MASTER

HOW TO START A UTILITY RESIDENTIAL ENERGY CONSERVATION PROGRAM

CONSULTANT REPORT

JUNE 1979

MASTER

California Energy Commission

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HOW TO START A UTILITY RESIDENTIAL ENERGY CONSERVATION
PROGRAM

CALIFORNIA MUNICIPAL UTILITY RESIDENTIAL
ENERGY CONSERVATION PROJECT
REPORT OF FIRST-YEAR ACTIVITIES

CONS-0003-T1

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By Sharon Kruse Aochi
Northern California Power Agency

CALIFORNIA ENERGY COMMISSION

Gordon Gill
Project Manager

June 1979

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ABSTRACT

This report describes the activities of the first year of operation of the California Municipal Utility Residential Energy Conservation Project. The Project, designed to foster residential energy conservation through the cooperative efforts of small utilities, is a five-year program of the Northern California Power Agency (NCPA), a group of eleven municipal utilities and one rural electric cooperative. First-year funding of a planned five-year grant has been provided by the U.S. Department of Energy in cooperation with the California State Energy Commission.

This report consists of four parts. Part I delineates the goals for Year One, including the development of retrofit insulation and financing programs, and the progress made toward reaching those goals. Part II describes program implementation in the first NCPA grant-funded city, Palo Alto, California, including the customer-incentive methodology employed. Part III is an exhibit of the forms, procedures, and publicity Palo Alto developed for its Weatherization Program. The concluding Part IV discusses the results of the Palo Alto program.

The main conclusion of the report is that utilities, no matter how small they are or whether they are investor-owned or publicly-owned, can successfully develop and implement residential energy conservation programs.

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INTRODUCTION

The Northern California Power Agency (NCPA) was established by eleven municipal utilities and one rural electric cooperative to build and maintain generation and transmission facilities in Northern California based on the concept of joint action. The idea of utilities working together toward common goals has now been applied to the purpose of energy conservation in the residential sector. To help develop and nurture this new common goal, the Department of Energy in cooperation with the State of California awarded NCPA \$141,803 for the first-year funding of a planned five-year grant to establish residential energy conservation programs in all NCPA member utilities. The project was conducted under the overall management of the California State Energy Commission (CEC).

To more effectively aid the member cities in implementing conservation programs, the NCPA utilized the vehicle of subcontracts to allocate grant funds directly to the individual NCPA utility. A grant award provides the utilities with the financial backing to work toward the common conservation goals of each NCPA city. Related to this concept is a plan to establish a centralized educational program through the NCPA for use in the conservation programs developed under this grant.

A task plan which delineates the goals for Year One as well as progress made in implementing these goals are described in Part I of this report. These tasks provide for the establishment of conservation programs in four utilities, including the development of retrofit insulation and financing programs, and the utilization by other NCPA utilities of expertise gained by the first grant-assisted utility.

Part II of this report discusses program implementation in the first NCPA grant-funded City, Palo Alto, on a step-by-step basis. It is divided into sections which 1) describe Palo Alto's program in detail, 2) provide the implementation mechanism used in that city, and 3) discuss issues which arose in the planning and implementation phases.

Part III of this report is simply an exhibit demonstrating the forms, procedures and publicity developed in Palo Alto for use in its Weatherization Program. These materials will be adapted for use in other NCPA cities beginning residential conservation programs.

This report concludes in Part IV with a discussion of the results of Palo Alto's program.

PART I - TASK PLAN

SUMMARY

The overall goal of the federal grant awarded to the Northern California Power Agency is the development and implementation of residential energy conservation programs in the eleven municipal utilities and one rural electric cooperative who are members of it. The program is mainly based on retrofit residential insulation and home energy surveys. A secondary goal is attempting to bring the conservation of energy into other phases of city operations such as planning and building permits.

The first year task plan calls for program implementation in four of the NCPA's cities.

Task I - Description

In Task I, the State Energy Commission staff and the NCPA Executive Director are to assess priority of utilities for first year implementation of the conservation program and to select four utilities to participate. An energy conservation program manager for NCPA and at least two additional employees are to be recruited.

Task I - Progress

The Energy Commission staff has visited several NCPA cities and has assessed the priority of the utilities for the first-year implementation. The regulatory bodies (in this case the City Councils) have enabled progress to be made for the residential programs by passing resolutions and/or contracts to provide comprehensive energy conservation services (including ceiling insulation retrofit). Copies of these resolutions/contracts are included at the end of Section I for the Cities of Palo Alto, Lodi, Santa Clara, and the Plumas-Sierra Rural Electric Cooperative. These four agencies are the first-year utilities which have been selected for implementation. However, due to a much longer contractual process (from CEC to NCPA and from NCPA to each city) than was originally anticipated, only the Cities of Palo Alto and Lodi have completely begun program implementation to date. The other two utilities are participating in various degrees of program activity which will be discussed in a subsequent section of this report.

A manager for the NCPA energy conservation program was recruited and began work on October 1, 1978. Duties of the position include: coordinating training for NCPA cities in methods of conducting energy surveys and in insulation; developing a centralized marketing and educational program for NCPA cities; designing a publicity program in which conservation programs are advertised; monitoring the development of conservation programs in the NCPA cities and administering the program grant funds.

Task II - Description

Task II provides that a centralized marketing and education program be developed through NCPA for use in all member utilities during the first year.

Task II - Progress

Progress in this area has been delayed because the NCPA program manager was not hired until October, 1978. However, it is anticipated that much of the educational material developed for the Palo Alto program will be adapted for use in the other utilities. This adaptation process should not require a significant amount of time and final development of a marketing and educational program should be completed within six months.

Task III - Description

Task III requires that residential retrofit insulation programs be initiated in the City of Palo Alto and the City of Santa Clara. Utility and/or lending institution-finance programs at low interest rates with three-to-five year payback options are to be established, and an advertising program is to be designed or purchased. The utilities are to subcontract for insulation installation, establish quality control and certification programs. Training is to be required utilizing the Sacramento Municipal Utility District's ongoing training program. As expertise is gained in Palo Alto, its conservation staff is to be utilized to train new NCPA personnel for energy surveys.

Task III - Progress

- The City of Palo Alto - In February, 1978, the Council of the City of Palo Alto authorized a comprehensive weatherization program to be partially funded (\$20,000) by the State Energy Commission through the Northern California Power Agency. In May, 1978, the program officially began, consisting of five basic elements.
- an energy survey procedure in which personal visits are made to homes and energy inefficiencies are identified. Individual energy prescriptions which provide suggested conservation measures, approximate annual energy and dollar savings, and payback periods are sent to each participant following the home visit.
- an insulation option with utility, low-interest financing available to all qualified Palo Alto homeowners. The financing is based on a six-month-to-five-year payment plan and payments are included on the monthly utility bill. A one-and two-payment plan is also offered with no interest charge.
- a certification program which verifies that homes insulated through the City reach the recommended R value.
- a quality control option which provides inspections for at least 10 percent of all homes insulated through the program for all participants who request a post-installation inspection. Inspections are also provided for "Do-It-Yourselfers" upon request.

- a "Do-It-Yourself" packet which contains information on weatherstripping, caulking, a Do-It-Yourself energy survey, brochures on insulation, energy savings on specific measures and various other conservation tips and techniques designed specifically for the do-it-yourselfer.

The Sacramento Municipal Utility District (under contract with NCPA) and the State Energy Commission provided extensive training in the details of insulation and energy surveys for four Palo Alto employees in January, 1978. As a result of this training and the expertise which has been gained through several months of field experience, the City of Palo Alto has developed a multifaceted training program to be used in other NCPA member utility programs as they are established.

The details of these program elements and the Palo Alto training program will be discussed at greater length in Part II of this report.

The City of Santa Clara - A draft contract to provide the Santa Clara Electric Department with grant funds to expand existing and develop new conservation programs will be finalized prior to January, 1979. Part of the grant money will be used to hire a conservation coordinator to be responsible for developing a residential program in Santa Clara which will include expanded energy surveys, a swimming pool load management program, inspection for insulation requirements, a referral system to the local gas supplier for contractor-installed insulation and financing (for natural gas customers), a certification program of insulated houses, a quality control program, and do-it-yourself home weatherization information.

Santa Clara will coordinate its energy survey program with the insulation program being offered by the gas supplier in that utility's service area (Pacific Gas and Electric Company). PG&E's program does provide the services required under Task III of this grant, in that it offers contractor-installed insulation, low-interest loans, certification of homes insulated through the utility, and a quality control mechanism. Since PG&E offers this insulation program, it seems illogical to compete with it. Therefore, the NCPA municipal electric utilities (including Santa Clara) who are also served by PG&E natural gas will perform surveys and inspect for insulation requirements. If the customer desires insulation, PG&E will be notified for follow up.

The City of Santa Clara is participating in other conservation efforts. It has developed a City Employee Energy Conservation Training Program in order to teach conservation techniques that employees can use in their homes. It is hoped that employees can "show the conservation way" to their friends and neighbors.

The City is also presently working with Santa Clara County in providing free weatherization installations to low-income homeowners. Over 30 homes have been insulated in the City of Santa Clara under the County program. Home energy surveys are also provided on a City-wide basis to any homeowner who requests on regardless of income. The grant funding will help Santa Clara expand the scope of these activities, as well as develop new programs described above.

Task IV - Description

Task 4 provides that NCPA personnel initiate home conservation programs for new customers in conjunction with municipal planning and building inspection departments in Palo Alto and Santa Clara. It also provides that a report card billing process be integrated with related energy audits and high bill complaint activities in both cities.

Task IV - Progress

- Palo Alto - A draft Resource Conservation Element for the City Comprehensive Plan has been prepared and was presented to the Planning Commission in mid January. This report develops objectives, policies and active programs for the conservation of gas, electricity and water and also makes provisions for long-term power supply, solar energy, recycling and other alternative technologies. The Building Department is, of course, guiding and advising customers of the State Energy Conservation Standards required for new construction.

A report card billing process is fully implemented for Palo Alto's 22,000 residential customers. However, since this billing process is new, usage history for a full twelve months is not yet shown on the bill. As more history is indicated, customers who request surveys will be asked to show the home energy consultant a current bill for analysis of energy use. Presently, a separate computer printout must be produced for each customer prior to a survey - an expensive and time-consuming step.

- Santa Clara - The Building Department of Santa Clara is advising and guiding customers regarding the State Energy Conservation Standards for new construction. A training program was offered to City employees in methods of conserving energy in August, 1978, in which these standards were identified and explained.

Santa Clara is planning to purchase new computer equipment which will allow its billing department to expand the scope of its activities. A report-card billing procedure will be considered as a function for the new expanded computer system.

Task V - Description

Task V requires evaluation of the success of the programs after three months and requires that modifications be made as necessary. Programs for the second two utilities selected to participate are to be initiated and the efforts of all four utilities are to be monitored and evaluated.

Task V - Progress

The success of the Palo Alto program was evaluated after three months and is continuously being examined and modified as necessary. The details are described in Part IV of this report.

The City of Lodi and the Plumas-Sierra Rural Electric Cooperative are presently engaged in varying degrees of program development as described below:

- . The City of Lodi - On November 1, 1978, the City of Lodi and the NCPA entered into an agreement which provided Lodi with \$46,225 to begin the development and implementation of its residential conservation program. The program will include home energy reduction surveys (energy audits), educational outreach efforts such as a do-it-yourself packet, inspection for insulation requirements, and a referral procedure to the local gas supplier for the installation and financing of ceiling insulation. A swimming pool load management program will also be implemented. The City of Lodi has used a portion of these funds to hire a conservation coordinator and field advisor to develop and implement the program. The City of Palo Alto provided insulation information and energy survey training to the Lodi personnel as part of a training program being developed for use for future NCPA programs. Much of the educational and outreach elements of the Lodi program will be provided as a central service by NCPA.
- . Plumas-Sierra Rural Electric Cooperative, Inc. - The Plumas-Sierra Rural Electric Cooperative has not yet received any funds from the Northern California Power Agency. However, NCPA and CEC project managers have visited the cooperative and have begun the first stages of contract development in order to provide the utility with funds to conduct a full-scale program. The Plumas-Sierra Cooperative is currently working in cooperation with Plumas County to provide free insulation for low-income families and it has also begun financing weatherization measures through the Farmers Home Administration. Currently no energy surveys are being performed by the utility itself. When a contract has been arranged a program will be designed which will include energy surveys, do-it-yourself weatherization materials, and an expansion of the existing insulation program.

It is anticipated that the Plumas-Sierra Rural Electric Cooperative, the County and the NCPA will coordinate their efforts so that all program elements which have been described for the other municipal utilities will be provided for the customers of this small utility (3,800 residential customers).

Monitoring and evaluation procedures for all four first-year programs are currently being designed by the staff of the State Energy Commission. Some evaluation work has been completed for Palo Alto, the details of which are described in Part 4 of this report.

Contract authorizing the City of Palo Alto
to receive grant funds
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A G R E E M E N T

THIS AGREEMENT, made and entered into this 30th
day of March, 1978, by and between the Northern
California Power Agency (hereinafter referred to as NCPA) and
the City of Palo Alto, a Municipal Corporation of California
(hereinafter referred to as CONTRACTOR):

W I T N E S S E T H :

WHEREAS, NCPA has entered into an agreement with the State
of California, ERDOC entitled Number 400-038 7/8,
dated December 28, 1977 (hereinafter referred to as the
ERDOC contract) wherein NCPA is eligible for a State grant to be
used to fund the residential energy conservation and insulation
programs of its member cities;

WHEREAS, NCPA desires to contract with the City of Palo
Alto to initiate and develop a residential energy conservation
and insulation program for said city;

NOW, THEREFORE, in consideration of their mutual covenants,
the parties hereto agree as follows:

1. PROJECT COORDINATION.

(a) NCPA. The Executive Director of NCPA shall be the representative
of NCPA for all purposes under this agreement. Norman Ingraham here-
by is designated as the NCPA Project Coordinator. Any and all ref-
erences to an NCPA contract officer within this agreement or its
exhibits shall be deemed to refer to the NCPA Project Coordinator.

(b) CONTRACTOR. CONTRACTOR shall assign a single Project
Director to have overall responsibility for the progress and
execution of this agreement for CONTRACTOR. Connie Smyser hereby
is designated as the Project Director for CONTRACTOR. Should
circumstances or conditions subsequent to the execution of this
agreement require a substitute Project Director for any reason,

The Project Director designee shall be subject to the prior written acceptance and approval of the NCPA Project Coordinator.

2. DUTIES OF CONTRACTOR.

(a) SERVICES TO BE FURNISHED. CONTRACTOR shall provide all specified services as set forth below:

(1) CONTRACTOR shall initiate and develop a residential energy conservation and insulation program in the City of Palo Alto through its Utilities Department by February 21, 1978. The program will include home energy reduction surveys, inspection for insulation requirements, subcontracts with insulation contractors for installation of insulation, a utility bill payback mechanism, certification of insulated homes, an insulation loan program with an annual interest rate of no more than 8% and a provision for "do it yourself" information upon request by the public.

(2) CONTRACTOR shall hire sufficient staff to implement a residential insulation financing and installation program and other energy conservation programs developed under this Agreement.

(3) This agreement shall be subject to every term and condition of the ERCDC contract. In the case of any ambiguity or inconsistency between this agreement and the ERCDC contract, the terms and conditions of the latter shall prevail.

3. COMPENSATION.

For the performance of the above-stated services by CONTRACTOR and as more fully described in Exhibit "A" attached hereto, NCPA shall pay CONTRACTOR monthly progress payments payable after submission by CONTRACTOR of an itemized billing in triplicate of services rendered and expenses incurred and following approval by NCPA. All such payments shall be subject to a prorata retention of funds as provided in paragraph 7D of the ERCDC contract. The total amount of personnel services in 1978 shall not exceed \$14,000. Final payment shall be made upon satisfactory completion of the entire contract.

4. TERM.

The services to be performed hereunder shall commence on January 1, 1978 and shall be completed by December 31, 1978.

5. TRAVEL COSTS.

CONTRACTOR shall be reimbursed by NCPA for travel costs incurred prior to the implementation of the insulation program and for the first three months of said program. The travel reimbursement shall be: Auto - 15 cents per mile; Air Travel - actual cost of coach fare; and other travel costs such as room and meals shall be actual cost (as shown upon submitted receipts).

6. OUT-OF-STATE TRAVEL.

CONTRACTOR shall be reimbursed by NCPA for out-of-state travel provided said travel is authorized in writing by the NCPA Project Coordinator and the ERCDC Contract Manager. At the present time a visit to the Salt River project power saver insulation energy audit program in Phoenix, Arizona in March, 1978, is planned.

7. CLERICAL SERVICES.

CONTRACTOR shall be reimbursed by NCPA for any clerical services required for the pre-implementation phase of the insulation program implemented under this agreement. The time and nature of said services shall be documented by CONTRACTOR.

8. LEGAL SERVICES.

CONTRACTOR shall be responsible for any legal services required for any program implemented under this agreement. Such legal services shall not be reimbursed by NCPA.

9. BAD DEBT COSTS.

CONTRACTOR shall assume all costs for bad debts or uncollectibles incurred under the insulation program.

10. COMPUTER PROGRAMMING COSTS.

CONTRACTOR shall be reimbursed by NCPA for all costs incurred to reprogram its computer for billing and other related activities of the insulation program. The continuing costs of billing customers shall be borne by the CONTRACTOR.

11. PRINTING COSTS.

NCPA shall reimburse CONTRACTOR for any printing costs for pamphlets, bill stuffers, and special billing envelopes necessary for any program arising under this agreement. City publications

incidental to programs under this agreement shall be the responsibility of the CONTRACTOR.

12. POSTAGE AND SUPPLY COSTS.

NCPA shall reimburse CONTRACTOR for necessary postage and supply costs incurred prior to the implementation of the insulation program. Following implementation of said program, such costs shall be part of the overhead charge (see Section 15).

13. EQUIPMENT COSTS.

Equipment necessary for the operation of the initial phase of the insulation program shall be rented. The first six-month rental fee shall be reimbursable by NCPA. "Equipment" includes among other things, typewriters and other office equipment. Telephone installation charges shall also be reimbursable by NCPA. Actual monthly telephone bills shall be included in the overhead charge (see Section 15).

14. INITIAL TRAINING.

The cost of the initial training for the insulation program under this agreement shall be paid by NCPA through a contract with Sacramento Municipal Utility District for one week of training in Sacramento. CONTRACTOR shall be reimbursed by NCPA for travel and living costs incurred during the week of training in Sacramento pursuant to Section 5 of this agreement.

15. OVERHEAD CHARGES.

CONTRACTOR should impose an additional charge of at least two cents per square foot of insulation on the wholesale contractor installation price. This additional charge of two cents shall be used to defray the marketing and administrative costs of the insulation program. CONTRACTOR may increase such charge to reflect additional costs.

16. FISCAL REPORTS.

CONTRACTOR shall retain and furnish to NCPA upon request all records of expenses incurred under this agreement that have been reimbursed by NCPA including hours of employment by any employee

of CONTRACTOR for which NCPA has been billed. Such records shall be maintained for a period of five (5) years following the termination of this contract and shall be made available to NCPA for inspectional audit upon request.

17. MONITORING AND EVALUATING.

Overall monitoring and evaluating of the program shall be performed jointly by NCPA and ERCDC. However, CONTRACTOR shall be responsible for monitoring and evaluating all programs arising under this agreement and shall be responsible for managing and changing said programs if necessary. CONTRACTOR shall not terminate or make any major changes to programs arising under this agreement without the prior written consent of both NCPA and ERCDC.

18. HOLD HARMLESS.

Each party agrees to indemnify, defend, and hold harmless the other party, its officers, agents, and employees from any claims, demands, or liability of any nature whatsoever caused in whole or in part by the negligence of said indemnifying party, its officers, agents, or employees arising out of this agreement.

19. ASSIGNMENT.

(a) Both parties shall not assign, transfer, convey or otherwise dispose of this agreement or any right, title or interest in or to the same or any part thereof without the prior written consent of the other party. A consent to one assignment shall not be deemed to be a consent to any subsequent assignment. Any assignment without such approval shall be void and at the option of the other party, shall terminate this agreement.

(b) SUBCONTRACTORS. CONTRACTOR shall be responsible for employing or engaging all persons necessary to perform the services of CONTRACTOR hereunder. CONTRACTOR shall obtain NCPA's prior written approval prior to entering into any subcontract for work arising under this agreement. Upon termination of any subcontract, CONTRACTOR shall notify NCPA immediately.

20. AGREEMENT BINDING.

The terms, covenants and conditions of this agreement shall

apply to and shall bind the heirs, successors, executors, administrators, assigns and subcontractors of both parties.

21. AGREEMENT CONTAINS ALL UNDERSTANDINGS.

This document represents the entire and integrated agreement between NCPA and CONTRACTOR and supersedes all prior negotiations, representations or agreements either written or oral. This document may be amended only by written instrument signed by both NCPA and CONTRACTOR. All provisions of this agreement are expressly made conditions. This agreement shall be governed by the laws of the State of California.

IN WITNESS WHEREOF, NCPA and CONTRACTOR have executed this agreement the day and year first above written.

NORTHERN CALIFORNIA POWER AGENCY

Chairman

CITY OF PALO ALTO

By _____

APPROVED:

STATE OF CALIFORNIA ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

By _____

EXHIBIT A

Estimated Budget

1. Personnel Services

Home Energy Consultant	\$ 10,760	
Clerical Support (520 hours)	<u>3,240</u>	
	\$ 14,000	Maximum

2. Start-up Costs¹

Programming to set up billing	\$ 1,500	
Materials	3,200	
Postage	50	
Drafting	250	
Miscellaneous (phone line, travel)	<u>1,000</u>	
	\$ 6,000	

¹ These figures are an estimate only. As expenditures are made for start-up costs, the figures may change. To be reimbursable, all changes to the above budget must receive prior written approval of the NCPA contract managers.

AGREEMENT

This agreement, made and entered into as of this first day of November, 1978, by and between the Northern California Power Agency (hereinafter referred to as NCPA) and the City of Lodi, a Municipal Corporation of California (hereinafter referred to as Contractor):

WITNESSETH:

WHEREAS, NCPA has entered into an agreement with the California Energy Commission (CEC) of the State of California, CEC entitled Number 400-038 7/8, dated December 28, 1977 (hereinafter referred to as the CEC contract) wherein NCPA is eligible for a State grant to be used to fund the residential energy conservation and insulation programs of its member cities; and

WHEREAS, the City of Lodi desires to enter into a residential energy conservation and insulation program in order to eliminate or reduce unneeded uses of energy and to reduce peak loads; and

WHEREAS, NCPA desires to contract with the City of Lodi to initiate and develop a residential energy conservation and insulation information program for said City (hereinafter called conservation programs);

NOW, THEREFORE, in consideration of their mutual covenants, the parties hereto agree as follows:

1. PROJECT COORDINATION.

(a) NCPA. The Energy Conservation Coordinator of NCPA shall be the representative of NCPA for all purposes under this agreement. Sharon Kruse is hereby designated NCPA Project Coordinator. Any and all references to an NCPA contract officer within this agreement or its exhibits shall be deemed to refer to the NCPA Project Coordinator.

(b) Contractor. Contractor shall assign a single Project Director to have overall responsibility for the progress and execution of this agreement for Contractor. The person holding the office of Director or Utilities for Contractor is hereby designated as the Project Director for Contractor. Should circumstances or conditions subsequent to the execution of this agreement require a substitute Project Director for any reason, the Project Director designee shall be subject to the prior written acceptance and approval of the NCPA Project Coordinator.

2. DUTIES OF CONTRACTOR.

Services to be furnished. Contractor shall provide all of the following services:

(a) Contractor shall initiate and develop conservation programs in the City of Lodi through its Utility

Department. The program will include home energy reduction surveys, inspection for insulation requirements, and other such program elements as may be mutually agreed upon between the NCPA and the Contractor. Contractor will cooperate with other utilities in the development of its residential energy conservation programs.

(b) Contractor shall hire sufficient staff to implement the residential energy conservation program to be developed under this agreement.

(c) Fiscal Reports. Contractor shall retain and furnish NCPA upon request all records of expenses incurred under this agreement that have been reimbursed by NCPA including hours of employment by any employee of Contractor for which NCPA has been billed. Such records shall be maintained for a period of five (5) years following the termination of this contract and shall be made available to NCPA for inspectional audit upon request.

3. COMPENSATION.

In consideration of the performance of the above-stated services by Contractor, NCPA shall make monthly progress payments to Contractor after receipt from Contractor of itemized billings in triplicate for the services rendered and the expenses incurred pursuant to this agreement, and following approval by NCPA.

NCPA shall determine what Contractor has expended during the period for which payment is being made on the basis of the contract terms, but shall retain out of such earnings an amount at least equal to 25% thereof, pending satisfactory completion of this contract.

Reference is made to Exhibit "A" attached hereto and it is understood that the total amount of personnel services shall not exceed \$39,825, and that the total cost of the program shall not exceed \$46,225.

4. TERM.

The services to be performed hereunder shall commence on date of execution of agreement and continue for a period of one year.

5. REIMBURSABLE COSTS.

The following costs shall be reimbursed to Contractor by NCPA:

(a) Travel Costs. Travel costs shall be reimbursed as follows: Auto: 15 cents per mile; Air Travel: actual cost of coach fare; other travel costs such as room, meals, rental cars shall be actual costs as shown upon submitted receipts.

(b) Out-of-state Travel. Out-of-state travel shall be reimbursed provided that said travel has the prior written approval of the NCPA Project Coordinator and the CEC Project Coordinator.

(c) Clerical Services. Clerical services required by Contractor shall be reimbursed and shall be documented as to time and nature of the services.

(d) Computer Programming Costs. Costs incurred to reprogram Contractor's computer for billing and other related activities shall be reimbursed by NCPA. The continuing costs of billing customers shall be the responsibility of Contractor.

(e) Printing Costs. Printing costs for pamphlets, billing stuffers and special billing envelopes shall be reimbursed to Contractor. Publications incidental to the programs sponsored under this agreement shall be the responsibility of Contractor.

(f) Postage and Supply Costs. Other than for normal utility billing postage, Contractor shall be reimbursed for necessary postage and supply.

(g) Equipment and Telephone Costs. Contractor may be reimbursed for the rental or the loaning of equipment, including typewriters, reproducing equipment, telephone installation charges and monthly telephone bills.

(h) Initial Training. The cost of training for the implementation of the conservation programs contemplated by this agreement shall be reimbursed to Contractor, including the travel and living costs incurred during the training. The training and associated expenses including

travel, must have the prior written authorization from the NCPA Project Coordinator.

6. BAD DEBT COSTS.

Any bad debts or uncollectibles incurred in carrying out the program shall be the responsibility and obligation of Contractor.

7. LEGAL SERVICES.

Legal services shall not be reimbursed by NCPA.

8. MONITORING AND EVALUATING.

Overall monitoring and evaluating of the program shall be performed jointly by NCPA and CEC and shall conform to the criteria established in the CEC contract and to CEC standard monitoring and evaluating procedures. However, Contractor shall be responsible for monitoring and evaluating all programs arising under this agreement and shall be responsible for managing and changing said programs, if necessary, including obtaining any and all information on energy saved through said program. Contractor shall not make any major changes to programs arising under this agreement without the prior written consent of both NCPA and CEC.

9. HOLD HARMLESS.

Each party agrees to indemnify, defend, and hold harmless the other party, its officers, agents, and employees from any claims, demands, or liability of any nature what-

soever caused in whole or in part by the negligence of said indemnifying party, its officers, agents, or employees arising out of this agreement.

10. ASSIGNMENT AND SUBCONTRACTORS.

Without the written consent of NCPA this agreement is not assignable by Contractor either in whole or in part. The prior written approval of NCPA shall be obtained prior to Contractor entering into any subcontract to perform any of the work arising under this agreement. Upon termination of any subcontract, Contractor shall notify NCPA immediately.

11. AGREEMENT CONTAINS ALL UNDERSTANDINGS.

Except as provided in Paragraph 8 hereof, this document represents the entire and integrated agreement between NCPA and Contractor and supersedes all prior negotiations, representations or agreements either written or oral. This document may be amended only by written instrument signed by both NCPA and Contractor. All provisions of this agreement are expressly made conditions. This agreement shall be governed by the laws of the State of California.

12. AGREEMENT BINDING.

The terms, covenants and conditions of this agreement shall apply to and shall bind the successors, assigns and subcontractors of both parties.

Time is of the essence of this agreement.

IN WITNESS WHEREOF, NCPA and CONTRACTOR have
executed this agreement as of the day and year first above written.

NORTHERN CALIFORNIA POWER AGENCY

Chairman

CITY OF LODI

Mayor

City Clerk

APPROVED:

STATE OF CALIFORNIA ENERGY COMMISSION

By _____

ESTIMATED BUDGET

1. Personnel Services

Coordinator	\$16,440	
Advisor	13,680	
Fringe Benefits	8,505	
Clerical 4 hrs. /week	<u>1,200</u>	
		\$39,825

2. General Expenses

Travel	\$ 1,800	
Printing & Advertising	2,500	
Postage	300	
Community Conservation Week	800	
Miscellaneous	<u>1,000</u>	
		<u>6,400</u>
Maximum contract amount		\$46,225

This budget is an estimate only. As personnel are hired and expenditures are made, the above figures may change. To be reimbursable, all changes to the above budget must receive prior written approval of the NCPA Project Coordinator.

Resolution authorizing the City of Santa Clara
to start a plan for residential energy FEB 15 1978
conservation through the State Energy Commission
RESOLUTION and the NCPA

RESOLUTION OF THE CITY OF SANTA CLARA REGARDING
ENERGY SHORTAGES

-23-

WHEREAS, the nation faces serious energy shortages in the future unless steps are taken now to increase energy supply and decrease energy waste, and

WHEREAS, the City of Santa Clara Electric Utility has taken steps in the past to make its customers aware of both national and local energy problems, and

WHEREAS, it is a natural extension of a public service agency such as the City of Santa Clara Electric Utility to provide additional energy conservation services to its customers,

THEREFORE, the City Council of the City of Santa Clara hereby directs the staff to start a plan to provide our residential customers with insulation inspection and financing and energy use surveys in cooperation with the staff of the California Energy Resources Conservation and Development Commission in coordination with NCPA.

PASSED AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF SANTA CLARA

THIS 7th day of February, 1978, by the following vote:

AYES: COUNCILMEN: Hansen, Street, Texera and Mayor Gissler

NOES: COUNCILMEN: Mahan

ABSENT: COUNCILMEN: Kiely and Stewart

ATTEST: A. S. Belick
A. S. BELICK, City Clerk
City of Santa Clara

I, A. S. Belick, City Clerk of the City of Santa Clara, do hereby certify that the within Ordinance or Resolution is a correct copy of the original, and that same has been published as required by law.

A. S. Belick
City Clerk

Resolution authorizing the Plumas-Sierra Rural Electric Cooperative to start a plan for residential energy conservation through the State Energy Commission and NCPA.

BOARD RESOLUTION

-24-

WHEREAS, the nation faces serious energy shortages in the future unless steps are taken now to increase energy supply and decrease energy waste and,

WHEREAS, the Plumas-Sierra Rural Electric Cooperative has taken steps in the past to make its customers aware of both national and local energy problems, and

WHEREAS, it is a natural extension of a public service agency such as Plumas-Sierra Rural Electric Cooperative to provide additional energy conservation services to its customers,

THEREFORE, the Board of Directors of Plumas-Sierra Rural Electric Cooperative hereby directs the staff to start a plan to provide our residential customers with insulation inspection and financing and energy use surveys in cooperation with the staff of the California Energy Resources Conservation and Development Commission.

I, Frank V. Dotta, Secretary of Plumas-Sierra Rural Electric Cooperative, do hereby certify that the above resolution was adopted at a regular meeting of the Board of Directors held on March 24, 1978.

Frank V. Dotta, Secretary

Attest:

Robert McDonald, President

(initial)
E-2

News Release announcing availability of funding
for conservation measures through Plumas-Sierra
~~Rural Electric Cooperative~~

-25-

AUG 23 1978

UNITED STATES DEPARTMENT OF AGRICULTURE
Farmers Home Administration
459 Cleveland Street
Woodland, California 95695

N E W S R E L E A S E

Date: August 15, 1978
Contact: Mr. Lowell A. Pannell
Phone: (916) 440-3223 or 666-2650

PORTOLA REA CO-OP FIRST TO SIGN UP UNDER
RURAL WEATHERIZATION PROGRAM

Mr. Lowell A. Pannell, State Director for the Farmers Home Administration (FmHA) in Woodland, today announced that Plumas-Sierra Rural Electric Cooperative serving the Portola area in Plumas County is the first Utility in California to sign up under the FmHA Rural Housing Weatherization Loan Program.

The agreement signed by Pannell and Mr. Albert E. Engel, Manager of the Portola Co-op, now makes the FmHA weatherization loans available to the Co-op's homeowner customers which, according to Engel, totals some 2,800. Under this loan program, homeowners served by a public utility may borrow up to \$1,500 to "weatherize" their homes. The FmHA loan, which presently has an 8 1/2 percent interest rate, can be repaid over a 5-year period by adding the small monthly payments to the utility bill. The Utility collects the loans and transmits one regular payment to the FmHA's central finance office. Like other FmHA housing programs, the loans are available in rural areas of open country or towns of less than 10,000 population and in non-metropolitan areas loans are available in towns of populations less than 20,000.

AUG 23 1976

News Release - Page 2

The loan can be used for insulation, weatherstripping, storm doors and windows, water heater jackets, or practically any approved item that will save home energy use. Well insulated homes generally save families more than enough in fuel or electric bills to meet the loan payments over five years. An average household may expect up to 35 percent reduction in the utility bills depending upon price of energy and amount of weatherization work done.

According to Pannell, the FmHA Weatherization Program was launched last year through a joint agreement between the Rural Electrification Administration (REA) and the FmHA, both of which are agencies of the U.S. Department of Agriculture. However, recent changes makes loans available to any public or privately-owned utility and not just to REA financed utilities. Also, the Utility now can keep up to \$25 plus 1 percent of the loan amount as a fee for carrying out the program.

As reported by Pannell, some ten other Utilities serving California customers have expressed interest in the program. The State Department of Housing and Community Development, through its Four-County Rural Demonstration Project, has offered to work with any Utility in Plumas, Lassen, Modoc, and Siskiyou Counties to package loans and provide help to the Utility in carrying out the Weatherization Loan Program.

LOWELL A. PANNELL
State Director

first livestock parade will proceed
down the promenade at 6 30 p m

perform at the Grandstand Arena
at 8 p m

REC first Coop in state with 'weatherization' program

Plumas-Sierra Rural Electric Cooperative is the first cooperative in the state to establish a weatherization program with Farmers Home Administration, and is now offering its members "No Red Tape" weatherizing loans.

Co-op members can apply to the REA office for advice on energy saving weatherizing improvements and for Farmers Home Administration financing. Loans will be repaid by the addition of small monthly installments on regular co-op electric bills. State Department of Housing estimates indicate the utility bill savings for the average home will cover weatherization costs within five years, with energy saving benefits continuing indefinitely.

Harlan Severson, Assistant to Administrator, Rural Electrification Administration, came from Washington, D C to meet with Al Engle of the local cooperative in announcing the program. Ralph Palmer, who worked with Engle and Logan Wilson of Farmers Home Administration to establish the simplified energy conservation program, attended the meeting with John Sheehan. Palmer and Sheehan represented the California Department of Housing and Community Development, California Rural Development Demonstration County Supervisor Leonard Ross and Portola City

Manager Mel Graham were also present at last Friday's meeting.

The group discussed coordination of weatherization and rehabilitation programs in the area and described the REA plan as one of several steps to address local energy saving problems and part of comprehensive energy conservation efforts.

WEATHERIZATION MEETING--
Meeting in Portola, from left to right, were: Supervisor Leonard Ross, Plumas-Sierra REA Co-op Manager Al Engle, Assistant to REA Administrator Harlan

Severson, Portola City Manager Mel Graham, John Sheehan and Ralph Palmer of California Department of Housing and Community Development.

daries were the main topics of discussion at the Tuesday night's meeting of the Plumas Unified School District Board (PUSD). The Board approved a reduced transportation schedule that would eliminate 21 bus runs countywide and trim \$39,000 off last year's transportation budget. In approving the schedule, the Board established a policy of only running bus routes that serve 10 or more students. Transportation superintendent Dick White pointed out that nine of the 21 routes proposed for elimination may well meet this criteria by the time school opens--which would require putting almost \$18,000 back in this budget.

In Quincy the eliminated bus runs include route 23, to and from the Nugget Motors area, route 16,

dergarten rell Valley, Kedd Quincy and A Chandler Rd runs.

In Greenville been eliminat school only, to area, in town runs, and the to Genessee, sville Cresce Hough Estates. In Portol dergarten rell Graceagle and eliminated.

In Chester, town and Eas were cancelled.

All runs w when school : attendance fig

The Board on to the pre and capital out budget modifi the Board wa proposal to e allocation for district office stead approve \$16,000 for com the entire fac John Malarkey money be al Superintendent share of the receipts.

Some trust validity of add budget while m programs and also leery of w a very conser the cost of remodeling job.

Malarkey a Board a more reconstruction reconsider the meeting.

Portola
Reporter
Aug 3, 1978

PART II - METHODOLOGY USED TO DEVELOP A RESIDENTIAL ENERGY CONSERVATION PROGRAM IN PALO ALTO

SUMMARY

The Palo Alto Weatherization Program has been designed to achieve the long-range goal of upgrading existing Palo Alto residences to approach today's state standards for energy efficiency in new construction. Achieving this goal requires a program that actively promotes and financially supports the cost-effective, but capital-intensive energy conservation modifications which can be made. The program accomplishes this by providing residents with positive incentives to "retrofit" their homes. These incentives are in the form of a utility service which includes:

- . A comprehensive home-energy conservation survey available to all residential customers which will concentrate on identifying energy inefficiencies in the home and cost-effective means of correcting them.
- . Do-it-yourself information packets covering home energy conservation measures such as insulation, weatherstripping, water heater insulation, duct insulation, caulking, and summer shut-off and fall relighting of the furnace pilot light (for gas furnaces).
- . A ceiling insulation option which provides a quality-assured insulation installation by local contractors with 8 percent municipal utility financing and payback through the utility billing system.
- . Certification of completed insulation installations which meet City criteria for safety and quality.

The State Energy Commission through NCPA partially funded Palo Alto's program by providing \$20,000 in grant monies which was allocated in the following manner: \$14,000 was used to pay the salaries of two part-time energy surveyors (Home Energy Consultants or HEC's), and \$6,000 was allocated to cover program start-up costs. These costs included travel expenses, training, miscellaneous operating costs (flashlights, uniforms, etc.).

Money was already budgeted by the City for the salaries of the conservation manager and assistant who worked on program development. In addition, one customer service person was budgeted to work part time performing energy surveys.

The Palo Alto program was the first to be planned under the NCPA grant, and consequently much has been learned regarding the process of establishing such a residential energy conservation program.

Many of the materials developed will be applicable to other NCPA cities as they begin implementing programs. In addition, the Palo Alto home energy consultants will subsequently train other energy specialists from NCPA cities providing those people an opportunity to learn from their expertise.

How Palo Alto's Program Works

The components of the Palo Alto Weatherization Program and how they interrelate are described below and in the flow chart included in Part 3 of this report.

- . Home-Consultation Service - A home energy consultant, when requested, visits the customer's home and performs a walk-through energy survey in which energy inefficiencies are checked, including insulation levels, air infiltration, and furnace and duct problems. Uses of water and electricity are also examined. For those homes without adequate ceiling insulation, the consultations also include the measurements and specifications for proper insulation installation. A copy of the form used in doing a survey is included in Part 3. The potential conservation measures are later developed into recommendations through calculations based on the customer's actual utility history. The resulting recommendations describe energy and cost savings and payback period for implementation and are sent to the resident in a folder with related backup information. This allows the customer to decide which measure(s) is the most cost-effective to implement. Typical recommendations are shown in Part 3.
- . Do-It-Yourself Packet - For the many people who are interested in "weatherizing" their homes but who prefer to do the work themselves, the Utilities Department provides a "Do-It-Yourself" packet which explains the different types of insulation available, how to install it, tips on weatherstripping and caulking, etc. At the time of the home consultation visit, the home-energy consultant offers a copy of this packet to those interested. Copies are also available at libraries, community centers, and other public facilities, as well as to anyone upon request.
- . Insulation Installations by Outside Contractors - Homeowners requesting this service receive a utility inspection of their insulation requirements. The inspector determines the amount of insulation required to bring the ceiling up to R-19 (the state standard for new residential construction in the Palo Alto climate zone) the cost of the installation, and other specifications for the contractor to meet in the installation. The homeowner is then given the option of signing a contract authorizing the installation and the billing on his or her monthly utility bill. If the homeowner's credit rating is satisfactory, the City subsequently notifies the contractor to arrange a date for the installation. Upon completion of the job, the contractor submits an invoice to the City, along with a signed acceptance of the job by the homeowner, at which point the City pays the contractor. The next utility bill includes the monthly payment stipulated in the homeowner's contract. A draft homeowner's contract is illustrated in Part 3 of this report.

Insulation contractors were invited to participate in the program through the City bidding process and contracts were awarded to the lowest responsible bidders as prescribed in the Municipal Code. (A draft contract is included in Part 3.) The bidding process is required of all local agencies by California law. In order to encourage more local and small companies to participate, the bid invitations were sent to companies located in the area between Sunnyvale and Redwood City on the San Francisco peninsula. However, qualified contractors from outside this radius were included on request. In order to assure quality control, a set of stringent requirements for the participating contractors was applied. These requirements included bondability, insurance coverage, prior approval of materials to be used, conformance to City specifications, and a background check of past experience, previous names used by the company, bankruptcy history, and previous installations. All insulation materials used must have been tested and approved by the Underwriter's Laboratory, as well as approved by the Electric and Gas Industries Association. The City inspected at least one job performed by each participating contractor prior to contract award and currently inspections are performed for any homes for which a major complaint is received. At least 10 percent of all installations are inspected routinely. Cause for deletion of a contractor from the program includes the following:

- the use of nonapproved materials in installations;
- consistent complaints about the insulation jobs;
- poor workmanship;
- failure to follow the signed contract

Utility Financing of Insulation Installations - Insulation installations done under the Weatherization Program mechanism may be financed through the utility with payback on the utility billing system. Interest rates for the loans are set at 1 percent above prime, not to exceed 8 percent, which would approximate the same rate of return the utility would otherwise gain on general investments, as well as cover administrative carrying costs. Details of the financing package are described below:

- Legal Precautions: The appropriate legal forms prepared by the City Attorney's Office are supplied to the applicant, including Truth-In-Lending Disclosure Statements and Right of Rescission Notices.
- Eligibility: The Utility credit rating system is used to determine eligibility of a homeowner who requests a loan. Applications with bad histories of payments do not qualify. Tenants wishing to participate must have their landlords sign the contract.
- Loan Size and Financing Means: For a typical Palo Alto house, insulation to R-19 standard costs between \$250 to \$450. The City consulted with local banks in the area and found that generally banks are not interested in financing such small amounts. The City set a limit of \$550 for the loan. It is hoped that by setting a maximum loan of \$550, more homeowners will be able to take advantage of the money available for this purpose. If a very large house requires an amount higher than this limit, a down payment of the difference may be made.

- Payment Options: Four payment options are offered:
 - Immediate cash payment upon completion of installations
 - Pay off the balance the first billing period after installation is complete with no finance charge.
 - Pay off the balance in two equal monthly installments with no finance charge.
 - Pay off the balance in up to 60 months with an annual finance charge of prime rate plus 1 percent interest, not to exceed 8 percent.

The fourth option importantly allows more low-income homeowners to participate since the added insulation charge is offset by the decrease in the bill resulting from the insulation. Low-income residents are also referred to the Citizens Home Energy Conservation Project of Santa Clara County to determine eligibility for its free insulation program.

- Nonpayment Problems: The City offers residents an unsecured loan, which does not require collateral. It is hoped that by making simple and uncomplicated loans available, more people will take advantage of the opportunity to insulate. All other public utilities contacted conducting similar programs have indicated that nonpayment is not a big problem. Typically, less than 1 percent do not pay, which is consistent with a bank official's statement that homeowners making home improvements are good risks. This fact, coupled with the use of the utility credit rating system as a qualifying factor, should minimize the nonpayment risk. All loans are due to be paid in full upon sale of the house.

Certification of Weatherized Homes - All homeowners who have completed insulation of their homes, either through the City's program or on their own, are able to request inspection and certification of the installation. The certification may be displayed in the home as it is now for new homes, and will be useful to the homeowner for tax credits and for increased value at resale.

Benefits

The weatherization program benefits both the homeowner, the municipal utilities and the City as a whole. Palo Alto residents who participate in the program rather than insulate on their own benefit in several ways:

- . The homeowner knows that he or she is obtaining a quality insulation job performed by a contractor who has demonstrated reliability to the City, and who has agreed to follow the stringent requirements demanded by the program.
- . Homeowners pay a price which has been obtained through the City's bidding procedure (plus 2 cents per square foot added to cover administrative costs), a price which may be lower than a contractor could otherwise offer an individual homeowner.
- . The City is able to provide a loan at a lower interest rate than would be available elsewhere.
- . Since the City has access to specific utility usage histories, the customer is in a position to receive sound advice with respect to cost effectiveness of conservation measures.
- . By participating in the weatherization program, the customer only has to deal with one trustworthy entity. The need for the homeowner to obtain several estimates, to check contractor reliability, insurance requirements, etc., and to arrange financing is eliminated. Consequently, much time and frustration for the customer is saved.

The Palo Alto program also benefits the other NCPA utilities since much of the program developed can be adapted to fit into their new programs.

Steps Taken to Develop the Program

Palo Alto's energy conservation program manager considered the idea of developing and implementing a residential conservation program for several months. An increase of one person to the staff helped create the manpower necessary to proceed with the idea. Several days were spent trying to synthesize the elements of existing utility programs into one which would work in Palo Alto. By studying these programs being offered by Southern California Gas Company, Michigan Consolidated Gas Company and others, and by working directly with the State Energy Commission staff, the ideas for the general components and program elements were finalized.

In October, 1977, a concerted effort was made to initiate the development of the procedures and processes that would be needed to implement these components. Steps taken to proceed are described below:

- . An outline was developed in which every program element was specified with its approximate implementation time. Composing a time frame outline forced the staff to consider each step necessary for the whole program to work.

- . Meetings with all division heads whose departments might be affected by the new program were conducted. For example, consultations were held with the Controller's Office to set up an accounting system; the Attorney's Office to check out legal aspects of such a program; the computer programmer to determine the feasibility of putting monthly insulation charges on the utility bill; the credit manager regarding the utility credit-rating system; the utility business manager to determine how an additional new utility service might impact an already-too-busy customer service department; the purchasing department to obtain input on the City's contract procedure.

The meetings proved to be extremely beneficial to the staff in helping shape departmental responsibilities in implementing the residential program. For example, it was quickly learned that the Building Department did not have the staff to provide attic inspections, as was originally proposed. Therefore, another option had to be considered to provide this component of the program (the use of home energy consultants).

- . A meeting was held with two prominent local insulation contractors, to gain input for the insulation portion of the program. The conservation staff believed that in order to have a successful insulation component, it was essential that local contractors want to participate. It was hoped that the contractors could give the staff ideas to structure that program so that this participation would occur.*
- . The conservation staff worked out a budget and determined personpower requirements for the program. The NCPA funding was incorporated into this process and the appropriate budget amendments were prepared.
- . Meetings with local banks were held to discuss a private lending institution financing arrangement for the insulation installations. These meetings indicated that banks generally are not interested in lending such small amounts of money to individual homeowners.

Concurrent with the actual program development, the conservation staff prepared a report to the City Council requesting authorization to develop and implement the weatherization program and requested the passage of a budget amendment to reflect the receipt of grant money. The establishment of a \$100,000 fund to be used for paying contractors and for receiving monthly payments was also requested in the staff report. The report was presented to the Council which passed it after much discussion and under certain conditions. These conditions will be described in another section of this report.

*This meeting ultimately determined the structure of the insulation program. Originally the staff planned to allow qualified contractors to contract with the homeowner directly. However, these two contractors convinced the staff that a key ingredient to a safe and successful program was that the City maintain absolute control in the field. At that point the staff decided to become the contracting agency with both the homeowner and with the contractor.

After City Council approval, the staff moved full-speed ahead in the weatherization program development. In order to more concisely describe this development, the remainder of Part 2 is discussed in terms of individual program components: home energy and insulation program development; internal procedures, do-it-yourself packet information development; program publicity, and Palo Alto's training program. Problems encountered along the way and other issues to consider will also be described.

Home Energy Surveys and Insulation Program

- . Four staff members (the program assistant, two home energy consultants, and one customer service person) received extensive insulation training by the Sacramento Municipal Utility District and training in home energy surveys by the State Energy Commission. These training outlines are attached in Part 3 of this report.
- . One staff person visited the Salt River Project in Arizona to study its insulation program and administrative procedures.
- . Materials necessary for the home energy consultants were ordered:
 - ladders
 - flashlights
 - dropcloths
 - face masks
 - tape measures
 - clipboards
 - carrying cases
 - uniforms
 - inexpensive calculators
 - scales to weigh insulation
- . Survey forms, brochures, contract forms, legal forms (including Truth-In-Lending and Right of Rescission) were developed, as well as instructions to the homeowner and contractor. Examples of these forms are included in Part 3 of this report.
- . Bid specifications for contractors were prepared (after much research) for use in the bidding process. The specifications described the types of products allowed and the procedure to be followed by the contractors in the process. The specifications are included in Part 3.
- . Notebooks were prepared by the home energy consultants which included samples of weatherstripping, brochures on insulation, caulking and weatherstripping, sample contract forms, instructions for insulating hot water heaters, a chart of R values for various types and thicknesses of blown insulation, and other miscellaneous materials which each home energy consultant thought might be useful.

Internal Procedures

- . Prior to implementing this comprehensive conservation program, the staff prepared a draft of detailed procedures which outlined the entire process for all phases of the program. These included overall procedures and step-by-step processes specifically for the clerk, program assistant, and for the home energy consultants. These procedures are included in Section 3.
- . A data collection and updating system was established in coordination with the State Energy Commission. The system monitors progress of the program by compiling statistics on number of visits made, number of contracts sold, number of insulatable houses, and percentage of sales. These reports are compiled by congregating data from forms which the home energy consultants turn in each week. The results of each week's figures are then added cumulatively so that at any one time comprehensive data can be available regarding the status of the program.
- . It was necessary to reprogram the City's computer in order to include the monthly utility-bill payback option in the program. This reprogramming took approximately 100 hours and cost about \$1500. A procedure to input the computer with monthly billings for insulation was also developed.

Do-It-Yourself Information

- . The do-it-yourself kit represents an extensive effort by the conservation staff to encourage homeowners to weatherize. A goal of the kit was to make home weatherization a project which could be carried out independently. As such, it was determined that the kit should be entirely comprehensive and include information on all major conservation measures applicable to Palo Alto. It included a home energy survey form, brochures on weatherstripping and caulking, insulation, water heater insulation instructions, lists of local insulation contractors, lists of establishments which carry energy conserving devices, lists of establishments which rent insulation blowing machines and more. Some of the do-it-yourself materials are included in Part 3 of this report.

Program Publicity

- . Program development was completed by May, 1978, just three months after City Council approval. The next step was to publicize the availability of the program. Other utilities with similar programs indicated that the most effective publicity to use was utility bill stuffers and/or special utility return tear-off envelopes ("bang-tail" envelopes). These envelopes are designed in such a way that the

desired publicity is printed on the envelopes on a section which must be torn off before the envelope can be sealed, thus assuring that the message is seen. The first bill stuffer was sent out in May and response was overwhelming. Over 500 requests came in which created over a three-month backlog of surveys to be performed. In August, the tear-off envelope was sent which again created a huge backlog. Other utilities control such backlogs by mailing bill inserts in a small number of billing cycles per month. Other publicity has been modest--a few articles in the newspapers, one short segment on a local news program, and a doorhanger with insulation information printed on it. None of these last efforts have produced significant results. Clearly, the bill stuffers and tear-off envelopes are the most effective publicity efforts tried in Palo Alto. Samples of the bill stuffers and tear-off envelopes are included in Part 3 of this report.

Training Program

- . One of the key benefits of Palo Alto's Weatherization Program is the expertise which has been gained through the program development and implementation phases. The City is now in a position to share this expertise with other utilities contemplating weatherization programs. Palo Alto has developed a comprehensive training program for Lodi, Santa Clara, and other NCPA cities, which was offered for the first time in December, 1978. It includes:

- The philosophy of the role of an energy consultant.
- An overview of energy use and supply
- Heat loss calculations
- Insulation
- Weatherstripping and caulking
- Heating systems
- Appliances
- Swimming Pools
- Water heating
- Lighting
- Reducing summer temperature
- Field training on home energy surveys

This training is scheduled to last one week and will be adaptable to any NCPA City.

Issues Encountered

Considering the innovative and creative aspects of the Weatherization Program, very few problems were encountered in setting it up. However, a few issues did arise which were significant:

- . One of the major issues which the City Council questioned involved the concept of the City competing with the private sector in the insulation business. The staff pointed out that the California Public

Utilities Commission was requiring the private utilities under its jurisdiction to develop insulation programs, including installation and financing.

- . The City Council also questioned the concept of the City lending money to finance insulation. Although the staff had indicated that banks were not interested in financing such amounts of money (\$250-\$550), the Council directed the staff to research this point more thoroughly. Consequently, a letter was prepared and sent to all lending institutions in Palo Alto requesting them to participate in the program, and to prepare proposals outlining the terms under which they would lend money to homeowners for the purpose of insulation.

Two banks responded, both of which desired credit-card type rates of interest for lending money. Clearly, this high interest rate (18 percent) was not in line with the concept of "encouraging homeowners to insulate." This additional step delayed the program implementation approximately one month.

- . An issue which arose early in the program dealt with the disenchantment of contractors who were not accustomed to participating in the City's bidding process. The City Purchasing Agent advised the conservation staff that contractor selection would have to be made on the bidding process, due to provisions in the Municipal Code. A significant amount of paperwork is required as well as bid bonds, performance bonds, insurance requirements, etc. Many small contractors were not used to dealing with this degree of paperwork, and therefore elected not to participate. However, ultimately, the bidding process produced well-established, reputable contractors who were able to bid low based on the expectation of a high volume of business and on the fact that their sales efforts were eliminated.

Because significant issues were questioned in the weatherization program, the staff was directed to bring the program back for Council review prior to January, 1979.

Issues to Consider

The purpose of this section of the report is to provide a brief description of some issues to be considered when implementing a weatherization program.

- . Control the degree of mass-media advertising of the program so that the backlog of energy survey requests does not become too large. A backlog of one month would be the largest a utility should allow. If it exceeds this time period, customers tend to think the utility has forgotten them, or they lose interest in participating at all.
- . Schedule appointments for home energy surveys no longer than one week ahead. Many customers forget appointments made in advance of one week, and the percentage of "no shows" increases. This results in an ineffective use of the home energy consultant's time.

- . Keep the home energy consultants on schedule with their duties. Follow-up is an essential ingredient for effective insulation sales. It is also important to send energy recommendations to the homeowner soon after completion of the survey so the homeowner does not forget which measures were recommended.
- . Devise a system to keep track of payments of each insulation customer. Record the interest each customer has paid during the year and report it to the customer for income tax purposes.
- . Establish a routine system for reporting on the status of the program. A weekly or bimonthly report helps the program manager make necessary modifications to the program by being able to identify program deficiencies early.

The preliminary results of the Palo Alto Weatherization Program are discussed in Section 4 of this report.

PART III - MATERIALS DEVELOPED FOR THE PALO ALTO PROGRAM

Part III represents an extensive effort in the development stages of Palo Alto's Weatherization Program. Samples of various materials are illustrated in this section including program flow charts, internal procedures, training schedules, legal forms and contracts, specifications used in the City's bidding process, and samples from the do-it-yourself packet. Progress reports sent to Palo Alto's Council are also included. Much of this section will easily be adapted to fit into other NCPA conservation programs as part of a centralized educational outreach effort.

staff report

REPORT SENT TO PALO ALTO CITY COUNCIL
REQUESTING COUNCIL APPROVAL OF PROGRAM

-40-

Although this report
is included in the
February 2 packet, it
will be on the
February 13 agenda.

February 2, 1978

THE HONORABLE CITY COUNCIL
Palo Alto, California

Home-Weatherization Program

Members of the Council:

This report provides the details of a proposed Home-Weatherization Program and contains the recommendation that Council approve the program as described and the establishment of a conservation account in the Utilities funds to invest in upgrading the energy efficiency of Palo Alto residences. The conservation account would provide a source of funds to finance the installation of attic insulation by local contractors and would be repaid through a utility bill pay-back mechanism.

Summary and Conclusions

The Weatherization Program has been designed to achieve the long-range goal of upgrading existing Palo Alto residences to approach today's standards for energy efficiency in new construction. Achieving this goal requires a program that actively promotes and financially supports the cost-effective, but capital-intensive energy conservation modifications which can be made. The proposed program will accomplish this by providing residents with positive incentives to "retrofit" their homes. These incentives are in the form of a new utility service which includes:

- . A comprehensive home-energy conservation survey available to all residential customers which will concentrate on identifying energy inefficiencies in the home and cost-effective means of correcting them.
- . Do-It-Yourself information packets covering home-energy conservation measures such as insulation, weatherstripping, water heater insulation, duct insulation, caulking, and relighting the furnace pilot light.
- . An insulation option which will provide a quality-assured insulation installation by local contractors with payback through the utility billing system.
- . Certification of completed insulation installations which meet City criteria for safety and quality.

Page Two

It is estimated that the implementation of this program would result in insulation of 600 homes per year through the utility bill payback option, and another 600 by Do-It-Yourselfers. Assuming that the program continues at the same rate for five years, energy savings of over two million therms per year will be realized. Dollar savings of approximately \$400,000 per year through lower utility bills will be achieved by the participating homeowners.

The additional costs of implementing and operating this program will be covered by a federal grant received by the State Energy Commission and the Northern California Power Agency, and by an extra charge of about 2¢ per square foot of insulation installed. An allocation of approximately \$100,000 placed in a conservation account will be necessary to provide for the contractor payments and utility bill payback mechanism. This money can be considered as an investment of City funds in conservation which will be repaid in full upon completion of the program. The anticipated expenses, as well as further details on the program mechanism and expected results, are explained in the body of this report.

This project is categorically exempt under Class 7 of the categories exempt in the Palo Alto Municipal Code, Title 11, and does not require action on an environmental impact assessment.

Why a Weatherization Program?

"Weatherizing" a home - by caulking, weatherstripping, and installing ceiling insulation - is the single most effective energy conservation step that can be taken to save energy in existing houses. Insulation installed in attics to "R-19" heat resistance value can reduce heat loss in a home up to 25 percent. According to a recent survey by the Conservation program, approximately 40 percent of the homes in Palo Alto are uninsulated. This represents a potential savings of 2,646,000 therms per year, or enough natural gas to heat 2800 average insulated homes for a year, or about 7 percent of total gas usage in Palo Alto. Nevertheless, for the individual homeowner, taking action to weatherize requires the knowledge that weatherization is a good investment, physical and psychological effort, capital, and the assurance that an effective, quality installation will be done.

Recognizing the magnitude of this problem, both the federal and state governments have been attempting to promote insulation through tax incentive legislation for homeowners*, establishment of insulation installation and financing as a function of utility companies, and free insulation for low-income homeowners. The

*As of the date of this report, the federal and state legislation has not passed. When and if it does, its provisions will be incorporated into the City's program.

Page Three

California Public Utilities Commission is requiring the private utilities under its jurisdiction to develop insulation programs, including installation and financing. Major utilities such as Pacific Gas and Electric Company, Southern California Gas Company, Sacramento Municipal Utility District, Seattle City Light, the Salt River Project in Arizona, and Michigan Consolidated Gas have all developed such programs. The proposed Palo Alto program incorporates and enhances on aspects of each of these utility programs, and will augment any tax incentives provided by the state and federal legislation mentioned above.

The establishment of a home-weatherization program is also in line with the recommendation of the Citizens Committee to Consider Long-Term Power Supply Alternatives that Palo Alto actively promote an effective conservation program in the residential sector. The proposed program would implement this recommendation.

Program Description

The Weatherization Program is designed to help make homes more energy efficient. Its components are: a home-consultation service, a "Do-It-Yourself" packet about weatherization, insulation installations by outside contractors, low-cost City financing of contractor-installed insulation with utility-bill payback, and inspection and certification of insulated homes. These components are shown in an attached flow chart (Exhibit A) as well as described below.

- Home-Consultation Service* - A home-energy consultant, when requested, will visit the customer's home and perform a walk-through energy survey in which energy inefficiencies are checked, including insulation levels, air infiltration, and furnace and duct problems. Uses of water and electricity are also examined. Since it is expected that 20 percent of the consultations will result in participation in the insulation program, the consultations will also include the measurements and specifications for proper insulation installation. Exhibit B is a copy of the form used in doing a survey. The potential conservation measures will later be developed into recommendations through calculations based on the customer's actual utility history. The resulting recommendations will describe energy and cost savings and payback period for implementation and will be sent to the resident in a folder with related backup information. This will allow the customer to decide which measure(s) is the most cost-effective to implement. Typical recommendations are shown in Exhibit C.

*This aspect of the program is already being performed by a utilities customer serviceperson. To handle the additional load, a part-time temporary energy consultant will be hired. Both will receive extensive training in insulation prior to program implementation.

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- . Do-It-Yourself Packet - For the many people who might be interested in "weatherizing" their homes but who would prefer to do the work themselves, the Utilities Department will provide a "Do-It-Yourself" packet which explains the different types of insulation available, how to install it, tips on weatherstripping and caulking, etc. At the time of the home-consultation visit, the home-energy consultant will offer a copy of this packet to those interested. Copies will also be available at libraries, community centers, and other public facilities, as well as to anyone upon request.
- . Insulation Installations by Outside Contractors - Homeowners requesting this service will receive a City inspection of their insulation requirements. The inspector will determine the amount of insulation required to bring the ceiling up to R-19, the cost of the installation, and other specifications for the contractor to meet in the installation. The homeowner will then be given the option of signing a contract authorizing the installation and the billing on his or her monthly utility bill. If the homeowner's credit rating is satisfactory, the City will subsequently notify the contractor to arrange a date for the installation. Upon completion of the job, the contractor will submit an invoice to the City, along with a signed acceptance of the job by the homeowner, at which point the City will pay the contractor. The next utility bill will include the monthly payment stipulated in the homeowner's contract. A draft homeowner's contract is attached as Exhibit D.

Insulation contractors will be invited to participate in the program through the City bidding process and a contract will be awarded to the lowest responsible bidders as prescribed in Section 2.30.090 of the Municipal Code. (A draft contract is attached as Exhibit E). In order to encourage more local and small companies to participate, the bid invitations will be sent to companies located in the area between Sunnyvale and Redwood City. However, qualified contractors from outside this radius will be included on request. In order to assure quality control, a set of stringent requirements for the participating contractors will be applied. These requirements include bondability, insurance coverage, prior approval of materials to be used, conformance to City specifications, and a background check of past experience, previous names used by the company, bankruptcy history, and previous installations. All insulation materials used must be tested and approved by the Underwriter's Laboratory, as well as approved by the Electric and Gas Industries Association. We will inspect at least one job performed by each participating contractor and any homes for which a major complaint is received. Cause for deletion of a contractor from the program would include the following:

- the use of nonapproved materials in installations
- consistent complaints about the insulation jobs
- poor workmanship
- failure to follow the signed contract

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Utility Financing of Insulation Installations - Insulation installations done under the Weatherization Program mechanism may be financed through the City with payback on the utility billing system. Interest rates for the loans will be set at 1 percent above prime, not to exceed 8 percent, which would approximate the same rate of return we would otherwise gain on our general investments, as well as cover administrative carrying costs. Details of the financing package are described below:

- Legal Precautions: The appropriate legal forms prepared by the City Attorney's Office will be supplied to the applicant, including Truth-In-Lending Disclosure Statements and Right of Recission Notices.
- Eligibility: The Utility credit rating system will be used to determine eligibility of a homeowner who requests a loan. Applicants with bad histories of payments will not qualify. Tenants wishing to participate must have their landlord sign the contract also.
- Loan Size and Financing Means: For a typical Palo Alto house of 1500 square feet, insulation to R-19 standard would cost about \$450. Staff consulted with local banks in the area and it was found that generally banks are not interested in financing such small amounts. It is suggested that the City set a limit of \$550 for the loan. It is hoped that by setting a maximum loan of \$550 more homeowners will be able to take advantage of the money available for this purpose. If a very large house requires an amount higher than this limit, a down payment of the difference may be made.
- Payment Options: Four payment options would be offered:
 - immediate cash payment upon completion of installation
 - pay off the balance the first billing period after installation is complete with no finance charge
 - pay off the balance in two equal monthly installments with no finance charge
 - pay off the balance in up to 60 months with an annual finance charge of prime rate plus 1 percent interest, not to exceed 8 percent.

The fourth option will allow more low-income homeowners to participate since the added insulation charge would be offset by the decrease in the bill resulting from the insulation. Low-income residents will also be referred to the Citizens Home Energy Conservation Project of Santa Clara County to determine eligibility for its free insulation program.

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- Nonpayment Problems: City staff is proposing to offer residents an unsecured loan, which would not require collateral. It is hoped that by making simple and uncomplicated loans available, more people will take advantage of the opportunity. All other utilities conducting similar programs have indicated that nonpayment is not a big problem. Typically, less than 1 percent do not pay, which is consistent with a bank official's statement that homeowners making home improvements are good risks. This fact, coupled with the use of the utility credit rating system as a qualifying factor, should minimize the nonpayment risk. All loans will be due to be paid in full upon sale of the house.

- . Certification of Weatherized Homes - All homeowners who have completed insulation of their homes, either through the City program or on their own, will be able to request inspection and certification of the installation. The certification will be displayed in the home as it is now for new homes, and will be useful to the homeowner for tax credits when and if they are passed and for increased value at resale.

Benefits

The proposed weatherization program will benefit both the homeowner and the City. Palo Alto residents who participate in the program rather than insulate on their own will benefit in several ways:

- . The homeowner will know that he or she is obtaining a quality insulation job performed by a contractor who has demonstrated reliability to the City, and who has agreed to follow the stringent standards demanded by the program.
- . Homeowners will pay a price which has been obtained through the City's bidding procedure (plus 2c per square foot added to cover administrative costs), a price which is expected to be lower than a contractor could otherwise offer an individual homeowner.
- . The City will be able to provide a loan at a lower interest rate than would be available elsewhere.
- . Since the City has access to specific utility usage histories, the customer will be in a position to receive sound advice with respect to cost effectiveness of conservation measures.
- . By participating in the weatherization program, the customer will only have to deal with one trustworthy entity. The need for the homeowner to obtain several estimates, to check contractor reliability, insurance requirements, etc., and to arrange financing, will be eliminated. Consequently, much time and frustration will be saved.

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Beyond these benefits to the homeowner, the City will benefit as a whole by establishing a weatherization program. Every kilowatthour or therm saved now means less money the City will have to spend to purchase these units. Energy supplies are dwindling and the locations of future sources are doubtful. To find new sources of electricity and gas will be considerably more expensive than saving these sources for future needs. The fact that the City already has a built-in mechanism to handle such a program (from the home-energy consultant down to the billing process), plus the fact that the program will be selfsustaining financially, demonstrates that the City cannot afford to pass up this opportunity to save our precious energy resources.

Program Costs and Revenue

While the total yearly operating costs of the program will be \$34,000 for personnel and \$10,000 for materials, almost half of the costs are already budgeted and the rest will be offset by revenues from the insulation installations and grant monies as described below.

- . Of the yearly personnel costs, \$21,000 is available in the adopted 1977-78 budget for currently filled positions. Because we are now entering a phase of program implementation rather than program development, these personnel can now be redirected to focus on the weatherization program.
- . From \$15,000 to \$18,000 will be generated by adding two cents per square foot of installed insulation to the contractors' bid price. The total cost to the homeowner for the installation will still be at or below market price because the City will solicit bids based on eliminating the contractors' sales efforts.
- . Grant monies have been received by the California Energy Resources Conservation and Development Commission and Northern California Power Agency (NCPA) from the Federal Energy Administration (now part of the Department of Energy) for a five-year residential energy conservation program for five of the NCPA member utilities. NCPA has agreed to pay \$14,000 of yearly salaries and many of the start-up costs for the weatherization program (approximately \$5,000). The attached contract (Exhibit F) was approved by NCPA on January 27, 1978. A supplemental contract between NCPA and the City of Palo Alto will be submitted to Council for approval when it is received.
- . Covering the start-up and operating costs of the program for the remainder of this fiscal year will require a budget amendment of \$13,000 for the temporary salaries of the home-energy consultant and clerical backup, computer programming and materials. The NCPA grant monies mentioned above will reimburse these costs entirely. The rest of the funds needed for the next five months have already been budgeted in anticipation of this program.

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A conservation account of \$100,000 will be necessary for the 600 insulation contracts per year.* This account is expected to be selfsustaining since it will be replenished as loans are repaid. Setting the interest rate at 1 percent above prime will bring in an additional \$1,000 over our usual rate of return. This will offset some of the administrative costs of financing and bad debts.

Expected Effect

It is expected that in the first year of operation, the program will result in 600 home insulation installation contracts. If the program continues at the same level for the next five years, a 5 percent decrease in overall single-family residential gas consumption will result, or an equivalent of almost one million therms. This represents almost \$200,000 in annual savings to participating Palo Alto residents after the cost of the installation has been repaid, or almost \$1.3 million over the 20-year life¹ of the insulation. It is expected that the home consultations will result in additional savings of natural gas and electricity through the other conservation recommendations made. The actual amount of these potential additional reductions cannot be determined reliably. Nevertheless, the spill-over effect of publicity given to insulation as well as the many do-it yourself installations expected, should result in at least double the savings reported above, according to the experience of other utility companies.

Next Steps

The proposed weatherization program will be evaluated in approximately six months when sufficient data will be available to judge its effectiveness. At that time staff may recommend expansion of the program to include the following provisions:

- . insulation for small businesses and commercial establishments;
- . insulation financing for wall insulation;
- . more homes than the proposed 600 per year;
- . increased limits of the loans so that people with homes that are extremely expensive to insulate (such as Eichlers) could take advantage of the financing option;
- . training of all customer servicepersons to do home consultations;

*This assumes that 200 contracts will request utility financing. The \$100,000 would be sufficient to meet cash flow needs for about one year. An additional \$100,000 will be necessary to assure adequate reserves for cash flow during the second and third years and by the end of the fifth year, the full \$200,000 plus interest and less bad debts will have been returned to the account.

- . extension of the program mechanism to include installation of other energy-efficient devices;
- . "Gold Star" certification of homes which have been retrofitted to be "super" energy efficient.

Recommendation

The Council action needed to implement the proposed program is summarized as follows:

- . Approve the establishment of a weatherization program as described in this staff report, which would include a home-consultation service, a "Do-It-Yourself" packet, insulation installations by qualified contractors, low-cost City financing for insulation jobs with utility-bill payback, and inspection and certification of insulated homes.
- . Authorize the establishment of a \$100,000 conservation account in the utilities funds to be appropriated from the Electric Fund Reserve for Plant Improvement. This account would be used to pay the insulation contractors for the insulation installation while allowing homeowners to repay the City (and the account) through their utility bill.
- . Approve the attached budget amendment of \$13,000 to cover the program start-up costs and first six months of operation costs.

Respectfully submitted,

Connie Smyser

CONNIE SMYSER

Resource Conservation Program Manager

Edward K. Aghjayan

EDWARD K. AGHJAYAN

Director of Utilities

Charles E. Walker

CHARLES E. WALKER

Acting City Manager

staff report

March 23, 1978

THE HONORABLE CITY COUNCIL
Palo Alto, California

Weatherization Program - Progress to Date and Implementation Timetable

Members of the Council:

This report provides Council with details on the activity to date since Council approval of the Home Weatherization Program. It also contains the expected timetable for full implementation. This report is for information purposes, and no Council action is required.

Background

On February 21, 1978, Council approved the establishment of a Home Weatherization Program as described in CMR:141:8, authorized a \$100,000 conservation account in the utilities funds to be appropriated from the Electric Fund Reserve, and approved a budget amendment of \$13,000 to cover the program start-up costs and first six months of operating costs. An amendment was also added which would terminate the program January 1, 1979, unless specifically renewed by Council. Publicity about the program since program approval has resulted in considerable citizen interest to take part in the program.

Progress to Date

Progress to date has focused on those aspects with the longest lead times to implement - the insulation contractor bidding process, the NCPA/City contract, and the home inspection/consultation process. The following points summarize chronologically the activities accomplished within these areas:

- Contractor selection process - Bid specifications for the insulation installations have been prepared and were sent out March 2, 1978, to interested insulation contractors. The return date for Minority Employment Program submittal was March 15, and completed bids were opened March 22.
- Contracts for grant funding - The contract between NCPA and the State Energy Commission has been approved and signed by both parties. Subsequent to Council approval of the program, the subcontract between NCPA and the City of Palo Alto, which formally establishes the City of Palo Alto as the NCPA subcontractor responsible for implementing the Home Weatherization Program for Palo Alto, was drafted as outlined in CMR:141:8. This contract provides for \$14,000 to hire personnel for the program and for an additional \$6,000 in start-up costs. Allowable start-up costs are stipulated in the contract and include programming, postage, materials, drafting, etc. The contract still needs formal approval by the NCPA Commission and the Palo Alto City Council.

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- Home consultation preparation - Two part-time casuals, one Customer Service person, and the Program Assistant, have been trained to do home consultations. Training for these people has been accomplished through use of Sacramento Municipal Utility District and State Energy Commission trainers. The consultants are now qualified to provide energy-conservation recommendations and to inspect and measure for insulation installations and quality control.
- Internal procedures - All City personnel who will be involved in program operation have been identified and internal procedures, such as credit checking and contract processing, have been devised. Data-collection needs for program management and reporting have been identified for incorporation in the internal procedures. Computer reprogramming for the new billing mechanism is about half completed. The homeowner/City insulation contract has been changed to include a hold-harmless clause according to Council directive.
- "Do-It-Yourself" information and certification - A "Do-It-Yourself" information kit and certificate of insulation has been prepared and is ready for printing. Other materials related to this packet have been ordered.

Financing

On the basis of Council action on March 21, 1978, staff has prepared a solicitation to be sent to lending institutions requesting proposals for financing the homeowner loans with private funds. A copy of that letter is attached. We are asking for expressions of interest within a week to ten days, and a formal proposal in four weeks. Staff will evaluate the proposals and report back to Council by the end of April.

In the interim, on the basis of Council direction given on February 21, 1978, staff is proceeding with the financing plan as outlined in CMR:141:8. Approximately \$1,500 has already been expended in this regard, primarily for computer programming and bill stuffers. Another \$800 to \$900 will be expended to complete the contract work and programming. In the event the City elects to switch to a bank financing plan, depending upon the details of the plan, an additional \$1,000 to \$1,200 for administrative expenses will be required to make the transition. Most of this is for new bill stuffers and staff time. These numbers are rough estimates at best, but based on them there does not appear to be a major economic problem in making a mid-stream change to a private financing arrangement.

Next Steps

In order to have maximum program operation time prior to Council evaluation of the program in December, 1978, staff has prepared the attached timetable for completion of the program's start-up phase. The following points describe the activities remaining prior to the first insulation installation.

- Bid analysis and award - Staff will analyze the bids received and prepare a recommendation for Council approval of the bid award in early April. A fifteen-day waiting period is then required for bonds and insurance to be submitted by the successful bidders.

- . NCPA/City contract - The contract will be presented to the NCPA Commission on March 30, and to the Palo Alto City Council on April 10.
- . Home consultation notebooks - Home consultation notebooks will be prepared during the remaining start-up phase. The notebooks will contain a comprehensive survey procedure and checklist of home energy-conservation measures, savings calculation sheets, illustrative samples and pictures of energy-conserving devices and measures, and related reference materials.
- . Publicity - The primary mode of program publicity will be utility-bill inserts. The first insert will be in the April bill. If insufficient response is generated, special bill-return envelopes, door hangers, and advertisements will be used.
- . Miscellaneous - Also scheduled during the remaining start-up phase:
 - The "Do-It-Yourself" information will be printed.
 - Computer reprogramming will be completed.
 - Internal procedures will be finalized.

Conclusions

It is projected that the first insulation installation will occur in mid-May, 1978, if all goes according to schedule. This will allow approximately six months' operating time prior to the mandated Council review of the program. Further progress will be reported when the contractors' bid award and the NCPA/City contract are submitted to Council in early April. Staff will report its findings on private financing alternatives to the Council at the end of April.

Respectfully submitted,

Connie Smyser

CONNIE SMYSER
Resource Conservation Program Manager

Under the Approval of:

Edward K. Aghjayan

EDWARD K. AGHJAYAN
Director of Utilities

Charles E. Walker

CHARLES E. WALKER
Acting City Manager

Attachments

CMR:211:8

City of Palo Alto

CALIFORNIA
94301

-52-

March 22, 1978

To: Lending Institutions in the Palo Alto Area:

The City of Palo Alto would like to offer you the opportunity to participate in a unique, new utility conservation service - a Home-Weatherization Program. The program is designed to offer incentives to homeowners to "weatherize" their homes. The program will include a "Do-It-Yourself" information packet about weatherization, a home-consultation service, and an option for homeowners to install attic insulation with low-interest loans.

As the program is presently approved, the City will contract with subcontractors to install the insulation and with the homeowner to authorize the installation. Upon completion and acceptance of the work by the homeowner, the City will issue payment to the contractor. The City Council has asked that the staff investigate using existing financial lending institutions, if possible, as the means to finance these loans. Therefore, we are inviting your institution to submit an informal proposal based on the parameters of the program described below. We are open to innovative approaches and would be happy to discuss any ideas you might have regarding the loan procedure.

About 600 insulation contracts would be required the first year (out of a five-year program) ranging from \$250 to \$500. We are currently proposing to offer to the homeowner the following payment options:

- . payment upon completion of work (estimate 40/year)
- . 30 day with no interest or finance charge (estimate 60/year)
- . 60 day with no interest or finance charge (estimate 300/year)
- . One year up to 60 months payback with as low an interest rate as possible (estimate 200/year)

The City may be willing to guarantee the loans and we are open to discussing a variety of proposals that would have the impact of lowering the interest rate. The City would screen applicants and determine program and loan eligibility based on their utility credit-rating history. At a later point in the program the City may encourage homeowners to insulate walls, which would require loans in a larger amount. Thus, the plan should have the option or capability of expanding to meet reasonable needs in addition to the totals suggested above.

Page two

We would appreciate an informal discussion with you regarding your interest within one week to ten days, and a written proposal by April 19, if feasible. Please direct your discussion to Connie Smyser, Resource Conservation Program Manager, 250 Hamilton Avenue, Palo Alto, California, 94301, 329-2268.

Sincerely,

A handwritten signature in cursive script, appearing to read "Edward K. Agajyan".

EDWARD K. AGHAJAN
Director of Utilities

staff report

December 14, 1978

THE HONORABLE CITY COUNCIL
Palo Alto, California

Home Weatherization Program - Six-Month Review

Members of the Council:

This report analyzes the home weatherization program according to Council directive. After six months the program is operating satisfactorily. Staff recommends not only that the program be continued, but also that it be enhanced with certain additions in the scope of services to be funded by an extension in grant funding and an increase in user charges. The recommended Council action is summarized below. The balance of this report contains an evaluation of the weatherization program.

Summary of Recommended Council Action

It is recommended that Council take the following action:

- . Approve the continuation of the program with the modifications described herein.
- . Approve the attached amendment to the Northern California Power Agency (NCPA)/City contract which will allow a six-month time extension and \$15,000 additional grant funding.
- . Approve the attached budget amendment to the Utilities Department Resource Conservation subprogram to increase revenues and expenditures \$15,000 for fiscal year 1978-79.

Background

As part of the resource conservation program goal of upgrading the energy efficiency of Palo Alto residences, a new utility service called the home weatherization program was developed to reach 6,000 residences over five years and was presented to Council in CMR:141:8. On February 2, 1978, Council approved the program with a "sunset" provision which automatically ended the program on December 31, 1978, unless renewed by Council. The program was designed to provide positive conservation incentives through such features as comprehensive analysis of home energy use, "do-it-yourself" packets, and attic insulation installations with utility bill payback at low interest. Partial funding of \$20,000 was provided from a Federal grant received by the State Energy Commission and the Northern California Power Agency. Additional revenues of about \$30.00 for every house insulated through the program provided the balance of the funding. Because of concerns over interference with the private sector and uncertainties about national energy legislation, Council directed staff to evaluate the program

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after six months and return to Council with recommendations prior to December 31, 1978, if continuation appeared desirable.

Progress to Date

A full breakdown of program results after six months can be found in the Weatherization Program Fact Sheet Attachment 1, while only the highlights will be mentioned here.

Implementation of the program occurred in accordance with the timetable outlined in a previous progress report, CMR:211:8. A later staff report, CMR:229:8 discussed the bids received for insulation installations. The first home visits and insulation installations began in May. In the ensuing six months, 520 home visits and 131 insulation installations have been made. Of those installing insulation through the program, about 49 percent chose the financing option. To date no defaults have occurred; although five contracts have had to be denied because of insufficient credit rating. To assure quality workmanship, over 20 percent of the insulation installations have been inspected for safety hazards and quality of insulation installed. The few minor deficiencies detected were corrected immediately by the contractor responsible. Do-it-yourself kits also proved to be popular; over 500 requests were filled.

Program Analysis

Analysis of the program as a whole can be most easily accomplished by first examining its components.

- . Response to the program - Modest publicity, through a utility-bill stuffer and a special return envelope, has generated over 1,000 requests for either a full home survey or an attic inspection. This enthusiastic response was greater than anticipated based upon the response to other major utilities' programs and, thus, could not be handled by the field staff allocated to the current program. There is still a backlog of over 500 surveys.
- . Effectiveness of the home consultation and insulation service
 - The value of the home visit and resultant recommendations was analyzed by calling program participants who had surveys, but not insulation. One month after the survey, an average of 65 therms or \$16.00 per year (based on calculations) was being achieved. The most popular measures were the ones easiest to implement such as turning off the pilot light in summer, unplugging the instant-on TV, and reducing thermostat settings both daytime and nighttime. A six-month callback is expected to indicate greater results since there will have been more time to implement the more costly, difficult, but effective measures. The home energy consultants have been advised to stress implementation of all cost-effective conservation techniques in addition to insulation.
 - Each house insulated through the program will have an average calculated annual savings of 185 therms or \$46.00. The actual savings resulting in homes receiving insulation installations will not be available until after this winter's heating season is over. At that time a paired comparison of insulated and uninsulated houses will be done.

- The value and effect of the insulation financing option and utility bill payback can be illustrated by comparison with other similar programs. Approximately 49 percent of the installations in Palo Alto's program were financed. Two other major utility programs have experienced only 30 percent of the participants opting for financing. Furthermore, the average length of loan is thirty-three months, indicating that the option is filling a gap in the need for long-term low-cost financing of small amounts. No complaints have been received from private lenders.
- Since insulation of the ceiling is one of the most cost-effective measures which can be taken, it is an important program goal that the maximum number of insulatable homes are insulated. The cumulative percentage of insulatable homes which were insulated through the program now stands at approximately 50 percent. Initial low percentages for eligible houses indicated that the home energy consultants lacked knowledge of effective marketing techniques. Sales training was provided with a resultant rise in participation.
- Effectiveness of the do-it-yourself packet - A telephone survey of recipients has shown an average of 35 therms, or \$8.75 per year savings. This saving more than justifies the cost of \$1.50 per kit (including staff development time, materials, printing, and postage).
- Effectiveness of the program in reaching all residences in Palo Alto - A map of surveys and installations done through the program shows even distribution throughout Palo Alto. However, there are two major housing groups which are not being adequately serviced in the program as presently structured - houses with combinations of uninsulated open-beam ceilings, large window areas and slab heating systems; and houses occupied by renters.
- Open-beam ceiling houses. These houses were built at the height of the era when energy was considered cheap and plentiful. They typically use more energy than the average Palo Alto house and are more expensive and difficult to service with conventional conservation measures. While a number of specialized recommendations have been developed for these homes, they can not be insulated through the program because they do not have attics.
- Rented houses are a problem because few landlords or renters are sufficiently motivated to invest in capital expenditures for rental property. Even though the program is open to renters, only four insulation installations were sold to renters in the six-month period.
- Cost of program vs. effectiveness - Each survey presently costs approximately \$30.00, including all personnel and materials involved in the program. Since each insulation installation generates on the average \$30.00, the program pays for itself. Homes surveyed which have implemented measures other than insulation installation are saving on the average at least 65 therms, or \$16.00, or a two-year payback through savings of energy. (Grant funding covered the program start-up costs in return for development of program aspects which are transferable to other NCPA cities).

Effectiveness in reaching program goals - Approximately one-half of the projected number of site visits and insulation installations were completed. While inexperience could account for some of the shortfall, it has become evident that a less ambitious goal must be set for the remainder of the program. Analysis has shown that calculations, making appointments, and record keeping is twice as time consuming as originally projected. Re-arrangement of personnel to consolidate calculations and appointment-making is presently easing this problem, but a long-term solution is proposed later in the "Next Steps" section.

The enthusiastic response to and positive results of this new residential conservation service are surprising since it was begun during the spring and summer, a low point in concern for conservation measures which involve primarily heating energy usage. It is even more remarkable since passage of major energy-conservation tax-credit legislation, the National Energy Act (NEA), was still uncertain during this time period. Staff has closely monitored all aspects of the service in order to ensure the effectiveness of the program, and action has been taken where necessary for improvement.

Grant Funding Continuation

The NCPA Commission and the State Energy Commission have approved a six-month extension of time and an increase of \$15,000 in grant funding. The increase was provided to help reduce the backlog of requests for energy surveys, to expand training for other customer service persons, and to assist in the field training for energy specialists to be hired for other NCPA cities. If Council approves continuation of the program, approval of a budget amendment and an amendment to the NCPA/City contract (both attached) will be necessary to accomplish the extension.

National Energy Act

The National Energy Act has finally passed Congress and was signed by President Carter on November 9, 1978. The full details and impact of this Act on Palo Alto utilities will be reported in a future staff report. However, the implications for the home weatherization program will be summarized here. Because Palo Alto had a home-inspection service in operation on the date of the Act's enactment, the program as it is presently structured will be "grandfathered". However, certain additions to the program will be required by the 1980-81 budget:

- . Arrangements for installation of all suggested conservation measures based on Federal standards.
- . Arrangements for loans for the above installations.
- . Utility-bill payback for any loans arranged.

For all loans (except for ceiling insulation) the program will be limited to less than \$300.00; larger loans will have to be arranged through private financing. The full impact and workload caused by these requirements will not be known

until standards, rules, and regulations are developed by the Department of Energy within the next six months. However, continuance of the existing program will certainly be the easiest and least expensive way for Palo Alto to comply with the Act.

Next Steps

If Council approves continuation of the program, several steps will be taken to improve the operation and financing of the program as well as to prepare for compliance with the National Energy Act.

- . Elimination of casual staff performing home visits and calculations. In the next six months all customer service persons will be trained to handle home consultations, and the calculations and recommendation procedure will be computerized. Part of the continuation grant funding will be used to accomplish this. The workload caused by this change will necessitate an additional customer service person beginning with the 1979-80 fiscal year. Consideration of this addition can be handled through the budget process.
- . Increase the insulation charge per square foot from 2¢ to 4¢. Increasing the square footage charge will provide revenue for ongoing publicity and replacement of materials used in the program as well as cover the costs of computerizing calculations. It will also provide a better margin in case bad debts are incurred. This increase will still enable us to offer a price that is several cents per square foot below current market prices for installed insulation.
- . Augment the service to houses not insulatable under the present program. This will be accomplished in several ways. A series of workshops will be given covering the special conservation problems encountered in these houses. Local banks will be approached to provide a conservation loan package at low interest to program participants.
- . Develop an additional service of installation of water heater insulation "blankets" at cost (if allowable under the NEA). Since water heating generally consumes the second largest amount of energy in the home and it is cost-effective and easy to reduce consumption with water heater insulation, an effective and positive addition to the program would be installation of the blankets by a customer service person. This would add about 15 minutes to a survey and would result in average savings of 210 therms and a net of \$43.00 over the life of the water heater.
- . Explore methods of motivating renters and/or landlords to implement cost-effective conservation measures.

Conclusions and Recommendations

The overall results of the program can be seen to be very positive. The popularity of many aspects of the service and the sizable backlog are indications of the need for the program to continue. The cost-effectiveness of the program and extension of grant funding for another six months further urge continuance.

Finally, the present program, with some modifications, would comply with the requirements of the National Energy Act. Therefore, it is recommended that Council take the following action:

- . Approve the continuation of the program with the modifications described herein.
- . Approve the attached amendment to the NCPA/City contract which will allow a six-month time extension and \$15,000 additional grant funding.
- . Approve the attached budget amendment to the Utilities Department Resource Conservation subprogram to increase revenues and expenditures \$15,000 for fiscal year 1978-79.

Respectfully submitted,

CONNIE SMYSER
Resource Conservation Program Manager

Under the Approval of:

EDWARD K. AGHAJAN
Director of Utilities

GEORGE A. SIPEL
City Manager

Attachments

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Weatherization Program Fact Sheet

Do-it-yourself kits requested		500
Survey requests received		1,000
Surveys completed		520
Attic inspection only	28%	
Survey only	30%	
Attic inspection and survey	42%	
Rental units	3%	
Owner-occupied units	97%	
Insulation installations performed		131 (\$41,455)
Percent of insulatable houses participating		46%
Average cost of installation		\$316
Average size of house insulated		1,252 sq. ft.
Type of insulation chosen:		
Cellulose R-11	5%	
Cellulose R-19	56%	
Fiberglass R-11	2%	
Fiberglass R-19	4%	
Rockwool R-11	0%	
Rockwool R-19	3%	
Type of payment chosen:		
Cash, 30, or 60 days	51%	
Financed	49%	
Credit denials	5	
Average length of loan		33 months
Average loan		\$310
Total amount financed through program		\$19,871

MUNICIPAL UTILITIES
**home weatherization
program**

Weatherization Program Flow Chart

PROGRAM MECHANISM - TIMETABLE

Timetable for Weatherization Program Implementation

* - Task Completed

PROGRAM MECHANISM - FORMS USED
FOR HOME ENERGY SURVEYS

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Date of Survey: _____

HEC: _____

Time: _____

CITY OF PALO ALTO UTILITIES DEPARTMENT
HOME CONSULTATION SURVEY

Name: _____

Address: _____

Account No. _____

Phone No. _____

1. House Flat Apartment Other
2. Square Feet _____
3. Age: _____ years
4. Brick Stucco Frame Masonry Other _____
5. Number of bathrooms: _____
6. Owner Renter Lessee
7. Number of residents _____
8. Number of Therms used per year: _____
9. Number of Therms used per square feet: _____
10. Number of Kilowatts used per year: _____
11. Number of Kilowatts used per person per year: _____

HOME CONSULTATION CHECK LIST
ALL QUESTIONS ARE BASED UPON PRE-INSPECTION CONDITIONS

HEAT AND HEAT LOSSES

Insulation

___ yes ___ no ___ don't
know

Are walls insulated?

R-value of insulation _____
don't know _____

___ yes ___ no

Is attic insulated?

Increasing from R-0 to
R-19
SAVE: 25% of heating costs

R-value of insulation _____
Type/inches _____

_____ inches

Lowest clearance for insulation?

_____ inches _____ Lots
of room

Inches clearance for installers?

(30 inches minimum needed.)

Indicate on contract:

Nail pops? (If any, list rooms)

Recessed lighting?

Soffits? With screens?

If owner is going to insulate,
advise them of possible problems
if they have the following:
wiring in attic for stereo,
etc., insulating soffits with
screens; explain about options
when insulating

Furnace

___ gas

___ electric

___ BTU's/hr. ___ don't know

___ kwh ___ don't know

___ number of wall
furnaces;
location(s) ___

___ number of electric wall
furnaces;
location(s) ___

___ number of floor
furnaces;
location(s) ___

___ number of baseboard or
space heaters;
location(s) ___

___ radiant heat-floor

___ radiant heat, wall

___ forced-air, ceiling
or upper wall vents

___ radiant heat, ceiling

___ forced-air, floor
or lower wall vents

___ forced-air, ceiling or
upper wall vents

___ gravity flow

___ forced-air, floor or
lower wall vents

___ other (specify)

___ heat pump (tell Connie)

___ other (specify)

Furnace pilot(s)

* ___ yes ___ no

Is heat ever used in summer months?

* ___ yes ___ no ___ heat used

If heat isn't used in summer, ask:

Is pilot turned off in summer?

Turn off pilot light.
SAVE: as much as \$9.50
per summer (depends
on size of pilot)

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Ducts

___ yes ___ no ___ no
ducts

Are ducts insulated?

Insulate ducts
SAVE: 10% of heating
costs

___ yes ___ no ___ no
vents;
(registers)

Are all vents (registers)
clear of obstructions?Filters and Miscellaneous

___ yes ___ no

Does furnace have a filter?

___ times per year;
___ no filter

How often is the filter cleaned
or replaced during the heating
season?

___ yes ___ no ___ no
burners
don't
know

Are burners adjusted?

___ yes ___ no ___ no
belts
don't
know

Are belts adjusted?

Thermostat setting during
heating season

___ degrees ___ off ___ N/A

Daytime thermostat setting?
If off, how many hours per
day? _____

Reduce thermostat from
72° to 65°
SAVE: 25% of heating
costs

___ degrees ___ off ___ N/A

Nighttime thermostat setting?

Reducing thermostat 10°
at night
SAVES: 10% of heating
costs

If no thermostat, how often do
they usually turn on heat?

<p>* ☐ yes ☐ no ☐ some-times ☐ never empty</p>	<p>Is the house usually empty during the day?</p>	<p>Turn off heat when house is empty.</p>
<p>* ☐ yes ☐ no</p>	<p>Is the thermostat usually turned down or off when the house is empty?</p>	<p>SAVE: 15% of heating costs (if off 8 hrs/day, 5 day/week)</p>
<p>* ☐ yes ☐ no ☐ percent</p>	<p>Are there any rooms not used? If yes, what percentage of total floor space do they take up?</p>	<p>Close vents and doors of unused rooms. Close duct at furnace, if possible.</p>
<p>☐ yes ☐ no ☐ no ducts ☐ N/A</p>	<p>Are the ducts closed to these rooms?</p>	<p>SAVE: Percent of heating cost saved is about equal to the percent of floor area closed off.</p>
<p>☐ yes ☐ no ☐ N/A</p>	<p>Is it possible to turn off heat to the unoccupied rooms?</p>	

	<p>Air-conditioning</p>	
<p>* ☐ yes ☐ no</p>	<p>If no, skip to "insulation."</p>	
<p>* ☐ yes ☐ no</p>	<p>Central?</p>	
<p>* ☐ Degrees ☐ no thermostat ☐ number ☐ none</p>	<p>Thermostat setting in cooling season (check if summer). Window units?</p>	<p>Turn thermostat up from present degrees to 76°. SAVE: about 3% per degree of air-conditioning costs</p>
<p>* ☐ times ☐ no filter</p>	<p>How many times is the filter cleaned or replaced during the cooling season?</p>	

WEATHERSTRIPPING

Inches of weather-stripping needed	Number with fair weather-stripping	Number with poor weather-stripping	Location of door or window	Type of weather-stripping needed
------------------------------------	------------------------------------	------------------------------------	----------------------------	----------------------------------

CAULKING

Number in fair condition	Number in poor condition	Location of door or window	List locations of other sources of infiltration below (e.g., electric outlets).
--------------------------	--------------------------	----------------------------	---

___ gas ___ electric ___ other?
 _____ type?

___ hot ___ medium ___ warm
 _____ other

___ yes ___ no

___ yes ___ no

___ yes ___ no

___ yes ___ no

_____ gallonage

Water Heater

Temperature setting?

Do you ever partially drain
 water heater?

Do you ever have a scarcity
 of hot water?
 (If no, then recommend a
 lower temperature setting)

Does the water heater have
 extra insulation?

Clearance for insulation?

Total capacity

If electric, recommend
 solar.

Lowering temperature
 20° will
 SAVE: about \$3.00 a year-gas
 \$4.00 a year-electric

Insulate water heater to
 R-6, SAVE: \$4.50
 R-11, SAVE: \$5.50

APPLIANCE-(ROUGHLY BY ROOM)

Living Room

Fireplace?
 (If no, skip to "Television")

How often is fireplace used?

Fireplace damper closed when
 not in use? (Check)

Damper operation (check)

Gas furnace?

Does fireplace have pilot?

Close damper when not in
 use - SAVE: around 8% of
 yearly heating costs

Tell about gas use
 restrictions

___ # yes ___ no

___ # yes ___ # no ___ no TV

Television(s)?

Instant-on feature?
 Indicate if they already avoid
 using "instant-on" feature, and
 how: _____

Put "instant-on" TV on wall
 switch, or extension cord
 switch, or unplug
 SAVE: about \$1.00 to \$9.00
 per year, depending on th
 TV make

Kitchen

Cooking range (stove)

Ceramic plate burners?

Double oven?

Self-cleaning oven?

Do you ever make "oven meals?"

If yes, how often? _____

If gas:

electric ignite?

burner pilots off?

burner pilots off?

Mention: Oven or skillet meals save energy. Also, use right size pot or pan for the burner

Buy range with pilotless ignition.

SAVE: about \$7.50 per year
(40% of energy for
stove)

Turn off pilots and light with matches or flint.

SAVE: almost \$2.00 per pilot
per year (\$1.85)

Microwave oven/Radar oven

If yes:

how many times per week do you use it? What do you cook in it? (Record)

___ # of refrigerators

Refrigerators

Answer the following questions
about each refrigerator:

"y" = yes

"n" = no

Raise refrigerator temperat
to 40°. Raise Freezer tem-
perature to 0°.

___ #1 ___ #2 ___ #3

___ cu.ft. ___ cu.ft. ___ cu.ft.

___ ° ___ ° ___ °

___ don't know temperature

Clean coils, defrost and raise
thermostat.

SAVE: up to about \$4.00 per
year (depending on size
and type or refrigerator)

Bad gaskets?

Dirty coils?

Poor ventilation?

Near a heat source? (If yes,
describe)

Automatic defrost, instead of
manual?

Is there more than 1/4 inch of
frost build-up?

Humidity or "power-saver"
switch?

If yes, what position is it in?

Any "extra" features, i.e.,
ice cube dispenser? If yes, list:

Location of refrigerators:

#1 _____

#2 _____

#3 _____

Freezer

___yes ___no

If no, skip to "dishwasher" portion

___cu. ft. ___don't know

Size?

___upright ___chest

Type?

___yes ___no

Has added insulation on outside?

Add styrofoam insulation to outside of freezer.
SAVE: \$4.00 to \$6.00 per year (depending on size)

___yes ___no

If no, is there room for 2 inch clearance for insulation?

___yes ___no

Dishwasher

___yes ___no

Is it turned off for the drying cycle?

Air dry.
SAVE: 1/3 Kwh per load, about \$2.00 per year (\$1.86, if one load per day)

___yes ___no

Air dry option?

___yes ___no

Utility Room (or garage)

___yes ___no ___some-times

Washing machine; (if no, skip to "clothes dryer" portion)

Is machine run with full loads only?

Switch from hot wash/warm rinse to warm wash/cold rinse.
SAVE: \$5.40 per year (assumes 2 loads per week)

___cold ___warm ___hot

Most commonly used wash temperature?

___cold ___warm ___hot

Most commonly used rinse temperature?

___yes ___no

Water level control?

___yes ___no

Suds-saver option?

___# of loads per week

How many loads of wash do you do per week?

☐ gas ☐ electric ☐ none

Clothes Dryer

If no dryer, skip to "bedroom" portion

* ☐ yes ☐ no

Is lint trap/filter cleaned after each load

* ☐ yes ☐ no

Is dryer run with full loads only?

☐ yes ☐ no

Is there an automatic cycle?

* ☐ yes ☐ no ☐ no automatic cycle

Is automatic cycle used?

* ☐ yes ☐ no

Is an outside clothesline available for use in good weather?

* ☐ yes ☐ no ☐ some-times

Would you use one, if one was available (OR, if it is available, "Do you use it?")

Bedrooms

* ☐ yes ☐ no ☐ none

Is electric blanket used?

* ☐ yes ☐ no ☐ none

Waterbed heater?

Use foam mattress cover, turn off waterbed heater.
SAVE: about \$25.00 per year;
about \$2.00 per month.

HOUSEHOLD LIGHTING

_____ yes _____ no

Do you have any light(s) which
is/are left on for more than
four (4) hours per day?

Change incandescent
to fluorescent.

SAVE: 50% of lighting
costs

If yes, list: (Also list any other lighting recommendations)

<u>Location</u>	<u>Watts</u>	<u>Hours Per Day</u>	<u>Recommendation</u>		
			<u>Watt</u>	<u>Fluorescent</u>	<u>Timer</u>

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SWIMMING POOL

____ yes ____ no

____ gas ____ electric

____ solar ____ none

____ yes ____ no

____ hours per day

____ hours per day

____ hours per day

____ hours per day

____ watts ____ unknown

____ watts ____ unknown

If no, skip rest of pool questions.

Heater

Pool Cover?

Pump and filter time - summer

Pump and filter time - winter

Sweep time - summer

Sweep time - winter

Filter pump power

Pool sweep power

WATER

____ yes ____ no

Leaks?

List location of all leaks and estimate of water lost.

(Indicate if hot water)

Water Conservation

Low flow showerhead(s)?

____ # yes ____ # no ____ no shower(s)

Flow restrictors in shower(s)?

____ # yes ____ # no ____ no shower(s)

Indicate how many showers could use restrictors ____

Toilet tank water bottles or dams

Drip irrigation system?

____ # yes ____ # no

____ yes ____ no ____ no landscaping

Have you continued any of the water conservation measures you practiced during the drought? (Optional question)

If yes, list:

FUTURE PLANS

____ Years

____ yes ____ no

____ years

____ yes ____ no

____ yes ____ no

Age of heating system?

Are you planning to replace your present heating system?

If so, how far in time from now?

Are you planning on replacing any major appliances in the near future?

If yes, list:

Do you plan to remodel or make additions to your home in the near future?

SOLAR FEASIBILITY

____ yes ____ no ____ flat roof

____ yes ____ no

____ yes ____ no

Roof or other structure facing within 20° of South?

Roof or other structure slanted between 30° and 45°?

Roof shaded?

Roof angle can be anywhere from 5° to 50° for solar heating pools.

PASSIVE SOLAR

____ yes ____ no

____ yes ____ no
____ sometimes

Overhanging or shading devices, other than drapes on South facing glass?

Are drapes being used?

In winter, open when sun comes in, close at night.
SAVE: 5% of heating costs

SPECIAL CONSERVATION DEVICES

___ # yes ___ no

___ # yes ___ no

___ yes ___ no

Double glazed windows?

Reflective film on windows?

Heat pump?

Solar

___ yes ___ no

If yes, circle type:

active space heating

passive space heating

domestic water heating

pool heating

other _____

CONSERVATION PRESCRIPTION

"Save Money by Conserving Energy"

<u>Conservation Measure</u>	<u>Cost</u>	<u>Annual Savings</u>	<u>Energy Savings</u>	<u>Payback Time</u>	<u>Correction Made</u>
1. Turn off pilot	0	\$8.17	44 therms	immediate	
2. Infiltration					
Doors	\$7.58				
Windows	9.60				
Weatherstrip*	17.18	7.82	40 therms	2.2 years	
3. Caulking cracks*					
5 tubes @ 1.89 ea.	9.45	7.82	39.2 therms	1.2 years	
4. Insulate to R-19 (attic)	\$450.00	39.20	196 therms	11.4 years	
5. Insulate water heater	\$20.00	4.00	20.5 therms	5 years	
6. <u>Other suggestions</u>					
. Fix the broken heating duct					
. Fix the toilet leak					
. Consider putting aerators in your faucets					

7.

* These costs are for material only. To figure payback including labor, use the following formula:

$$\frac{\text{Cost of Material + Labor Cost}}{\text{Annual Savings}}$$

-78- PROGRAM MECHANISM -
 TYPICAL RECOMMENDATIONS BASED
 ON COMPLETED SURVEY.

City of San Jose

CALIFORNIA
95101

PROGRAM MECHANISM -
COVER LETTER SENT TO
HOMEOWNER WITH ENERGY
RECOMMENDATIONS

HOME WEATHERIZATION SURVEY

Thank you for participating in the City's home consultation service. In the attached prescription we have identified certain steps you can take to make your home more energy efficient. We hope, of course, that you will implement as many of our energy savings suggestions as possible. However, we realize that many people can only afford to implement energy saving suggestions if the money saved on their utility bills quickly pays back the initial investment required. For this reason the attached prescription includes a simple estimate of the payback time. This will enable you to look at the suggestions and consider only those that you feel are worth the effort and money needed to implement them. When deciding which actions to take, please remember that utility rates are increasing rapidly. Since the dollar savings and payback periods in the prescription are based on today's rates, they will be enhanced by any increase in rates.

Most of the costs to implement the measures are based on the cost of materials only, with the exception of installing attic insulation which is an installed cost. All of the figures given are estimates. Though we believe they are the best estimates that can be made for your home and for this area, special features about your home and your energy use habits may cause your savings to differ from the estimates we have made.

Each savings estimate is based on the assumption that only one conservation measure is implemented. Because many of the conservation measures are interrelated, you cannot always add the dollar savings in order to estimate total savings.

Thank you again for participating in our energy conservation program. In order to evaluate our program, we will be contacting you in a month, and again in six months, to see what measures you have chosen to implement.

If you have any questions regarding the process we used in our calculations, please do not hesitate to call us at 329-2241.

Sincerely,

Beth O'Connor
Resource Conservation Program Assistant

**INSULATION ELEMENT: CONTRACT BETWEEN
INSULATION SURVEY/CONTRACT NO. HOMEOWNER AND CITY**

**CITY OF PALO ALTO,
MUNICIPAL UTILITIES**

**250 Hamilton Avenue, Palo Alto, California 94301
(415) 329-2241**

Name	Phone No.
Installation Address	Zip Code
Billing Address	Zip Code

The above named person(s) (hereinafter, Owner) agrees to buy from the City of Palo Alto (hereinafter City) the insulation material and services described below. The City agrees to have material installed and services performed in workmanlike manner. The Owner agrees to pay to only the City or its authorized Payment Agency, the amounts due as described below.

In accordance with terms of this contract, and subject to the City's approval of Owner's credit, the City will arrange with a licensed contractor to assure work can be performed as set forth herein. Subject to installing Contractor's approval, insulation will be installed as described below, which means or exceeds material, area, density, and other standards as established by U. S. Government "R" Factor specifications for insulation installations. In the event installing Contractor does not give approval, any advance payment by Owner will be refunded.

Customer understands and acknowledges that the purchase and installation of insulation under this agreement has not been represented to him as being any guarantee or assurance of any change or improvement in his or her utility bill.

Signature of Owner also constitutes acknowledgement that Owner has received two copies of "Notice of Right of Rescission" from the City of Palo Alto and a copy of the City "Limited Warranty".

DESCRIPTION OF INSULATION MATERIAL AND SERVICES

Bags of _____ Blown-in _____

Insulation ("R" Factor _____) or Equivalent per Manufacturer's Specification.

Sq. Ft. @ \$ _____ per Sq. Ft. \$ _____

Other Material and Services \$ _____

Total Price of Material and Services \$ _____

Less Down Payment \$ _____

Balance to be paid:

In Full - 30 days ☐ Financed ☐

In Full - 60 days ☐ On Installation Date ☐ \$ _____

Total Finance Charge \$ _____

Total Remaining, including Finance Charge \$ _____

Payments of \$ _____ each due on the _____

day of each month starting _____

\$ _____ IS THE TOTAL PRICE OF CONTRACT INCLUDING DOWN PAYMENT AND FINANCE CHARGES, IF ANY.

ANNUAL PERCENTAGE RATE = _____ %

Do not sign this agreement before you read it and agree with all filled-in copy. Price guaranteed for 30 days only.

Signature of Owner _____ Date _____

Signature of City Representative _____ Date _____

As landlord, I agree to permit insulation to be installed in the home at the above installation address. I agree that if the tenant should leave the home before his repayment is complete, for any reason whatsoever, I will assume and guarantee the balance of the repayment obligation.

Date _____ 19 _____

(Landlord's signature) _____

The above is to be installed over an existing insulation of an estimated value of \$ _____

MUNICIPAL UTILITIES
**home weatherization
program**

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INSULATION ELEMENT - RIGHT OF
RESCISSION. GIVEN TO EVERY
HOMEOwner WHO PURCHASES INSULATION

INSULATION SURVEY / CONTRACT NO. _____

CITY OF PALO ALTO,
MUNICIPAL UTILITIES

250 Hamilton Avenue, Palo Alto, California 94301
(415) 329-2241

NOTICE OF RIGHT OF RESCISSION

(This notice to customer is required by federal law)

You have entered into a transaction on _____ which may result in a lien, mortgage, or other security interest on your home. You have a legal right under federal law to cancel this transaction, if you desire to do so, without any penalty or obligation within three business days from the above date or any later date on which all material disclosures required under the Truth in Lending Act have been given to you. If you so cancel the transaction, any lien, mortgage, or other security interest on your home arising from this transaction is automatically void. You are also entitled to receive a refund of any downpayment or other consideration if you cancel. If you decide to cancel this transaction, you may do so by notifying

**CITY OF PALO ALTO
MUNICIPAL UTILITIES
250 Hamilton Avenue
Palo Alto, California 94301**

by mail or telegram sent not later than midnight of _____. You may also use any other form of written notice identifying the transaction if it is delivered to the above address not later than that time. This notice may be used for that purpose by signing and dating below.

EFFECT OF RESCISSION When a customer exercises his right to rescind as stated on the contract, he is not liable for any finance or other charge, and any security interest becomes void upon such a rescission. Within 10 days after receipt of a notice of rescission, the creditor shall return to the customer any money, or property given as earnest money, downpayment, or otherwise, and shall take any action necessary or appropriate to reflect the termination of any security interest created under the transaction. If the creditor has delivered any property to the customer, the customer may retain possession of it. Upon the performance of the creditor's obligations under this section, the customer shall tender the property to the creditor, except that if return of the property in kind would be impracticable or inequitable, the customer shall tender its reasonable value. Tender shall be made at the location of the property or at residence of the customer, at the option of the customer. If the creditor does not take possession of the property within 10 days after tender by the customer, ownership of the property vests in the customer without obligation on his part to pay for it.

I hereby cancel this transaction _____
(customer's signature) (date)

**MUNICIPAL UTILITIES
home weatherization
program**

**INSULATION ELEMENT -
GIVEN TO EVERY HOMEOWNER
WHO PURCHASES INSULATION**

**CITY OF PALO ALTO,
MUNICIPAL UTILITIES**

**250 Hamilton Avenue, Palo Alto, California 94301
(415) 329-2241**

LIMITED WARRANTY

The following warranty is extended to every consumer owner of a warranted product under this agreement:

The City of Palo Alto warrants that for a period of three years from the "date of completion" (as defined in agreement) all services and goods in connection with this Agreement shall be free from original defects in material and workmanship, and all insulation materials used shall meet the United States government "R" factor specifications for the type of insulation material installed.

The City's obligation under this warranty and the sole remedy of the owner shall be limited to the replacement of defective material or the installation of additional material, at the City's option.

ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS ARE LIMITED TO THE DURATION OF THIS WARRANTY (THREE YEARS).

In no event shall the City be liable for any special, consequential or incidental damages, subject to the limitations set forth in California Commercial Code Section 2719 (3). Furthermore, the City disclaims any responsibility for any warranties which may be offered or expressed by any manufacturer or installer of insulation materials.

You may obtain information regarding the performance of any warranty obligation stated herein, or otherwise arising under this agreement by contacting:

Department of Utilities
City of Palo Alto
250 Hamilton Avenue
Palo Alto, California 94301
Telephone: 329-2241

The City will investigate a warranty claim within five working days of notification of such claim. If an inspection by a City Inspector reveals the existence of defective workmanship or defective materials installed under this agreement, the City or its authorized agent shall promptly repair or replace the same to the extent necessary to satisfy the requirements of this agreement.

This warranty gives you specific legal rights and you may also have other rights under California or Federal law.

certificate of insulation

this is to certify that the residence located at

*Palo Alto, California, has had ceiling insulation installed to
meet or exceed California State Standards of R-19 Value.*

MUNICIPAL UTILITIES
home weatherization
program

date _____

signed _____

INSULATION ELEMENT: AGREEMENT BETWEEN
CONTRACTOR AND CITY (INCLUDES SPECS.)

A G R E E M E N T

THIS AGREEMENT, made and entered into this _____ day of _____, 1978, by and between the CITY OF PALO ALTO, a municipal corporation of California, hereinafter referred to as "City," and _____, a _____ with offices at _____, California _____, hereinafter referred to as "Contractor";

W I T N E S S E T H:

WHEREAS, CITY desires to retain certain services in conjunction with a CITY program providing for installation of thermal insulation by CONTRACTOR for the CITY in residences of CITY utility customers; and

WHEREAS, CITY desires to engage CONTRACTOR to provide these services by reason of its qualifications and experience for performing such services, and CONTRACTOR has offered to provide the required services on the terms and in the manner set forth herein;

NOW, THEREFORE, in consideration of their mutual covenants, the parties hereto agree as follows:

1. DEFINITIONS.

(a) The word "City" as used in this agreement shall mean and include all the territory lying within the municipal boundaries of the City of Palo Alto, California, as presently existing, plus all territory which may be added thereto during the term of this agreement by annexation or otherwise.

(b) The term "City Manager" shall mean the duly appointed City Manager of the City of Palo Alto, California, or his designated representative.

(c) The term "City Attorney" shall mean the duly appointed City Attorney of the City of Palo Alto, California, or his designated representative.

(d) The term "City Clerk" shall mean the duly appointed City Clerk of the City of Palo Alto, California, or her designated representative.

2. PROJECT COORDINATION.

(a) City. The City Manager shall be representative of CITY for all purposes under this agreement. _____ hereby is designated as the PROJECT MANAGER for the City Manager, and he shall supervise the progress and execution of this agreement.

(b) Contractor. CONTRACTOR shall assign a single PROJECT DIRECTOR to have overall responsibility for the progress and execution of this agreement for CONTRACTOR. _____ hereby is designated as the PROJECT DIRECTOR for CONTRACTOR. Should circumstances or conditions subsequent to the execution of this agreement require a substitute PROJECT DIRECTOR for any reason, the PROJECT DIRECTOR designee shall be subject to the prior written acceptance and approval of the PROJECT MANAGER.

3. DUTIES OF CONTRACTOR.

(a) Services to be Furnished. CONTRACTOR shall provide all specified services as set forth below:

(1) CONTRACTOR shall furnish all labor, materials, and equipment, to install ceiling thermal insulation, in accordance with the specifications set forth in Exhibit A, attached hereto, to provide the customer with a minimum ceiling thermal insulation value of R-19. CONTRACTOR shall make certain that the work, upon completion, is free and clear of any and all liens and charges of any kind whatsoever. CONTRACTOR, if required, shall deliver to CITY a complete release of all liens arising out of the Contract or receipts in full in lieu thereof. If any lien or claim remains unsatisfied after all payments are made by CITY, CONTRACTOR shall refund to CITY all monies that the latter may be compelled to pay in discharging such lien or claim, including all costs and reasonable attorney's fees.

(2) CITY shall give notice to CONTRACTOR to make ceiling thermal insulation installations upon CITY's insulation Survey/Contract (Exhibit B) Form, hereinafter called "S/C". If CONTRACTOR cannot obtain sufficient materials to perform the work within the time specified in subparagraph 3 (below), CONTRACTOR shall notify CITY to that effect immediately upon receipt of the S/C. CONTRACTOR shall then be excused from performing the order, and CITY may place the order with another contractor.

(3) Unless the requirements of this provision are waived in writing by CITY, CONTRACTOR shall contact the customer within two (2) work days after receipt of a S/C and install the insulation within ten (10) work days after contact. Installation shall be conducted in good and workmanlike manner and pursued to completion without undue interruptions. All work is to be done promptly, and, should CONTRACTOR fail to prosecute the work diligently and properly, CITY reserves the right to terminate the order and this agreement forthwith.

(4) Unavoidable interruptions beyond the control of CONTRACTOR shall be reported immediately to CITY and the respective insulation customer. CITY shall not unreasonably withhold approval of a request for a reasonable extension of time upon receipt of notice from CONTRACTOR that there is an unavoidable interruption beyond his control.

(5) After installation is made, CONTRACTOR shall complete, sign, and have customer sign Certification of Completion, Exhibit B, and return it to the CITY. If customer is C.O.D., CONTRACTOR shall collect payment and forward it to the CITY with Certification of Completion.

(6) Payment will be made by CITY at the rates specified in Exhibit C on a weekly basis upon satisfactory completion and acceptance of the work by CITY and after receipt of invoice. No payment will be made by CITY for unique or extraordinary ceiling thermal insulation installations not provided for in Exhibit A unless the CITY has given its written approval for such installations in advance.

(7) CONTRACTOR understands CITY has the right to inspect each job and agrees to correct any installation found by such inspection to be improperly installed according to the standards

described in Exhibit A. Upon completion of the work and prior to final payment, CONTRACTOR shall clean up the working area including fixtures and equipment, removing from the premises all debris, waste or unused material and any accumulated dust and dirt.

(b) Laws to be Observed. CONTRACTOR shall:

(1) Procure all permits and licenses, pay all charges and fees, and give all notices which may be necessary and incident to the due and lawful prosecution of the services to be performed by CONTRACTOR under this agreement;

(2) Keep itself fully informed of all existing and future federal, state, and local laws, ordinances, regulations, building codes, orders, and decrees which may affect those engaged or employed under this agreement, any materials used in CONTRACTOR's performance under this agreement, or the conduct of the services under this agreement;

(3) At all times observe and comply with, and cause all of its subcontractors and employees, if any, to observe and comply with, all of said laws, ordinances, regulations, orders, and decrees mentioned above;

(4) Immediately report to the PROJECT MANAGER in writing any discrepancy or inconsistency it discovers in said laws, ordinances, regulations, orders, and decrees mentioned above in relation to any plans, drawings, specifications, or provisions of this agreement.

(c) Qualifications of Contractor. CONTRACTOR represents that it is qualified to furnish the services described under this agreement. As evidence thereof, CONTRACTOR warrants that one or more members or employees of the firm are licensed speciality contractors (C-2) by the State of California and that the services to be provided under this agreement will be performed by them or under their supervision.

(d) In addition to the specific guarantees required by other provisions in this agreement and the specifications for the work, CONTRACTOR guarantees all the work to be performed, and all the materials to be furnished by it or its subcontractors, against defects in materials or workmanship which may develop within a period of one year from the date of final acceptance of the completed work by CITY. CONTRACTOR shall, at its own expense within a reasonable time after receipt of written notice of any such defects, correct or replace the defective work and shall pay for any damage without cost to CITY. If CONTRACTOR does not correct any such defective work within a reasonable time after notice thereof (not to exceed 15 days), CITY may correct or have corrected such defects and back charge to CONTRACTOR all costs applicable thereto plus a reasonable supervisory fee, which costs and fee CONTRACTOR agrees to pay.

(e) It is agreed that CONTRACTOR is performing work or services hereunder as an independent contractor and that no principal-agent or employer-employee relationship is created thereby.

(f) No Publicity or Sales Pitch. No publication of any information, promotion or advertising regarding this program or agreement shall be made without the prior written approval of CITY. Furthermore, CONTRACTOR shall make no attempt to promote or procure additional business from customer by means of "sales pitches," offers of special or discounted prices for additional work, or any other such promotional act.

(g) The CONTRACTOR to whom the contract award is made shall furnish the CITY with a Performance Bond, executed as surety by a corporation authorized to issue surety bonds in the State of California, in an amount not less than Five Thousand Dollars (\$5,000) on the form provided by CITY (Exhibit D).

(h) CITY has executed similar contracts with other insulation contractors and will direct CONTRACTOR to perform work under this contract only at times when other contractors whose prices are lower are unable to perform the work.

4. TERM. This agreement shall commence on 1978, and shall continue in full force and effect until terminated as provided herein.

5. TEMPORARY SUSPENSION. The CITY MANAGER shall have the authority to suspend this agreement, wholly or in part, for such period as he deems necessary due to unfavorable conditions or to the failure on the part of CONTRACTOR to perform any provision of this agreement.

6. SUSPENSION; TERMINATION.

(a) Right to Suspend or Terminate. Either party may suspend or terminate this agreement for any reason by giving () days' written notice to the other party. Upon receipt of such notice, performance of the services hereunder shall be immediately discontinued.

(b) Payment. Upon such suspension or termination, CONTRACTOR shall be paid for all services actually rendered to CITY to the date of such suspension or termination; provided, however, if this agreement is suspended or terminated for fault of CONTRACTOR, CITY shall be obligated to compensate CONTRACTOR only for that portion of CONTRACTOR's services which are of benefit to CITY.

7. INSPECTION. CONTRACTOR shall furnish CITY with every reasonable opportunity for CITY to ascertain that the services of CONTRACTOR are being performed in accordance with the requirements and intentions of this agreement. All work done and all materials furnished, if any, shall be subject to the PROJECT MANAGER's inspection and approval. The inspection of such work shall not relieve CONTRACTOR of any of its obligations to fulfill its agreement as prescribed.

8. ASSIGNMENT; SUBCONTRACTORS; EMPLOYEES.

(a) Assignment. Both parties shall give their personal attention to the faithful performance of this agreement and shall not assign, transfer, convey, or otherwise dispose of this agreement or any right, title, or interest in or to the same or any part thereof without the prior written consent of the other party, and then only subject to such terms and conditions as the other party may require. A consent to one assignment shall not be deemed to be a consent to any subsequent assignment. Any assignment without such approval shall be void and, at the option of the other party, shall terminate this agreement and any license or privilege granted herein. This agreement and any interest herein shall not be assignable by operation of law without the prior written consent of the other party.

(b) Subcontractors; Employees. CONTRACTOR shall be responsible for employing or engaging all persons necessary to perform the services of CONTRACTOR hereunder. No subcontractor of CONTRACTOR will be recognized by CITY as such; rather, all subcontractors are deemed to be employees of CONTRACTOR, and it agrees to be responsible for their performance. CONTRACTOR shall give its personal attention to the fulfillment of the provisions of this agreement by all of its employees and subcontractors, if any, and shall keep the work under its control. If any employee or subcontractor of CONTRACTOR fails or refuses to carry out the provisions of this agreement or appears to be incompetent or to act in a disorderly or improper manner, he shall be discharged immediately from the work under this agreement on demand of CITY.

9. NOTICES. All notices hereunder shall be given in writing and mailed, postage prepaid, by certified mail, addressed as follows:

To CITY: Office of the City Clerk
250 Hamilton Avenue
Palo Alto, California 94301

To CONTRACTOR: Attention of the PROJECT DIRECTOR
at the address of CONTRACTOR
recited above.

10. INTEREST OF CONTRACTOR. CONTRACTOR covenants that it presently has no interest, and shall not acquire any interest, direct or indirect, financial or otherwise, which would conflict in any manner or degree with the performance of the services hereunder. CONTRACTOR further covenants that, in the performance of this agreement, no subcontractor or person having such an interest shall be employed. CONTRACTOR certifies that no one who has or will have any financial interest under this agreement is an officer or employee of CITY. It is expressly agreed that, in the performance of the services hereunder, CONTRACTOR shall at all times be deemed an independent contractor and not an agent or employee of CITY.

11. INDEMNITY. CONTRACTOR hereby agrees to indemnify and save harmless CITY, its officers, agents, and employees of and from:

(a) Any and all claims and demands which may be made against CITY, its officers, agents, or employees by reason of any injury to or death of any person or damage suffered or sustained by any person or corporation caused by, or alleged to have been caused by, any act or omission, negligent or otherwise, of CONTRACTOR or any subcontractor under this agreement or of CONTRACTOR's or any subcontractor's employees or agents;

(b) Any and all damage to or destruction of the property of CITY, its officers, agents, or employees occupied or used by or in the care, custody, or control of CONTRACTOR, or in proximity to the site of CONTRACTOR's work, caused by any act or omission, negligent or otherwise, of CONTRACTOR or any subcontractor under this agreement or of CONTRACTOR's or any subcontractor's employees or agents;

(c) Any and all claims and demands which may be made against CITY, its officers, agents, or employees by reason of any injury to or death of or damage suffered or sustained by any employee or agent of CONTRACTOR or any subcontractor under this agreement, however caused, excepting, however, any such claims and demands which are the result of the sole negligence or willful misconduct of CITY, its officers, agents, or employees;

(d) Any and all claims and demands which may be made against CITY, its officers, agents, or employees by reason of any infringement or alleged infringement of any patent rights or claims caused or alleged to have been caused by the use of any apparatus, appliance, or materials furnished by CONTRACTOR or any subcontractor under this agreement; and

(e) Any and all penalties imposed or damages sought on account of the violation of any law or regulation or of any term or condition of any permit.

CONTRACTOR, at its own cost, expense, and risk, shall defend any and all suits, actions, or other legal proceedings that may be brought or instituted by third persons against CITY, its officers, agents, or employees on any such claim or demand of such third persons, or to enforce any such penalty, and pay and satisfy any judgment or decree that may be rendered against CITY, its officers, agents, or employees in any such suit, action, or other legal proceeding.

12. WORKERS' COMPENSATION. CONTRACTOR certifies that it is aware of the provisions of the Labor Code of the State of California, which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and it certifies that it will comply with such provisions before commencing the performance of the work of this agreement.

13. INSURANCE. CONTRACTOR, at its sole cost and expense, shall obtain and maintain in full force and effect throughout the entire term of this agreement the following described insurance coverage, insuring not only CONTRACTOR and its subcontractors, if any, but also, with the exception of workers' compensation and employer's liability insurance, CITY, its officers, agents, and employees, and each of them:

<u>POLICY</u>	<u>MINIMUM LIMITS OF LIABILITY</u>
(a) WORKERS' COMPENSATION	Statutory
(b) COMPREHENSIVE AUTOMOBILE LIABILITY, including owned, hired, and non-owned automobiles	Bodily Injury - \$100,000 each person - \$300,000 each occurrence Property Damage - \$100,000 each occurrence
(c) COMPREHENSIVE GENERAL LIABILITY, including protective, completed operations, broad form contractual, and personal injury	Bodily Injury - \$100,000 each person - \$300,000 each occurrence - \$300,000 aggregate Property Damage - \$100,000 each occurrence - \$100,000 aggregate Personal Injury - \$100,000 each occurrence - \$300,000 aggregate
(d) If CITY property is used, rented, or leased hereunder, FIRE LEGAL LIABILITY	All Damages - \$ _____

Certificates of such insurance, preferably on the forms provided by CITY, shall be filed with CITY concurrently with the execution of this agreement or, with the City Attorney's approval, as soon thereafter as possible. Said certificates shall be subject to the approval of the City Attorney and shall contain an endorsement stating that said insurance is primary coverage and will not be cancelled or altered by the insurer except after filing with the City Clerk thirty (30) days' written notice of such cancellation or alteration. Current certificates of such insurance shall be kept on file at all times during the term of this agreement with the City Clerk.

14. AGREEMENT BINDING. The terms, covenants, and conditions of this agreement shall apply to, and shall bind, the heirs, successors, executors, administrators, assigns, and subcontractors of both parties.

The invalidity, in whole or in part, of any condition of this agreement shall not affect the validity of other conditions.

15. WAIVERS. The waiver by either party of any breach or violation of any term, covenant, or condition of this agreement or of any provision, ordinance, or law shall not be deemed to be a waiver of such term, covenant, condition, ordinance, or law or of any subsequent breach or violation of the same or of any other term, covenant, condition, ordinance, or law. The subsequent acceptance by either party of any fee or other money which may become due hereunder shall not be deemed to be a waiver of any preceding breach or violation by the other party of any term, covenant, or condition of this agreement or of any applicable law or ordinance.

16. COSTS AND ATTORNEY'S FEES. The prevailing party in any action brought to enforce the terms of this agreement or arising out of this agreement may recover its reasonable costs and attorneys' fees expended in connection with such an action from the other party.

17. NONDISCRIMINATION. No discrimination shall be made in the employment of persons under this agreement because of the race, color, national origin, ancestry, religion, or sex of such person. If the value of this agreement is, or may be, Five Thousand Dollars (\$5,000) or more, CONTRACTOR agrees to meet all requirements of the Palo Alto Municipal Code pertaining to nondiscrimination in employment and to complete and submit the "Compliance Report--Nondiscrimination Provisions of City of Palo Alto Contracts" on the form furnished by CITY.

If CONTRACTOR is found in violation of the nondiscrimination provisions of the State of California Fair Employment Practices Act or similar provisions of federal law or executive order in the performance of this agreement, it shall thereby be found in material breach of this agreement. Thereupon, CITY shall have the power to cancel or suspend this agreement, in whole or in part, or to deduct from the amount payable to CONTRACTOR the sum of Twenty-five Dollars (\$25) for each person for each calendar day during which such person was discriminated against, as damages for said breach of contract, or both. Only a finding of the State of California Fair Employment Practices Commission or the equivalent federal agency or officer shall constitute evidence of a violation of contract under this paragraph.

If CONTRACTOR is found in violation of the nondiscrimination provisions of this agreement or the applicable affirmative action

guidelines pertaining to this agreement, CONTRACTOR shall be found in material breach of this agreement. Thereupon, CITY shall have the power to cancel or suspend this agreement, in whole or in part, or to deduct from the amount payable to CONTRACTOR the sum of Two Hundred Fifty Dollars (\$250) for each calendar day during which CONTRACTOR is found to have been in such noncompliance as damages for said breach of contract, or both.

18. AGREEMENT CONTAINS ALL UNDERSTANDINGS. This document represents the entire and integrated agreement between CITY and CONTRACTOR and supersedes all prior negotiations, representations, or agreements, either written or oral. This document may be amended only by written instrument, signed by both CITY and CONTRACTOR. All provisions of this agreement are expressly made conditions. This agreement shall be governed by the laws of the State of California.

IN WITNESS WHEREOF, CITY and CONTRACTOR have executed this agreement the day and year first above written.

EXHIBIT A

General Specifications for Insulation

This specification covers the criteria that must be followed by CONTRACTOR. Failure to comply with said specifications may result in immediate termination of this contract by CITY.

1. Recessed lighting fixtures - Thermal insulation shall not be installed within 24 inches of the top or within three (3) inches of the side of a recessed fixture.
2. Door Bell Transformers - Thermal insulation shall not be installed on top of any door bell transformer.
3. Fluorescent light ballasts - Thermal insulation shall not be installed on top of any fluorescent lighting ballasts.
4. Heating vents and chimneys - Thermal insulation shall not be installed within one inch of double-walled vent pipes and four inches of brick chimneys.
5. Attic ventilation and soffit vents shall not be covered or blocked in any way. CONTRACTOR shall apply insulation in a manner that best maintains existing attic ventilation.
6. CONTRACTOR shall install R-19 rated material to all attic entrances, garage or outside openings excluded.
7. Insulation products may be used only under the following conditions:
 - (a) The products must be covered by \$1,000,000 product liability insurance carried by the manufacturer. Certificates of insurance evidencing product liability and vendor's liability coverage must be submitted to the CITY.
 - (b) The product must have been submitted for flame spread and thermal performance testing since the last change in chemical formulae of the fire retardants used or the quantity of same or any change in the composition of the product that may affect thermal or fire retardant qualities, and the test results submitted to and approved by the CITY.
 - (c) The product must have a type 1 flame classification of 0 to 25. The flame hazard classification is to be tested in accordance with ASTM-E-84. The flame resistance permanency shall not vary by more than 20 percent from the unconditioned values. The flame resistance permanency is to be tested in accordance with ASTM-C-739.

- (d) The product must comply with Federal Specifications HHF-515C and have a label reflecting precautions for installation.
 - (e) The manufacturer shall have submitted the product to Underwriters Laboratories' follow-up service to check quality control and individual packaging must carry the Underwriters Laboratories' label.
8. The following manufacturers are known to make products which meet the specifications listed under Section 7 (above). Any product used, however, including those products made by manufacturers listed below, shall meet the specifications set forth in Section 7 and CONTRACTOR shall produce proof of such compliance with the specifications prior to contract award.

Mineral Wood

Fiberglass - Owens Corning / Johns Manville / Certainteed
Rockwool - Premium Brand

Cellulose

Ameriguard
Celucon
Diamond
FiberCel
Mono-Therm
U.S. Insulation (after being checked for U.L. and "R" value)
Western Weathercheck
TR+ (Thermal-Coustics)
Sun-Tec (only U.L. approved line of products)
Golden Therm
Weyerhaeuser

- 9. The moisture absorption of the product shall be no more than 10 percent by weight. The moisture absorption of the product to be tested in accordance with ASTM-C-739.
- 10. The product must have an odor emission rating of no apparent difference when tested in accordance with ASTM-C-739.
- 11. There shall be no visible fungal growth on the product.
- 12. The product must have zero starch content.
- 13. All horizontal access holes will be covered with a minimum R-19 batt insulation.

14. All eave vents will be protected with baffles or batt-type insulation. If batt insulation is used, it should be placed far enough back from vent to allow air flow through vents.
15. Where knee or skylight walls exceed a depth of 12", a minimum of R-11 batts will be installed on knee/skylight walls.

EXHIBIT C

Price List

DESCRIPTION

Names of products and pounds per bag

CONTRACTOR'S CHARGE

\$ per bag (tax inclusive)

INSULATION ELEMENT - BID PACKAGE
SENT TO LOCAL CONTRACTORS INVITING
THEM TO BID

March, 1978

CITY OF PALO ALTO
NOTICE INVITING SEALED PROPOSALS

The Council of the City of Palo Alto invites sealed proposals for its home-attic insulation program, hereafter referred to as the Home-Weatherization Program. In order to give potential bidders an idea of the size and nature of the job, the following description of the program is provided.

The City of Palo Alto Home-Weatherization will begin a residential insulation retrofit program on April 1, 1978. The program will be aimed at bringing the insulation value in existing residential attics up to a minimum of R-19. City advertising and publicity will be employed.

Upon request, homeowners will receive a City energy-conservation survey including the attic insulation needed and its installed cost. Our sales force will attempt to close the sale at the time of the survey, offering time payments up to five years at 8% interest, 30 to 60 days at no interest, or cash on delivery. The insulation contractor will be notified of the sale and will set up the installation date with the homeowner.

Payment to the contractor will be made in cash or by warrant by the City on a weekly basis upon contractor's completion of all insulation jobs accepted by the City and homeowner within the previous week.

In attics already having more than an R-7, we will recommend an additional R-11. In attics that have an estimated R-7 or less, we will recommend an additional R-19. Insulation such as redwood bark, cedar, fir or redwood shavings and some older cellulose products, will not be given any value in this determination. The sales price will be determined on the basis of dividing the gross square footage by the net listed coverage per bag of product. We will not subtract the space occupied by ceiling joists. This will result in a bonus to the recommended R value. Even though the homeowner will pay a little more, he is assured of full value.

Our reasoning behind this decision is based on the lower insulating value of 2 x 4 or 2 x 6 wood versus insulation, long-term settling of insulation, and possible errors in subtracting out the area occupied by said joists.

Other utilities selling insulation have had a great deal of success increasing the volume of insulation going into their service areas. They feel that public acceptance and trust was a large factor in their success and the publicity helped the industry as a whole, including the contractors not involved in their program.

Please note that the attached sample contract contains:

- . The duties of the contractor (Sec. 3).
- . Specifications for Insulation (Exhibit A).
- . Sample Survey/Contract for the homeowner (Exhibit B).
- . Nondiscrimination in employment requirements (Sec. 17).

The City will not recognize any claim for additional compensation because of the payment by the contractor of any wage rate in excess of the prevailing wage rate set forth in the contract. The possibility of wage increases is one of the elements to be considered by the Contractor in determining his bid and will not, under any circumstances, be considered as the basis of a claim against the City on the contract.

All bids shall be accompanied by cash, a certificate of deposit, a certified check or draft, or a cashier's check or draft, of or on a responsible bank in the United States, in favor of and payable at sight to the City of Palo Alto, in an amount not less than \$1,000. If the bidder, to whom the contract is awarded, fails or neglects to enter into the contract, or fails or neglects to file the required bonds within fifteen (15) days after the posting of such award of contract, the City Treasurer shall draw the money due on such certificate of deposit, check, or draft and shall pay the same, or any cash deposited, into the Treasury, and under no circumstances shall it be returned to the defaulting bidder.

In lieu of the foregoing, any bid may be accompanied by a surety of \$1,000 by a corporation authorized to do a surety business in the State of California, guarantying that said bidder will enter into the contract and will file the required bonds within the said period.

Each bidder and his subcontractors must complete a Compliance Report for bidder's Minority Employment Program (M.E.P.). General Contractors bidding will be pre-qualified prior to bid opening, and their M.E.P. shall be delivered to the Director of Purchasing Services, 250 Hamilton Avenue, Palo Alto, CA 94301, at or before March 15, 1978.

Subcontractors for the low qualified bidder shall be required to submit Compliance Reports within five (5) calendar days after bid opening, and all subcontractors must be qualified prior to award of the contract. Subcontractors are encouraged, where possible, to submit M.E.P.'s prior to the bid opening for pre-qualification.

Contractor by executing this contract certifies that he is aware of the provisions of Section 1777.5 of the Labor Code of the State of California which require that the contractor to whom a public works contract is awarded must apply for and receive a certificate approving the contractor or subcontractor under the Apprenticeship Standards for the employment and training of apprentices in the area. A certificate

shall fix the number of apprentices or the ratio of apprentices to journeymen who shall be employed in the craft or trade on this public work. Contractor certifies that he will comply with all of the provisions set forth in said statute before commencing the performance of the work on this contract.

In accordance with Section 1770 of the California Labor Code, the City has ascertained and does hereby specify that the prevailing wage rates shall be those established by collective bargaining agreements between the duly recognized labor organizations and the employer associations covering the Palo Alto, Santa Clara County labor rates for the particular craft, classification or type of workman needed to execute the Contract as the same are on file with the Director of Purchasing Services of the City of Palo Alto. The said rates shall include all employer payments as required by Section 1773.1 of the California Labor Code.

Sealed proposals shall be delivered to the Director of Purchasing Services at the Civic Center, Palo Alto, California, at or before March 22, 1978 - 3:00 p.m. and will be publicly opened on said day and hour in the Council Committee Room, in the Civic Center, Palo Alto, California.

Reference is hereby made to said specifications for further details, which specifications and this notice shall be considered a part of any contract made pursuant thereto.

Public telephones are located in the Civic Center. Civic Center business telephones are not available for public use.

J. D. BRODIE
Director of Purchasing
Services

This request for sealed proposals will be accepted by the City in the following form:

1. Each bidder will bid his approved products separately by Brand for R-11 and R-19 blown insulation on an installed basis per bag.
2. The City will convert the price per bag at installed cost per square foot for R-11 and also for R-19, based on the following coverage:

Coverage Per Bag In Square Feet

<u>Cellulose</u>	<u>R-11</u>	<u>R-19</u>	<u>Wt./Bag</u>
Fibercei	89.5	51.9	40
Monotherm	77.6	44.9	40
Ameriguard	89.5	51.9	40
Cel-U-Con	53	30	25
Diamond	53	31	30
U.S. Insulation	56	33	30
TR+ (Thermal-coustics)	60 (unsewn bag) 66 (sewn bag)	36 (unsewn bag) 40 (sewn bag)	30 30
Sun-Tec	none tested for R-11	43	40
Golden Therm	32	24	19-20
Weyerhauser (Silva-wool)		58	40
<u>Fiberglass</u>			
Owens-Corning	90	51	25
Certain-Teed	90	51	25
<u>Rockwool</u>			
Premium Brand	44	26	26

NOTE: Any other products submitted which have been documented to the City of Palo Alto as satisfying contract specifications prior to bid closing will be converted on the same basis, e.g., on the accepted manufacturer's certified coverage per bag for R-11 and R-19.

3. The City will award contracts to the three lowest responsible bidders of each general type of insulation, namely, cellulose, fiberglass and rockwool, based on the converted calculations as outlined in item 2 above, for R-11 and also for R-19. However, bids are to be submitted on the basis of price per bag, and payment will be made by the City to the successful bidders on that basis.

We require that you have been in business installing insulation in City's service area for a minimum of six months, and that you supply us with a list of ten customers for whom you have installed attic insulation on a "retro" basis in the last year.

Selected contractors must supply the City with certificates of insurance, performance bonds, etc., required by the contract by 15 days after award of contract. Also, performance test results must be submitted to the City prior to bid closing. If you have any questions regarding the procedure of our planned operation before submitting a firm bid, please call Sharon Kruse, at (415) 329-2241.

PROPOSAL TO THE CITY COUNCIL OF
THE CITY OF PALO ALTO, CALIFORNIA

HOME-WEATHERIZATION PROGRAM

Name of Bidder: _____

Business Address: _____

To the City Council, City of Palo Alto, California:

The undersigned, as bidder, declares that the only persons or parties interested in this proposal as principals are those named herein; that this proposal is made without collusion with any other person, firm or corporation; that he has carefully examined the annexed proposed contract and the specifications therein referred to; and he proposes and agrees, if this proposal is accepted, that he will contract with the City of Palo Alto in the form of the copy of the contract annexed hereto, to provide all necessary machinery, tools, apparatus and other means of construction, and to do all the work and furnish all the materials specified in the contract, in the manner and time therein prescribed and according to the requirements of the Utilities Department as therein set forth.

BIDDING SCHEDULE

Bids are to be submitted on the basis of a price per bag and payment will be made on that basis. However, the City will convert the per bag bid price to a cost per square foot and will base its awards on the resulting square foot costs. The City plans to award contracts to the three low bidders of each type of insulation (e.g., Cellulose, Fiberglass and Rockwool) for R-11 and also for R-19. The City will place orders for each alternative type of insulation with the contractor whose bid for that alternative is lowest as long as that contractor can perform the work as outlined in the Invitation To Bid. Thereafter, orders will be placed with the second low bidder for each alternative type, as long as that contractor can perform as outlined, and thereafter, orders will be placed with the third low bidder, if such exists, on the same basis.

All prices bid shall be firm for a period of six months after award of contract. Thereafter, price increases may be allowed on proof of manufacturer's written price list determining increases.

The term of each contract will be for a period of one year.

BIDDER'S PROPOSAL.

<u>Type</u>	<u>Brand</u>	<u>Lbs. Per Bag</u>	<u>Price Per Bag Tax Included</u>	<u>(Not to be filled in by bidder)</u> <u>Cost per Sq. Ft.</u>	
				<u>R-11</u>	<u>R-19</u>
First Brand (Cellulose R-11)					
(Cellulose R-19)					
Second Brand (Cellulose R-11)					
(Cellulose R-19)					
Third Brand (Cellulose R-11)					
(Cellulose R-19)					
Fourth Brand (Cellulose R-11)					
(Cellulose R-19)					
Fifth Brand (Cellulose R-11)					
(Cellulose R-19)					
Sixth Brand (Cellulose R-11)					
(Cellulose R-19)					
Seventh Brand (Cellulose R-11)					
(Cellulose R-19)					
Eighth Brand (Cellulose R-11)					
(Cellulose R-19)					
Ninth Brand (Cellulose R-11)					
(Cellulose R-19)					

BIDDER'S PROPOSAL

<u>Type</u>	<u>Brand</u>	<u>Lbs. Per Bag</u>	<u>Price Per Bag Tax Included</u>	(Not to be filled in by bidder) Cost per Sq. Ft.	
				<u>R-11</u>	<u>F-19</u>
Tenth Brand (Cellulose R-11)	_____	_____	_____	_____	_____
(Cellulose R-19)	_____	_____	_____	_____	_____
Eleventh Brand (Cellulose R-11)	_____	_____	_____	_____	_____
(Cellulose R-19)	_____	_____	_____	_____	_____
First Brand (Fiberglass R-11)	_____	_____	_____	_____	_____
(Fiberglass R-19)	_____	_____	_____	_____	_____
Second Brand (Fiberglass R-11)	_____	_____	_____	_____	_____
(Fiberglass R-19)	_____	_____	_____	_____	_____
Third Brand (Fiberglass R-11)	_____	_____	_____	_____	_____
(Fiberglass R-19)	_____	_____	_____	_____	_____
First Brand (Rockwool R-11)	_____	_____	_____	_____	_____
(Rockwool R-19)	_____	_____	_____	_____	_____

I hereby offer to perform insulation service for the City of Palo Alto in accordance with the terms of the sample contract included with the City's Request for Sealed Proposals at the prices set forth above and, if this bid is accepted, will enter into such a contract with the City. I understand that the City may award a contract to me on the basis of my bid for any one or for more than one, of the alternatives listed in the bidding process.

The foregoing prices are FOB Palo Alto as designated by the City. Enclosed find \$1,000 which is given as security that the undersigned will enter into the contract. If awarded the contract the undersigned hereby agrees to sign said contract and furnish a performance bond in the amount of \$5,000, and a contractor labor and materials bond in the amount of \$2,500. The contractor shall furnish such bonds within fifteen (15) days after notice of award of the contract.

In case of discrepancy between words and figures, the words shall prevail; provided, however, that the City Council reserves the right to construe any bid according to its true intent where it contains a patent mistake.

It is understood that Owner reserves the right to reject the proposal and that it shall remain open and not be withdrawn for a period of sixty (60) days from the date prescribed for its opening.

If this proposal shall be accepted and the undersigned shall fail to contract as aforesaid and to give the required bonds in the sums to be determined as aforesaid, with surety satisfactory to the City Council, within fifteen (15) days, not including Sundays, after the posting of such contract, then the Council may, at its option, determine that the bidder has abandoned the contract, and thereupon this proposal and the acceptance thereof shall be null and void and the forfeiture of such security accompanying this proposal shall operate and the same shall be the property of the City of Palo Alto, California.

Accompanying this proposal is _____
(NOTICE: Insert the words "Cash (\$.....)," or "Certified Check," or "Bond," as the case may be in an amount equal to \$1,000.

The names of all persons interested in the foregoing proposal as principals are as follows:

(IMPORTANT NOTICE: If bidder or other interested person is a corporation, state legal name of corporation, also names of the president,

secretary, treasurer, and manager thereof; if a copartnership, state true name of firm, also names of all individual copartners composing firm; if bidder or other interested person is an individual, state first and last names in full).

Licensed in accordance with an act providing for the registration of contractors, License No. _____ Classification _____.

Name of Firm _____

Signature of Bidder

Bidder is a:

_____ California Corporation

_____ Corporation under the laws of the State of _____

with offices located at _____

and offices in California at _____

_____ Sole Proprietorship

_____ Partnership (list names of partners; state which partner or partners are manager partner (s) _____

_____ Other (specify, using separate sheet if necessary) _____

ACKNOWLEDGEMENT OF ADDENDA

NOTE: Failure to execute the following may be considered as an irregularity in the bid.

Receipt of the following addenda issued during the time of bidding is acknowledged, and the information contained therein has been considered in the preparation of this bid.

Addendum No. (None _____), (1____), (2____), (3____), (4____), (5____).

(Check appropriate space)

Signature of Bidder

Year	Type of Work	Contract Amount	Location and for Whom Performed
------	--------------	-----------------	---------------------------------

Following is a list of plant and equipment owned by the bidder, and which is definitely available for use on the proposed work as required.

<u>Quantity</u>	<u>Name, Type and Capacity</u>	<u>Condition</u>	<u>Location</u>

(Use extra sheets if necessary)

SUBCONTRACTORS

The following is the name and location of the mill, shop or office of each subcontractor who will perform work or labor or render service to the undersigned in or about the construction of the work or improvement contemplated by this proposal and the portion of the work which will be done by each subcontractor. *

<u>Name</u>	<u>Location</u>	<u>Work</u>

* No subcontractors are allowed in this program unless specific written permission is granted by the City.

CERTIFICATE OF INSURANCE

Issued to the
CITY OF PALO ALTO
250 Hamilton Avenue
Palo Alto, California

WHEREAS, _____
has been awarded a contract with the City of Palo Alto to perform certain
work described as follows:

Home-Insulation Program
for the
City of Palo Alto

WHEREAS, under said contract Contractor is required to maintain in
force during the term of such contract a policy or policies of insurance
insuring the Contractor and the City of Palo Alto, its officers, and
employees against loss or liability which may arise from any of the work
performed or required under such contract; and in addition thereto,
Workmen's Compensation Insurance.

NOW, THEREFORE, the undersigned insurance company does hereby
certify through its duly authorized representative that it has issued
the policy or policies described below, that the same are in force at
this time and that the following provisions, among others, are included
in said policy or endorsements thereto:

1. The names of the persons (or firms) insured under such policy or
policies are _____

and in addition thereto, the City of Palo Alto, its officers, agents,
and employees, but only as to work performed or required under such
contract and except as to any Workmen's Compensation Insurance.
Said coverage as to the City of Palo Alto etc., shall be primary
coverage, any other insurance carried by the City being excess
insurance only.

2. The policies in force with limits of liability not less than those
specified below are as follows:

<u>Coverage for which</u> <u>Insurance is afforded</u>	<u>Limits of</u> <u>Liability</u>	<u>Policy</u> <u>Number**</u>	<u>Policy</u> <u>Period*</u>
Workmen's Compensation & Employer's Liability	Compensation Statutory		
Bodily Injury Liability except automobile includ-	\$100,000 each person \$300,000 each occur-		
ing the following coverages:	rence		

<u>Coverage for which Insurance is Afforded</u>	<u>Limits of Liability</u>	<u>Policy Number**</u>	<u>Policy Period*</u>
Protective, Completed Operations, Broad Form Contractual and Personal Injury			
Property Damage Liability except automobile Including the following coverages: Protective, Completed Operations, and Broad Form Contractual	\$100,000 each occurrence		
Bodily Injury Liability	\$100,000 each person		
Automobile	\$300,000 each occurrence		
Property Damage Liability Automobile	\$100,000 each occurrence		

OR WHEN SINGLE LIMIT POLICY IS ISSUED:

Liability (Bodily Injury and Broad Form Property Damage), Including the following coverages: Protective, Completed Operations, Broad Form Contractual and Personal Injury	\$300,000 each occurrence
---	---------------------------

* Policy is effective and expires at 12:01 A.M., Standard Time at the address of the named insured as stated herein.

** Absence of an entry in these spaces means that insurance is not afforded with respect to the coverages opposite thereto.

3. Deductibles over \$500.00 must be indicated and are subject to approval. No bodily injury deductibles will be approved.

4. Where the work involved includes blasting, explosion coverage is included under the limits above.

5. Where the work performed involves excavating, collapse of building coverage is provided in the amounts provided above. (The City may waive this requirement in writing when the opinion of the Utilities Department is that such coverage is not necessary because of the location or the depth of the excavating to be done).
6. Where the work performed involves grading of land, paving, excavating, drilling, or other underground work, the policy includes coverage for the liability of the insureds for injury to or destruction of wires, conduits, pipes, mains or other similar property, or any apparatus in connection therewith, below the surface of the ground whether owned by third parties or the City of Palo Alto.
7. The policy includes a "Severability of Interest" provision.
8. If such policies are cancelled or change during the period of coverage as stated herein in such a manner as to affect this Certificate, thirty (30) days written notice will be mailed to the said City of Palo Alto.
9. The coverage afforded under the above policies is subject to all the terms of the policies designated herein and meets all the provisions called for herein. ANY EXCEPTIONS MUST BE NOTED BELOW:

In executing this certificate, representative certifies that he has authority so to do for the Company.

DATED _____, 1978

APPROVED AS TO FORM

Company

City Attorney

By _____
Its Authorized Representative

Date _____, 1978

Address

APPROVED:

City

Telephone number

HOLD HARMLESS CLAUSE

WHEREAS, _____
has been awarded a contract with the City of Palo Alto to perform
certain work described as follows: Home-Insulation Program

The Contractor agrees to save and hold harmless the City, its officers,
agents and employees from any liability of any nature whatsoever
caused in whole or in part, by the negligence of the Contractor, or
his agents, or employees arising out of such work.

Dated _____, 1978 _____
Contractor or Permittee

By _____

Address

City

PERFORMANCE BOND
(In the amount of \$5,000)

KNOW ALL MEN BY THESE PRESENTS: That

WHEREAS, the City of Palo Alto, State of California, has awarded to

hereinafter designated as the "Principal," a contract for the improvements described in the specifications designated as "Home-Insulation Program," on file with the City Clerk, and

WHEREAS, said Principal is required under the terms of said contract to furnish a bond for the faithful performance of said contract;

NOW, THEREFORE, we the Principal, and _____

as Surety, are held and firmly bound unto the City of Palo Alto in the penal sum of _____ DOLLARS (\$5,000) lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that if the above bounden principal, his or its heirs, executors, administrators, successors, or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions and agreements in the said contract and any alteration thereof made as therein provided, on his or their part, to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify and save harmless the City of Palo Alto, its officers, agents and employees, as therein stipulated, then this obligation shall become null and void otherwise, it shall be and remain in full force and virtue.

And the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or the work to be performed thereunder or the specifications accompanying the same, shall in any wise affect its obligations on this bond, and it does hereby waive notice of any change, extension of time, alteration or addition to the terms of the contract or to the work or to the specifications.

IN WITNESS WHEREOF two identical counterparts of this instrument, each of which shall for purposes be deemed an original thereof, have been duly executed by the Principal and Surety above named, on the _____ day of _____, 1978.

APPROVED AS TO FORM:

Principal _____

City Attorney

By _____

Surety _____

Date _____

By _____

LABOR AND MATERIAL BOND

(In the amount of \$2,500)

KNOW ALL MEN BY THESE PRESENTS:

THAT _____,

as principal, and _____,
as surety, are held and firmly bound unto the City of Palo Alto, a
municipal corporation, in the just and full amount of _____
DOLLARS (\$2,500)

for the payment whereof we hereby bind ourselves, our heirs, executors,
administrators, successors and assigns, jointly and severally, firmly
by these presents.

Given under our hands and sealed with our seals this _____
day of _____, 1978.

The condition of the foregoing obligation is such that,

WHEREAS, the above-named principal has been awarded a contract by
the Council of the City of Palo Alto for the improvements described in
the specifications designated as: Home-Insulation Program

which said contract is hereby referred to and made a part hereof to
the same extent as if the same were herein specifically set forth;

NOW, THEREFORE, if the said principal or his/its subcontractors
fail to pay for any materials, provisions, provender or other supplies,
or teams used in, upon, for or about the performance of said work
contracted to be done, or for any work or labor thereon of any kind,
or for amounts due under the Unemployment Insurance Act with respect to
such work or labor, the surety will pay for the same in the amount not
exceeding the sum hereinabove specified, and in case suit is brought
hereon, a reasonable attorney's fee to be fixed by the Court. in which
event this bond shall thereafter become null and void, otherwise it
shall be and remain in full force and effect.

PROVIDED, that any alterations in the work to be done, or the
material to be furnished, which may be made shall not in any way
release the principal or the surety hereunder, nor shall any extensions
of time granted release either the principal or the surety, and notice
of such alterations or extension of the contract is hereby waived by
the surety.

This bond shall inure to the benefit of any and all persons entitled to file claims under Section 1192.1 of the Code of Civil Procedure of the State of California, and shall give a right of action to such persons or their assigns in any suit brought upon this bond.

Witness our hands this _____ day of _____, 1978.

APPROVED AS TO FORM:

PRINCIPAL _____

City Attorney By _____

Surety _____

Date _____ By _____

CITY OF PALO ALTO
HOME-INSULATION PROGRAM
CHECKLIST FOR BIDDERS

M.E.P. due March 15, 1978, directed to Director of Purchasing Services _____

Sealed Proposals (bids) due March 22, 1978, not later than 3:00 p.m.,
directed toward Director of Purchasing Services, 250 Hamilton Ave., _____
Palo Alto, California 94301
(Bid opening - Council Conference Room, March 22, 1978, 3:00 p.m.)

\$1,000 surety (or cash, certificate of deposit, certified check of
draft, or a cashier's check or draft) due with bid. _____

Notice also that blanks need to be filled in by bidder on pages
6, 7, 8, 9, 10, 11, 12, 13 of bid packet. _____

If awarded contract, the following will be due fifteen days after award
of contract:

Performance Bond (\$5,000) _____

Contractor labor and material bond (\$2,500) _____

Certificates of Insurance _____

INSULATION ELEMENT - INSTRUCTIONS TO
CONTRACTOR FOR BILLING

-118-

INSTRUCTIONS TO CONTRACTOR

HOME-WEATHERIZATION PROGRAM

1. The Conservation Office will send to you a copy of the survey/contract (S/C) between the homeowner and City which will specify the number of bags and type of insulation, the number and location of eave vents and recessed fixtures, etc. This form will be mailed to you after the customer's three day right of rescission period has passed. This form is your order form.
2. Your office will contact the homeowner directly to arrange an appointment. According to the contract you have signed with the City, you are to contact the customer within two (2) work days after receipt of a S/C and install the insulation within ten (10) work days after the receipt of the contract.
3. Install the number of bags of the specified product as outlined on the contract survey form. If, for some reason, it is obvious from the number of bags installed that the homeowner will not be obtaining at least an R-19, please call us right away (329-2241) so we can send someone out to recalculate, while you are still at the residence.
4. After installation is made, fill out and sign the Certificate of Completion. Also have the customer sign it. If the customer's payment is to be COD, collect a check for the payment made out to "City of Palo Alto."
5. Submit all certificates of completion, checks and invoices weekly to Sharon Kruse, Resource Conservation Program Assistant, 250 Hamilton Avenue, Palo Alto, California, 94301, by 5:00 p.m. each Wednesday for the previous week's installations. Any invoices received after this deadline will be processed the next week. These invoices should be itemized with your copy of the homeowner's S/C attached as backup. Warrants will be mailed out to you by 5:00 p.m. each Monday.
6. Remember to use only the product on which you bid. Homeowners will be instructed to examine bags and count them. (A copy of homeowner's instructions are included).

7. Follow the specifications as outlined in the contract you have signed.
8. We will be making periodic inspections of the work performed. The contractor absorbs the expense if sent back out due to fault of contractor. If contractor is sent back out due to City's error in determining correct bag count, City will reimburse contractor for the extra bags needed.
9. Remember that the contract states that attic access will be covered with R-19 batt-type insulation.
10. Any attics with a clearance of less than 30" will not be referred to you unless you are willing to perform the installation at the same price you bid.
11. Any questions may be directed to Connie Smyser or Sharon Kruse, Resource Conservation Program, 329-2241.

INSULATION ELEMENT - COMPLETION
CERTIFICATE

-120-

Instructions to Contractor

Complete this section below by filling in: 1) Certification of Completion and 2) Completion date. Obtain customer's signature, sign for Contractor and return to the City of Palo Alto, Municipal Utilities. NOTE: YOU MAY WISH TO MAKE A COPY OF THIS FOR YOUR RECORDS.

To: City of Palo Alto
Municipal Utilities
Conservation Office
250 Hamilton Avenue
Palo Alto, California 94301

CERTIFICATION OF COMPLETION

The installation of _____
(brand and type)
Insulation ("R" Factor _____ per manufacturer's specifications)
has been completed.
Completion Date _____

Signature of Customer Date

Signature of Contractor

Signature of Contractor's Representative Date

MUNICIPAL UTILITIES
home weatherization
program

INSULATION ELEMENT - INSTRUCTIONS TO
INSULATION CUSTOMER

-121-

INSTRUCTIONS TO CUSTOMER
FOR
CONTRACTOR INSTALLATION OF INSULATION

1. An insulation contractor will call you to schedule your installation date.
2. Double check at the time the contractor schedules your home as to the R-value, type and brand of insulation and bag count shown on your copy of the Survey/Contract form.
3. If you have items stored in your attic, please remove them prior to the installation date.
4. Also, please check to be sure the area of access to your attic is clear and that the installers can get to it. If you have a drop cloth, you should put it around the attic access area.
5. You have purchased a specific number of bags of insulation. In order to check that number, you should:
 - A. Make sure installer begins with an empty machine hopper.
 - B. Stand by and count the bags as they are fed to the machine, making sure they are the type or product ordered.
 - C. Check for Underwriters Laboratory label on bag.
 - D. Make sure installer finishes with an empty machine hopper. When the installer has completed the job, have him sign the Certificate of Completion, stating R-value.
6. Check to make sure the attic access is insulated with fiberglass batts.
7. Upon completion of installation, inspect your attic to make sure all is in order, and that any necessary cleanup has been done. Look for relatively even coverage, unblocked eave vents, uncovered recessed lighting fixtures, etc. If you are satisfied with the job, sign the completion certificate that the installer will provide for you. If the sale is C.O.D., make check out to "City of Palo Alto" and give to contractor after you have accepted the installation.
8. If you are not satisfied with the job, call the Resource Conservation Program to arrange an inspection. At that time you will receive further instructions.
9. Any questions can be directed to Sharon Kruse or Connie Smyser, Resource Conservation Program, 329-2241.

3 copies

TRAINING - INSULATION TRAINING FOR HOME ENERGY CONSULTANTS

SACRAMENTO MUNICIPAL UTILITY DISTRICT □ 6201 S Street, Box 15830, Sacramento, California 95813; (916) 452-3211

INSULATION PROGRAM TRAINING

1/16/78 8:00 - 4:45

1/17/78 8:00 - 11:45

General Operating Procedures

Sales information and procedures including:

1. Contract Procedure

- a. Interest
- b. Calculation
- c. Terms
- d. Right of Rescission
- e. Other related items - see Insulation Survey/Contract Procedure
- f. Calculator quiz

2. Insulation

- a. R Value
- b. Identification
- c. Cellulose testing
- d. Other heat transfer information
- e. Product charts

3. Survey Procedure

- a. Estimating existing R value
- b. Measuring house
- c. Scale drawing
- d. Calculating square footage
- e. Cost and presentation
- f. See sales information

1/17/78 1:00 - 5:00 Meeting at Energy Commission - Room 620

1/18/78 8:00 - 11:45

4. Field Training

- a. Measure house
- b. Line drawing
- c. Fill out contract

1/18/78 ^{12:45}~~2:00~~ - 5:00 Field men to travel with individual Insulation Technician on actual appointments

1:00 - 4:45 Office Personnel

INSULATION PROGRAM TRAINING (continued)

Administrative Procedure

1. Outline of complete procedure
2. Problems
3. Personal types needed
4. Inspection procedures

1/19/78 8:00 - 5:00 Field men to travel with Insulation Technicians, etc.

1/19/78 8:00 - 5:00 Office Personnel

Administrative Procedure (continued)

5. Accounting Department
 1. General Accounting
 2. Plant Accounting
6. Customer Service Department
7. Review (as needed)

1/20/78 8:00 - 11:45 Inspection Procedure
All personnel in the field on inspections

TRAINING - SURVEY TRAINING FOR HOME ENERGY
CONSULTANTS

-124-

TRAINING FOR RESIDENTIAL ENERGY AUDITS

February 21, 22, 23

Tuesday, February 21

8:00-10:00- Residential Appliances

10:00-10:20- Break

10:20-12:00- Residential Appliances

12:00-1:00- Lunch

1:00-2:00- Heating and Cooling

2:00-2:45- Bill interpretation; homework assignment

2:45-3:00- Break

3:00-5:00- Trip to appliance store to look at conservation features

Wednesday, February 22

8:00-8:45- Go over homework assignment

8:45-9:15- Weatherstripping; caulking

9:15-10:15- Window shading devices

10:15-10:35- Break

10:35-11:15- Swimming pool management; pool covers; solar tax laws

11:15-12:00- Lighting

12:00-1:00- Lunch

1:00-1:30- Lighting

1:30-2:45- Test

2:45-3:05- Break

3:05-3:30- Loose ends

3:30-4:00- Discussion of next day's activities

Thursday, February 23

7:30-8:00- Drive to first audit

8:00-10:00- First audit and critique

10:00-10:30- Drive to second audit

10:30-12:00- Second audit

12:00-1:30- Lunch; drive to third audit

1:30-3:00- Third audit

3:00-3:30- Drive to fourth audit

3:30-5:00- Fourth audit

INTERNAL PROCEDURES: OVERALL INTERNAL ROUTINE, ADDITIONAL CONSIDERATIONS WHEN MAKING OUT CONTRACTS, PROCEDURE FOR HOME-ENERGY CONSULTANTS, INSPECTION PROCEDURE, INSULATION SURVEY/CONTRACT PROCEDURE, PROCEDURE FOR CLERK.

The following pages are the procedures to be followed in the Home-Weatherization Program. These procedures are to be evaluated periodically and revised according to new information and processes that are received.

Internal Routine

Home-Weatherization Program

1. Conservation Division receives bill stuffer from homeowner with one of the following items checked:
 - No. 1 - Wants complete energy survey (including insulation check)
 - No. 2 - Wants attic inspection only
 - No. 3 - Wants Do-It-Yourself packet only
2. Record name, address, phone number on card and date (or tape bill stuffer on card).
3. If homeowner checked No. 3 above, send it in mail, make notation on card "sent _____" and file card in separate card file for "Do-It-Yourselfers" by address. Lorraine will mark on log each kit that is sent out chronologically.
4. If homeowner has checked No. 1 or No. 2 above, follow procedure listed below:
 - a. File card (filled out in Step 2) under "Requests Received" section of card file by date we receive the request to ensure "first come-first served" order.
 - b. Appropriate staff members will make appointments (Laura and Pat will make their own, Sharon or Lorraine will make appointments for Larry). Appointments will be made by phone.
 - c. When making the appointment, briefly describe what it is we will be doing in the home. If the homeowner wants a complete survey, cover the following points:
 1. Home Energy Consultant (HEC) will perform a walk-through of your house looking for energy inefficiencies. He (she) will check for such items as:
 - cracks which need weatherstripping and caulking;
 - appliance efficiency
 - lighting uses
 - water uses
 2. We will look at your attic and your utility bill to determine if you need insulation. Therefore, please be aware that we will need to look into your attic, so you may want to cover your attic access area.
 3. We will also send you a list of recommendations with approximate costs, energy savings, and payback within one week of the survey.
 - d. If the homeowner is interested only in having an attic inspection, cover the following points:

- We have several payment options available with utility bill payback
 - low interest (8%) loans available
 - we will certify that the house has been insulated under our program to reach R-19 after installation
- e. File card under "Appointments Made" by address. Fill in appointment date, time, HEC _____.
- f. If homeowner does not want to set a date yet, put in "hold" file. If no answer, mark card "n/a" and file in "hold" by address for follow up.
5. Home Energy Consultant goes to house on appointed day and performs the walk-through, following the revised form and the revised script.
6. If there is a need for insulation, the Home Energy Consultant will measure the house and explain the insulation options to the homeowner covering the following points:
- a. We have an insulation program available whereby we can arrange to have the work completed by a City-approved contractor.
 - b. We have three types of insulation material available - rockwool, fiberglass, and cellulose.
 - c. If you think you might be interested, I can figure out what it would cost.
 - d. If you are interested in financing the work, we have 8% loans available which can be paid off in 1/2 to five years. We also have loans available which can be paid off in 30-60 days with no finance charge. The payments will be added to your utility bill.
 - d. After the work has been completed, we will send you a certificate stating that the house has met a minimum R-19 standard through the City of Palo Alto Home Weatherization Program.

NOTE: IF HOMEOWNER APPEARS TO BE ELDERLY OR LOW INCOME, YOU SHOULD MENTION THAT SANTA CLARA COUNTY OPERATES A CHEC PROGRAM. ALSO MENTION CAL VET, AND HOUSING REHABILITATION PROGRAM THROUGH CITY OF PALO ALTO.

NOTE: IF YOU FILL OUT A CONTRACT, EVEN IF THE SALE IS NOT COMPLETE, BE SURE TO LEAVE WARRANTY INFORMATION AND NOTICE OF RESCISSION WITH HOMEOWNER.

7. If homeowner wants to have the work done, HEC determines how many bags are needed based on the type of insulation the homeowner wants, if you have not already done it. Follow the SMUD procedure regarding the contract, being sure to leave notice of rescission and warranty information, and instructions to customer.

NOTE: If the homeowner is not sure if they want a contract filled out, try to at least measure the house anyway and make a scale drawing. This will allow us to write up a contract in the office and mail it out without having to go back out to the house.

- a. We will need to use a coverage chart based on the brands of insulation we will be using.
- b. Prices for insulation/square foot have been determined, and a price sheet has been developed.

8. When HEC returns to office, perform calculations for Energy Prescription and send to homeowner within one week. Note on card what day the calculations were sent, and file under "Consultation Completed" or "Pending Installations" (for those wishing attic installation by address).
9. Give completed contracts to Sharon to hold for three days. She will double check calculations for accuracy. If mistakes are found, she will return contracts to HEC, and HEC will need to notify homeowner of any changes made to contract. Contract will need to be rewritten and signed again, which can be done through the mail.
10. While holding contracts for three-day waiting period, Sharon will arrange a credit check on homeowner waiting for financing. A credit rating of 85 will qualify the homeowner.

If homeowner does not have a credit rating of 85, Sharon will call them and explain to them that it is possible to bring their credit rating up in four to six months if they pay their bills promptly, or, if they wish, they can pay COD.

File card in "Credit Denials" according to address if they do not wish to pay COD.

11. If credit is good, Sharon will determine which contractor should perform the installations (based on which product homeowner wants). Refer job to contractor by sending him copy of the contract (after the 3-day rescission period has passed).
12. Original card now filed under "Pending Installations" will be pulled by Sharon and the following information filled in: (This information will come off contract).

Contract No. Sold Date, Product, Square Feet, Sale: Cash, 30D, 30/60D
Financed Years, Total Amount, Bags, R-19, R-11, Interest Only, Down-payment.

Card will be filed under "Referred to Contractor"

13. Sales sheet will be filled in at this time by Sharon or Lorraine.

14. Contractors will submit invoices weekly for the previous week's installations, itemized, with contractor's copy of homeowner's agreement attached as back-up. Contractor will also submit a completion certificate signed by him and homeowner. These invoices will be due by 5:00 p.m. each Wednesday for the previous week's work. (Itemized bills not received by then will be held until the following week). Any changes will be noted. Sharon will review these invoices.
15. Follow procedure for inputting data on computer system for billing. This procedure will be available from Diether Roth.
16. Sharon will type direct payment warrants using contractor's itemized statements (with back-up copy of contract) for attachment. These warrants will be hand carried to Barbara Frembling in Controller's Office.
17. When payments are ready, Sharon will personally pick up checks from Barbara, check them, and mail to contractors by Monday, 5:00 p.m. Cards will be pulled from "Referred to Contractors" and given to Lorraine.
18. From cards, Lorraine will type out Certificates of Insulation, and mail to homeowners. She will mark on card the date the certificate was sent. Card will then be filed under "Installations Completed".
19. Follow up on completed surveys by having Laura and Pat turn in completed surveys to Sharon, who will file them in expanding file for follow-up in one and six months.

OTHER CONSIDERATIONS

WHEN MAKING OUT CONTRACTS

Sliding doors in attics - batt over - sell batts at 25¢ per square foot-Coast
28¢ per square foot - Superior

Mark on drawing when access is small or low

Mark heater and water heater vents in attic

Sell batts (25¢ per square foot) for closet vents (28¢ per square foot for Superior)

If access is over 150 feet back from street, mark on drawing.

Mark Recessed lights

Mark doorbell transformers

Mark closest door to access

Mark furnace in attic

Mark eave vents - \$15.00 extra

Mark knee walls - be sure to measure them - 25¢ per square foot (Coast)
28¢ per square foot (Superior)

Be sure to mark any potential heat source

PROCEDURE FOR
HOME-ENERGY CONSULTANTS

In the Office

1. Pull card from "Requests Received" file and make appointments. Try as much as possible to use a "first come--first served" order.
2. When making the appointment briefly describe what it is you will be doing in the home. If the homeowner wants a complete survey, cover the following points:
 - a. We will perform a walk-through of your house looking for energy inefficiencies. We will check such items as:
 - cracks which need weatherstripping and caulking
 - appliance efficiency
 - lighting uses
 - water uses
 - b. We will also look at your attic and utility bill to determine if you need insulation. Therefore, please be aware that we will need to get to your attic access, so you might want to cover your clothes if the access is in a closet.
 - c. After the audit is completed, we will send you a list of recommendations with approximate costs, energy savings and payback within one week of the survey.
 - d. If the homeowner is interested only in having an attic inspection, cover the following points:
 - we can arrange to have the work done by a Utilities Department approved contractor
 - we have several payment options available with utility-bill payback
 - low interest (8%) loans available
 - we will certify that the house has been insulated under our program to reach R-19
3. File card under "Appointments Made" by address. Fill in Appointment date, time, HEC."
4. If the homeowner does not want to set a date yet, put in "Hold" file. If no answer, mark card "N/A" and date it and put in "Hold" file by address.
5. Arrange the following prior to the appointment:
 - a. determine if the house is in a housing development and record*
 - b. ask Lorraine to get printouts for water, gas and electric usage
 - c. get average use and range of use for similar houses*

*These will become part of the process at a later date.

In the House

6. HEC goes to house on appointed day to perform the walk-through.

7. Introduce yourself and the inspection procedure.

- . Name
- . Will be here for 1 to 2 hours.
- . All data will be kept confidential.
- . Let the homeowner know about the safety check:
"You should know that I am not checking the safety of your appliances. If you would also like a safety inspection, we could see if a customer service person is available at this time. If one is not available now, you can call 329-2413 at a later date have this service performed.

Before I begin the inspection, I would like to give you a quick overview of residential energy use."

- Show customer the breakdown of energy use in country.
- Show customer the breakdown of energy use in average residence, emphasize the major uses.
- Show breakdown of home energy use which separates out gas and electric. Once again, emphasize major uses.
- Show customer utility history, explain base load concept.

"The recommendations I will make on this survey will either be for big energy savings or for small energy savings which cause you little or no inconvenience." (Give water conservation example.)

I will be going through the house looking at various energy uses,

- checking for drafts around doors and windows,
- checking your energy-using appliances,
- checking your attic for insulation. "

"If your attic needs insulation, I will measure the house so that I can give you an estimate of how much insulation is needed. "

"After I am done with the inspection, I will have some questions for you."

8. Go through the house per the survey.

9. If there is a need for insulation, measure house and fill in as much of the contract as is possible without the homeowner's assistance.

10. After completion of the survey, sit down with customer:

- . Ask remaining questions that are needed on the survey form.
While asking questions, you can mention conservation measures that are related to the questions you are asking.
- . Summarize problems noted on inspection, briefly. If the homeowner did not go with you, proceed to explain:
 - problem areas, by going through checklist;

- point out places which need weatherstripping and/or caulking;
 - show customer samples of materials or instructions for installing;
 - . Tell homeowner that the recommendations with costs and savings will be sent.
11. If the homeowner needs insulation, explain the options to the homeowner; cover the following points while emphasizing that they should insulate for savings and comfort;
- . What your recommended R value is;
 - . The 3 types of insulation available, i.e., Rockwool, Cellulose and Fiber-glass;
 - . Savings expectations.
 - . If the homeowner thinks they might be interested in financing, explain our options:
 - C.O.D.
 - 30/60 day-no finance charge
 - one to five years at 8%
 - payment on the utility bill
 - . Availability of D.I.Y. packet
 - . After installation, we send a certificate stating that the house has met State Standard of R-19

NOTE: If homeowner appears to be low-income, tell them about Santa Clara County
CHEK Program; the number is: (408) 998-3020
CAL VET Program; the number is: (415) 557-1566

12. If homeowner wants to participate, fill out Contract. Be sure to leave two (2) copies of Notice of Rescission, and one (1) copy of Warranty Information. Follow SMUD procedure for filling out Contract. (SMUD Procedure is attached). Also, leave Instructions to Customer.
13. Thank them for their interest in our program and tell them that we will be calling them after one month, and again after six months, to find out if they have implemented any of the recommended measures. Reassure them that they are under no obligation to do any of the measures we recommend, but that we will be calling only to help us evaluate our program.

Back at the Office

14. Give completed contracts to Sharon. She will double-check the calculations for accuracy. If mistakes are found, she will return contracts to you, and you will need to notify homeowner of any changes made to contract. Contract will need to be rewritten and signed again.
15. Perform calculations for energy prescription and send to homeowner within one week. Note on card what day the calculations were sent and file under "Consultation Completed" or "Pending Installations" (for those wishing attic inspection) by address.
16. Record the energy use in appropriate place.*

*This will become part of the process at a latter date.

PROCEDURE FOR HOME-WEATHERIZATION PROGRAM CLERK

1. Conservation Division receives bill stuffer from homeowner with one of the following items checked:
 - No. 1 - Wants complete energy survey
(including insulation check)
 - No. 2 - Wants attic inspection only
 - No. 3 - Wants Do-It-Yourself packet only
2. Record name, address, phone number on card and date (or tape bill stuffer response on card.)
3. If homeowner checked No. 3 above, send it in mail, make notation on card "Sent _____" and file card in separate card file for "Do-It-Yourself" (date) according to address. Mark on log each kit as it is sent out chronologically.
4. If homeowner has checked No. 1 and No. 2 above, follow procedure listed below:
 - a. File card (filled out in step 2) under "Requests Received" section of card file according to date we receive the request to ensure "first come - first served" order.
 - b. Clerk will make appointments for Larry. Appointments will be made by phone.
 - c. When making the appointment, briefly describe what it is we will be doing in the home. If the homeowner wants a complete survey, cover the following points:
 1. Home Energy Consultant (HEC) will perform a walk-through of your house looking for energy inefficiencies. He (she) will check for such items as:
 - cracks which need weatherstripping and caulking;
 - appliance efficiency
 - water uses
 2. We will look at your attic and your utility bill to determine if you need insulation. Therefore, please be aware that we will need to look into your attic, so you may want to ^{up}cover your attic access area.
 3. We will also send you a list of recommendations with approximate costs, energy savings, and payback with one week of the survey.

- d. If the homeowner is interested only in having an attic inspection, cover the following points:
 - We have several payment options available with utility bill payback;
 - Low-interest (8%) loans available;
 - We will certify that the house has been insulated under our program to reach R-19 after installation.
- e. File card under "Appointments Made" according to address. Fill in appointment date, time, HEC_____.
- f. If homeowner does not want to set a date yet, put in "Hold" file. If no answer, mark card "N/A" and file in "Hold" by address for follow-up.

5. Clerk will get M1, M2, M3, for homes for which appointments are made.

6. Home Energy Consultants and Program Assistant will give Clerk energy prescriptions to type. After they are typed, Clerk will pull card from "Appointments Made" and note on card what day the calculations were mailed. File under "Consultation Completed" or "Pending Installations" for those wishing attic installation. File by address.

7. After Program Assistant performs credit check, and if credit is good, the pending installation will be referred to the contractor. At this time the card which is filed under "Pending Installations" will be pulled by Sharon or Lorraine and the following information filled out:

Contract Number, Sold Date, Product, Square Footage,
Sale: Cash, 30 Day, 30/60 Day, Financed Years, Total Amount
Bgs, R-19, R-11, Interest Only, Down Payment.

Card will be filed under "Referred to Contractor."

8. Clerk or Program Assistant will fill in sales sheet at this time.

9. After invoices are received, Clerk will type out Certificate of Insulation and mail it to homeowner. Mark on card the date the Certificate was mailed.

10. File card under "Installations Completed."

11. Clerk will file completed surveys in expanding follow-up file.

12. Follow-up in one (1) month, and six (6) months to see which measures were implemented.

Inspection Procedure

Home-Weatherization Program

Whenever a complaint is received by a customer regarding their installation, we will send an inspector out. We will also perform random inspections. The procedure for inspections is the following:

1. Request from customer for inspection is received by conservation office.
2. Conservation Office asks customer for address.
3. Pull card and give to HEC to set up an appointment for an inspection.
4. Attached is a form used to aid inspector.
5. HEC performs inspection. If there is a problem with shortage, HEC remeasures house. Tell Sharon results of inspection.
6. Sharon will refer contractor back to house if there was a problem. If contractor's mistake, he pays. If City's mistake, we pay.
7. Contractor will submit invoice for work that is City's fault.
8. Mark card with date of inspection, and refile under "Installations Completed."
9. Sharon will file inspection report with contract, and keep a log of all inspections completed.

ATTIC INSULATION INSPECTION

Contract No. _____

Date Inspected _____

Inspector _____

Name _____

Address _____

Zip _____

Telephone No. _____

R _____ Square Feet _____

Product _____ No. Bags _____

Contractor _____

Home-Energy Consultant _____

Proper Weight _____

Installed Weight _____

Comments by customer regarding Home Energy Consultant:

Comments by customer regarding contractor:

Comments by Inspector:

NOTES: _____

INSULATION SURVEY/CONTRACT PROCEDURE

NOTE: Fill in every blank

1. Determine present R-Value of attic (see R-Value/thickness chart). Place it in the space provided under the scale drawing space.
2. If additional insulation is needed, measure outside perimeter of home and draw envelope of house to scale, marking attic, furnace and recessed lighting as needed. Compute total square feet of attic. Mark eave vents also and advise homeowner that eave vent baffles are \$15.00 extra.
3. After talking to the customer and determining any preference, compute R-19 or R-11 insulation needed and quantity of bags and brand/product in required spaces.
4. Put total square feet, cost per square foot and total cost in proper spaces under Description of Insulation Material and Services on the form.
5. If the sale is to be C.O.D., check the square after "On Installation Date," fill in (1) before "Payments" and total amount in space after "Payments of \$ _____"
6. If the sale is to be paid in 30 days, check the square after "30 days," fill in (1) payment of total amount and "Month Following Installation."
7. If the sale is to be paid in 60 days, check the square after 60 days, fill in (2) payments of 1/2 total amount and due date in the spaces provided. (Subtract 1¢ from total amount if not even.)
8. If the payment is to be financed, check the square after financed, compute the finance charge and monthly payment (6, 12, 18, 24, 30, 36, 42, 48, 54 or 60 months).

To compute the finance charge, multiply the total amount times the factor opposite the amount of months to be financed. This will give you the monthly payments. Multiply this times the total months. This will give you Total Remaining, Including Finance Charge. Subtract the total amount for the Total Finance Charge. Place these figures in the spaces provided.
9. If there has been a down payment, be sure to add it to the above total before entering the Total Price of Contract in its proper space.
10. Whether there is a sale or not, sign and date the form as City representative. If there is a sale, even if it is for cash, have the Owner sign the Contract.
11. Copy #4 (the last page) is left with the customer and the other 3 are to be returned to Sharon the same or following work day. If there is no sale, leave the entire contract with the customer. For our records, make note of Contract number, square feet, R-value, R to be added and price.
12. Also leave two (2) copies of "Notice of Rescission" and one (1) copy of "Warranty Information" with the customer, write the Contract number on both, and explain the law.

NOTE: Always round down to the nearest cent for money.

For bags, round up if greater than .5; round down if less than .5

INTERNAL PROCEDURES - HISTORY CARD
USED TO PROCESS CUSTOMER REQUESTS
FOR HOME ENERGY SURVEY/INSULATION
INSPECTION.

NAME: _____

Contract No. _____

ADDRESS: _____

Account No. _____

PHONE: _____

Zip

Appointment Date _____ Time _____ Home-Energy Consultant _____
Sold Date _____ Installed Date _____ Product _____ Contractor _____
FU for Sales Date _____ Sq. Feet _____ Calculations sent _____
Sale: Cash _____ 30D _____ 30/60D _____, Financed _____ Years _____

Total Amount _____ Bags _____ R-19 _____ R-11 _____
Interest Only _____ Certificate Sent _____ Post-Installation
inspection done _____

Downpayment _____

Do-It-Yourself Only _____

Comments:

Home-Energy Survey Only _____

FLOW CHART OF CONTRACT PROCESS

INTERNAL PROCEDURE - FLOI HART
FOR HOME ENERGY SURVEYS AND CONTRACTS

1. Request Received
2. Make Appointment, Run Util. History
3. File Hard Copy, HEC File

(INSULATION CONTRACT)

4. HEC turns in contracts or contracts rec'd. in mail.
5. Contract Signed
6. Credit Check (If credit not OK, notify homeowner, file contract in "Credit Denials")
7. Hold contract 3 days
8. Receive invoice, certificate of completion and check for cash sales
9. Check invoices against contracts for accuracy.
10. Type up DPW and attach copies of invoice, contracts, and checks
11. Take DPW to Purchasing and Controller for processing*
12. Mail check to contractor on or before following Monday by 5:00 p.m.
13. File yellow copy of DPW and invoice in appropriate contractor's file.
14. File original (with attachments) in working file.

(ENERGY SURVEY)

4. HEC turns in survey
5. HEC performs calculations for energy prescription
6. Send out calculations, utility history, cover letter
7. Post to Map
8. Fill out green cards, "calculations sent"
9. Follow up in 1 and 6 months

* For cash sales, Controller's Office will type up receipts. Attach to original contract.

FLOW CHART OF CONTRACT PROCESS (CONTINUED)

Monthly

1. Fill out "Weatherization Loan Schedule Input Form" for financing customers (not cash, or 30,60 day)
2. Check schedules for accuracy
3. File schedule in computer printout file
4. Fill out computer card labelled "Weatherization Loan Input" (all except cash)
5. Make alphabetical list of all computer cards to be submitted each month.
6. Turn in all computer cards to Controller's Office first day each month
7. Check to make sure all are being billed who should be.
8. Post originals to wall map
9. Send each homeowner certificate
10. File each original contract in permanent file alphabetically.

HEC: _____

Time Period:

FILL OUT AFTER EACH SURVEY - TURN IN TO BETH LAST DAY OF WEEK

[illegible]**TOTALS**

TIME LOG	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	TOTALS
Making Appointments								
Performing Calculations								
Other Time(meetings, travel, training, etc.)								

WEEKLY TOTALS: Appointment time _____, Calculation time _____, Other time _____

UPDATE ON WEATHERIZATION

<u>Month/Date</u>	<u>No. Visits</u>	<u>No. Visits Cum.</u>	<u>No. Insul. Houses</u>	<u>No. Insul. Houses Cum.</u>	<u>No. Sales</u>	<u>No. Sales Cum.</u>	<u>% Sales of Insul. Houses</u>	<u>% Sales of Insul. Houses Cum.</u>
May	34	34	21	21	5	5	24%	
June	76	110	29	50	9	14	31%	28%
July 3-8	19	129	11	61	4	18	36%	29%
July 10-14	27	156	21	82	13	31	62%	38%
July 16-22	21	177	14	96	9	40	64%	42%
July 23-29	17	194	17	113	12	52	70%	46%
July 31 - Aug. 5	13	207	9	122	8	60	88%	49%
Aug. 6 - Aug. 26	58	265	27	149	15	75	55%	50%
Aug. 28 - Sept. 8	33	298	8	157	5	80	63%	50%
Sept. 10 - Sept. 16	28	326	16	173	4	84	25%	48%
Sept. 17 - Sept. 23	25	351	27	200	2	86	27%	43%
Sept. 24 - Oct. 7	36	387	12	212	8	94	67%	44%
October 8 - Oct. 21	39	426	20	232	13	107	65%	46%
October 22 - Nov. 4	51	477	23	255	12	119	52%	47%
Nov. 5 - Nov. 18	50	527	37	292	20	13	54%	47%

Insul. = Insulatable

PROGRAM PUBLICITY-BILL STUFFER SENT IN MAY, 1978

NEW IN PALO ALTO!

HOME WEATHERIZATION PROGRAM

MUNICIPAL UTILITIES

The City of Palo Alto Utilities Conservation Office is proud to announce its newest and most unique service -- a comprehensive HOME-WEATHERIZATION PROGRAM. Here is what we can do for you!

At no cost to you, a thoroughly trained home-energy consultant from the Utilities Department will make a survey of your home to locate MONEY-WASTING ENERGY INEFFICIENCIES. The consultant will provide recommendations of measures you can take to save money and energy, and how much it will cost to carry out the recommendations. We will even tell you how much money you can save on your utility bill! As part of this survey, we will perform a FREE ATTIC INSULATION INSPECTION. We can also arrange an INSULATION INSTALLATION for you by a Utilities Department-approved contractor. For those of you who are interested in financing the installation, LOW-INTEREST LOANS (8%) with REPAYMENT ON YOUR REGULAR UTILITY BILL are available - NO EXTRA BILLS arriving in the mail each month. After the installation has been completed, we will send you an INSULATION CERTIFICATE stating that your house has been insulated through the City of Palo Alto's HOME-WEATHERIZATION PROGRAM. This entire energy reduction survey is FREE - it only will take about 1-1/2 hours of your time. For those of you who are only interested in an attic inspection, we can complete it in about 45 minutes. You will be under no obligation to implement any measures we recommend.

We also have available for you a free copy of our "DO-IT-YOURSELF WEATHERIZATION KIT". Tips on insulation, weatherstripping, caulking, as well as a "Do-It-Yourself" home-energy survey are included.

Don't miss this FREE opportunity to participate in one of the most UNIQUE ENERGY CONSERVATION PROGRAMS IN THE COUNTRY. Fill in the form below and mail it in with your utility bill or call 329-2241 for more information. YOU WILL SAVE ENERGY!

I am interested in the following:

- ☐ A complete energy survey of my home, including a free attic insulation inspection.
- ☐ An attic insulation inspection only.
- ☐ A "Do-It-Yourself Home-Weatherization Kit".

For an appointment for either the survey or inspection I would prefer weekdays between 8:00 and 5:00 _____ or evenings/Saturdays _____.

I understand that I am under no obligation by requesting this service.

Name _____ Phone _____

Address _____ Zip _____

Own or Rent _____ House or Apartment _____

WATER RATE DECREASE

Effective March 6, 1978, water rates in Palo Alto were reduced, passing through a corresponding rate decrease from the San Francisco Water Department, Palo Alto's water supplier. The rate reduction results in the following decrease in monthly bills:

<u>Example</u>	<u>Ccf</u>	<u>Amount</u>	<u>Decrease</u>	<u>(Decrease)</u>
Residential (lifeline)*	4	\$ 3.48	0	0
Residential	10	5.75	\$.19	(3.2%)
Residential	15	7.88	.36	(4.4%)
Residential	30	14.45	.89	(5.8%)
Commercial	49	26.23	1.61	(5.8%)

* No decrease was applied to the first four units of use since the lifeline amount was exempted from the rate increase that was enacted last July.

PROGRAM PUBLICITY-
SPECIAL UTILITY BILLING
ENVELOPE
SENT IN AUGUST, 1978

WE WANT TO HELP YOU SAVE MONEY IN YOUR ATTIC

If your attic insulation is not adequate, you are losing precious dollars in higher heating costs. As a homeowner within the City of

Palo Alto, you are eligible for a free attic inspection to determine how efficient your present insulation is.

Return this coupon for a FREE attic insulation inspection

**PLEASE HAVE A UTILITY REPRESENTATIVE PHONE ME TO
ARRANGE A FREE ATTIC INSULATION INSPECTION**

☐ I own residential property in the City of Palo Alto.
☐ I rent residential property in the City of Palo Alto.

NAME _____

ADDRESS _____

PHONE No. Home _____ Office _____

Best time to call for appointment _____ A.M. _____ P.M.

I would prefer an inspection in the evening or Saturday _____

**MUNICIPAL UTILITIES
home weatherization
program**

YOU CAN SAVE ENERGY AND MONEY! LET US TELL YOU HOW!

You can save money by allowing a Palo Alto Home Energy Consultant to make a complete energy survey of your home. Part of this survey includes an inspection of your attic to see if adding insulation will help you reduce energy use and costs. If you wish, the consultant can arrange for an insulation contractor to install what is needed. Low-interest financing (8%) is also available through the City with easy, convenient utility-bill payback.

When the work is completed, the City will send you a Certificate of Insulation.

A well-insulated house is more comfortable, quieter, and less expensive to heat and cool.

Let us help you save energy and money! Simply fill out the above coupon and mail it in with your utility bill today! The attic inspection and survey are FREE!

BE AN ENERGY SAVER!

PROGRAM PUBLICITY:
ARTICLE APPEARING IN
SAN FRANCISCO NEWSPAPER,
FEBRUARY, 1978

Palo Alto's Insulation Plan

A \$100,000 program to save energy by helping residents insulate their homes with low-cost loans has been approved in Palo Alto on a trial basis.

Palo Alto, which operates its own municipal utility district, is believed to be the first city in the nation to initiate this type of demonstration project. The program will include free energy inspections for homes and distribution of do-it-yourself insulation packets.

City officials said yesterday that application forms will be mailed out citywide with next month's utility bills. Their aim is to enlist as many as 600 homeowners in the loan plan.

Borrowers will be able to repay the eight percent interest loans over five years with the payment of their monthly utility bills.

Officials estimated start-up costs of the plan at \$44,000, of which \$14,000 will be provided with a federal energy grant secured by the Northern California Power Association—a group of 11 municipal utilities.

A \$100,000 revolving loan fund was authorized earlier this week by the city council. The program will end Jan. 1, 1978, unless the council votes to extend it.

PROGRAM PUBLICITY
ARTICLE APPEARING IN
SAN FRANCISCO NEWSPAPER
FEBRUARY, 1978

Palo Alto's Plan

S.F. Chronicle 2/27/78

AN INNOVATIVE PROPOSAL by the municipal government of Palo Alto — a \$100,000 program to save energy by helping residents insulate their homes with low-cost loans — deserves notice and commendation. The city, which operates its own utility district, is believed to be the first such municipality in the nation to start such a project.

Participants will receive free energy inspections of their homes and do-it-yourself instructions on how to insulate. The city council has authorized a \$100,000 revolving loan fund, and borrowers will repay the eight percent interest loans over five years, including the payments in their monthly utility bill remittances. The savings made through insulation — and thus a lowered utility bill — could over that time amortize the cost of insulation.

The cost of getting the insulation plan under way will be about \$44,000, some \$14,000 of this provided from a federal energy grant secured by a group of 11 municipal utilities known as the Northern California Power Association.

Palo Alto's program could, at maximum, cut down on energy usage. This forward-looking action is one that could well be copied by other municipalities.

Big home 'weatherization' program proposed by Palo Alto

A comprehensive "home weatherization" program, including loans to homeowners for attic insulation, has been proposed by the Palo Alto city utilities department staff.

The program aims at insulating and "weatherizing" up to 600 homes a year to provide a savings of up to \$400,000 to participating residents after the first five years, according to Ed Aghjayan, director of utilities.

A major feature of the program would be a \$100,000 revolving loan fund. The fund would be used to pay for contractor installation of attic insulation in people's homes. The residents would then repay the loan with their monthly utility bills, over a period of years.

Aghjayan said with longer pay-back periods, the amount saved in winter heating bills would about match the monthly payment. The average cost of installing attic insulation is about \$500, he said.

Other features of the program would include:

- Distributing packets of information about how to do-it-yourself in areas such as insulation, weatherstripping around doors and windows, insulating water heaters and heater ducts, caulking and even how to re-light furnace pilot lights.

- Providing free home-energy inspections to people who request them, to spot inefficiencies and defects in home weatherproofing.

- Officially certifying completed insulation installations, which may be useful if future tax credits are created for insulation, and when homes are sold, Aghjayan said.

The annual operating cost of the program is estimated at about \$44,000, above the cost of setting up the \$100,000 loan fund.

But \$14,000 of that will be paid by a federal Department of Energy grant which Palo Alto is getting through the Northern California Power Association (NCPA), a group of 11 public agencies which—like Palo Alto—own their own utility systems.

Another \$18,000 of the annual cost would be paid by a city surcharge of 2 cents a square foot of installed insulation, added to help pay administration costs of the program.

Aghjayan said the added charge will be more than offset by lower overall installation costs. He said the city has already contacted private insulation contractors, and that the city would contract for the installation at lower bid prices—because of the volume—than individual homeowners likely would be able to get. Also, the private contractors would be spared the cost of making individual home estimates, since that would be done by city personnel, he said.

The remaining \$12,000 cost is in salaries of existing city employees, either existing utility customer service people, or extra people hired to help administer the water rationing program that is just ending, Aghjayan said.

If the program can meet its 600 house a year goal, there would be a savings in heating energy of about 1 million therms a year, he said.

"Long-term energy supplies are maybe nonexistent, and if they are existent they will be more expensive," he said. "What we save now we'll be able to use later."

He said the program likely will be an impetus to other residents, businesses, and apartment owners who might insulate on their own, creating even further savings.

The recommended program is to be considered by the City Council on Feb. 13.

Aghjayan said that the loan program, as of now, will not be available for people who want to install their own insulation, or for people who want their walls insulated. It also does not apply to weatherstripping or other energy efficiency improvements—just attic insulation installation by contractors.

But those are future possibilities, he said.

The program is being coordinated by Connie Smyser, the city's resource conservation program manager, who wrote a 9-page report to the council on the program. She is being assisted by Sharon Kruse, who with three other city employees has already taken a class in home energy consulting put on by the Sacramento Municipal Utility District (SMUD), which is going into a similar program.

The other employees are Larry La Rosa, a utilities customer service representative, Laura Merrill, who has been working in the water rationing program, and Pat Gillespie.

The staff report recommends that \$13,000 be allocated now to begin the program, an amount that would be returned later through the grant funds.

Aghjayan said that not all houses can have attic insulation installed, such as the attic-less Eichler houses that abound in Palo Alto. The only insulation that can be installed in the flat-roof houses is sheet insulation under the tar and gravel roofing, which means tearing off the existing roof, unless false ceilings are put inside. The program will not apply to those type houses at this stage, he said.

One of your neighbors just stopped losing money. That neighbor will not only save dollars, but will also live more comfortably this summer and winter than ever before. That neighbor did one thing - had the attic insulated through the City of Palo Alto Weatherization Program.

Call us to receive your FREE attic inspection. The number is 329-2241. Or send the attached coupon in to us. We'll contact you!

I would like an attic inspection at no charge. I understand I am under no obligation by requesting one.

Name _____

Address _____

Phone _____

Best Time for Appointment:

Monday-Friday, 8:00 a.m. - 5:00 p.m. _____

Evenings/Saturdays _____

DO-IT-YOURSELF KIT
FILE FOLDER CONTAINING
KIT MATERIALS

MUNICIPAL UTILITIES
home weatherization
do-it-yourself kit

MUNICIPAL UTILITIES

DO-IT-YOURSELF HOME-WEATHERIZATION PROGRAM

All of us are becoming aware of the ever-increasing cost of the energy we use in our daily lives. Home-energy costs can be substantially lowered by making simple changes in our homes and by making minor adaptations in our lifestyles.

Nineteen percent of all energy in the United States is consumed by the residential sector. This energy is principally consumed in the following manners: space heating—57 percent; water heating—14 percent; refrigeration—4 percent, and space cooling—3.7 percent.

The purpose of this packet is to demonstrate to Palo Alto utility customers how to reduce residential energy usage and monthly utility bills effectively. The packet focuses on "Do-It-Yourself" techniques. We have included illustrated brochures and pamphlets on insulation, weatherstripping, caulking, and various other conservation tips and ideas. Whether you decide to "Do-It-Yourself" or hire someone to help you, the information provided here will help you decide which measures you should consider implementing to save energy and money. A survey is included which can be used as a checklist for a home-energy audit. Good luck!

HOME-ENERGY SURVEY

This survey is intended to direct you to look at the most likely spots in your house where energy inefficiencies may exist. Answer the questions as you go through your house and check the appropriate box.

HEAT LOSS

Is your attic insulated to R-19 heat resistance level? Yes ☐ No ☐

If not, how many inches of insulation does your attic presently have?* _____

Are your windows free from drafts when you stand next to them? Yes ☐ No ☐

Are your doors sealed properly to eliminate heat loss from those areas? Yes ☐ No ☐

Do you close off unused rooms during the winter? Yes ☐ No ☐

Do you close the damper in the fireplace when it is not in use? Yes ☐ No ☐

Do you have awnings or other window shading devices over your sunny windows? Yes ☐ No ☐

Do you open your curtains in the winter during the day to allow sunlight in, and close them during the summer to keep sunlight out? Yes ☐ No ☐

Do you keep your thermostat at 65° in the day and turn it down to 55° at night? Yes ☐ No ☐

FURNACE

Do you turn off your pilot light in the summer months? Yes ☐ No ☐

Are the burners adjusted yearly or when the flame looks yellow? Yes ☐ No ☐

Are the heating ducts insulated? Yes ☐ No ☐

Is the filter on your furnace clean? Yes ☐ No ☐

* See the enclosed chart which will tell you what R value is presently in the attic given the number of inches of existing insulation.

APPLIANCES

- Do you put only full loads in your dishwasher, washing machine, and clothes dryer? Yes ☐ No ☐
- Do you clean the filter regularly on your clothes dryer? Yes ☐ No ☐
- Do you use a clothesline in the warm weather instead of a clothes dryer? Yes ☐ No ☐
- If your refrigerator is a manual defrost, do you regularly defrost it so that the ice buildup gets no more than one-quarter inch thick? Yes ☐ No ☐
- Do you regularly clean the coils on your refrigerator? Yes ☐ No ☐
- Is your refrigerator located away from heat sources such as a dishwasher or stove? Yes ☐ No ☐
- Do you unplug your "instant on" TV when not in use? Yes ☐ No ☐
- Do you use the proper temperature setting on your clothes washer for the type of clothes you are washing? Yes ☐ No ☐
- Have you installed an insulating blanket on your hot water heater? Yes ☐ No ☐
- Have you lowered the thermostat setting on your hot water heater to 120°-140°*? Yes ☐ No ☐

WATER

- Have you fixed all hot and cold water leaks, including toilet and faucet leaks? Yes ☐ No ☐
- Have you installed flow restrictors or low-flow showerheads? Yes ☐ No ☐
- Have you installed plastic bottles or toilet dams in your toilets? Yes ☐ No ☐
- If you have a heated swimming pool, do you use a pool cover to reduce heat loss as well as water loss? Yes ☐ No ☐
- Have you reduced the number of hours your pool is filtered and swept? Yes ☐ No ☐

* If you use a dishwasher, keep your water heater set at 140° for sanitary reasons, unless your dishwasher has an automatic hot water booster feature. Also, when washing diapers in clothes washer, have the setting on your water heater at 140° for sanitary reasons.

LIGHTING

Do you turn off unneeded lights?

Yes ☐ No ☐

Do you use fluorescent lights?

Yes ☐ No ☐

Do you use task lighting?

Yes ☐ No ☐

Have you turned off outdoor gas
lanterns if you have any?

Yes ☐ No ☐

Any question which was answered "no" indicates a place to which your attention should be directed. By making the appropriate modifications in your home or life-style so that these questions could all be answered in the "yes" column, you will cut energy losses. In the following section, many of these measures will be discussed in more detail. If you have any questions regarding these measures, or any other concerns about conservation, please call the City of Palo Alto, Resource Conservation Program, 329-2241.

Residential energy consumption can be effectively reduced in two major ways: 1) "Weatherize" your home by insulating, weatherstripping, and caulking, and 2) make more efficient use of the furnace, appliances, lights, etc., in your home. In the following paragraphs, weatherization tips and other energy-saving measures will be discussed.

INSULATION

Insulating your attic to R-19 heat resistance value will reduce the required amount of energy to heat your home by approximately 25 percent. In the packet you will find a brochure entitled "Insulate—Save Energy". In it you will find tips on installing insulation yourself, avoiding certain pitfalls, types of insulation available, etc. Insulation installation is a messy job, and it is important to follow the recommendations regarding the proper tools and clothes to use. There are several types of insulation material available on the market today. It is **very** important that any material you buy contain Underwriter's Laboratory labeling, and that it be a Class I product. The City of Palo Alto encourages the use of those materials which have been endorsed by the Electric and Gas Industries Association, as being safe and sound products to use in attic insulation. These are materials which have been properly treated and which are periodically retested to check continued high quality. If you have any questions regarding which products are approved, call the Resource Conservation Program at 329-2241.

If you prefer to hire a contractor to install insulation, please consider the following:

- Be cautious of contractors who claim that "you will save X dollars per year" on your heating bills. Without knowing your specific heating requirements, they cannot accurately predict money savings or payback, and they may be "overselling" their product.
- Speak to the contractor only in terms of "R" value, rather than in terms of inches. Six inches of one type of insulation may not resist heat as well as six inches of another type.

- Find out if the contractor carries appropriate insurance in case he or one of his workers gets hurt.
- Request references from your contractor.
- Make sure each bag of insulation is properly UL labeled with information regarding the number of square feet it will cover to obtain a R-19 resistance value.
- When the contractor is installing loose-fill insulation, count the number of bags used to make sure they correspond to the amount needed to reach R-19 value.
- Check with your bank or the City of Palo Alto Utilities Department if you are interested in financing the insulation job. Some contractors have their own financing plan which may or may not be as good.

These guidelines are designed to help protect you from fraudulent or overzealous contractors. Basically, be sure you are dealing with a well-established, reputable contractor and your insulation job will not only save you energy, but will be a worthwhile investment in your home.

In the packet, you will find a list of local insulation contractors in this area, as well as a list of building-supply stores which carry insulation materials for "Do-It-Yourselfers".

WEATHERSTRIPPING AND CAULKING

The first step in making any home more energy efficient is to seal it up as much as possible to prevent air infiltration. It is estimated that 20 percent of home-heating energy is lost through cracks in doors and windows. The best means to prevent this is to properly install weatherstripping around those areas, as well as to caulk larger cracks throughout the house.

Weatherstripping is available in all sizes and is made from many different types of materials—from small strips of inexpensive felt to large, higher priced pieces of aluminum and plastic. The type to buy depends on the location and size of the window or door.

Caulking compound is available in four basic types:

1. Resin or oil based. This is fairly inexpensive, but not as durable as other types.
2. Latex, butyl or polyvinyl based. More expensive and more durable than oil- or resin-based caulk.
3. Elastometric — most expensive and most durable.
4. Filler—made from various materials and used for very large cracks.

THE CITY OF PALO ALTO DOES NOT RECOMMEND LEAD-BASED CAULK BECAUSE IT IS TOXIC.

Included in the packet of information is a brochure which describes different types of weatherstripping available, as well as the proper way to install them. The Insulation Contractors' list also provides the names of local establishments which install and/or sell weatherstripping and caulking.

SPACE HEATING AND COOLING

Insulation, weatherstripping and caulking are the most effective measures to reduce heat loss in a building. There are, however, other measures which will also help reduce heat loss and which will help cool a home in the summer. Some of these measures, as well as other heating and cooling tips, are listed below:

- Closed chimney dampers (when fireplaces are not in use) will reduce heat loss.
- During the summer, open windows at night to let cool summer night air in; close during the day to keep hot air out.
- Awnings over windows facing south keep sun out during the summer (to help cool your house) but allow it in during the winter (to help heat).
- Windows treated with plastic, double-glazing, reflective film or special screens, as well as the use of insulated draperies, help prevent heat loss. For more information, refer to the enclosed list of window treatments.
- Set temperature on furnace no higher than 65° in the day, and 55° at night. By lowering the thermostat 10° at night, up to 10 percent of heating energy will be saved. Have your furnace serviced regularly, and keep it clean by dusting and vacuuming accessible parts. Clean or replace filter regularly.
- If you have an air conditioner, use it only when necessary and do not overcool. Set the thermostat no lower than 78°. Be sure to clean the filter regularly.
- Close drapes in the summer. This will keep hot air out. Open them on sunny days during the winter to let sun in.
- Turn furnace pilot off in summer.
- Insulate heating ducts to reduce heat loss in the pipes. In this way more of the energy produced will reach the house. If there are leaks in heating ducts, fix them with cloth adhesive tape.
- Close off unused rooms. It makes no sense to heat or cool a room that is not used regularly.

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APPLIANCES

The efficient use of home appliances will not only save energy, but will also contribute toward the life-time of the product. The following are some tips which will help you do both.

Water Heaters — Consume 30 percent of total gas consumption, or 7 percent of electricity consumption annually.

- Lower water heater temperature to 120° (or 140° if you use a dishwasher or if you wash diapers).
- Install a hot water heater insulation blanket (instructions included, or buy a kit for about \$20).
- Service hot water heater as required.

Stoves—Consume 6 percent of annual gas consumption, or 5 percent of annual electricity consumption.

- Use the proper size pan with the proper size burner on your electric range. Too large a burner simply wastes energy.
- Be sure to turn off burners when not in use.

Refrigerators—Consume 25 percent of home's annual electricity consumption.

- Be sure that gaskets on refrigerator seal properly.
- Only open refrigerator doors when necessary.
- Keep coils clean.
- Locate refrigerator away from heat sources.
- Keep refrigerator and freezer full.
- Defrost regularly. Do not let frost build up over one-quarter inch.

Dishwashers—

- Most dishwashers do not require prerinsing of dishes. However, if you need to prerinse, use cold water.
- If your model allows, open the door after the final rinse cycle so that dishes can air dry. This can save up to 40 percent of the energy your dishwasher uses.
- Wash full loads only.
- Use special energy-saving cycle if your dishwasher has one.

Washers and Dryers—

- Wash and dry full loads (use clothesline for drying when possible).
- Use cold water when possible—by switching from hot water wash/warm water rinse, to warm water wash/cold water rinse, you will save 67 percent of water-heating energy for each wash.
- Keep filters and lint traps clean.

OTHER

Lighting—Consumes 20 percent of electricity used annually in the home. The efficient use of lighting can reduce energy consumption significantly.

WATER

The drought Californians have recently experienced quickly made all of us aware of the urgent need to conserve this resource. General tips follow:

- Install flow restrictors, toilet dams, and low-flow showerheads.
- Take short showers rather than baths.
- Fix all leaks promptly.
- Reduce the amount of flushing.

OTHER CONSIDERATIONS

Energy conservation is here to stay, and it should be practiced as much as possible and practicable. Other factors which should also be considered are the following:

- Avoid using the dishwasher, clothes dryer, and other energy-consuming devices during peak times—11:00 a.m. to 3:00 p.m. during the summer, and 5:00 p.m. to 7:00 p.m. during the winter.* These are the hours when demand is the greatest on the electric system.

- Keep lawn and yard tools in top condition by sharpening, cleaning and lubricating them.
- Avoid using power tools when possible.
- Fix all malfunctioning equipment and faulty plumbing.

The energy-saving measures discussed in the previous paragraphs can effectively lower energy and water consumption and your utility bills, given existing appliances and buildings. However, energy conservation should also be a major consideration in planning for the future.

If you plan to buy a new appliance, such as a dishwasher, clothes dryer, furnace, etc., try to purchase one which contains energy-saving features. Often these types of appliances cost more initially, but over the life of the product the difference is made up by the savings gained on energy not used. To determine an appliance's efficiency, look at its energy-efficiency ratio, which is an important indicator of how much an appliance will cost over its entire lifetime, based on today's utility rates. Other measures which should be considered when planning for future replacements are listed below:

- Replace incandescent light bulbs with fluorescent lights. Lamp converter kits are now on the market which consume up to 65 percent less electricity than regular incandescent fixtures, and new colors are also available which correspond more closely to shades we are used to looking at in our homes.
- Manual defrost refrigerators consume one-third less electricity than automatic defrost models.
- If you plan to buy a new home, look at insulation levels and hot water and heating systems for efficiency. If you design your own home, consider "north-south" orientation, the use of natural landscaping, the placement of windows, awnings, and shading devices, etc., to help "naturally" heat and cool the home.

- When purchasing new products, get only the size that is needed to do the job effectively. Oversized air conditioners, furnaces, refrigerators, etc., use extra energy, do not work as efficiently, and require extra space.

* These are the peak hours for Palo Alto.

The following tips will help direct your attention to lighting in your home.

- Turn off lights which are not being used.
- Substitute task lighting for general lighting.
- Use bulbs which produce the proper level of light for the area and activity.
- Use fluorescent lights when possible. Fluorescent lights produce light two and one-half times more efficiently than incandescent.
- Install dimmer switches on lights that are used for activities which require different lighting levels.
- Turn off outside gas lanterns, or convert them to low-wattage electric lamps.

Swimming Pools

- Use a pool cover. This can reduce the amount of energy used for heating by 40 percent. Please request a copy of the City's brochure on pool covers and the list of local swimming pool cover retailers.
- Reduce the length of time you run your pool sweep and filter. You can make the adjustment on a timer.

Water Beds

- Put a mattress pad or a foam pad on your water bed. This will allow you to lower the temperature on your water bed heater thermostat.

• Consider purchasing a heat pump for your home if you ever need to replace your heating and cooling system. This appliance actually delivers more energy than it uses, therefore making it much more efficient than conventional heating and cooling systems. For more details, please read the brochure on the heat pump which is included in this packet.

- Pilotless gas ranges are now available which save 40 percent of the energy used for this purpose.
- Self-cleaning ovens are more efficient than conventional ovens because of better insulation. Do not use the cleaning cycle, however, unless it is absolutely necessary.
- Pilotless ignition furnaces can save up to 10 percent on fuel.
- Pilotless ignition on gas clothes dryers can save up to 45 percent of the energy used for drying.
- Some of the available clothes washers use much less water than others. Models which have adjustable water-fill control will use less water, and variable water temperature settings will allow you to select the proper temperature and conserve.

Included in the packet is a list of local retail establishments which carry energy-conserving devices.

BY CAREFULLY MONITORING YOUR ENERGY NEEDS AND PRACTICES, YOU WILL BE ABLE TO SAVE ENERGY AND MONEY!

ELECTRICITY APPLIANCES

Insulate. Save energy.

SAVE ENERGY

cut your HEATING & COOLING losses WITH DOOR & WINDOW WEATHERSTRIP

IT'S THIS EASY...

to save money...conserve energy...reduce dusting
drudgery...prevent damaging leaks.

all for just a few dollars and a few minutes using
simple tools.

DO-IT-YOURSELF KIT:
LIST OF RETAIL STORES WHERE ENERGY
CONSERVATION DEVICES ARE SOLD

RETAIL STORES WHERE
ENERGY DEVICES
ARE SOLD

RETAIL STORES WHERE ENERGY DEVICES ARE SOLD		ENERGY DEVICES																							
		Caulking	Caulking Guns	Rope Caulk	Car Door Weatherstripping	Weatherstripping Door Bottom	Weatherstripping Compress	Weatherstripping Compress & Abrasion	Battling	Blown	Equipment to Rent - Insulation	Furnace Duct Insulation	Hot Water Pipe Insulation	Any Other	Fluoresc. Adapt Circular	Photo Lamp Control	Lamp Dimmer Socket	Lampcord dimmer Switch	Full Range Wall Switch Dimmer	24-Hour Timer w/Cord	Cordless Timer	Low Watt Night Light or Bulbs	Flue Damper for Furnace	Duct Tape	
Ace Hardware	- PA	1	1	1	1	1	1					1		1	1	1	1	1		1	1		1		
Appliance Parts Dist.	- PA	1	1													1	1		1	1		1		1	
Atlas Furnace Co.	- SV										1	1											1	1	
Barton Plumbing/Heating	- LA	1	1								1	1											1	1	
The Beacon Co.	- SU													1	1	1	1	1	1		1				
Bergie Plumbing Co.	- RC																								
Walter Both Light	- MP																1	1	1			1			
J.A. Boudreau Plumbing	- RC																								
Bruce Bauer Lumber Co.	- MV	1	1	1	1	1	1												1					1	
Buffalow's Inc.	- MV										1	1											1	1	
Builder's Emporium #640	- RC	1	1	1	1	1	1	1				1	X	1	1	1	1	1	1	1	1	1		1	
Cambridge Hardware	- PA	1	1	1	1	1	1				1	1			1	1	1	1	1	1	1	1		1	
Community Hardware	- PA	1	1	1	1	1	1										1	1	1	1		1	1	1	
Custom & Security Hrdwr	- MV				1	1	1	1																	
John Dahl Plumbing	- PA	1		1							1	1											1	1	
Eyerly's Hardware	- PA				1	1	1									1	1	1	1	1		1		1	
4349 K-Mart	- RC	1	1		1	1	1	1																	
Foothill Plaza Hrdwr	- LA				1	1	1										1	1	1	1		1		1	
Gemco	- MV	1	1			1	1	1							1		1		1	1	1	1		1	
Handyman	- MV	1	1	1	1	1	1		1		1	1		1	1	1	1	1	1	1	1	1	1	1	
H. P. Hansen & Sons	- PA											1													
Hillview Plumbing Co.	- MV																								
Home Plumbing Supplies	- MV										1	1													
The Householder	- LA	1	1			1	1					1				1			1	1		1		1	

COMMENTS

1 = Now carry
X = Intend to carry in near future
PA = Palo Alto
MV = Mountain View
SU = Sunnyvale
LA = Los Altos
PV = Portola Valley
RC = Redwood City

This list is provided as a convenience to City of Palo Alto utility customers. It in no way is an endorsement of the store or products listed.

RETAIL STORES WHERE ELECTRIC DEVICES ARE SOLD		ELECTRIC DEVICES																							
Store Name	Address	Furnace Filters	Filter Flap	Hot Air Deflectors	Timed Thermo- stats	Fuel Sentry	Shower On/Off	Shower Temp Control	Low Flow Showerhead	Aerator Flow Restrictor	Toilet Displace Devices	Low Flush Toilet	Irrigation Sys. Timers	Drip Irrig. sys. or parts	Tensio- meters	Waterbed Foam Pads	Pool Cover	Storm Windows	4-1111 Temporary Storm Window	Window Shades	Reflective Film Screen	Fireplace for Decreased Heat Loss	Extension Cord for "Inst on" TV	Various Appliance Timers	Solar system Equipment
Mc Hardware	- PA	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
Appliance Parts Dist.	- PA	/	/	/	/	/	X	X	X	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
Atlas Furnace Co.	- SV	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
Barton Plumbing/Heating	- LA	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
The Beacon Co.	- SE	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
Bergie Plumbing Co.	- NC	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
Water Bath Light	- XP	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
J.A. Bradshaw Plumbing	- NC	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
Brace Power Lumber Co.	- NV	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
Dufflow's Inc.	- NV	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
Fuller's Department #61	- NC	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
Cambridge Hardware	- PA	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
Community Hardware	- PA	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
Orston & Security Lumber	- NV	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
John Dahn Plumbing	- PA	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
Boyle's Hardware	- PA	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
4349 K-Mart	- NC	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
Knoxhill Plaza Lumber	- LA	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
Genco	- NV	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
Handyman	- NV	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
H. P. Hanson & Sons	- PA	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
Millview Plumbing Co.	- NV	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
Home Plumbing Supplies	- NV	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
The J. Schneider	- CA	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	

Misc. Appliances Timers	/
Heat pumps & misc. appliances	/
Water heaters	/
Painted insulation	/
Water heater vent vents, appliances	/

CADDRES

Misc. Appliances

Heat pumps & misc.
appliances

Water heaters

Rotted insulation

Water heater instal-
lations, appliances

RETAIL STORES WHERE ENERGY DEVICES ARE SOLD		
Hubbard-Johnson Lumber - NW	/	Caulking
Lull Bros. Hardware - NC	/	Caulking Guns
The Kitchen & Bath Shop - NC		Rope Caulking
Kraeg Plumbing/Heating - NC		Gar Door Weatherstripping
Kobe Heat/Air-Conditioning-SU		Weatherstripping Door Bottom
K.L. Martin Plumbing/Heat - NC		Weatherstripping Compress
Metallic Hardware - PA	X	Weatherstripping Compress & Abrasion
Mento Park Hardware Co. - MP	/	Batting
Minton's Lumber - MW	/	Blown
Orchard Supply - SU	/	Equipment to Rent - Insulation
Peninsula Hardware - PA	/	Furnace Duct Insulation
Pine Cone Lumber Co. - SU	/	Hot Water Pipe Insulation
Plumbing N' Things - NC	/	Any Other
Rancho Hardware Garden - LA	/	Fluores. Adapter Circular
Reduced Plumbing/Heating - NC		Photo Electric Lamp Control
Stanford Electric Works - PA	/	Lamp Dimmer Socket
Sunnyvale Hardware - SU	/	Lampcord Dimmer Switch
T & H Building Supply - PA	X	Full Range Wall Switch Dimmer
Valley Lighting - MW	/	24-Hour Timer W/Cord
	/	Cordless Timer
	/	Low Watt Night Light or Bulbs
		Flue Damper for Furnace
		Duct Tape

COMPONENTS

RETAIL STORES WHERE
ENERGY DEVICES
ARE SOLD

		ENERGY DEVICES																		COMMENTS						
		Furnace Filters	Filter Flag	Hot Air Deflectors	Timed Thermostats	Fuel Sentry	Shower On/Off	Shower Temp Control	Low Flow Showerhead	Aerator Flow Restrictor	Toilet Displace Devices	Low Flush Toilet	Irrigation Sys. Timers	Drip Irrig. sys. or parts	Tensio-Meters	Waterbed Foam Pads	Pool Cover	Storm Windows	4-Mill Temporary Storm Windows	Window Shades	Reflective Film Screen	Fireplace for Decreased Heat Loss	Extension Cord for "Inst On" TV	Various Appliance Timers	Solar System Equipment	
Hubbard-Johnson Lumber	- NW	/																								
Full Bros. Hardware	- NC																									
The Kitchen & Bath Shop	- NC																									
Krieg Plumbing/Heating	- NC																									
Kube Heat/Air-Conditioning	- SU	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	X	
K.L. Martin Plumbing/Heat	- NC																									
Mentalto Hardware	- PA	/																								
Mendo Park Hardware Co.	- NP	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
Minton's Lumber	- NW	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
Orchard Supply	- SU	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
Peninsula Hardware	- PA	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
Pine Cone Lumber Co.	- SU	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
Plumbing N' Things	- NC	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
Rancho Hardware Garden	- LA	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
Rehner Plumbing/Heating	- NC																									
Stanford Electric Works	- PA																									
Sunnyvale Hardware	- SU	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
T & H Building Supply	- PA																									
Valley Lighting	- NW																									

Misc. appliances
double-pane windows

Misc. appliances
plastic paneling
water heater insul.

Solar water heaters
Heat pumps, appls.
Solar water systems

Misc. appliances

DO-IT-YOURSELF KIT:
NOTICE TO HOMEOWNERS REGARDING
HOME INSULATION SERVICE

CITY OF PALO ALTO

HOME INSULATION SERVICE

The City of Palo Alto offers to arrange attic insulation installations for Palo Alto residents as part of its Home-Weatherization Program. The City can arrange the installations through City-approved contractors, and we can even arrange low-cost City financing for those who wish it. The loan can be paid back on the utility bill monthly! If you are interested in learning more details about the insulation program, please call the Resource Conservation Program, 329-2241, or fill in the form below and return it with your utility bill.

TO: CONSERVATION OFFICE

I would like more information regarding the City's Insulation Program. Please contact me to provide details.

NAME _____

ADDRESS _____

Zip

PHONE _____

Please return this form with your utility bill or
mail it to: Resource Conservation Program, 250 Hamilton
Avenue, Palo Alto, California, 94301.

MUNICIPAL UTILITIES
**home weatherization
program**

DO-IT-YOURSELF KIT:
CERTIFICATION REQUEST

CITY OF PALO ALTO

CERTIFICATION OF YOUR ATTIC INSULATION INSTALLATION

MUNICIPAL UTILITIES
**home weatherization
program**

For those homeowners who have installed attic insulation themselves, the Palo Alto Resource Conservation Program offers free inspections to make sure the installation was completed safely and correctly. If you would like to have a free inspection, please fill out the form below and mail it in with your utility bill, or mail it to the Weatherization Program, 250 Hamilton Avenue, Palo Alto, California, 94301. After inspection, a certificate will be sent to those homeowners whose attics reach the California State Standard of R-19. Recommendations will be made to those homeowners whose installations were not correctly and safely done. The inspection is FREE! Call us at 329-2241 for more details.

TO: CONSERVATION OFFICE

We have installed attic insulation in an effort to "weatherize" our home. Please have an inspector contact us to arrange an inspection and certification of our attic installation.

NAME _____

ADDRESS _____

PHONE _____

Zip

Please return this form with your utility bill or mail it to: Resource Conservation Program, 250 Hamilton Avenue, Palo Alto, California, 94301.

DO-IT-YOURSELF KIT
SAVINGS CALCULATION WORKSHEET

SAVINGS CALCULATIONS WORKSHEET

MUNICIPAL UTILITIES

The following calculations are provided to help homeowners calculate the amount of money spent yearly to heat their houses.

1. List all of the costs for gas or electricity (depending on whether you heat your home with gas or electricity) next to the corresponding month.

EXAMPLE:	<u>Months</u>	<u>Costs</u>
	Jan.	\$50.00
	Feb.	50.00
	Mar.	40.00
	Apr.	40.00
	May	30.00
	June	17.00
	July	15.00
	Aug.	13.00
	Sept.	15.00
	Oct.	35.00
	Nov.	35.00
	Dec.	45.00

2. Figure the average cost charged for the summer month. (June through September).

June	\$17.00
July	15.00
Aug.	13.00
Sept.	15.00
<hr/>	
\$60.00/4 months = \$15.00	

This is the amount it costs each month for energy not used for heating (since you normally do not heat your house in the summer months). It is referred to as "base load". *

3. Subtract this average from the remaining months' charges:

<u>Month</u>	<u>Monthly Charge</u>	<u>Base Load</u>	<u>Cost to Heat</u>
Jan.	\$50.00	- \$15.00	= \$35.00
Feb.	50.00	- 15.00	= 35.00
Mar.	40.00	- 15.00	= 25.00
Apr.	40.00	- 15.00	= 25.00
May	30.00	- 15.00	= 15.00
Oct.	35.00	- 15.00	= 20.00
Nov.	35.00	- 15.00	= 20.00
Dec.	45.00	- 15.00	= 30.00
			<hr/>
			\$205.00

* If you own a pool, subtract gas usage for pool heater.

4. Add the listed monthly "Cost to Heat" figures.

\$205.00 is the approximate amount of money it cost to heat this home for one year.

March, 1978

DO-IT-YOURSELF KIT: ANNUAL SAVINGS
BY INSTALLING CEILING INSULATION TO
R-19

ANNUAL SAVINGS BY INSTALLING CEILING INSULATION TO R-19

MUNICIPAL UTILITIES

If you have no ceiling insulation and you decide to install it to R-19 heat resistance value, you can assume you will save approximately 25 percent of your annual heating cost.

EXAMPLE: $\$205.00 \times .25 = \51.25 annual heating savings.

To figure annual savings if you already have some insulation and you wish to add enough to bring it up to R-19, use the following formula:

EXAMPLE: Annual Heating Cost x Savings Factor = Estimated Heat Savings
 $\$205.00 \times .035 = \7.18
 (Existing insulation
 in this case is R-7)

Savings Factor

If you have R-3 = .082
 R-7 = .035
 R-11 = .016
 R-13 = .011
 R-16 = .004

To figure existing R value, use the coverage chart included in this packet. If you already have R-11 in your attic, the payback period will be very long if you insulate to R-19.

ANNUAL SAVINGS BY LOWERING THERMOSTAT

To determine annual heating savings by lowering the thermostat, multiply your annual cost for heating by the number of degrees turned down by four percent.

EXAMPLE: Annual Heating Cost x (72°-65°) x 4% = Annual Heat Savings
 $\$205.00 \times 7 \times .04 = \57.40

If you lower your thermostat at night, you will save even more.

EXAMPLE: Annual Heating Cost x (65°-55°) x 1% for each degree
 lower than 65°
 $\$205.00 \times 10 \times .01 = \20.50

DO-IT-YOURSELF KIT: LIST OF LOCAL INSULATION CONTRACTORS AND RETAILERS

LOCAL INSULATION CONTRACTORS AND RETAILERS

The following is a list of establishments which install or retail insulation, caulking, and/or weatherstripping. An X listed under particular items indicates which functions that company performs. This list was compiled from responses to a survey of local insulation contractors and building materials companies conducted by the City of Palo Alto Utilities Department, and does not represent an endorsement of the contractors or retailers. The list is not comprehensive. Any insulation contractor and/or building material retailer who is not listed should notify the City of Palo Alto Utilities Department, c/o Conservation Office (329-2241) for inclusion the next time the list is revised.

Name	C O N T R A C T O R S						R E T A I L E R S				
	Installs						Sells				
	Insul.	Weather- stripping	Caulking	Duct Insul.	Offer Guarantees	Provide Certificates	Insul.	Weather- stripping	Caulking	Duct Insul.	Provide* Machine
Sears 455 San Antonio Road Mountain View, Ca 948-8511 Ext. 381	X				X	X	X		X	X	
Minton's Lumber Supply 455 West Evelyn Avenue Mountain View, Ca 94040 968-9201							X	X	X	X	X
Hans Stavn, Contractor 2250 Princeton Street Palo Alto, Ca 94306 322-3591	X	X	X	X	X		X				
Raybeig Lumber & Supply 1460 El Camino Menlo Park, Ca 94025 323-4148							X	X	X	X	X
T & H Building Supply 100 California Avenue Palo Alto, Ca 94306 326-8775							X	X	X	X	
Alten Corporation 2594 Leghorn Street Mountain View, Ca 94043 969-6474	X				X		X			X	X

CONTRACTORS

RETAILERS

Installs

Sells

Name	Insul.	Weather- stripping	Caulking	Duct Insul.	Offer Guarantees	Provide Certificate	Insul.	Weather- stripping	Caulking	Duct Insul.	Rent* Machine
Pacific Coast Insulation Company, Inc. 1757 E. Bayshore Road Redwood City, Ca 94063 365-6414	X	X	-		X	X					
Diamond Insulation Mfg. Company of San Jose 2390 Lafayette Street Santa Clara, Ca 95050 243-6800	X			X	X	X	X			X	X
Coast Insulation P. O. Box 2629 Menlo Park, Ca 94025 323-5121	X	X	X	X	X	X					
Alpine Insulation Co. 1200 Dale Avenue Mountain View, Ca 94040 965-1944	X	X	X			X					
Eco-Logic Systems 303 Convention Way, Suite #3 Redwood City, Ca 367-8433	X	X	X		X	X		X	X		
Menalto Hardware 2129 St. Francis Dr. Palo Alto, Ca 94303 328-6382								X	X	X	

* These establishments will rent "Do-It-Yourself" machines for blowing insulation.

Name	C O N T R A C T O R S					R E T A I L E R S					
	Installs					Sells					
	<u>Insul.</u>	<u>Weather- stripping</u>	<u>Caulking</u>	<u>Duct Insul.</u>	<u>Offer Guarantees</u>	<u>Provide Certificates</u>	<u>Insul.</u>	<u>Weather- stripping</u>	<u>Caulking</u>	<u>Duct Insul.</u>	<u>Provide* Machine</u>
Superior Insulation 2514 Channing Avenue San Jose, Ca 95131 246-5277	X	X			X	X					
Mensalto Hardware 2129 St. Francis Dr. Palo Alto, Ca 94303 328-6382							X	X		X	
J. A. Garry Const. Co. 354 Encinal Avenue Menlo Park, Ca 94025	X	X	X	X							

Gas Water Heater Insulation Kit Instructions for Application

Note: A gas water heater has a metal duct coming out of the top and connecting to the chimney flue.

List of Materials

- 1 each 24"x24" Square for top plate (NOT USED ON GAS WATER HEATERS)
- 1 each 48"x87" Main wrapper with 4" tabs
- 1 each 6"x48" Vinyl tape for side seam
- 3 each 3"x12" Vinyl tape for side seam cross tension
- 2 each 3"x36" Vinyl tape for top seams or hangers
- 16 each 2"x4 3/4" Double stick tape for top tabs

Important: Read instructions thoroughly before installing kit

1 *Note: The 24"x24" square top plate is NOT TO BE USED on gas water heaters.*

2 Wrap heater with the 48"x87" section with the vinyl to the outside, to determine the necessary length and height. Mark the length and height and the area around the pilot light access plate. The top of the main wrapper should be flush with the top of the water heater.

Note: Care must be taken not to cover pilot light access and to provide air flow under the water heater. The blanket must not come completely to the floor.

3 Lay insulation flat on floor. Cut with scissors or knife to length and height. Then cut pilot light access. See Figure A.

Note: Do not cut side with tabs. If the water heater is taller than 48", the kit will work as designed if at least 3/4 of the water heater is covered.

4 Peel release paper from one side of the 2"x4 3/4" double stick tape and apply to tabs. See Figure A.

5 Wrap water heater, keeping the edge of the side insulation flush with the top of the water heater, using 3"x12" vinyl tape to secure across the top of the side seam and in the middle and bottom. See Figure B. Now apply the 6"x48" tape to side seam completely covering the seam. See Figure C.

6 Wipe any dirt or dust from the top of the water heater and dry. Peel remaining release paper from the top tabs and secure firmly to the top of the water heater. See Figure D. Place the 2 pieces of 3"x36" vinyl tape across the top of the water heater and secure them to the side section. See Figure E.

Note: For best results the kit should be at room temperature before applying.

The development of the Gas Water Heater Insulation Kit, and the information about its technical performance, have been accomplished with the support of the Energy Research and Development Administration.

Electric Water Heater Insulation Kit Instructions for Application

List of materials

- 1 each 24"x24" Square for top plate
- 1 each 48"x87" Main wrapper with 4" tabs
- 1 each 6"x48" Vinyl tape for side seam
- 3 each 3"x12" Vinyl tape for side seam cross tension
- 2 each 3"x36" Vinyl tape for top seams or hangers
- 18 each 2"x4 3/4" Double stick tape for top tabs

Important: Read instructions thoroughly before installing kit

1 Determine the exact diameter of the heater. Refer to circles on chart for size to cut pattern. Cut on designated circle pattern with scissors. Take this cut out pattern, lay on the top plate and cut to size.

2 Determine where holes are to be located for the top plumbing pipes.
Caution: Do not cover pop-off valve.

3 Cut a straight line from the edge of the top plate so it can be slid on top the water heater. See Figure A. Use the 3"x36" section of tape to seal the cut.

Wrap heater with the 48"x87" section, with the vinyl to the outside, to determine the necessary length and height. Mark and lay insulation flat on floor. Cut with scissors or knife to determined length and height. See Figure B.

Note: Do not cut side with tabs if heater is shorter than 48". If the water heater is taller than 48", the kit will work as designed if at least 1/4 of the water heater is covered.

5 Peel release paper from one side of the 2"x4 3/4" double stick tape and apply to the inside of all tabs. See Figure B.

6 Wrap water heater, keeping the edge of the side insulation flush with the top plate. Use 3"x12" vinyl tape to secure across the top of the side seam and in the middle and bottom. See Figure C. Now apply the 6"x48" tape to side seam completely covering the seam. See Figure D.

7 Peel remaining release paper from the top tabs and secure firmly to the top plate. See Figure E.

Note: For best results the kit should be at room temperature before applying.

The development of the Electric Water Heater Insulation Kit, and information about its technical performance, have been accomplished with the support of the Energy Research and Development Administration.

DO-IT-YOURSELF KIT: MAJOR
CONSERVATION MEASURES

GENERAL ANNUAL DOLLAR SAVINGS

MAJOR CONSERVATION MEASURES*

	<u>Energy Savings Annually</u>	
	<u>Percent</u>	<u>Dollars</u>
Insulate ceiling to R-19	25	\$55.00
Seal all exterior windows, doors, and cracks by caulking and weatherstripping	20	44.00
Lower thermostat setting from 72° to 65° in the daytime	25	55.00
Reduce nighttime temperature from 65° to 55°	10	22.00
Raise air-conditioning thermostat from 72° to 78°	25	24.00
Lower hot water temperature by 20°	7	6.00
Install hot water heater insulating blanket	7	6.00
Convert incandescent lights used more than four hours per day to fluorescent	50(of energy used for unconverted lights)	15.00

* This list does not take into account the cost effectiveness of each measure. Each item's energy savings must be taken separately. It must be assumed that each house has different energy requirements, and, therefore, this list should be used as a general guideline only and not for specific information.

MUNICIPAL UTILITIES

DO-IT-YOURSELF KIT: R-VALUE
OF INSULATING MATERIALS

R-VALUE OF INSULATING MATERIALS OF THICKNESSES LISTED

<u>THICKNESS</u>	<u>FIBERGLASS R-VALUE</u>	<u>ROCKWOOL R-VALUE</u>	<u>CELLULOSE R-VALUE</u>	<u>VERMICULITE R-VALUE</u>
1"	2	3	4	2
2"	4	6	8	4
3"	7	9	11	6
4"	9	12	15	9
5"	11	15	19	11
6"	13	18	22	13
7"	15	21	26	15
8"	18	23	30	17
9"	20	26	33	19
10"	22	29	37	21
11"	24	32	41	23
12"	26	35		26
13"	29	38		28
14"	31	41		30
15"	33			32
16"	35			34
17"	38			36
18"	40			38

Prepared by:
Metro Residential Consumer Services
Revised March 1, 1976

CAULK THE OPENINGS IN YOUR HOME

DO-IT-YOURSELF KIT: INSTRUCTIONS ON CAULKING AN EASY DO-IT-YOURSELF PROJECT

Caulking should be applied wherever two different materials or parts of the house meet. It takes no specialized skill to apply and a minimum of tools.

Tools

1. Ladder
2. Caulking gun
3. Caulking cartridges
4. Oakum, glass fiber strips, caulking cotton, or sponge rubber
5. Putty knife or large screwdriver

Safety

You'll need to use a ladder to reach some of the areas which need to be caulked. Be sure you use it safely.

Level and block the ladder in place. Have a helper hold it if possible.

Don't try to reach that extra little bit — get down and move the ladder.

Carry your caulking gun with a sling so that you can use both hands climbing the ladder.

Materials

What you'll need

Caulking compound is available in these basic types:

1. Oil or resin base caulk; readily available and will bond to most surfaces — wood, masonry and metal; not very durable but lowest in first cost for this type of application.
2. Latex, butyl or polyvinyl based caulk; all readily available and will bond to most surfaces, more durable, but more expensive than oil or resin based caulk.
3. Elastomeric caulks; most durable and most expensive; includes silicones, polysulfides and polyurethanes; the instructions provided on the labels should be followed.
4. Filler; includes oakum, caulking cotton, sponge rubber, and glass fiber types; used to fill extra wide cracks or as a backup for elastomeric caulks.

CAUTION: Lead base caulk is not recommended because it is toxic. Many states prohibit its use.

Where a house needs to be caulked

1. Between window drip caps (tops of windows) and siding.
2. Between door drip caps and siding.
3. At joints between window frames and siding.
4. At joints between door frames and siding.
5. Between window sills and siding.
6. At corners formed by siding.
7. At sills where wood structure meets the foundation.
8. Outside water faucets, or other special breaks in the outside house surface.
9. Where pipes and wires penetrate the ceiling below an unheated attic.
10. Between porches and main body of the house.
11. Where chimney or masonry meets siding.
12. Where storm windows meet the window frame, except for drain holes at window sill.
13. And if you have a heated attic; where the wall meets the eave at the gable ends.

How much

Estimating the number of cartridges of caulking compound required is difficult since the number needed will vary greatly with the size of cracks to be filled. Rough estimates are:

1/2 cartridge per window or door

4 cartridges for the foundation sill

2 cartridges for a two story chimney

If possible, it's best to start the job with a half-dozen cartridges and then purchase more as the job continues and you need them.

IN THE BANK . . . OR UP THE CHIMNEY

Installation

Before applying caulking compound, clean area of paint build-up, dirt, or deteriorated caulk with solvent and putty knife or large screwdriver.

Drawing a good bead of caulk will take a little practice. First attempts may be a bit messy. Make sure the bead overlaps both sides for a tight seal.

A wide bead may be necessary to make sure caulk adheres to both sides.

Fill extra wide cracks like those at the sills (where the house meets the foundation) with oakum, glass fiber insulation strips, etc.)

In places where you can't quite fill the gaps, finish the job with caulk.

Caulking compound also comes in rope form. Unwind it and force it into cracks with your fingers. You can fill extra long cracks easily this way.

DO-IT-YOURSELF KIT: WINDOW COVERINGS

-184-

WINDOW COVERINGS

SCREENS

. Louvered

Application: good for high sun angle protection; fixed position louvers still allow for horizontal vision; if problem of overheating from mid-day sun--these are effective; if problem of early morning or late afternoon--not so effective--external use.

Products: Koolshade, Solano Beach, California
Cost \$5 to \$6 per square foot installed, very rugged, commercial applications usually.

Shade Screen; Kaiser Aluminum
Cost \$1.50 to \$2.00 per square foot installed, stamped aluminum, susceptible to damage from denting and corrosion

Addresses: Koolshade Corp.
722 Genevieve
Solano Beach, CA 92075
(714) 755-5126

Kaiser Aluminum & Chemical Corp.
Kaiser Center
300 Lakeside Drive
Oakland, CA 94612
(415) 271-3300

. Fiberglass

Application: good for high sun angle protection; horizontal vision more impaired than with the louvers; overall least effective of screens; readily available; can be installed in either existing insert screen frames or by horizontal rails at the top and bottom; very durable; can be used for draperies and internal shades

Products: Comfort Screen; manufactured by J.P. Stevens';
Cost \$2.00 per square foot installed, distributed by Sun Rad

Sunscreen; manufactured by Phifer Wire Products, Inc.
Cost \$2.00 per square foot installed, distributed by Sun Chek West

MUNICIPAL UTILITIES

. Reflective Application: suitable for use with open windows--as the screen reflects light and does not absorb heat--so one can ventilate without air-conditioning; tears but mends easily; higher shading value than fiberglass screens; there is a special coastal variety made.

Product: Reflect-O-Screen;
Cost \$2.50 per square foot, installed.

. Reflective
Films

Application: effective at reducing solar heat gains; applied by either water pressure sensitive backing or spray on; should be installed professionally; should only be installed on inside and not on wired glass or plastic surfaces--does block nighttime view and is not readily removed like screens.

Product: 3M, MADICO, Solar-X, and others;
Cost \$1.00 per square foot uninstalled, up to \$2.50 per square foot installed.

SHADE AND DRAPERIES

. Insulating
Shades

Application: interior--retention of heat at night; shading of sunlight during the day--some heat build-up between glass and shade.

Products: Sun Ban, Exlite, and others
Cost \$.50 to \$1.00 per square foot uninstalled.
Sun Ban is fiberglass vinyl impregnated while Exlite is cotton vinyl impregnated.

. Insulated
Drapery
Linings

Application: interior--glass side of drapes--or at the window itself; used for heat retention and for sunlight control; some heat build-up between window and lining; can be utilized as a drape.

Products: ROC-LON, WIN-GLO, and others
Cost \$2.00 to \$2.50 per square foot installed, range from 100% cotton to a variety of combinations of synthetic fabrics.

Insulated
Drapes

Application: interior--glass side of drapes--or at the window itself; used for heat retention and for sunlight control; some heat build-up between window and lining; can be utilized as a drape.

Products: Pre-cut--vinyl foam lined drapes available from places such as Sears;
Cost \$1.00 to \$1.50 per square foot finished.

OTHER

Other types of shading controls include verticle louvers and horizontal louvers or blinds. Another insulating device is a double window. These products range widely in prices per square foot. One manufacturer in California--WIN-GLO--carries most of these products. Their main office/plant is located in San Jose. The address is:

WIN-GLO
1355 North Tenth Street
San Jose, CA 95112
(408) 286-4141

GENERAL NOTES ON THE ABOVE:

- Extreme east and west exposures will not benefit as greatly from louvered screens as would a high sun angle exposure.
- If the removal of a shading control is important, then films would not be satisfactory.
- Consideration should be taken of the reflectivity of films or screens upon safety, such as reflection of cars' headlights back at the driver.
- Also, if a window is an emergency fire exit, one should avoid fixed screens.
- Usually east, west and south windows would be the likely areas to be shaded.
- Most films and fiberglass screens can be bought for self-installation.
- In addition, there are several other factors to consider when selecting some form of solar control. These include: overhang, drapes, and internal shades as control devices. Although shades and drapes are not as effective as external screens, they can be important for wintertime heat retention.

The very brief representation of the above products is used purely for information purposes. There are many more products and even more dealerships that carry or can order the products, than have been listed here. The prices are only approximations, based upon discussions with many of the suppliers contacted.

**DO-IT-YOURSELF KIT: LIST OF
POOL COVER RETAILERS**

The following is a list of establishments which carry various types of pool covers. A ☆ listed under a particular type of cover indicates that the store opposite carries or will order that cover. This list was compiled from responses to a survey of pool cover retailers conducted by the City of Palo Alto Utilities Department and does not represent an endorsement of the retailers listed nor is the list necessarily comprehensive. Any pool cover retailer whose establishment is not listed should notify the City of Palo Alto, Utilities Department, c/o Energy Conservation Coordinator (329-2268), for inclusion the next time the list is revised.

Name of Establishment	Vinyl Sheets/ Variations	Bubble	Foam/Foam- Lined Plastic	Safety/ Solar	Domes
Neptune Pool Service 3705 El Camino Real Palo Alto, California 94306 493-4500	☆	☆	☆		
Lee 'N Carol Pool, Inc. 4906 El Camino Real Palo Alto, California 94306 969-2402	☆	☆			☆
Krohme Industries 1059 Aileen Street Lafayette, California 94549 935-5200	☆				
Sunset Associates Pool & Patio Shop 2525 El Camino Real Redwood City, California 369-4681	☆	☆			
Lincoln Equipment 3859 Piedmont Avenue Oakland, California 94611 655-8434			☆		
Excel Pool & Patio 955 Fremont Avenue Los Altos, California 948-1222		☆	☆		
Richco. Inc. of Palo Alto 212 Homer Avenue Palo Alto, California 94301 326-1917		☆			

Pool Cover Retailers
(Continued)

Name of Establishment	Vinyl Sheets/ Variations	Bubble	Foam-Foam- Lined Plastic	Safety/ Solar	Domes
Cover-Pools, Inc. P. O. Box 9561 Stanford, California 94306 326-8488				☆	
MPA Pool Products P. O. Box 2052 Sunnyvale, California 94087 245-8740	☆	☆	☆		☆
Tree Farm Pool, Patio 'N Things 4434 El Camino Real Los Altos, California 941-3316		☆			
Sterling Pool Supplies & Service 1239 W. El Camino Real Mountain View, California 964-7300		☆			
Vantage Pools, Inc. 1098 S. Fifth Street San Jose, California 253-6435		☆			
MacBall Industries 5765 Lowell Street Oakland, California 94608 658-1124		☆	☆		
Aqua Blanket, Inc. 1900 Old Middlefield Way Mountain View, California 94043 969-1336		☆			
Lifetime Pools, Inc. 910 San Antonio Road Palo Alto, California 94303 494-7070		☆			

PART IV - MONITORING, EVALUATION AND MODIFICATIONS OF PALO ALTO'S WEATHERIZATION PROGRAM

SUMMARY

The first home insulation installation occurred in May, 1978, three months following Palo Alto Council approval of the weatherization program. Over 520 home energy surveys and/or insulation inspections have been made, and over 131 insulation contracts have been sold. Of these, 49 percent elected to utilize the financing option. Palo Alto has not experienced any loan defaults, and only five customers have been denied credit because of an insufficient credit history. Approximately 20 percent of all installations have been inspected for quality control, and very few deficiencies were noted. These deficiencies were referred back to the responsible contractor and were corrected immediately. Over 500 Do-It-Yourself packets were requested and sent out. A weatherization fact sheet is included in Part 3 of this report as an attachment to Palo Alto's six-month progress report.

Results

Actual energy savings data will not be available until after this winter's heating season is over, since the savings to be realized in Palo Alto will be in heating costs only. (Air conditioning in residential homes is almost nonexistent). However, the Palo Alto staff conducted a follow up survey in which participating homeowners were asked to relay which suggested measures they implemented. On the basis of this survey, the staff projects that the average annual savings for homeowners who did not insulate but who did implement other suggestions, will be 65 therms or \$16.00 per year. For homeowners who also insulated, projected annual savings are 185 therms or \$46.00 per year.

The measures most people elected to implement were those that were easiest to do, such as turning off the furnace pilot in the summer, unplugging the "instant-on" T.V., and reducing thermostat settings. It is expected that a subsequent phone survey will produce more significant results since homeowners will have had more time to invest in more costly measures, and do-it-yourselfers will have had more time to implement. However, the home energy consultants have been instructed to utilize their insulation sales training techniques to more effectively "sell" homeowners other cost-effective conservation measures in addition to insulation.

A telephone survey of recipients of the Do-It-Yourself packet indicated that 35 therms or \$8.75 per homeowner per year will be saved as a result of measures taken in response to the kit. The cost of providing the packet was \$1.50.

Program Modifications

The Palo Alto program is analyzed weekly for customer response for surveys, attic inspections, number of "insulatable" homes, number of insulation sales and percentage of sales of insulatable homes. Samples of data sheets are included in Part 3. As these reports are received, weaknesses in the program are studied and modifications made.

- . At the beginning of the weatherization program, the home energy consultants could not sell insulation very effectively and thus the percentage of sales of insulatable houses was very low. This fact indicated that they lacked knowledge of effective sales techniques. To remedy this situation, the home energy consultants were enrolled in a sales training class where they learned the basics of good selling. Correspondingly, sales increased after the completion of the class.
- . Originally, requests for home energy surveys were prioritized on a first-come, first-served basis. However, experience indicated that prioritizing requests according to the greatest potential for energy savings resulted in more effective surveys. Consequently, surveys for homes with insulatable attics were given first priority and houses with no attics or fully insulated attics were deferred until later in the program. Palo Alto is planning to expand the home energy survey program by training more customer service people to complete surveys for the "atticless" houses. This will allow the sales trained home energy consultants to concentrate on homes for which there is a potential for selling attic insulation.
- . Record keeping, appointment making and performing calculations for energy prescriptions were twice as time consuming as originally projected. These activities will be consolidated into a system to be performed by one person and will be computerized.

Cost of Program

Each survey costs approximately \$30.00, including personnel time and materials, not including costs to develop the program. For each sale of insulation, the City makes approximately \$30.00, which covers the cost of providing the service. Average savings of 65 therms, or \$16.00 are realized for surveyed homes which implement measures other than insulation, which represents a two-year payback in energy savings.

Each complete survey (including full survey, an attic inspection and contract write-up) takes about 1.5 hours to do. A survey only or an inspection only takes anywhere from .5 hours to 1 hour.

Funding Continuation

The NCPA staff and the California Energy Commission have agreed to amend the Palo Alto contract to provide the City with an additional \$15,000 and to extend the time limit for up to six months. This contract amendment will allow the qualified, trained home energy consultants now working on the program to remain for six more months to accomplish three major tasks:

1. Reduce the backlog of requests for home energy surveys;

2. Train other home energy consultants from NCPA cities which are just beginning to implement conservation programs;
3. Teach Palo Alto customer service personnel how to perform energy surveys. As a result, the two part-time energy consultants will be phased out and Palo Alto's program will become self-sufficient. The contract amendment has been approved by the Palo Alto City Council.

SUMMARY OF FIRST YEAR GRANT ACTIVITIES

The purpose of the \$141,803 awarded to the Northern California Power Agency was to establish residential conservation programs in four NCPA utilities. The four utilities selected for first year implementation are Palo Alto, Lodi, Santa Clara, and the Plumas-Sierra Rural Electric Cooperative. These utilities are involved in varying degrees of program activity as described below.

The City of Palo Alto was awarded \$20,000 as the first NCPA City to develop and implement a residential conservation program under the grant. This "Home-Weatherization" program contains elements which include home energy surveys, insulation installations by qualified contractors, a low-interest financing mechanism with utility-bill payback, a quality control and certification program and a do-it-yourself packet. The ultimate goal of the weatherization program is to save energy in the residential sector by upgrading the energy efficiency of Palo Alto residences. The features of the program provide positive conservation incentives for homeowners to invest in conservation measures.

The Palo Alto contract expired in December, 1978, and was amended to provide an additional \$15,000 for a six-month time extension. The purpose of the increase and extension is to allow trained staff to reduce the backlog of requests for energy surveys and to train energy specialists from other NCPA utilities in methods of conserving energy. Other Palo Alto personnel will also be trained for the purpose of making Palo Alto's program self-sufficient, while the present energy surveyors are being phased out.

The City of Lodi Electric Department was awarded \$46,225 in November, 1978, to begin implementing a residential conservation program. This program will include energy surveys, inspection for insulation requirements, educational outreach efforts, referral system to the local gas supplier for insulation installation and financing. Two conservation staff members have been hired to begin program development and implementation.

A draft contract has been prepared which will provide Santa Clara with \$48,950 in grant funds to expand its current energy survey program to include inspections for insulation requirements, do-it-yourself information, a swimming pool load management program, a referral system to the local gas supplier for contractor installed insulation and financing, and various other program elements. This contract will be finalized prior to January, 1979.

The Plumas-Sierra Rural Electric Cooperative is the fourth utility selected to begin implementation for the first year. This utility presently is working with the County to provide free insulation to low-income families, and is administering a weatherization financing program through the Farmer's Home Administration. The first stages of contract development to provide the utility with grant funds have been initiated. These funds will be used

to begin a program which will augment the utility's present activity, and expand a program to include energy surveys, inspections for insulation requirements for all utility customers, and do-it-yourself materials.

Monitoring and evaluation procedures for the first year programs are currently being developed by the staff of the State Energy Commission which will be used to evaluate the effectiveness of these residential programs. Presently, only the first assisted city, Palo Alto, has been monitored. The response to that program has been impressive and is outlined in Part 4 of this report. The other programs are still in the developmental stages and, therefore, no evaluation has yet been done.