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THE IOWA SUPPLEMENTAL ENERGY CONSERVATION PLAN: 1977-1980



Prepared by the staff of the

IOWA ENERGY POLICY COUNCIL

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PREFACE

This Supplemental Energy Conservation Plan for the State of Iowa has been prepared in accordance with Part B of Title IV of the Energy Conservation and Production Act (ECPA), which establishes a program for Supplemental State Energy Conservation Plans in addition to those established under Part C of Title II of the Energy Policy and Conservation Act (EPCA), which are identified as Original Plans. This Plan has also been prepared under guidelines issued by the Federal Energy Administration as published in the Federal Register, Vol. 42, No. 58, March 25, 1977.

The State of Iowa intends to fully comply with these Acts and Guidelines including the voluntary and tentative provisions.

To be eligible for federal financial assistance the ECPA requires the establishment of three supplemental program measures in the areas of public education, intergovernmental coordination and energy audits. Certain additional requirements are also established. Additional program measures may also be included.

The original Iowa Energy Conservation Plan, as submitted, contains many elements related to, and partially meeting the requirements of the Supplemental Plan. Therefore, this Supplemental Plan is arranged as an amendment to the Original Plan, describing areas wherein the Original Plan meets the requirements of the Supplemental Plan and presenting additional program elements and content necessary to meet the FEA Supplemental Plan Guidelines for the required programs. This Plan also includes additional programs and funding requirements necessary for implementation of the Supplemental Plan by the State of Iowa.

The additional program elements and new programs presented herein are expected to increase the overall state-wide energy savings through 1980 from the Original Plan estimate of 6.7% to 7.2%.

This Supplemental Plan was prepared by the staff of the Iowa Energy Policy Council with the assistance of SRI International.

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I OVERVIEW

Original Iowa Energy Conservation Plan

The Original Iowa Energy Conservation Plan contained 71 programs including five (5) mandatory programs and 66 voluntary programs divided among the Agricultural, Government, Residential, Transportation, Utility, Commercial, Industrial, Construction and Mining Sectors. The estimated state-wide energy savings for all of these programs was 7.5% of total state energy consumption without the plan.

The estimated budget requirements for all programs of the Original Plan through 1980 were:

1977	\$1,524,978
1978	1,113,097
1979	801,817
1980	787,947

Of these estimated requirements, the Federal Energy Administration has provided \$332,000 for the remainder of 1977 and it is expected that \$460,000 will be provided for 1978.

The Original Plan contained many elements relating to, and partially meeting, the requirements of the Supplemental Plan as prescribed in Guidelines issued by the Federal Energy Administration. This Supplemental Plan, therefore, amends and extends the Original Plan in order to meet Supplemental Plan Guidelines, and, in addition, includes several new programs developed by the State of Iowa.

Philosophy and Approach

The general philosophy and approach utilized in the development of this Supplemental Plan is an extension of that of the Original Plan and includes:

1. Utilization of existing state and local agencies, to the extent possible for development and conduct of the various programs.

2. Solicitation and employment of business, professional, industrial and other associations on a voluntary basis for the development and conduct of programs affecting their interests.

3. Placing major emphasis on voluntary programs, as opposed to regulatory programs, and dependence on a vigorous public education, information and assistance program to obtain the maximum participation.

Supplemental Plan Relationships to Original Plan

This Supplemental Plan amends and extends the Original Plan in order to meet the requirements of the Supplemental Plan Guidelines. Included are the mandatory requirements for Public Education, Intergovernmental Coordination and Energy Audits, as well as additional state planned programs and programs meeting minimum requirements of the Guidelines.

The Public Education Program contained herein (Section II) discusses applicable elements of the Original Plan (of which there are numerous) and adds elements necessary to meet minimum FEA requirements and to further extend the program in order to obtain maximum benefit.

The Intergovernmental Coordination Program (Section III) describes the related Original Plan elements and adds elements relative to the organization of an Energy Advisory Committee and Local Energy Councils. The Energy Advisory Committee element is in response to a requirement in the Supplemental Plan Guidelines.

The Energy Audit Program (Section IV) discusses elements contained in the Original Plan related to the audit requirements and adds elements required by the guidelines. The Energy Audit Measure now becomes the principal vehicle for energy conservation in residences and other buildings.

An Additional Program Measures Section (Section V) includes the remaining program elements required by the Supplemental Plan Guidelines

(Consumer Protection, Financial Verification, and Provision of Assistance) and adds 5 additional programs developed by the state.

Energy Savings

The programs included in this Supplemental Plan are primarily designed to provide incentives, encouragement and assistance in carrying out Original Plan programs and to provide coordination and expediency. As such, they will serve to amplify the energy savings estimated by the Original Plan and are therefore not given individual savings credits in the Supplemental Plan. It is, however, considered that the 6.7% savings estimated in the Original Plan will be increased. Best estimates of the increase through 1980 are about 0.5%, giving an overall energy savings of 7.2% for the combined plan.

Summary of Supplemental Plan Costs

The following table summarizes the estimated costs of all programs contained in this Supplemental Plan. These cost requirements are in addition to those reflected in the Original Plan and are requested to be provided from the Federal Energy Administration.

Table 1

SUMMARY OF ADDITIONAL COST ESTIMATES

<u>Program</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>Total</u>
1. Public Education	\$ 50,000	\$117,000	\$ 92,000	\$ 52,000	\$311,000
2. Intergovernmental Coordination	5,000	30,000	30,000	30,000	95,000
3. Energy Audits	102,000	134,000	94,000	74,000	404,000
4. Additional Programs					
a. Audit Before Mortgage	5,000	10,000			15,000
b. Training of Building Officials	35,000	60,000			95,000
TOTAL	\$197,000	\$351,000	\$216,000	\$156,000	\$920,000

II PUBLIC EDUCATION

Introduction and Requirements

Supplemental Plan Guidelines require establishment of procedures for carrying out a continuing public education effort designed to:

1. Increase significantly public awareness of the energy and cost savings which are likely to result from the implementation of energy conservation measures and renewable resource energy measures, with particular emphasis on the availability and benefits of energy audits.
2. Increase significantly public awareness of information and other assistance with respect to planning, financing, installing and monitoring energy conservation and renewable energy resource measures.

Original Plan Elements

The original Iowa Energy Conservation Plan contains many elements pertaining to public education, public awareness and public relations; however, these elements were described as individual programs under the various sections (Agricultural, Government, Residential, Transportation, Utility, Commercial, Industrial, Construction, and Mining), or were discussed in other individual programs. A summary of these elements follows:

Agricultural Sector

Program 1: Energy Field Days - This program relates to the conduct of a series of demonstrations and discussions of energy saving farm practices to be held in each of the 99 Iowa Counties with the objective of reaching most of Iowa's 132,000 farmers. The program will be conducted by the Iowa Cooperative Extension Service and Iowa State University under the leadership of the Iowa Energy Policy Council (IEPC).

Program 2: Booklet on Energy Savings Tips for the Farm - This program consists of the preparation of a booklet describing energy

saving farm practices and will be distributed to each farmer in Iowa. The booklet will be prepared by Iowa State University in cooperation with the Iowa Extension Service. Coordination will be effected with Program 1 and with the Residential Sector programs. The booklet will describe energy conservation measures for homes and household operations in addition to agricultural information.

Program 3: The Farm Progress Show - Every third year, a tri-state farm progress show is held in Iowa. It will be held in Iowa in September 1977 and again in 1980. The theme of the 1977 show is energy conservation. The show consists of demonstrations and other activities with a state or county fair format. The Iowa Cooperative Extension Service is preparing energy conservation exhibits and demonstrations for the 1977 show. The 3-day event is expected to draw 250,000 to 300,000 persons from all of the Midwestern states.

Program 4: Land, Water, and Energy in Century III - This program is a public education effort being developed by the Iowa Cooperative Extension Service. The program will cover the general issues of resources, energy and the environment; however, energy topics related to agriculture will be a major concern of the program. The program will disseminate information through a series of 3-day workshops to be conducted at 60 selected cities and towns in Iowa.

Government Sector

Program 2: State Funded Energy Research and Development - The state has and will fund research and development projects in energy conservation and renewable energy sources. The results of these projects will be publicized, thus adding to public awareness of their potentials for overall energy savings.

Program 3: Solar Demonstration at the State Capitol Complex - This project will serve as a vehicle for demonstrating the potential of solar energy and will increase public awareness of the availability and advantages of the technology.

Program 4: School Building Energy Conservation Program - As part of this program, energy conservation workshops will be conducted in each of 15 Area Educational Agencies (Community College Districts) for the benefit of all school officials in the area served. These workshops will serve to promote awareness of energy conservation opportunities and techniques. In addition an information dissemination system relating to conservation techniques, economic analyses, and so on, will be established by the Department of Public Instruction of the State which will reach each local school district.

Residential Sector

Because of the relative importance of the residential sector in overall energy consumption in Iowa, the Original Plan included several general public relations, public education and public awareness programs in this sector, although many have general applications to the overall Plan. In addition several of the substantive residential sector programs contain public education and awareness elements applying to the specific programs.

Program 1: Energy Education Curricula - This program consists of the development of interdisciplinary energy conservation lesson plans for integration into subject lessons in mathematics, science, social studies, and so on. Concentration will be placed in the elementary grades where much attitude formation takes place. The Iowa Department of Public Instruction is responsible for the program.

Program 2: Special Publications - Residential Sector - This program includes the development of a slideshow and booklet entitled "Introduction to Energy Conservation in Residences." A number of backup publications will also be prepared. The slideshow and booklets have been prepared by the IEPC and will be made available through homeowner associations, Cooperative Extension offices (99 in Iowa), fraternal and social clubs, environmental organizations and the like. Availability will be advertised through the Iowa Energy Bulletin and other media.

Program 3: Speakers Bureau - Iowa Energy Policy Council staff members currently serve as speakers for consumer and other groups interested in energy conservation. This program is to be expanded both as to encouraging greater use of the service and more speakers.

Program 4: Press Coverage for Energy Conservation - This program provides for the preparation and dissemination of press releases to keep energy issues of all types before the public eye. The program also serves to announce the specifics of all state program activities in order to provide public awareness of available assistance and benefits.

Program 5: Iowa Energy Bulletin - The Bulletin is a monthly publication of the IEPC covering all Iowa energy activities. It will be used to announce availability of programs, publications and assistance in order to increase the public awareness of assistance and benefits. It receives wide dissemination.

Program 6: Community Betterment Projects - The Community Betterment Program is an annual contest sponsored by the Iowa Development Commission. The IEPC will provide technical and monetary assistance to encourage the undertaking of energy conservation projects. The outcome of these projects and resulting publicity will serve to increase public awareness of conservation techniques and benefits.

Program 8: Appliance Efficiency Standards - As part of this program the IEPC will prescribe energy efficiency standards for electrical appliances to be sold in Iowa. The Council will also publish information as to the meaning of the energy efficiency standards in a variety of vehicles including those discussed in Programs 2 and 5 above. These measures will generate public awareness of the benefits of the standards.

Program 10: Low Interest Loans by Utilities and Banks to Consumers for Insulation - An element of this program includes publicity and education programs to be conducted by the utility companies. This will probably be accomplished through flyers accompanying utility bills. This will assure public awareness of the availability and benefits of the program.

Program 14: Voluntary Thermal Upgrading of Residences - This program includes an aggressive public education and awareness program aimed at obtaining the maximum of participation in voluntary energy conservation in residences. Many private and public agencies and means of information dissemination will be employed in order to assure a maximum of public awareness of the program and its benefits. This is the single most important program in the Original Plan as regards requirements for public education and awareness.

Program 15: Demonstration Grants - The results of grants under this program will be given publicity, thus increasing public awareness of energy conservation opportunities and benefits.

Transportation Sector

Program 16: Public Information Programs - The Iowa Department of Transportation has issued a booklet entitled "Energy and Transportation" which focuses on encouraging citizens to use more efficient means of commute travel. In addition the monthly Iowa Energy Bulletin will describe energy saving transportation opportunities and techniques.

Program 19: Transit Education in Schools - The Iowa Department of Public Instruction will develop public school curricula designed to educate students in the benefits of public transit, thus increasing the awareness of benefits.

Program 20: Driver Education Program - This program consists of two parts; one, the development and distribution of a booklet by the IEPC describing energy conserving driving techniques, and two, the incorporation of energy conserving driving techniques in public school driver education programs.

Utility Sector

Program 5: Utility Advertising for Energy Conservation - An order by the Iowa Commerce Commission permits public utilities to charge the cost of energy conservation advertising as a cost of service and

therefore to recover through rates. An increased level of advertising in this area will serve to increase the public awareness of energy saving techniques and benefits.

Commercial Sector

Program 1: Energy Efficiency Sharing Workshops - A series of local workshops conducted in each major community will be conducted under the auspices of the local Chamber of Commerce to encourage energy savings in the commercial building sector. These workshops are primarily of an information dissemination nature and thus will promote the awareness of energy savings techniques and benefits.

Program 2: Energy Audit Services for Small Businesses - The workshop program described above serves as an information dissemination element for this program as well.

Program 4: Voluntary Conservation Programs for Offices, Retail Stores, and Other Commercial Buildings - The information dissemination activities of Programs 1 and 2 above, apply as well to the program. In addition, this program calls for the formation of committees among the various associations of building owners (The Iowa Restaurant Association, The Iowa Retailers Federation, etc.) for the purpose of exchanging energy conservation information, thus promoting awareness of conservation techniques and benefits.

Industrial Sector

Program 2: Industrial Conservation Workshops - This program is similar to the workshops in the Commercial Sector and will promote awareness of conservation techniques and benefits among industries in the state.

Program 5: Annual Energy Expo - The IEPC is sponsoring an annual 2-day program for the Commercial and Industrial sectors in Iowa. The program consists of seminars and exhibits on energy saving techniques and products and includes awards to companies with outstanding

achievements in energy conservation. This program serves to promote a wide awareness of energy conservation techniques and benefits.

Construction Sector

Program 1: Building Materials, Process and Equipment Substitution - A substantial portion of this program is devoted to the development and dissemination of educational materials designed to promote awareness of energy saving opportunities, techniques and benefits within the construction industry.

Mining Sector

Program 2: Provide Training Seminars in Energy Conservation Opportunities in Mining Operations - This program is similar to the energy conservation workshops described for the commercial and industrial sectors. Their purpose will be to promote awareness of energy conservation opportunities, techniques and benefits among participants in the Mining sector.

Summary of Original Plan Public Education Measures

As indicated by the foregoing resumé of original plan public education elements, the State of Iowa places foremost importance on information systems as the driving force for the overall energy conservation plan. Public education measures contained in the plan include fundamental energy conservation education; advertising and other means of inducing public awareness of the availability and benefits associated with conservation practices; demonstrations; workshops and other organized cooperative efforts for the exchange of conservation techniques and information; development and distribution of conservation technical materials; establishment of a speakers bureau; provision for press and other media coverage; and other educational, public awareness and informational activities.

An important feature of the Iowa Plan is the utilization of existing organizations and institutions in the public education effort, thus insuring the widest possible coverage, as well as economy. These include the public

school system; the Iowa Cooperative Extension Service; public utilities; business, industrial and professional associations; service clubs; and others.

The importance placed on public education is indicated by the fact that of the total budget requirement of about \$4,250,000 for the Original Plan through 1980, about \$546,000 or 13.0% is directly associated with public education and awareness activities. Substantial portions of the remainder are also related to public education and awareness activities.

Evaluation of Minimum Criteria

The minimum criteria for the supplemental plan public education program, as established by the FEA Guidelines, requires a continuing effort:

1. To increase significantly public awareness of the energy and cost savings which are likely to result from the implementation of energy conservation measures and renewable resource energy measures, including a public awareness program regarding energy audits with respect to buildings and industrial plants.

2. To increase significantly public awareness of information and other assistance, which is or may be made available, with respect to the planning, installing and maintaining the effectiveness of conservation measures and renewable energy resource measures.

The public education content of the Original Plan, as discussed in the previous paragraph, although not integrated into a single program, is considered to meet all minimum criteria for required Supplemental Plan measures. The coverage of the various public education elements by sector is illustrated by Table 2, following.

The table illustrates the importance placed on public education by the IEPC in the preparation of the Original Plan. It is also evident from the table that direction and coordination of the numerous elements will require extensive staff effort at the IEPC level. The provision of such direction and coordination is the requirement to be met by the Supplemental Plan.

Table 2

APPLICATION OF PUBLIC EDUCATION MEASURES IN THE IOWA ENERGY CONSERVATION PLAN

Public Education Element	Sectors									
	Gen. Public	Agric.	Gov't.	Resid.	Trans.	Util.	Comm.	Ind.	Const.	Mining
1. Energy Education Curricula (V-1)*	x	x	x	x	x	x	x	x	x	x
2. Special Publication, Residential Sector (V-2)				x						
3. Speakers Bureau (V-3)	x	x	x	x	x	x	x	x	x	x
4. Press Coverage (V-4)	x	x	x	x	x	x	x	x	x	x
5. Iowa Energy Bulletin (V-5)	x	x	x	x	x	x	x	x	x	x
6. Community Betterment Projects (V-6)	x			x						
7. Energy Field Days (III-1)		x								
8. Farm Energy Conservation Booklet (III-2)		x								
9. Farm Progress Show (III-3)		x								
10. Land, Water and Energy (III-4)		x								
11. State Energy Research & Development (IV-2)	x	x	x	x	x	x	x	x	x	x
12. Solar Demonstration (IV-3)	x			x			x	x		
13. School Building Workshops (IV-4)			x							

* Refers to Sector and program numbers in original Plan.

Table 2 continued

Public Education Element	Sectors									
	Gen. Public	Agric.	Gov't.	Resid.	Trans.	Util.	Comm.	Ind.	Const.	Mining
14. Residential Audit Information (V-14)				x						
15. Demonstration Grants (V-15)				x						
16. Booklet, "Energy and Transportation (VI-16)	x				x					
17. Transit Education in Schools (VI-19)	x				x					
18. Driver Education Program (VI-20)	x				x					
19. Utility Advertising for Conservation (VII-5)	x	x	x	x	x		x	x	x	x
20. Energy Efficiency Sharing Workshops (IV-4, VIII-1, VIII-2, IX-2, X-1, XI-2)			x				x	x	x	x
21. Commercial Audit Information (VIII-4)							x			
22. Annual Energy Expo (IX-5)								x		

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Supplemental Plan Additions

Increased Staff Capability

The general nature of the Supplemental Plan Public Education measure will be to provide a strengthened capability at the state level (IEPC) to direct and coordinate all public education and awareness activities as discussed in the previous paragraphs and as illustrated by Table 2. In addition, a strengthened capability will be provided to prepare the technical, educational and informational materials required to support the Class A, B and C Audit programs discussed in a later section of this Plan. These capabilities will be provided by two full-time staff members of the IEPC in addition to those required by the Original Plan.

One of the full time staff members will be responsible for the direction and coordination of all energy conservation, educational, public awareness and other informational activities for the IEPC for all programs contained in both the Original Plan and this Supplemental Plan.

The other added staff member will be assigned primary responsibility for directing, coordinating and accomplishing the development and preparation of energy conservation technical materials for all programs contained in the Original Plan and the added programs of this Plan, with particular direction to the energy audit materials as discussed in a later section of this Plan.

Energy Education Curricula Extension

An additional element of the Supplemental Plan entails the amplification and strengthening of the public school educational program (Program 1: Energy Education Curricula, Residential Sector) through the preparation of comprehensive audio-visual materials, workbooks and other teaching aids; and the conduct of teacher training programs. The program will also be extended to include the secondary school and community college levels. Additional funding will be required for staff and services under the Supplemental Plan. This effort will be under the direction and management of the Iowa Department of Public Instruction with technical assistance and coordination provided by the IEPC staff.

Milestones

Third Quarter 1977 - Staff planning

Fourth Quarter 1977 - Staff planning; recruit and hire professional public education and information specialist; recruit and hire energy conservation technical specialist.

First Quarter 1978 - Public education and information activity fully operational. Initiate teacher training sessions for the primary level.

Second Quarter 1978 - Recruit and hire specialist for conduct of primary level teacher training; continue teacher training sessions for the primary level.

Third Quarter 1978 - Continue primary level teacher training sessions; recruit and hire a specialist for the development and conduct of secondary school energy education materials.

Fourth Quarter 1978 - Continue primary level teacher training sessions; develop audio-visual materials for secondary level instruction.

1979 - Continue and complete primary level teacher training; evaluate progress and results to date. Initiate and continue secondary level teacher training.

1980 - Continue secondary level teacher training; evaluate progress to date and alter both primary and secondary programs as necessary.

Energy Savings

No energy savings accrue directly to the public education program. The program serves to maximize savings in other substantive programs.

Environmental Residuals

No environmental residuals are assessed to the public education program.

Estimated Costs

Estimates of additional cost requirements (over those contained in the Original Plan) are as follows:

<u>Element</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>Total</u>
1. Public Education Specialist	\$10,000	\$20,000	\$20,000	\$20,000	\$70,000
2. Energy Conservation Technical Specialist	10,000	20,000	20,000	20,000	70,000
3. Public School Program					
a. Specialists for Curricula Development and Teacher Training	10,000	40,000	20,000		70,000
b. Travel and Adminis- trative Expense for Teacher Training		2,000	2,000	2,000	6,000
c. Printing and Prepara- tion of Curricular and Audio-Visual Materials	10,000	25,000	10,000		45,000
d. Audio Supplies- Video Tape Units			10,000		10,000
e. Miscellaneous	<u>10,000</u>	<u>10,000</u>	<u>10,000</u>	<u>10,000</u>	<u>40,000</u>
TOTAL	\$50,000	\$117,000	\$92,000	\$52,000	\$311,000

Monitoring

The overall public education program will be continuously monitored by the IEPC staff as to depth and extent of public awareness and as to cost effectiveness. The public school program will be tested as to effectiveness through normal student evaluation processes.

III INTERGOVERNMENTAL COORDINATION

Introduction and Requirements

Supplemental Plan Guidelines require that the Supplemental Plan include procedures for ensuring that effective coordination exists among the various local, State and Federal energy conservation programs within, and affecting, such State; including any energy extension service program administered by the Energy Research and Development Administration. The procedures must also contain activities considered appropriate by the State, such as coordinating local and State agencies to prevent duplication of energy conservation activities; and the conduct of public hearings to ensure that individuals and groups concerned with State energy conservation programs, and all other energy conservation programs in the state, shall be afforded the opportunity to participate in their development, implementation and modification.

In general, these requirements indicate that a state body be established to develop and coordinate energy conservation plans and to ensure the widest participation by public and private agencies and individuals. This concept is precisely that adopted by the State of Iowa in the establishment of the Iowa Energy Policy Council. The organization, responsibilities, activities and procedures of the Council are described in the following paragraphs.

Original Plan Elements

Although not given detailed attention in the Original Iowa Energy Conservation Plan, the position and responsibilities of the Iowa Energy Policy Council were inferred throughout.

The IEPC was established by the Iowa General Assembly in 1974 to formulate an energy policy for Iowa and to assist the state's response to problems of energy supply, consumption and development. The

responsibilities of the Council include: (1) the preparation of a State Energy Policy for submission to the Governor and General Assembly; (2) to establish an energy data repository and to prepare, on at least a quarterly basis, a report on energy supply, demand and conservation in the State; (3) to review and recommend legislation relating to energy use and development within the State; to develop educational programs for energy conservation; and (4) to administer the state setasides of fuel under the Mandatory Fuel Allocation Program of the Federal Energy Administration.

The Council also receives direction from the General Assembly to perform additional functions. One of these was the development of the Iowa Energy Conservation Plan (Original Plan). The function of coordination of the various programs contained in the Original Plan is a natural extension of this assignment.

A Director and Council Staff is also provided with nine (9) staff members presently assigned.

From the point of view of intergovernmental coordination of energy conservation, the Council enjoys a unique organizational position since both legislative and executive department representation is present, as well as direct representation of the affected public.

The IEPC is composed of members appointed by the governor representing both the public and appropriate state agencies. There are seven (7) voting members of the Council, all representing the public and its various interests. This group includes the Vice Chairman. The non-voting members of the Council include two members each of the Iowa Senate and House of Representatives, five (5) members being either directors of state agencies or designates by the agency director, and the Chairman. The state agencies represented include the Iowa State Commerce Commission (Iowa's Public Utilities Regulatory Body) whose Chairman is also ex-officio the Chairman of the IEPC, the Department of Geology, the Soil Conservation Service, the Department of Transportation, the Department of Agriculture, and the Department of Environmental Quality.

Activities and procedures being, and to be, employed by the Council in connection with energy conservation activities in the State of Iowa include:

1. Provision of advice and recommendations to the Governor and General Assembly on all energy and energy conservation matters.
2. Develop energy conservation plans and programs.
3. Conduct public hearings on plans, programs and other substantive energy conservation proposals.
4. Coordinate the development and execution of energy conservation plans, programs and other energy conservation measures by other state agencies, and other public and private agencies and organizations. This will include the Energy Extension Service Program to be conducted under the auspices of the Energy Research and Development Administration as described in Section V of this plan.
5. Serve as the single point of contact for the state with the Federal Energy Administration and the Regional Office at Kansas City.
6. Monitor all energy conservation activities in the state and report and evaluate results.
7. Direct the development of educational and other energy conservation materials having general application within the state.
8. Direct and coordinate an overall public education program with the objective of inducing a strong energy conservation ethic among the citizens of Iowa.

An important feature of the Council's policy in regard to energy conservation programs is to utilize appropriate existing state agencies, other public bodies, and private organizations to develop and execute such efforts on a cooperative basis with the Council serving in a coordinating, assisting and monitoring role.

Evaluation of Minimum Criteria

As can be seen, the Council and Staff contains within itself, an effective organization and mechanism for state intergovernmental coordination and advisory processes in the overall energy and energy conservation area. In this respect, the Council and Staff is considered to more than meet the Guideline minimum requirements for obtaining effective coordination among various local, State and Federal energy conservation programs.

Supplemental Plan Additions

Although Iowa's organization and mechanism for intergovernmental coordination is considered to be responsive to the Guideline minimum criteria, it is also considered necessary to strengthen it, particularly with respect to state agencies and other organizations not represented on the IEPC and with respect to local coordination requirements. Two additional measures are therefore planned:

Energy Advisory Committee

In order to more effectively ensure coordination and obtain the advice and assistance of other affected groups in Iowa, an Energy Advisory Committee will be formed by appointment or invitation by the Governor. The members of the Committee will be drawn from state and federal agencies not represented on the IEPC; from state-wide business, industrial and professional associations and consumer groups; and others having an interest in, or to be affected by, energy conservation measures. The formation of the Committee will formalize ad hoc coordinating activities which already are taking place with some of the affected agencies. The state and federal agency membership of the Committee will include representatives of:

Department of Public Instruction
Department of Commerce (Federal)
Office of Economic Opportunity
Department of General Services
Iowa Development Commission
Small Business Administration (Federal)
Board of Public Works

The public members of the Committee will be drawn from:

- Iowa Association of Chambers of Commerce
- Iowa Manufacturers Association
- Iowa Retailers Federation
- Professional Engineers Association of Iowa
- Farmer groups
- Contractors and Builders Association
- Consumer groups
- Union organizations
- Architectural Association
- Banking and Savings and Loan Associations

The Committee would meet periodically to review the overall state program and its elements and would provide advice to the IEPC including recommendations for additional conservation programs and on the impact of programs in being. Since many of the agencies to be represented will be directly involved in various programs of the overall Iowa Conservation Plan, the exchange of program details, progress and results will be of mutual benefit to agencies represented. From time to time, the IEPC would charge the Committee with review, recommendation and report on various substantive matters relating to energy and energy conservation. It is expected that the Committee would form various subcommittees in order to carry out its functions.

Administrative support to the Committee would be provided by the Staff of the IEPC. Such support would include meeting arrangements, clerical support, communications, printing and document distribution, etc. The Director of the IEPC Staff, or a designate, would be an ex-officio member of the Committee in order to facilitate such support. Financial support to the Committee would be provided through the IEPC and would include meeting and travel expenses.

Local Energy Committees

Local energy committees will also be formed on a voluntary basis in order to more directly reach and reflect the concerns of the affected public. These committees would be formed in each county and the larger municipalities. Although there is no direct connection planned between the state-wide Energy Advisory Committee and the local committees, it is

expected that informal communications would exist and that the state Committee would obtain advice and assistance from the local committees from time to time. The local committees will also serve as an important point of contact for the Staff of the IEPC.

The local committees would be formed by invitation or appointment by County Supervisors or Municipal Government bodies. Membership would be drawn from local government agencies affected, from the local associations of the type listed under the state-wide advisory Committee, and from the public.

The local committee would serve as an important public relations vehicle also, ensuring contact with the widest possible public.

It is expected that all financial and other support requirements for the local committees would be borne on a voluntary basis.

Other Requirements

The state also intends to conduct public hearings on this Supplemental Plan and major future programs in the interest of coordination as suggested by the Supplemental Plan Guidelines.

Milestones

The following milestones apply to both the Energy Advisory Committees and Local Energy Committee measures described in the previous paragraphs.

Third Quarter 1977 - Staff planning.

Fourth Quarter 1977 - Invitations sent to agencies and individuals selected for the Energy Advisory Committee. Letters sent by Governor to counties and municipalities recommending the establishment of local committees. IEPC staff prepare advisory and educational materials for both Committees.

First Quarter 1978 - First Committee meetings; organizations, subcommittee formation, etc.

Second Quarter 1978 and thereafter - Committees fully operational. IEPC staff establish and maintain contact with local committees.

Energy Savings

No energy savings accrue directly to the Intergovernmental Coordination Program. The program will serve to maximize savings in other substantive programs, particularly those of a voluntary nature.

Environmental Residuals

No environmental residuals are assessed to this program.

Estimated Costs

Estimates of additional cost requirements (over those contained in the Original Plan) are as follows:

<u>Element</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>Total</u>
1. Support Staff Assistance from IEPC	\$5,000	\$20,000	\$20,000	\$20,000	\$65,000
2. Travel and Other Meeting Expense		10,000	10,000	10,000	30,000
TOTAL	\$5,000	\$30,000	\$30,000	\$30,000	\$95,000

IV ENERGY AUDITS

Introduction and Requirements

Supplemental Plan Guidelines require establishment of procedures for conducting energy audits on various categories of buildings in the State. The Federal Energy Administration will issue rules regarding types and requirements of energy audits which are referred to as Class A, B and C.

Class A energy audits are expected to require a State-qualified energy auditor to conduct an individualized on-site energy audit of a particular building or industrial plant.

Class B energy audits are expected to require a State-provided questionnaire and State-sponsored analytical process that would enable the owner, operator or occupant of a building or industrial plant to receive advice on reducing energy consumption.

Class C energy audits are expected to require State-provided workbooks to enable an owner, operator or occupant of a building or industrial plant to conduct a "do-it-yourself" energy audit.

Class B and C energy audits are required to be available at no cost to occupants of residential dwelling units. Class A audits are to be conducted at the owners, occupants or operators expense.

The Guidelines also require provision for Class A energy audits in at least one political subdivision for at least one building category, as many Class C energy audits as are practicable within the State, and Class B and C audits for all residential buildings (except apartment buildings) to the extent feasible.

Although Federal Administration's detailed criteria and instructions are not yet available it is expected that they will be modeled after the Federal Project "Conserve" program for Class B and C audits for residential structures.

Original Plan Elements

The Original Iowa Energy Conservation Plan contains several elements which at least partially meet the Supplemental Plan Guideline requirements. These elements were described as portions of individual programs under the Government, Residential and Commercial Sectors of the Original Plan and are summarized in the following paragraphs:

Government Sector

Program 4: School Building Energy Conservation Program - This program included the provision of a full-time professional consultant to assist each school district, Area Educational Area (Community College District) and other school bodies to conduct energy efficiency evaluations of its buildings. The program also provides for the preparation and dissemination of information materials relating to conservation techniques, economic analyses, etc. The program will be conducted by the Department of Public Instruction through its School Plant Facilities Unit.

Program 5: Energy Management Plan for State Buildings - This program is similar to the School Building Program but relates to all state-owned or operated buildings in Iowa. The program will be conducted directly by the Department of General Services with the Superintendent of Building and Grounds as the responsible official. The program also includes a comprehensive before-and-after building energy consumption record element.

Residential Sector

Program 14: Voluntary Thermal Upgrading of Residences - This program includes elements which relate directly to Class B and C audits as required by Supplemental Plan Guidelines. The program provides for preparation and distribution on a wide basis of residential thermal efficiency evaluation materials. It provides for either self evaluation by the residential owner, or for local or central evaluation if the homeowner desires assistance. The program is to be designed under the principles of the Federal Project "Conserve" with certain departures in

the areas of information dissemination and evaluation processes. This program is also closely coordinated with the public education and information aspects contained in other programs in the Residential Sector.

Commercial Sector

Program 2: Energy Audit Services for Small Business - This program includes the direct provision for building energy audit assistance for small-business enterprises. The program is to be directed and conducted by the Federal Small Business Administration's agencies in Iowa with coordination provided by the Staff of the Iowa Energy Policy Council.

Program 3: Voluntary Conservation Programs for Hospitals - This program provides for a cooperative energy conservation effort among the hospital operators (public and private) in Iowa. Among other elements, specific energy audit materials will be developed and assistance given in their application. The program will be managed by the Iowa Hospital Association through an organized Energy Conservation Committee.

Program 4: Voluntary Conservation Programs for Offices, Retail Stores and Other Commercial Buildings - This program consists of an organized, cooperative effort to reduce energy demand in commercial buildings. It includes some elements relating to energy audits but does not at present include the direct preparation, distribution and provision of assistance for evaluation of audit materials. The program is to be conducted under the auspices of the various commercial associations (such as the Iowa Retailers Federation).

Industrial Sector

Program 2: Industrial Conservation Workshops - This program is similar to Program 4, above, and is organized by the Iowa Manufacturers Association. Although many energy conservation activities are being carried out on a cooperative basis (e.g., Energy Efficiency Sharing Workshops) which relate to audit principles, it does not at present include direct provision for the preparation, distribution and provision of assistance for evaluation of audit materials.

Evaluation of Minimum Criteria

Class A Audits

The Guideline requirements for the Supplemental Plan includes the state qualification of building energy auditors and audits in at least one political subdivision for at least one building category. The School Building and State Building programs are considered to meet the minimum requirements; however the public sector is not covered.

Class B Audits

The Guideline requirements for Class B audits include provision for state supplied evaluation materials and state sponsored evaluation processes for residential buildings. These requirements are met in the Original Plan to a substantial degree.

Class C Audits

The Guideline requirements for Class C audits include state supplied evaluation materials (with "do-it-yourself" evaluation) for all classes of buildings. The Original Plan is considered to meet this requirement for residential (single family) buildings only.

Supplemental Plan Additions

In order to meet the requirements of the Supplemental Plan Guidelines and to strengthen the Original Plan content in relation to audit measures, several additional program elements are required. These are included in the general program "Energy Audits" and are described by type of audit in the following paragraphs:*

Class A Audits

Class A Audits will consist of a detailed on-site examination of individual buildings, an analysis of existing thermal efficiency, and the preparation of recommendations for energy conservation measures. The audit will be performed by professional engineers or architects

* These elements are subject to revision on receipt of detailed FEA guidance.

licensed to practice in the State of Iowa, or by persons having an engineering or architectural degree with four years of subsequent experience in the design or operation of building heating, ventilating, and air conditioning. Building owners will be required to pay direct costs of on-site audits of their properties.

The Class A audit activity will be conducted initially as a pilot program and will be applied initially to office buildings in the City of Des Moines. It is expected that the success of the program will provide incentives for expansion of the program to all types of nonresidential buildings in all jurisdictions in the state.

The IEPC will develop and implement a rule requiring an auditor to make certain financial disclosures to the person requesting an audit in order to prevent conflicts of interest. The IEPC will also develop rules and procedures governing the conduct of Class A audits in accordance with guidelines to be furnished by FEA, including a cost scale, so that audits will be available on a reasonable and equitable basis.

Individual auditors will be guided by a building workbook with standardized instructions for calculating energy utilization and the cost effectiveness of conservation measures, including weather protection; insulation; efficiency improvements in heating, ventilating and air conditioning equipment; lighting and electrical systems; water heating systems; and renewable energy source substitution. The utilization and cost effectiveness calculations will be localized on the basis of heating and cooling degree days and present and prospective future fuel and electrical costs.

The IEPC will organize the capability for Class A audits through cooperative efforts with the state chapters of the National Society of Professional Engineers (NSPE), the American Institute of Architects (AIA), the American Society of Mechanical Engineers (ASME), and other interested professional associations. The State will fund the development of the appropriate working materials for the conduct of the audits, the publicity leading to awareness of the service (under the Public Education Program), and the conduct of orientation and training sessions. The State will not recommend individual audit firms or individuals. Instead, a list of

qualified consulting firms and individuals will be furnished based on a suitable application process to be developed and attendance at the orientation and training session(s).

The State will closely monitor the initial results of the measure with the view of early statewide expansion to all building types in all jurisdictions.

Two important principles will be observed during the development and conduct of this measure:

- The State will not compete with the engineering and architectural professions in the conduct of the audits but will instead organize and develop their capabilities and encourage the use of their services by building owners.
- The State will serve as a vehicle for publicizing the availability and desirability of these services, thus providing an "advertising" function that otherwise may be against the ethics of the professions.

Class C Audits, Nonresidential

A system of Class C audits will be developed for all types of non-residential buildings. These audits will consist of the do-it-yourself system based on a set of instructions and a workbook to be prepared for each building type (educational institutions, hospitals, hotels and motels, industrial plants, office buildings, restaurants, retail stores, transportation terminals, warehouses, and storage facilities) in accordance with guidelines to be furnished by FEA.

The instructions and workbooks will be made available for a fee sufficient to cover the costs of printing and mailing. Development and preparation costs will be borne by the overall State Energy Conservation Program. Because of the diversity of building types and their rather complex nature, the development of the instructions and workbooks will require professional competence; therefore, this work will be done under contract with selected engineering firms.

Class C audit materials will be issued by the IEPC and the building officials of the several jurisdictions in the state. One-half of the

cost collected by the building official will be retained by the local jurisdiction to offset (at least partially) its contribution to the program.

Public awareness and encouragement to participate in the program will be a function of the Public Education Program. Other means of publicizing the program will be through flyers in utility bills, coordinated advertisement programs by contractors associations; building materials dealers; heating, ventilating, and air conditioning equipment dealers; workshop sessions; etc.

Assistance to the building owner in conducting the audit of his building will be offered from three sources: a toll-free telephone connection to a specialist in the IEPC, the office of the building official in each local jurisdiction, and utility company engineers. In the case of local building officials, preparation will be accomplished by the training program described in a following section.

Class B and C Audits, Residential

The elements of Program 14: Voluntary Thermal Upgrading of Residences of the Residential Sector of the Original Plan will be revised, replaced or supplemented as appropriate, to reflect the following:

A system of Class B and C audits will be developed for residential properties, except for apartments. The audits will differ only in that the Class C version will provide guidance for self-evaluation and the Class B version will provide for evaluation by the IEPC or cooperating agencies (public utilities, local building officials, Iowa Conservation Extension Service, suppliers and contractors, etc.) if the homeowner does not feel capable.

A common workbook and set of instructions will be prepared for both types. The building data (space, materials, degree of insulation, etc.) portion will be completed by the homeowner in both cases. The homeowner may then send the workbook to the IEPC or cooperating agency for evaluation of the cost effectiveness of various conservation measures (resulting in a Class B audit), or he may proceed to the evaluation himself

using the instructions contained in the workbook (resulting in a Class C audit). The IEPC or cooperating agency evaluation will be performed at no cost to the homeowner.

The instructions and workbooks will be based on those used for the federal experimental Project Conserve with the following additions and alterations:

- Localized climatological factors will be incorporated.
- A simplified cost-effectiveness evaluation procedure will be used for homeowner self-evaluating (Class C audit). This procedure will entail the use of specially prepared graphs, charts, and tables.
- The audit process will include consideration of hot water heating energy conservation (not included in Project Conserve). Measures will include thermostat lowering, tank and piping insulation, and the use of low-flow shower heads and fixtures.
- The workbook will include log sheets to permit the homeowner to compare the results of his conservation efforts on the basis of comparing before and after utility bills. This log will be a valuable sales promoter upon resale of the residence.

The evaluation of the IEPC or cooperating agency (Class B audit) will be done either manually or by computer depending on a study of manpower and cost requirements to be conducted.

Public awareness and availability of the audit materials will be publicized by the Public Education Program using media announcements (radio, TV, and newspapers), flyers in utility bills, and other means. Issue of the instruction and workbook materials will be coordinated by the IEPC and will include the following means as a minimum:

- Mailing of application post cards with utility bills, the supply to be handled by the IEPC.
- Provision of stockage by cooperating building materials outlets, insulation contractors, banks and savings and loan institutions, Iowa Cooperative Extension Service in each county, local building officials, etc.

If necessary, the homeowner may obtain assistance in completing his evaluation from several services, which will include:

- A toll-free telephone contact with a specialist at the IEPC.
- The offices of the local building official.

- Insulation contractors who may advertise such assistance.
- Building materials outlets who may choose to offer such services through advertisement.
- Local Iowa Cooperative Extension Service.
- The utility companies.

Audit Program Support Requirements

The development, implementation, and operation of the energy audit measure will require substantial effort on the part of the IEPC staff.

Key tasks to be accomplished will include:

- Assemble necessary staff and prepare detailed plan.
- Prepare instruction and workbook materials for each of the audit types.
- Conduct training sessions for professional engineers (Class A audit), building officials and other cooperating agencies (Class B and C audits), and others interested in cooperating in the Class C homeowners audit.
- Prepare publicity materials in coordination with the Public Education Program.
- Develop and implement plan for distribution of the instruction and workbook materials.
- Develop and implement the procedure and capability for evaluation of the Class B audits for homeowners.
- Develop and implement the procedure and capability for monitoring energy savings resulting from the measures.

The measures will be developed and implemented by the IEPC Staff in coordination with other state offices, local authorities, and professional and business associations.

The largest staff requirements will occur during the planning and coordination stages and during the materials preparation and training stages. To avoid the assembly of a large temporary staff during this period, most of the material preparation and training will be contracted to consulting firms, university departments, etc. Contract assistance will also be employed to assist with any large peak work loads that might occur from the Class B residential evaluation measure.

Milestones

Third Quarter 1977: Detailed program planning, organize capability for Class A audits and establish rules and procedures.

Fourth Quarter 1977: Preparation of workbooks and associated literature; sample testing of process; revision as necessary; organize cooperating agencies.

First Quarter 1978: Distribution of workbooks and associated literature; organize IEPC and cooperating agency capability in Class B audit evaluation.

Second Quarter 1978: All audit programs become operational; monitor progress of Class A audits and decide on extension state-wide.

Third Quarter 1978 and thereafter: Monitor degree of participation and results, modify program as necessary.

Energy Savings

Although some additional energy savings (over those estimated in the Original Plan) are expected because of increased emphasis, and inclusion of commercial buildings, it is not considered prudent to assess them at this time.

Environmental Residuals

There are no changes in the environmental residuals reported in the Original Plan, as a result of the program.

Estimated Costs

Estimates of additional cost requirements (over those contained in the Original Plan) are as follows:

<u>Element</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>Total</u>
1. Additional Staff Requirements, IEPC	\$ 12,000	\$ 24,000	\$24,000	\$24,000	\$ 84,000
2. Preparation of Workbooks and Other Materials	90,000	60,000	20,000		170,000
3. Evaluation of Class B Audits, Program Monitoring		50,000	50,000	50,000	150,000
TOTAL	\$102,000	\$134,000	\$94,000	\$74,000	\$404,000

V ADDITIONAL PROGRAM MEASURES

Introduction

The Supplemental Plan Guidelines would also allow FEA to require provisions for the establishment of (1) a State Energy Conservation Advisory Committee, (2) an adequate program for preventing any unfair or deceptive acts or practices affecting commerce which relate to the implementation of energy conservation measures and renewable-resource energy measures, (3) procedures for the periodic verification of purchase and installation and actual cost of energy conservation measures and renewable-resource energy measures for which financial assistance was obtained under Section 509 of the Housing and Urban Development Act of 1970, or Section 451 of the Energy Conservation and Production Act, and (4) procedures for assisting individuals and other persons to implement energy conservation measures and renewable-resource energy measures.

Item (1) has been implemented in the Intergovernmental Coordination Program herein and the Guideline requirement is considered to be fully complied with.

Item (2) requires procedural development and is discussed in a following paragraph as an additional program.

Item (3) is considered to apply to hardware purchases with federal funds which is not contemplated by either the Original or this Supplemental Plan.

Item (4) is considered to be fully complied with through the many assistance elements contained in the Original and this Supplemental Plan.

This section also includes additional voluntary program measures planned by the state.

Consumer Protection Plan

The requirement of item (2) of the previous paragraph relates to the establishment of a consumer protection system in the area of energy conservation and renewable-resource energy.

The consumer protection plan for the State of Iowa envisages consumer protection through the existing legal-judicial system established for all business and commercial activities. The IEPC will request the State Attorney General to render an opinion as to the application and adequacy of existing law for energy conservation and renewable energy resource activities. In the event of a negative opinion, the IEPC will request submission of appropriate legislation to the General Assembly.

No energy savings or costs are associated with this measure.

Energy Efficiency Home Awards

This program will establish a system of awards for homeowners who exhibit initiative and industry in energy conservation measures applied to their homes. The awards will be given on the basis of before and after utility bills with awards going to those demonstrating the largest savings.

The program will be developed in association with public utilities, homeowners associations and other interested agencies.

The program will receive wide dissemination through the Public Education Program. Awards will consist of medallions, plaques or certificates, etc., together with local and statewide media publicity. Awards of monetary value will also be made if feasible. These would be in the form of vacation trips, appliances and other articles or things of value which would be solicited on a voluntary basis from manufacturers, suppliers, banks, utility companies and others having an interest in energy conservation.

Milestones

It is planned that this program be developed and implemented by the beginning of the heating season in 1978 with the contest to be conducted from about October 1, 1978 until April 30, 1979. Additional contests will be held for the heating seasons of subsequent years.

Energy Savings

No energy savings are assessed to this program.

Environmental Residuals

No environmental residuals are assessed to this program.

Estimated Costs

No additional funding is required for this program.

Thermography

A statewide aerial thermogram program, currently under contract negotiation by the Iowa Utility Association, will supplement and complement the energy audit programs and other voluntary programs planned for supplemental funding under this plan as previously described.

Aerial thermograms already have been completed for four communities in Iowa, two of these by the Iowa Public Service Co. (IPS). Some 10,000 persons viewed thermograms of their homes in these communities (Waterloo and Sioux City) and follow-up cards indicate about 40 percent of these persons have added additional insulation to their homes.

The success of this program has influenced IPS to conduct a thermogram program for its entire service area (some 400,000 combination gas and electric customers) this winter. The utility believes much of the success of the program is due to the one-to-one counseling on home insulation done when persons come to view thermogram displays. In addition, the thermograms graphically depict home heat losses. For this

reason, the proposed Iowa Energy Extension Service plans to use thermograms taken by the Utility Association in their neighborhood home energy audit workshops.

As shown in Project Conserve projects, thermograms not only aid persons in determining how much insulation they need in their homes, but also serve as a tool for publicizing home energy waste.

Milestones

Complete community coverage will be taken in the state during the winter of 1977-78, weather permitting.

Energy Savings

No energy savings are assessed to this program. The program will serve to amplify the savings accruing to the other voluntary programs.

Environmental Residuals

No environmental residuals are assessed to this program.

Estimated Costs

The costs of this program are borne by the public utilities and federal funding is not required.

Audit Before Mortgage

This program provides for the requirement that an energy audit must be accomplished and provided to a home buyer before a lending institution will issue a mortgage on the property. The requirement would be similar to those requiring title searches, property surveys, termite inspections, etc. Such requirements are not based on law but are established to protect the buyer and lender. As such, the requirement will be initiated through a voluntary, cooperative arrangement among associations of savings and loan institutions, banks and other residential lending agencies.

The program is associated with the voluntary Audit Programs described in Section IV of this Supplemental Plan and Program 9, Residential Sector of the Original Plan (Thermal Efficiency Standards on Sale of Existing Residences). The program procedure will use the workbook and evaluation process of the Audit Programs. The Original Plan requires only that the residence meet certain minimum physical standards of thermal efficiency before a mortgage can be issued and does not require the preparation of an audit which would indicate the expected actual energy utilization. The present program also differs from Program 9 in that the former requires legislation (because of the requirement for additional costs to the seller for physical improvements), and this program does not, inasmuch as it is considered as a legitimate requirement of the lending institution.

The program will apply to both newly constructed and existing residences. In the former case, it is expected that builders will automatically arrange and provide the audits and use them as marketing tools. In the latter case the audit would take the form of a Class B audit as described in Section IV with the evaluation performed by the IEPC or a cooperating agency. In any case the audit would require preparation and evaluation in a manner satisfactory to the lending institutions. It would be verified by the institution's appraiser along with other appraisal procedures.

The program may generate an opportunity for local small business for the conduct of the audits where the seller does not desire, or is unable, to accomplish the audit himself. It is not contemplated, however, that a state approval system of the type required for Class A audits (as described in Section IV) be established. The audits might well be conducted by local plumbing, heating and air conditioning firms.

The program will be developed through a cooperative effort by lending institution associations, with necessary assistance and coordination with other programs to be provided by the IEPC Staff.

Milestones

It is planned that this program be developed for implementation starting no later than the beginning of calendar year 1978 and be in full operation thereafter.

Energy Savings

No direct energy savings are assessed to this program. The program will serve to amplify the savings accruing to the other voluntary programs.

Environmental Residuals

No environmental residuals are assessed to this program.

Estimated Costs

The costs of this program are to be borne substantially by the lending institutions; however, some planning and development costs will accrue to the IEPC. These are indicated below:

<u>Element</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>Total</u>
Planning and Development Staff Costs	\$5,000	\$10,000	--	--	\$15,000
TOTAL	\$5,000	\$10,000	--	--	\$15,000

Training of Building Officials

The Original Plan Mandatory Programs (Program 1 relating to mandatory lighting efficiency and Program 4 relating to thermal efficiency) place a considerable additional burden on the local building officials through requirements for comprehensive lighting and thermal evaluation of building plans submitted for building permits. An additional burden applies to the added requirements of field inspections. Also, the Audit Programs described in Section IV of this Supplemental Plan place additional technical requirements on the offices of the building officials which will participate in provision of technical evaluation assistance.

Although a substantial increased workload is expected, it is considered a proper expense of the local jurisdiction. On the other hand, the success of the mandatory lighting and thermal efficiency programs depend in large degree on having an adequate technical capability for evaluation of building plans at the local level. This capability is not now present except for a few of the larger jurisdictions and its development is considered to be a proper expense to the overall state Conservation Program. An estimate of individual training requirements is not available but it is expected to be on the order of several hundred. It is therefore planned to develop and conduct a training program to prepare building officials in all jurisdictions in the state. This program will be developed under the supervision of the IEPC Staff and will be performed by contract with a suitable engineering firm which will also conduct the training sessions. The program will also be coordinated with the State Building Code Commission and appropriate associations of city and county officials.

It is expected that the training program will be conducted in several central areas in the state for all jurisdictions in that area.

Milestones

Third Quarter 1977 - Staff Planning

Fourth Quarter 1977 - Selection of contractor to develop training program; preparation of training program and materials.

First Quarter 1978 - Pilot test of training materials and program for first area; revise as necessary.

Second Quarter 1978 - Conduct additional training programs.

Energy Savings

No energy savings accrue to this program.

Environmental Residuals

No environmental residuals accrue to this program.

Estimated Costs

Estimates of additional cost requirements (over those contained in the Original Plan) are as follows:

<u>Element</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>Total</u>
1. Staff Planning and Coordination	\$ 5,000	\$10,100	--	--	\$15,000
2. Contract for Development and Conduct of Training Program	<u>30,000</u>	<u>50,000</u>	--	--	<u>80,000</u>
TOTAL	\$35,000	\$60,000			\$95,000

Iowa Energy Extension Service

This program consists of the development and utilization of a capability within the Iowa State Cooperative Extension Service for providing advice and assistance at the local level to all citizens in energy conservation matters. This advice and assistance will be provided in a manner similar to that practiced for agricultural matters utilizing the 99 local extension offices in Iowa.

The contribution of the Extension Service in agricultural matters is well known. The philosophy here is to extend the range of information and services to all aspects of energy conservation and renewable energy resources. The services would apply to agricultural energy conservation matters and to residential and other building areas as well. Community residents as well as farmers would be served.

This program will be coordinated at the state level through the IEPC to insure integration and coordination with all other programs.

Services to be offered include:

1. Preparation and distribution of energy conservation and renewable energy resource and information materials for both the agriculture and building sectors.

2. Distribution of workbooks and other audit materials in support of the Class B and C Residential Audit Program described in Section IV of this Supplemental Plan.

3. Provision of assistance to homeowners in self evaluation of Class C residential audits.

4. Conduct of workshops and demonstrations at the state and local level of agricultural energy conservation matters as described under the Agricultural Sector of the Original Plan.

5. Conduct of local workshops and demonstrations on residential and other building energy conservation matters.

This program will be developed and initiated under the auspices of the Energy Research and Development Administration. An application for funding has been submitted. All required costs will be charged to this program if approved.

Milestones

Depending on receipt of ERDA approval and funding, this program will be initiated in the last quarter of 1977 and is expected to be developed progressively with substantial operations underway during 1978.

Energy Savings

No energy savings are assessed directly to this program. The program will serve to amplify the savings accruing to the voluntary programs of the Original and this Supplemental Program, particularly those relating to the Agriculture and Residential Sectors.

