneous retail stores[2]	548	53 324	6 708	1 595	1 476
592	Liquor stores	33	6 919	475	121	114
594	Miscellaneous shopping goods stores	225	27 393	3 392	790	814
5992	Florists	49	3 571	762	171	168

Standard Notes: - Represents zero. D Withheld to avoid disclosure. NA Not available.
[1]Excludes nonstore retailers (mail-order houses, direct selling, and merchandising machine operators) SIC 596.
[2]Includes data for those kinds of business in SIC 59 (except 591 and 596) not covered in any of the lines below.

APPENDIX W

ENERGY PROGRAMS AND SERVICES DIRECTORY

FOR THE GREATER LANSING AREA

ENERGY PROGRAMS AND SERVICES DIRECTORY FOR THE GREATER LANSING AREA

INTRODUCTION

Purpose

This Directory is an overview of the current Lansing and East Lansing energy conservation programs and services. Brief descriptions of the organizations which manage the programs and services are included.

Disclaimer

The Directory is primarily intended to aid future conservation program planning and research by describing the organizational resources of the community. It is not intended in any way to promote the programs or products of any of the organizations. The only energy related business organizations included are the local utility companies and the Oldsmobile Division of General Motors. The conservation programming of these organizations is described since they play such a prominent role in the community. However, it is not the intent of this Directory to promote their products or services.

In order to provide information concerning energy products, the appropriate categories from the Michigan Bell Lansing Area Telephone Directory are listed at the end of the Directory.

Acknowledgements

We wish to thank Rex Lamore and Dr. Jack Bains of the Michigan State University Center for Urban Affairs for their support in carrying out this project. We also wish to thank Nathan Hampton and Wanda Haneline of the East Lansing Energy Consciousness Team for their assistance.

Format

Each entry in the Directory uses the following format:

NAME OF ORGANIZATION and brief description.
INFO-ED
- Information and education programs of the organization.
ASSISTANCE
- Financial assistance programs of the organization.
TRANSPO
- Transportation programs and services designed to provide alternatives to the single-driver automobile.
ADVOCACY
- Political action programs of the organization.
PLAN-REG
- Activities of the organization involving planning and regulation related to energy use.

CONTACT: Under each program entry a contact (name of contact person and/or phone number) is listed if information about the contact was available at the time the Directory was prepared. The CONTACT entry refers to all programs listed above it.

Limitations

Since energy programming changes rapidly and frequently, it is difficult and costly to prepare a comprehensive, up-to-date listing of information. This Directory, therefore, will be to some extent out-of-date the day it is printed. However, since its listings are according to organizations, interested users can easily up-date information which they find to be important.

The final up-dating of the Directory took place in the Fall of 1980.

LIST OF ORGANIZATIONS

CAPITOL AREA COMMUNITY SERVICES (C.A.C.S.)
CAPITOL AREA TRANSIT AUTHORITY (CATA)
CONSUMERS POWER COMPANY
COOPERATIVE EXTENSION SERVICE (CES), INGHAM COUNTY OFFICE
CRISTO RAY COMMUNITY CENTER
EAST LANSING DEPARTMENT OF BUILDING AND ZONING
EAST LANSING DEPARTMENT OF PLANNING, HOUSING, AND COMMUNITY DEVELOPMENT (EL-PHC)
EAST LANSING ENERGY CONSCIOUSNESS TEAM (ELECT)
HOUSING ASSISTANCE FOUNDATION (HAF)
INGHAM COUNTY DEPARTMENT OF SOCIAL SERVICES (DSS)
INGHAM COUNTY ENERGY COMMISSION
INGHAM COUNTY ENERGY OFFICE
LANSING BOARD OF WATER AND LIGHT (BWL)
LANSING COMMUNITY COLLEGE (LCC)
LANSING DEPARTMENT OF ADMINISTRATIVE SERVICES
LANSING DEPARTMENT OF BUILDING, SAFETY, AND COMMUNITY DEVELOPMENT
LANSING SCHOOL SYSTEM ENVIRONMENTAL EDUCATION PROGRAM
LOCAL GOVERNMENT COMMISSIONS
MICHIGAN BUILDING AND CONSTRUCTION TRADES COUNCIL
MICHIGAN CITIZEN'S LOBBY (MCL)
MICHIGAN ECONOMICS FOR HUMAN DEVELOPMENT (M.E.H.D.)
MICHIGAN ENERGY ADMINISTRATION (MEA)
MICHIGAN ENERGY COALITION
MICHIGAN LEAGUE FOR HUMAN SERVICES
MICHIGAN STATE BUREAU OF COMMUNITY SERVICES
MICHIGAN STATE DEPARTMENT OF LICENSING AND REGULATION
MICHIGAN STATE DEPARTMENT OF TREASURY
MICHIGAN STATE HOUSING DEVELOPMENT AUTHORITY (MSHDA)
MICHIGAN STATE LEGISLATURE
MICHIGAN STATE PUBLIC SERVICE COMMISSION (MPSC)
MICHIGAN STATE UNIVERSITY
MICHIGAN STATE UNIVERSITY CENTER FOR URBAN AFFAIRS (CUA)
NEIGHBORHOOD ASSOCIATIONS ACTIVE IN ENERGY
OLDSMOBILE
PIRGIM
RATEPAYERS UNITED
TENANTS RESOURCES CENTER OF EAST LANSING (TRC)
TRI-COUNTY OFFICE ON AGING
TRI-COUNTY REGIONAL PLANNING COMMISSION (TCRPC)
URBAN OPTIONS
UNITED AUTO WORKERS (UAW)
URBAN LEAGUE

CAPITOL AREA COMMUNITY SERVICES (C.A.C.S.) operates the largest weatherization program for low-income persons in the greater Lansing area. Capitol Area is involved with a number of services for the needy (e.g., Crisis Assistance, Headstart). It serves as the local CAP agency (Community Action Program), and it is funded by grants and contracts from the Federal Community Services Administration and other agencies. It is under the supervision of the Michigan State Bureau of Community Services. Capitol Area has several offices in the Lansing area, and works with a number of other agencies to get people involved in their programs.

INFO-ED

- General information on weatherization and assistance programs.
  CONTACT: 372-9140
- Youth Program: On-the-job training in basic construction skills related to energy conservation (carpentry, etc.) for high school age youth.
  CONTACT: Virginia Massey, 372-9140

ASSISTANCE

- Weatherization: Crews come to your house and install insulation, weatherstripping, etc. You must meet income requirements and have proof of ownership of home.
  CONTACT: 372-9140
- Crisis Assistance: Emergency financial assistance in case of utility/fuel shut-offs. Fuel delivery, temporary clothes, food, medicine, and emergency housing repairs. Program details change frequently; call for assistance.
  CONTACT: 482-6281
  COMPLETE LIST OF C.A.C.S. CONTACTS:
  Clinton County, 224-6702
  Cristo Rey, 1314 Ballard, 482-1387
  East side, 1710 E. Kalamazoo, 372-9010
  Eaton County, 543-5465
  Ingham County, 676-1065
  Kingsley Center, 1222 W. Kalamazoo, 487-1370
  North side, 101 E. Willow, 372-9140
  Shiawasee County, 743-5648
  West side, 428 W. Lenawee, 485-0155

CAPITOL AREA TRANSIT AUTHORITY (CATA) provides the greater Lansing area with mass transit service. CATA is governed by a Board of Directors which includes members of local governments (e.g., Lansing City Council) and is funded mostly by federal, state and local grants; only about 25% of its funds come from bus fares.

INFO-ED and TRANSPO

- Bus routes and schedules.
  CONTACT: 394-1000
- Handicapper program: CATA provides SPEC-TRAN (special transportation) service.
  CONTACT: Mrs. Walfston, 394-6230
- Park-and-Ride: You can park in lots in outlying locations and ride CATA buses into greater Lansing.
  CONTACT: Mr. Frolich, 394-1100

- Van pooling: CATA is the local contact for the Michigan Department of Transportation Program. Vans are supplied to individuals who have lined up ten riders. Reasonable monthly rates.
  CONTACT: Ms. Nan Casey, 394-1100
- Ride sharing: CATA will also be coordinating ride sharing for individuals who wish to use their own cars. They are accumulating names and addresses of those interested in car-pooling in the greater Lansing area.
  CONTACT: Ms. Nan Casey, 394-1100

CONSUMERS POWER COMPANY is one of the two major utility companies serving the greater Lansing area. (The other is the Lansing Board of Water and Light). Consumers Power is basically the only supplier of natural gas in Central Michigan. Consumers does not supply Lansing and East Lansing with electricity, but has customers elsewhere in Ingham County. Consumers Power is a "public utility" owned by its stockholders.

INFO-ED

- Pamphlets and general information on energy conservation, especially insulation and appliances.
- Speakers bureau: Speakers on general energy conservation, insulation, etc.
- Solar energy: Names of all local dealers are supplied.
  CONTACT: 373-6100, ext. 323 or 324 (use this number for all INFO-ED questions).

ASSISTANCE

- Home insulation loan program: To be eligible, you MUST BE A CONSUMERS POWER RESIDENTIAL CUSTOMER. You may apply for a loan up to $300. A 20% down payment is required. If you repay the loan within 3 months, there are no interest or financial charges; if you make monthly payments with you gas bill, the annual interest rate is 1% per month (12% per year). Consumers pays the insulation contractor. AT PRESENT, ONLY CEILING INSULATION IS COVERED. However, the new Residential Conservation Service Program (RCS) will REQUIRE Consumers to offer a package of additional services. See PUBLIC SERVICE COMMISSION in this Directory for information about the new RCS.
- RCS (Residential Conservation Service Program): Still in planning stages. Will involve utilities in conducting home energy audits and helping to finance home weatherization. Should be in action by Winter 1980-81.
- Wind-buy-back: If you have a wind-powered generator, you can hook into Consumers' lines and be paid for your electricity when the wind's blowing.
  CONTACT: 373-6100 (use this number for all ASSISTANCE questions).

COOPERATIVE EXTENSION SERVICE (CES), INGHAM COUNTY OFFICE: CES is one of the largest and most active organizations working to promote energy conservation in Michigan. CES is a complex network of organizations, involving eighty county extension offices and 130 faculty specialists from several Michigan State University departments. CES is supported by county government funds, Michigan State University, and various grants.

INFO-ED
- General information: Call or stop by the Ingham County office for information on gasahol, minimum tillage farming, gardening and canning, home appliances, solar, wind, and biomass energy, etc.
- Lectures and films on various energy topics.
  CONTACT: Ingham County CES Office: 676-5222, ext. 361
- Research: Some of the research projects include the Home Energy Audit Program, Farm Energy Audit Program, Alcohol Fuel Project, monitoring of energy policy, etc.
  CONTACT: These research projects are spread out across Michigan State University and the CES network. Three good sources for information on CES research projects are: Dr. Adjer Carrol, 355-0118; Dr. Bill Stout, 355-4720; Dr. Tom Edens, 353-8697.
- Energy Fact Sheets: Over 40 bulletins are available. Readable and informative. Titles include Home Hot Water Heating with Solar Energy; Energy Conservation, the Tax Approach; Window Treatments for Thermal Comforts; etc. The bulletins range between 5¢ and 15¢ for single copies.
  CONTACT: CES Bulletin Office, 355-0240

CRISTO RAY COMMUNITY CENTER provides counseling and assistance to the low-income and the needy. This organization has especially close ties with the Hispanic community, and its programs are coordinated with other local service agencies, such as Capitol Area Community Services and Ingham County Department of Social Services.

INFO-ED
- General information and counseling: Information on home energy conservation and financial assistance programs. Information and pamphlets in English and Spanish.
  CONTACT: 372-4700

EAST LANSING DEPARTMENT OF BUILDING AND ZONING is in charge of inspecting new construction to check compliance with local building codes and ordinances.

INFO-ED
- Information on building codes and ordinances. (SEE BELOW.)

PLAN-REG
- Building codes and ordinances: East Lansing's codes are currently in accordance with ASHRAE 90-75, a nationwide model code which requires a minimal amount of conservation related steps. However, this area is changing rapidly. For example, new developments with the East Lansing Comprehensive Plan (see above entry) and the Federal D.O.E. "B.E.P.S. codes" will affect the regulation enforced by the East Lansing Department of Building and Zoning.
  CONTACT: 337-1731, ext. 203

EAST LANSING DEPARTMENT OF PLANNING, HOUSING, AND COMMUNITY DEVELOPMENT (EL-PHC) is responsible for planning and regulation for the use of land, existing housing, and multi-purpose developments in East Lansing. It has a large number of activities and programs which are related to energy conservation.

INFO-ED

- Information on assistance programs (see below).

ASSISTANCE

- Housing repairs: There are currently grant and loan programs. In general, these programs provide financial assistance for energy related and other repairs, including weatherization, electrical, mechanical, etc. These programs include:
- Neighborhood Improvement Loan Program
- Home Improvement Loan Program
- Neighborhood Strategy Programs
- Section 312 Loans
- East Lansing Home Insulation Grants
- Housing Rehabilitation Program

  CONTACT: Rosie Norris, Housing Administrator, 337-1731

PLAN-REG

- Comprehensive Plan: EL-PHC has coordinated the research and planning activity for the new Comprehensive Plan. Several citizen advisory committees assisted by EL-PHC staff researched existing codes and ordinances and considered various options for revision. These committees studied such areas as energy, housing, waste and water management, and land use. The committees' suggestions are currently being integrated into a Comprehensive Plan, which is expected to be complete by Fall of 1980

  CONTACT: Robert Owen, 337-1731

EAST LANSING ENERGY CONSCIOUSNESS TEAM (ELECT) has been one of the most active organizations promoting energy awareness in East Lansing. ELECT is housed in the East Lansing Department of Planning, Housing, and Community Development (see above), and is a "temporary" organization, funded by a short-term (18-month) grant. The intent of ELECT has been to mobilize East Lansing activities to work on energy awareness projects and to promote energy awareness in a number of different ways. ELECT serves East Lansing exclusively.

INFO-ED

- School City Activity Program (SCAP) Workshops: These ELECT community education programs have had high attendance and will be continued after termination of ELECT funding. They have covered a broad variety of energy topics.
- Weekly radio program: WKAR-AM's Mid-Michigan Morning Show, Wednesday's from 11:35 to 11:50 will continue to feature informal talks with local energy experts. Sponsored by ELECT.
- Speakers Bureau: Speakers for a variety of energy topics. Free service to schools and other organizations.
- Media events: Six events, including a highly successful tour of solar homes, have been held.
- Energy directory: ELECT has published a concise, comprehensive directory for energy related services, including not only local services, but also state and national services. Easy to use. Available from ELECT.

  CONTACT: Wanda Haneline, 337-1731

HOUSING ASSISTANCE FOUNDATION (HAF) of Lansing is a non-profit service agency which operates a number of housing and consumer related services such as financial counseling, information-and-training workshops, etc.

INFO-ED

- General information and pamphlets are available in the HAF office.
- Winterization workshops: Workshops will be held for organizations on request. Workshop includes lecture, pamphlets, and visual aid presentations.

ASSISTANCE

- Home Repair Program: The Housing Assistant Foundation is the contact for the Lansing Youth Development Corps (YDC) Home Repair Program. The program works as follows: (1) Call HAF; (2) staff person will inspect your home; (3) a contract is drawn up for work to be performed; (4) a YDC crew will come to your home to do the work. Crews include youths up to 24 years of age.
  CONTACT: Scott Velduis or Charlie Roland, 487-5488

INGHAM COUNTY DEPARTMENT OF SOCIAL SERVICES (DSS) administers Michigan DSS programs in this county.

INFO-ED on assistance programs.

ASSISTANCE

- Emergency Needs Program: Assistance in paying heating bills and deposits. Low-income persons and families may apply. Eligibility determined by DSS.
- Volunteer Heating Fuel Program: DSS clients who are Consumers Power customers can have their monthly heating fuel allowance deducted from their assistance grants and paid directly to Consumers by DSS.
  CONTACT: 373-6420

INGHAM COUNTY ENERGY COMMISSION serves as an advisory group to the Ingham County Board of Commissioners on energy matters. (The Board of Commissioners, the major elected executive body for the county government, appoints the nine members of the Energy Commission.)

PLAN-REG and ADVOCACY

- Ingham County Energy Office: The Energy Commission serves as a policy board for the Energy Office (SEE ENTRY BELOW for details on the Office).
- County Energy Policy: The Energy Commission attempts to serve as the county "energy watchdog." They advise all units of county government on energy matters when requested. They are currently negotiating to have a stronger voice in county energy related affairs, by requiring Commission reviews of county energy related projects.
- County Jail Co-Generation Facility: The Energy Commission has been instrumental in advocating and planning for this future facility ("co-generation refers to the use of 'waste' steam from electric generation in the heating of buildings). This highly energy efficient project is still in the planning and funding stages.

INGHAM COUNTY ENERGY OFFICE is one of the major energy information agencies in the greater Lansing area. Until January, 1980, it was part of the Ingham County Cooperative Extension Service Operation. It is presently housed in the Ingham County Department of Purchasing and Property.

INFO-ED

- Home Energy Audit: Free service. Call office and request audit. Auditor will inspect home with you and point out places you can save energy and money. After the inspection, you'll receive information on how long it would take for each conservation step to pay for itself in reduced fuel bills.
- Hotline: Call the office with any energy question.
- Pamphlets: Good selection. Will mail on request.
- Speakers and films: Films and slides on energy savers (e.g., solar greenhouses), lectures on conservation for community groups.
  CONTACT: 676-3550

LANSING BOARD OF WATER AND LIGHT (BWL) is the major electric utility for the greater Lansing area. It is a "municipal" (city-owned, non-profit) utility. Appointments to its Board of Directors are made by the mayor, and must be approved by the Lansing City Council.

INFO-ED

- Pamphlets: BWL has a selection of pamphlets on appliances, conservation, home safety, etc. Some are in Spanish as well as English.
- Speakers: Presentations to community groups on conservation.
  CONTACT: Dennis Casteele, 487-4974

PLAN-REG and ADVOCACY

- Although in former years the BWL has been criticized for not backing conservation as strongly as it might, recent actions indicate increased support for conservation, including:
- Citizens Task Forces on Conservation, Public Energy Education, and Rates. For inquiries concerning the Conservation Task Force:
  CONTACT: Tony Benevitas (BWL Board Member), 372-4700
- RCS: BWL, although not regulated by MI-PSC, has decided to voluntarily comply with the RCS regulations. Taking effect in March, 1981, these will require utilities to provide residential audits and financial assistance for weatherization (see MICHIGAN PUBLIC SERVICE COMMISSION below).
- Rates: BWL has a "mildly inverted" rate structure somewhat favorable to conservation, and has a special rate program for senior citizens which favors conservation.
  CONTACT: 487-4890

LANSING COMMUNITY COLLEGE (LCC) has a relatively progressive energy management operation, and has training programs for people seeking jobs in energy conservation fields.

INFO-ED

- Solar Design and Energy Efficiency Training Program: Located in Department of Engineering Technology. One year certificate or two year degree in Architectural Solar Design.
  CONTACT: Dr. Cernyw Kline, 373-9975

- Applied Technology Courses: Training in heating and air conditioning (including solar installation, heat pumps, etc.) and alternative sources of energy.
  CONTACT: Thom Peterson, 373-7173
- Social Science Courses: Energy policies, energy and the environment, etc.
  CONTACT: John Ducat, 373-7229
- Ecology Club: Various information services, e.g., car-pool ride boards, environmental films, information on CATA, etc.
  CONTACT: John Ducat, 373-7229
- Other programs: Energy forums, conferences, etc. (contact any of the above).

ADVOCACY

- Ecology Club: Promotes conservation and energy awareness on campuses. See INFO-ED above.

PLAN-REG

- Energy Committee: Members are staff and administrators. Campus-wide energy planning and regulation. Has been very effective with a large number of activities, including: computerized temperature controls, de-lamping, building audits, insulating and window treatments, etc. A good model for institutional planning and regulation.

LANSING DEPARTMENT OF ADMINISTRATIVE SERVICES is in charge of a number of municipal operations which involve energy use.

PLAN-REG

- This office has adopted an aggressive conservation policy for its own jurisdiction, involving the following: Rehauling the city's motor fleet (obtaining diesel-engine cars, improved maintenance, etc.); encouraging car-pooling and mass transit use for city employees, using financial incentives; monitoring building energy use; increasing maintenance; insulating city buildings; disseminating conservation information to Lansing city employees.

LANSING DEPARTMENT OF BUILDING, SAFETY, AND COMMUNITY DEVELOPMENT

INFO-ED on ASSISTANCE and PLAN-REG programs (see below).

ASSISTANCE

- Housing repairs: There are currently seven grant and loan programs. In general, these programs provide financial assistance for energy related and other repairs including weatherization, electrical, mechanical, etc. For specific information on each program:
- Community Development in Neighborhood Development Areas.
- Community Development in Peripheral Housing Target Areas.
- Section 312 in Neighborhood Strategy Areas.
- Neighborhood Improvement Program.
- Neighborhood Strategy Area Section 8 (Rental Property)
  CONTACT: Ron Stonehouse, Redevelopment Division, 487-1020
- Community Development City-wide (extremely low income)
  CONTACT: Housing Rehabilitation Division, 487-1250
- Home Improvement Program: See Michigan Housing Development Authority below.

PLAN-REG
- This office is responsible for administering and enforcing Lansing's building, planning, mechanical and electrical codes. Citizen's Commission advises the Department is each area. Call the Department for specific information.
  CONTACT: James Kzeski: 487-1250

LANSING SCHOOL SYSTEM ENVIRONMENTAL EDUCATION PROGRAM
INFO-ED
- Science and Environmental Education is highly decentralized. The school system operates a training and consultation center for teachers to promote environmental education. Their basic philosophy is that energy issues must be integrated into a "total systems" educational approach. The school system also has a nearby large outdoors facility for environmental education.
  CONTACT: Dave Cross, 374-4343

LOCAL GOVERNMENT COMMISSIONS
PLAN-REG
- There are a large number of commissions in Lansing and East Lansing with appointed or volunteer membership that advise on energy related policies, e.g., Housing and Community Development, Planning, Transportation, etc. Contact the public information offices or Planning Department in Lansing or East Lansing.

MICHIGAN BUILDING AND CONSTRUCTION TRADES COUNCIL is a coalition of unions representing seventeen trades. Activities include public education and community action.
INFO-ED and ADVOCACY
- Michigan Committee on Jobs and Energy: Affiliated with the Council. Researches, lobbies, and promotes labor interests related to energy.
  CONTACT: 484-1456
- General Energy Education: Promotes energy forums, speakers, demonstration projects, mall shows, etc.
  CONTACT: Burt Lee, 485-0323

MICHIGAN CITIZEN'S LOBBY (MCL) is the largest citizen action group in Michigan. Programs include lobbying, utility intervention, and consumer education.
ADVOCACY
- Utility Company Project: MCL has an ongoing program to support consumer interests vis-a-vis the state's utilities and the Public Service Commission. This involves litigation, rate-case intervention, and lobbying at state and federal levels.
  CONTACT: Alan Barak, 372-7111

MICHIGAN ECONOMICS FOR HUMAN DEVELOPMENT (M.E.H.D.; formerly United Migrants for Opportunity) is the largest and most active Michigan organization concerned with migrant issues. They are a private, non-profit social agency, and provide migrant and seasonal farm workers with employment training, help in obtaining permanent housing, emergency relief, child care, etc. Their main office is located in Grand Ledge, and they have a number of other offices around the state.

INFO-ED and ASSISTANCE

- The Weatherization Program involves training crews of migrant workers in construction skills, and providing substantial weatherization labor and materials for migrant residences.
- General Energy Education: M.E.H.D. is attempting to integrate more energy education into their on-going program, involving consumer education, nutrition, adult basic eduction, etc.
- Other Assistance Programs: M.E.H.D. offices provide various energy related assistance services to migrants, e.g., car tune-ups, housing rehab, etc.

  CONTACT: 482-5571

MICHIGAN ENERGY ADMINISTRATION (MEA) is the major state agency for developing, coordinating, and promoting energy programs. MEA is a division of the state Department of Commerce, and is funded primarily by the U.S. Department of Energy.

INFO-ED

- Clearinghouse: MEA has a vase amount of publications on energy, from general to highly technical. The Clearinghouse operates the TOLL FREE ENERGY HOTLINE. You can call this number for answers to energy questions, and you will be sent publications relevant to your questions.

  CONTACT: 373-0480

  TOLL FREE HOTLINE: 1-800-292-4704
- Other MEA public information programs include the following:
- Conservation and Consumer Assistance (including Fraud Prevention).
- Energy Education Program (to increase energy education in schools).
- Residential Conservation (see MICHIGAN PUBLIC SERVICE COMMISSION entry below).
- Senior Energy Project (see TRI-COUNTY OFFICE ON AGING below).
- Small Business Program

  CONTACT: (For all the above programs), 373-0480
- Data, Research, and Evaluation.

  CONTACT: 373-8340
- Agriculture and Appropriate Technology Research.

  CONTACT: 373-6430
- Institutional Conservation and Transportation.

  CONTACT: 373-7543

PLAN-REG

- Policy and Planning
- State and Federal Legislation

  CONTACT: 374-9090

MICHIGAN ENERGY COALITION is a large, loosely bound coalition of approximately 50 groups, which promotes the interests of consumers, low-income people, and the needy in energy affairs.

ADVOCACY

- Lobbying, litigation, and public education. Focuses on issues such as Lifeline rates, funding of public utility intervention, "truth-in-heating," regulation of power plant siting and construction, etc.
  CONTACT: Terry Black, 482-1193

MICHIGAN LEAGUE FOR HUMAN SERVICES is a non-profit research and advocacy organization funded by the United Way.

INFO-ED and ADVOCACY

- Energy and the Poor: The League has prepared an excellent, well researched summary of the effect of various energy issues on the poor.
- Lifeline: The League has been active in lobbying for the recently passed "Lifeline" bill (see MICHIGAN STATE LEGISLATURE below).
  CONTACT: 487-5436

MICHIGAN STATE BUREAU OF COMMUNITY SERVICES, a division of Michigan's Department of Labor, supervises the state's Community Action Program's (CAP's) and has been active in energy policy-making and programming. For details on Ingham County CAP energy programs, see above, CAPITOL AREA COMMUNITY SERVICES. For information on BCS energy activity;
CONTACT: William Holt: 322-1726

MICHIGAN STATE DEPARTMENT OF LICENSING AND REGULATION

INFO-ED and PLAN-REG

- Information on service records for contractors and builders.
  CONTACT: 373-1870 or 373-0678

MICHIGAN STATE DEPARTMENT OF TREASURY administers tax incentive programs for conservation and solar.
CONTACT: MEA HOTLINE: 1-800-292-4704 or 373-0480

MICHIGAN STATE HOUSING DEVELOPMENT AUTHORITY (MSHDA) was established to help low and middle income residents to obtain decent housing, and is a major intermediary for buyers, owners, and builders to obtain housing related financing.

INFO-ED on ASSISTANCE programs.

ASSISTANCE

Home owner programs:

- Home Improvement Loan Program (H.I.P.): This popular program helps low income residential owners (below $14,000/year) obtain bank loans for home improvements, specifically including energy improvement. Maximum loan: $15,000. Maximum term: 15 years. Interest rates on income levels.
  CONTACT: Howard Miles, 373-8016, or
  Lansing Department of Building, Safety, and Community Development, or
  East Lansing Department of Planning, Housing, and Community Development
  (see above entries).

- Energy Saver Plus Program: This program offers homeowners reduced interest rates and higher mortgage ceilings for conservation. Two options: conservation and conservation plus solar.
  CONTACT: 373-6840

ASSISTANCE

- Rental unit programs: Builders and developers constructing MSHDA assisted multi-unit housing must conform to MSHDA conservation standards, which are progressive and well researched. MSHDA also encourages tenants in these developments to conserve.

MICHIGAN STATE LEGISLATURE

PLAN-REG and ASSISTANCE

- Energy legislation: In recent years, a large number of bills related to energy have been passed; e.g., in January, 1980 there were about 75 bills in process. Some key pieces of legislation include: the Lifeline rate bill; solar tax credits; home heating tax credits; truth in heating; power plant siting; and public intervenor.
  CONTACT: Call the MEA Hotline (373-0480) or the MEA Office of State and Federal Legislation (373-9090) for specific information.

MICHIGAN STATE PUBLIC SERVICE COMMISSION (MPSC) regulates the state's major utilities, including electricity and natural gas suppliers. The Commission sets policies and is supported by a large staff of technical assistants. As well as regulation and enforcement, MPSC is involved in a number of energy related research and planning activities.

INFO-ED

- Utility customer information: General and technical information on policies, regulations, etc. Call MPSC. Also some active dissemination (brochures, energy fairs, tours, etc.).
  CONTACT: 373-8530
- Information on Residential Conservation Service (RCS): (See below for description of RCS and CONTACT).

PLAN-REG

- Rate setting: MPSC sets rates after hearing evidence from interested parties.
- Power plant efficiency: Supervises maintenance improvements.
- Research and development: Internal and external research on energy devices, alternative energy sources, etc.
- Residential Conservation Service (RCS) and other residential financing programs: In 1978 the federal government legislated requirements for all U.S. utilities to become involved in residential energy audits and weatherization financing. MPSC coordinated a large-scale, state-wide effort to develop a state RCS plan. This plan is currently being piloted in Ann Arbor and will be implemented state-wide in 1981. The plan will supersede or supplement current utility residential insulation financial assistance programs. For information on the RCS or other MPSC conservation projects:
  CONTACT: Geoffrey Crandall or Cheryl Garbuthis, 373-8681

MICHIGAN STATE UNIVERSITY is one of the largest universities in the country, and has a multitude of energy related activities in progress.

INFO-ED

- Courses: Some of the departments offering energy courses include: Agricultural Economics, Agricultural Engineering, Education, Geography, Human Ecology, Resource Development, Sociology, and the Science-Mathematics Teaching Center. This is not a complete list, since such courses change frequently.
- Research: All of the above-mentioned departments have active research programs and again, this list is not comprehensive. Much of the research conducted in these departments is related to community energy planning.

PLAN-REG

- MSU has a relatively progressive energy management system, including the following components: co-generation; life-cycle costing; progressive construction guidelines; efficient monitoring of energy use and feedback control.
  CONTACT: MSU Physical Plant
  OTHER CONTACTS: (Not comprehensive list)
  Bill Stout: Agricultural Engineering
  Adjer Carrol: Agricultural Economics
  Herman Koenig: Center for Environmental Quality
  Robert Muth: Education
  Lawrence Somers: Geography
  Joanne Keith and Bonnie Morrison: Human Ecology
  Tom Edens: Resource Development
  Craig Harris: Sociology
  Marty Hetherington: Science-Mathematics Teaching Center

MICHIGAN STATE UNIVERSITY CENTER FOR URBAN AFFAIRS (CUA) is the service-and-research division of the MSU College of Urban Development. MSU faculty and students work together with community members on CUA programs, which deal with housing, community development, health services, organizing neighborhoods for self-help and impact on government, and other areas of social concern.

INFO-ED

- Energy Forums and Energy Directory: CUA has co-sponsored two components of our Needs Assessment project, including two Community Energy Forums (held in Spring, 1980) and this Directory. The forums involved discussion among local energy policy-makers and activists concerning energy programming issues.
- Other Energy Programs: CUA supports community energy education whenever budget and staff constraints permit. In the past, CUA has conducted home conservation workshops, issued energy public service announcements, conducted surveys addressing energy questions, etc.
  CONTACT: Rex Lamore, 353-9555

NEIGHBORHOOD ASSOCIATIONS ACTIVE IN ENERGY: These programs vary from month to month. Consult the latest Lansing Star Community Handbook for names and addresses of local neighborhood associations.

ADVOCACY

- Citizens concerned about Logan Corridor: This neighborhood group has had an on-going energy related program for several years. They have conducted traffic flow research and other activities related to organizing opposition to the expansion of Logan Street into a north-south highway.
- Other neighborhood associations which have had energy programs include North Lansing, East Side, and South Central.
  CONTACT: Lansing Star Community Handbook, or MSU Center for Urban Affairs.

OLDSMOBILE: Lansing's largest private enterprise employer.

PLAN-REG

- Energy management: Oldsmobile has a well coordinated, though not extremely innovative, energy management system.
  CONTACT: Bill Geisenhafer, 377-4371
- Car-pooling: Oldsmobile has been active since 1973 encouraging employee ride-sharing, and is currently phasing in a computerized system to make it easier for people who live in the same area to form a car-pool.
  CONTACT: Bob Shong, 377-4713

PIRGIM (Public Interest Research Group in Michigan) is a large research-and-advocacy student organization with 40,000 members on five campuses. Its major activities include lobbying, intervention on behalf of consumer interests, and public education.

INFO-ED and ADVOCACY

- Utility Project: PIRGIM's energy staff person serves as an "intervenor" in rate cases, representing consumer interests.
- Legislation and policy: PIRGIM has been active in drafting and lobbying for various energy policies, including the recently passed Lifeline rates bill; a "truth-in-heating" bill requiring disclosure of landlords on previous property owners of energy bills at the time of leasing or sale; the State Residential Conservation Service Plan (see MICHIGAN STATE PUBLIC SERVICE COMMISSION) and legislation on power plant siting.
- Other research and advocacy: PIRGIM coordinates independent student research and advocacy on various energy topics. Much of this research deals with issues related to nuclear power.
- Workshops and pamphlets: On various energy related topics, such as rental housing issues, weatherization, appliances, etc.
  CONTACT: Ron Wilson, 487-6001

RATEPAYERS UNITED is a coalition of labor unions, citizen action groups, human service organizations, and concerned citizens.

INFO-ED and ADVOCACY

- This group has been active in opposing expansion and "nuclear buy-in" activity by the Board of Water and Light. Its members advocate maintaining local control over Lansing's electric utility, and increasing

utility support for energy conservation. Rather than an on-going organization, Ratepayers United is an issue-oriented group which becomes active when the Board of Water and Light indicates that it is considering action which Ratepayers United opposes. Two of the leaders of this organization are Marty Bakken of the LCC Labor Studies program, and Dick Holmes, editor of the Lansing Labor News.

TENANTS RESOURCES CENTER OF EAST LANSING (TRC) is a non-profit organization, supported by the City of East Lansing and other grant funding.
INFO-ED
- Tenant counseling: TRC provides counseling to East Lansing tenants on their rights with landlords. In many cases, this relates to energy conservation, e.g., landlord housing code violations causing "leaky" dwellings which prevent conservation. Tenants can visit TRC for counseling, or call the TRC "hotline."
  CONTACT: 337-9795
- Research: TRC conducts research on tenant issues.

TRI-COUNTY OFFICE ON AGING is one of Michigan's Area Agencies on Aging (AAA) and works to improve the quality of life for senior citizens.
INFO-ED
- Senior Energy Advisor: As an AAA, Tri-County has a VISTA volunteer who specializes in energy counseling and other activities related to energy education for seniors. These include lectures, films, workshops, and conferences on energy problems.
- Referrals: This agency takes an active role in seeing that senior citizens with energy problems (shut-offs, maintenance problems, etc.) are served by local ASSISTANCE programs. Has information on all local ASSISTANCE programs.
  CONTACT: Hale McKinney, 487-1066

TRI-COUNTY REGIONAL PLANNING COMMISSION (TCRPC) is the regional, "intergovernmental" planning agency for Clinton, Eaton and Ingham counties. TCRPC conducts research and planning in the areas of housing, land use, transportation and water quality.
INFO-ED and PLAN-REG
- General information on demographic data: TCRPC holds most of the available energy related demographic data. Staff members are very helpful in accessing this data, and will answer energy related planning questions.
- Community assistance: TCRPC provides staff assistance to any community organizations requiring help with planning, i.e., zoning, housing, traffic, public service costs, etc. Short-term assistance is free; long-term aid is performed under contract.
- A-95 Review: TCRPC reviews many locally generated grant proposals to the federal government (including energy related proposals) to determine conformity to regulations. They will assist in modifying proposals to fit requirements.
- Energy related planning is involved in much of TCRPC's regular activity. Some effort is being made to fund special attention to energy problems, e.g., preparing and up-dating a useful energy data base.

URBAN OPTIONS of East Lansing is a citizen's group formed to provide local residents with information on low-cost, self-help methods for saving and generating energy, and appropriate energy technologies such as solar energy.

INFO-ED

- Demonstration House: Urban Options operates the Energy House in East Lansing, an old two-story frame residence retrofitted for energy efficiency. The house has a large number of exhibits, including an attached passive solar greenhouse, wall sections showing different types of insulation, insulated shutters and shades, etc.
- Hands-on workshops: Much of the work in the Energy House is accomplished through "hands-on" workshops, where persons with any level of skill can learn more about weatherization and other energy saving improvements by actually doing the work. These workshops are also conducted outside of the Energy House for interested groups in the community.
- Lectures and films: Covering a broad range of energy topics, including passive solar house construction, greenhouses, etc.
- Referral service: Urban Options is developing a comprehensive "hotline" service to answer questions on any energy matter with general or detailed and technical information.

ADVOCACY and PLAN-REG

- Task forces: Urban Options has coordinated research and advocacy activities related to building and housing, waste and water management (including recycling), transportation, and urban agriculture. These activities include research on existing codes and ordinances and providing testimony at city hearings supporting energy conservation approaches.
  CONTACT: Energy House, 351-3757

UNITED AUTO WORKERS (UAW) is the largest labor union in greater Lansing.
INFO-ED and ADVOCACY supported by UAW:

- Lansing Labor News: This publication covers the labor scene in the greater Lansing area. The editor, Dick Holmes, is an active spokesman for energy conservation, and includes energy related articles in the Labor News. Mr. Holmes is familiar with current labor activity related to energy conservation, and has helped coordinate labor support for RATEPAYERS UNITED (see above).
  CONTACT: Dick Holmes, 484-7408
- Local 724 Energy Education: The chairman of 724's education committee, Chris Beauchamp is interested in energy and is attempting to start an active energy education program in this local.
  CONTACT: Chris Beauchamp: UAW Local 724.
- Other local unions which have been active in advocating energy conservation programs include:
- Plumber and Pipefitters Union Local #388
  CONTACT: Doug Griffith
- Sheet Metal Workers Local #360
  CONTACT: Arthur James

URBAN LEAGUE of greater Lansing is a non-profit service organization supported primarily by United Way funds which works to improve the quality of life for minorities and low-income persons.

INFO-ED

- Cable TV Energy Environment Series: The Urban League is starting a regular program dealing with energy issues and practical energy education.
  CONTACT: Jim Nelson, 487-3608

ASSISTANCE

- Weatherization: The Urban League has operated weatherization programs serving low-income residents and employing seniors and disadvantaged youths, and expects to renew these operations in the future.

ADVOCACY

- Coalitions: The Urban League is an active member of such state-wide energy action coalitions as the Michigan Energy Coalition and the Governor's Energy Task Force.
  CONTACT: Charles Mitchner, 487-3608

ENERGY SUPPLIES AND PRODUCTS are listed in the greater Lansing Yellow Pages under the following entries:

Air Conditioning Equipment
Chimney Builders, Cleaners
Draperies and Curtains
Furnaces, Heating, Repair and Cleaning
Gas Appliances, Burners, Servicing
Heat Exchangers
Heat Pumps
Insulation
Light Bulbs and Tubes
Screen Doors
Storm Doors
Stoves, Coal and Wood
Stoves, Heating
Thermostats
Washing Machines, Dryers
Water Heaters
Windows
Window Shades
Wood