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Marketing Manufactured Housing Under the "Super Good Cents" Program

**B. L. Mohler
S. A. Smith**

January 1986

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EXECUTIVE SUMMARY

The objective of this study is to propose a strategy for including manufactured housing (MH) in Bonneville Power Administration's (BPA) Super Good Cents (SGC) Program. This report presents information on the site-built SGC program (Chapter 2.0), the characterization of MH consumers (Chapter 3.0), the options for including MH in the SGC program (Chapter 4.0), and the recommendations for including MHs in the SGC program (Chapter 5.0).

The proposed strategy for including MHs in the SGC program is designed to reduce risks to manufacturers and dealers, stimulate demand and allow for maximum flexibility. Specific program strategy features include the following:

- provide training and education to manufacturers and dealers on the purpose, benefits and responsibilities of participation in the SGC program
- allow manufacturers maximum flexibility in meeting the SGC standards
- allow manufacturers to self-certify their MHs as meeting the SGC standards
- provide manufacturers and dealers with detailed market information to help reduce risks associated with the construction and inventorying of SGC MHs
- Implement advertising and promotional strategies with participants on a co-op or allowance basis
- provide dealer with a rebate or purchase allowance to reduce the costs associated with carrying inventories of SGC MHs
- offer consumers rebates or other financial incentives to purchase SGC MHs
- encourage lending institutions to reduce normal debt to income ratios for consumers purchasing SGC MHs
- encourage insurance companies to reduce the premiums on SGC MHs.

Specific details of each of these strategic elements are discussed in Chapter 5.0. Research deficiencies and needs are also identified and discussed which would aid the design and implementation of the strategy to include MHs in the SGC program.

CONTENTS

EXECUTIVE SUMMARY	iii
1.0 INTRODUCTION AND BACKGROUND	1.1
1.1 BACKGROUND	1.1
REFERENCES AND NOTES FOR SECTION 1.0	1.3
2.0 DESCRIPTION OF THE SUPER GOOD CENTS PROGRAM	2.1
2.1 PURPOSE OF THE PROGRAM	2.1
2.2 MAJOR COMPONENTS OF THE PROGRAM	2.2
2.2.1 Training	2.2
2.2.2 Incentives	2.3
2.2.3 Delivery Mechanisms	2.4
2.3 SUMMARY	2.7
REFERENCES AND NOTES FOR SECTION 2.0	2.8
3.0 CHARACTERIZATION OF MH CONSUMERS AND THEIR INCOMES	3.1
3.1 SOURCE AND METHODOLOGY USED TO COLLECT NEW DATA	3.1
3.2 CONSUMER CHARACTERIZATION AND PURCHASE INFORMATION	3.3
3.2.1 Consumer Demographics	3.3
3.2.2 MH Consumer Opinions and Trends Concerning MH Living	3.9
3.2.3 Consumer Purchase and Finance Information	3.16
3.3 MH INFORMATION AND CHARACTERISTICS	3.20
REFERENCES AND NOTES FOR SECTION 3.0	3.26
4.0 OPTIONS FOR INCLUDING MH IN SGC PROGRAM	4.1
4.1 DIFFERENCES IN MH VERSUS SITE-BUILT HOME MARKETS	4.1

4.2	SGC PROGRAM FOR MH	4.2
4.2.1	Certification Options	4.2
4.2.2	Promotional Options	4.4
4.2.3	Information and Training Needs	4.5
4.3	OVERALL PROGRAM ELEMENTS AND OBJECTIVES	4.7
4.3.1	Consumer Incentives	4.7
4.3.2	Reducing the Costs to Manufacturers	4.9
4.4	SUMMARY	4.10
	REFERENCES AND NOTES FOR SECTION 4.0	4.11
5.0	RECOMMENDATIONS AND RESEARCH NEEDS	5.1
5.1	MH CONSUMER DESCRIPTION	5.1
5.2	OTHER EXISTING PROGRAMS	5.3
5.2.1	Identification of Other Relevant Programs	5.3
5.3	APPROACH/DELIVERY RECOMMENDATION	5.6
5.3.1	Key Participants	5.7
5.3.2	Related Recommendations	5.17
	REFERENCES AND NOTES FOR SECTION 5.0	5.18

TABLES

3.1	Sample Size by State - Foremost Reports	3.2
3.2	Sample and Actual Population Sample Percentages	3.2
3.3	MH Household Head Age	3.3
3.4	MH Household Head Employment Status	3.4
3.5	MH Household Head Occupation	3.4
3.6	Education Levels of MH Household Heads	3.5
3.7	Annual Household Income	3.6
3.8	MH Household	3.6
3.9	Marital Status of MH Consumers	3.7
3.10	Family Household Designation	3.7
3.11	MH Siting Locations	3.8
3.12	Overall Satisfaction With MH Living	3.9
3.13	Percentage of MH Owners Perceiving Advantages to MH Living, By State	3.10
3.14	Perceived Advantages of MH Living	3.11
3.15	Percentage of MH Owners Perceiving Disadvantages to MH Living	3.12
3.16	Perceived Disadvantages of MH Living	3.12
3.17	Number of Times MH has been Moved	3.13
3.18	Previous Residence Type	3.14
3.19	Years Ever Owned/Lived in a MH	3.14
3.20	Expected Tenure in Current MH	3.15
3.21	Next Residence Type	3.15
3.22	MH Purchase Source	3.16
3.23	MH Purchase Price	3.17

3.24	Percentage of MH Owners Who Use Financing Alternatives	3.18
3.25	Financing Term	3.18
3.26	Amount of Down Payment	3.19
3.27	Finance Source	3.19
3.28	MH Model Year	3.20
3.29	MH Width	3.21
3.30	Total Square Footage	3.21
3.31	Overall MH Length	3.22
3.32	Exterior Siding	3.22
3.33	Roof Type	3.22
3.34	MH Foundation	3.23
3.35	Permanent Structures Attached to MH	3.23
3.36	MH's with Woodstoves or Fireplaces	3.24
3.37	MH Location	3.24
3.38	Community Facilities	3.25
3.39	Monthly Park Space Rental Fee	3.26

1.0 INTRODUCTION AND BACKGROUND

The principal objective of this report is to determine how HUD-Code manufactured housing (MH)⁽¹⁾ can be included in the existing Bonneville Power Administration's (BPA) "Super Good Cents" (SGC) marketing program. While the majority of this report will focus on the options available for the inclusion of MHs into the SGC program, the following topics will also be included:

- A description of the "Super Good Cents" program,
- Characterization of MH consumers,
- Characterization of the MH market, and
- Recommendations and options for the inclusion of MHs in the SGC program.

This report will draw heavily from a previous PNL report entitled "Marketing Energy Conservation Options to Northwest Manufactured Home Buyers"⁽²⁾ for background and support information. In some cases, more recent or regionally specific data has become available and will be used in this report.

1.1 BACKGROUND

BPA is interested in including MH's in the SGC program as part of its broader activities designed to promote energy conservation as a resource for the Northwest. With the passage of the Pacific Northwest Electric Power Planning and Conservation Act (the "Act") in 1980,⁽³⁾ the Northwest Power Planning Council (the "Council")⁽⁴⁾ was established and charged with the responsibility to develop a regional conservation and electric power plan (the "Plan").⁽⁵⁾ A revised draft plan was issued in August of 1985 and emphasizes several new priorities which include:⁽⁶⁾

- A stronger regional role for BPA,
- Development of conservation capability in all sectors, and
- Specific inclusion of manufactured housing in BPA conservation activities.

In the Northwest region (Washington, Oregon, Idaho and Western Montana) MHs made up approximately 27% of new housing units available on the market each year.⁽²⁾ Narrowing the focus to only electrically heated new homes, MHs dominate by representing 49.4% of this market segment.⁽⁷⁾ For these reasons, BPA is interested in integrating MH into the existing SGC program to the extent possible, and identifying areas where the program could be modified or expanded to include MH.

The SGC program is a home certification program being offered to Northwest utilities to be implemented with the assistance of BPA. SGC is designed to increase consumers' awareness, interest and propensity to purchase energy-efficient homes. The focus of the program is on electric utilities that purchase power from BPA and is implemented by these utilities within their respective service territories.

As the program currently exists, it applies only to site-built residential structures. The primary delivery mechanism is the utilities participating in the BPA program which subsequently encourage builders to construct "Super Good Cents" (certified) homes. It appears as if the MH market is significantly different in structure than that of site-built homes. The production, sales and distribution of MHs presents unique issues and problems which need to be addressed prior to the inclusion of MHs in the SGC program. These issues and potential inclusion options are identified and discussed in this report.

REFERENCES AND NOTES FOR SECTION 1.0

1. HUD defines a manufactured home at 24 C.F.R. 3280.2(16) as a "structure, transportable in one or more sections, which in the traveling mode, is eight body feet or more in width or forty body feet or more in length, or, when erected on site, is three hundred twenty or more square feet, and which is built on a permanent chassis and designed to be used as a dwelling with or without a permanent foundation when connected to the required utilities, and includes the plumbing, heating, air-conditioning and electrical systems contained therein."
2. Hendrickson, Mohler, Taylor, Lee, Onisko. Marketing Energy Conservation Options to Northwest Manufactured Home Buyers. October 1985. PNL-5496 Rev. 1.
3. Public Law 96-501, enacted December 5, 1980.
4. 16 U.S.C.A. 839b(a)(2). Section 4(a)(2) of the Act.
5. 16 U.S.C.A. 839b(d). Section 4(d) of the Act.
6. Northwest Public Power Association. Northwest Public Power Bulletin, September 1985, pg. 16.
7. Onisko, Stephen A. March 1985. Energy-Efficient Manufactured Housing. Bonneville Power Administration.

2.0 DESCRIPTION OF THE SUPER GOOD CENTS PROGRAM

The objective of this chapter is to provide a description of the Super Good Cents (SGC) program. Specifically this chapter will include information on the purpose, training, incentives and delivery mechanisms of the SGC program as they exist for site built homes.

2.1 PURPOSE OF THE PROGRAM

The Pacific Northwest Electric Power Planning and Conservation Act of 1980 stated as a major goal energy conservation by promoting electricity-conserving appliances, homes and businesses. Conservation is achieved through the Model Conservation Standards (MCS). BPA is anxious to see these energy conservation goals achieved; however it needed a mechanism for encouraging energy conservation during the time period when new building codes complying with MCS were developed. As an interim measure, the BPA contracted with Southern Electric International (SEI) for the rights to the Good Cents program. Pacific Power and Light (PP&L) was already promoting the Good Cents program within their service region. In order to avoid confusion with the PP&L program, the BPA effort was named the Super Good Cents program.

The purpose of the SGC program is to promote the construction and sale of new homes that are built to comply with the requirements of the MCS as listed in the 1983 Plan. BPA hopes that the SGC program will result in at least 25% of all new housing starts, located in participating utility areas, being built to the MCS.⁽¹⁾ Components covered by the SGC program include doors, windows, floors, walls, ceilings, air distribution systems, infiltration barriers, attic ventilation, heat pumps and water heating. These guidelines typically reduce a houses energy consumption by 30-50% over conventionally-designed houses. To determine if a house that is being built in the region qualifies as a SGC home the local utility reviews builder's plans, and inspects the home while its under construction. Site-built houses that meet the SGC criteria receive the SGC certification award. This award certifies that the home has been built to the Super Good Cents standards, and it lists the specific conservation measures that the builder has used in constructing the home.

A computer software package, Wattsun III, is available through SGC-participating utilities for use by consumers and builders to aid in the design and construction of SGC-certified homes. The program uses information such as square footage, orientation, insulation etc., to predict how efficiently a home will use energy, as well as the length of time required to pay for the additional energy conservation features.

Most SGC-certified homes will have a Wattsun III energy analysis posted inside. This information can be used by a prospective buyer in comparing the energy use of SGC with conventionally-built homes, or comparing the energy efficiency of two SGC-certified homes.

The BPA offers the SGC program to all of the utilities within the BPA service region. The SGC program is first introduced through a letter sent to the utility managers inviting them to a half day orientation meeting. The orientation meeting consists of presentations that are made by representatives of utilities that are currently participating in the SGC program within other regions on the country. In an effort to encourage the participation of member utilities, the BPA will pay the annual service fee to SEI for the rights to the SGC program for the first three years of operation.

2.2 MAJOR COMPONENTS OF THE PROGRAM

The major components of the SGC program include

- training
- incentives
- delivery mechanisms

2.2.1 Training

Once a utility has agreed to participate in the SGC program by signing a memorandum of Agreement, representatives of the utility are sent to SGC training seminars. The seminars focus on the technical criteria used to qualify a house for the SGC award (i.e., the MCS) and the Wattsun III computer software that is available for the floor plan analysis. Other SGC seminars focus on the

sales and marketing techniques, procedures, and requirements of the SGC program. Local trainers are used to conduct the technical seminars while the marketing seminars are performed by representatives of SEI.

Training seminars are also available for builders within a utility's region. In these seminars, builders are presented with the optional features that can be selected and combined to reduce a house's energy consumption and meet the SGC criteria. Most design and appliance recommendations will fit in to any style of home.

2.2.2 Incentives

The incentives for participation in the SGC program are as varied as the list of participants. A few examples of the incentives to participate for the various participants are listed below.

Utilities

The principle incentive for utilities to participate in the SGC program is that this program will help to reduce the peak electricity demands that occur in winter months. Installing generating capacity to meeting these peak demands is economically unattractive to utilities since the generating capacity used to meet these peak demands remains idle or operating at well below capacity in off peak periods. The costs of building additional generating capacity has escalated dramatically over the past decade, primarily as a result of the increased time required to bring new capacity online. Other benefits to the utility of participating in the SGC program included enhanced public image and reduced utility rates.

An additional incentive that encourages utilities to participate in the SGC program is the potential for reduced advertizing expenses. Whenever utilities find themselves in the same general media area, they can pool their resources and use a cooperative advertizing (i.e., co-op advertizing) campaign. Also, those utilities that have signed long term agreements with the BPA will be offered an additional agreement that will reimburse the utilities for 50% of their local SGC advertizing expenditures. The BPA also assists the utility in establishing a local SGCs advertizing campaign.

Builders

The incentives for builders to participate in the SGC program is that they can potentially expand their business by advertizing that they are participating in the SGC program. With heightened consumer awareness of the SGC program, consumers will perhaps be more interested in locating a builder who is cognizant of the building requirements of the SGC program. As consumer interest and knowledge of SGC homes increase, contractors who build SGC homes will likely experience increased demand for their work.

Consumer

The use of energy conserving features in a MH increases its initial costs by 2-3% over a conventionally-built home.⁽²⁾ However, the reduction in operating costs typically outweigh the increased mortgage payments thus providing a net savings to the customer. Also, as energy costs increase, the value of the SGC home will also increase at a faster rate than most conventionally-built homes. The award that the buyer receives certifying that his home meets the SGC criteria, can be passed along to subsequent buyers of the home. The ability to transfer the SGC certification makes home resale easier and it assists the homeowner in recovering his investment in energy conserving features. This is particularly important if home tenure is less than the expected payback period.

2.2.3 Delivery Mechanisms

The successful execution of the SGC program requires the effort and cooperation of the following participants

- BPA
- SEI
- local utilities
- builders
- consumers

The responsibilities of each of these groups in the SGC program are summarized in this section.

BPA

The BPA is the principle actor in the administration of the regional SGC program. Specific BPA responsibilities include

- Accepting the long term responsibility for the regional SGC program by contracting with SEI,
- Providing the local utilities with SGC orientation meetings, as well as program materials and training,
- Granting the right to use the SGC logo and service mark for utilities for the years 1984-1987,
- Establishing training sessions for utility managers, SGC representatives and local builders,
- Sponsoring technical information sessions for builders, realtors, and lenders,
- Assisting in the review of floor plans and completed homes (when requested by the utility),
- Providing each utility with one package of SGC materials,
- Reimbursing utilities for 50% of their local SGC advertizing expenditures.

Utilities

Local utilities that choose to participate in the SGC program are responsible for the following aspects of the program.

- Providing for staff needs including travel, office space, expenses, and overhead,
- Acquiring (at its own expense) any additional SGC materials including construction handbooks, market guides, graphics manual, representative's handbook, yard signs, miscellaneous promotional items, award certificates, and home buyer and builders guides, not initially furnished by BPA,
- Sending staff to SGC training programs,

- Selecting builders operating within their service area to attend the training sessions,
- Conduct local SGC advertizing and promotions in accordance with the guidelines set forth in the SGC graphics manual and advertizing guide, and,
- Agreeing to use the SGC logo for only new residential structures that meet the MCS.

SEI

SEI is responsible for promoting the Good Cents program on a national level. Specific SEI responsibilities include

- Insuring that each utility promoting the SGC program meets the standards set by SEI for the conduct of the program,
- Conducting sales and marketing-type seminars during the initial stages of the SGC program,
- Providing a staff member as part of the SGC advisory board. (This panel visits utilities after the orientation meetings to answer questions about the SGC program and its implementation.)

Builder

The responsibilities of the local builders includes

- Attending SGC technical seminars (if recommended by the local utility),
- Selecting, from the menu of options, those features that will (in combination) reduce a house's space and water heating electricity requirements by 30% over conventionally-built homes,
- Building home to MCS.

Consumer

Consumer responsibilities include

- Bringing floor plans to the local utility before the home is constructed to see if the structure qualifies as a SGC home (this may be performed by the builder),

- Transferring the SGC certificate to the new owner, if the house is sold.

2.3 SUMMARY

In 1984 the SGC program was initiated by the BPA, in cooperation with SEI, with the objective of having 25% of site-built homes in the BPA region complying to the MCS. Through the SGC program, the BPA provides technical and marketing seminars, home energy analysis software packages, and promotional assistance.

The successful administration of this program requires the cooperation of many participants including the BPA, SEI, utilities, builders and consumers. SGC program responsibilities vary between participants; however, responsibility for the SGC lies with BPA.

REFERENCES AND NOTES FOR SECTION 2.0

1. Super Good Cents Marketing Program Description.
2. Southern Electric International. 1985. "Home Buyer's Guide."

3.0 CHARACTERIZATION OF MH CONSUMERS AND THEIR HOMES

The purpose of this section is to describe the demographics and attitudes MH consumers and to provide a brief characterization of the homes in which these consumers live. Purchasing, financing and siting trends are also discussed. The revised Hendrickson et al. report⁽¹⁾ provides a more detailed examination of MH consumer characteristics and attitudes. The information presented here is Northwest region specific and has just recently become available. This new information includes the following:

- Consumer demographics,
- Opinions and trends of MH living,
- Siting, and physical characteristics
- Purchase information, and
- Finance information.

Data will be presented from each of these categories and conclusions or implications will be drawn as they relate to developing marketing plans to increase the sales of energy efficient MHs and including them under the SGC program.

3.1 SOURCE AND METHODOLOGY USED TO COLLECT NEW DATA

The Foremost Insurance Company is the nations leading MH insurance specialist. In 1979, Foremost conducted a comprehensive nationwide study of all MH owners. Since then, the industry, consumers and the market had changed significantly to warrant the updating of the survey in 1982. The survey database was most recently updated in October of 1984 when National Family Opinion, Inc. administered surveys to over 10,000 MH households. Of those surveyed, 7,276 returned completed surveys for a usable return rate of 73%. The data was compiled, tabulated and analyzed during late 1984 and early 1985.^(2,3,4)

Rather than using national or aggregate data, PNL requested special reports be generated from the Foremost data base to specifically represent the BPA service territory. Three reports were obtained; one for Washington MH owners, Oregon MH owners and the third report combining Idaho and Western Montana MH owners. The sample size for these reports is presented in Table 3.1.

TABLE 3.1. Sample Size by State - Foremost Reports

<u>State</u>	<u>Number of MH Owners Responding in Each State</u>
Washington ⁽²⁾	210
Oregon ⁽³⁾	162
Idaho and Western Montana ⁽⁴⁾	<u>59</u>
Total respondents	<u><u>431</u></u>

National Family Opinion used a stratified sampling procedure using geography, population density, age, income, and size of household as stratification and weighting variables. Under small sample conditions, and a 95% confidence level, the smallest statistically valid sample for the BPA service territory is 400 observations. The Foremost sample satisfies this condition, but may be limited by a potential weighting error by geographic region.

The information in Table 3.2 indicate that the number of MHs from each state as a percent of Foremosts Northwest (Washington, Oregon, Idaho and Western Montana) sample size is fairly close to the percent that the actual number of MHs in each state represent for the Northwest region as a whole. Thus, the potential weighting error may be minimized. A second caution is that in some cases the number of respondents is less than 400 which may introduce a small sample error.

TABLE 3.2. Sample and Actual Population Sample Percentages

	<u>Foremost Sample Size (2,3,4)</u>	<u>% of Sample</u>	<u>Actual Number of MH in the Region⁽¹⁾</u>	<u>% of Regional Total</u>
Washington	210	48.7%	105,261	44.6%
Oregon	162	37.6%	89,826	38.1%
Idaho and Western Montana	<u>59</u>	<u>13.7%</u>	<u>40,950</u>	<u>17.3%</u>
Total	<u><u>431</u></u>	<u><u>100.0%</u></u>	<u><u>236,037</u></u>	<u><u>100.0%</u></u>

3.2 CONSUMER CHARACTERIZATION AND PURCHASE INFORMATION

This section contains information on demographics, attitudes, trends and purchasing characteristics of the Northwest MH Consumer. Data is also presented on the physical characteristics of MHs purchased in the BPA service territory. This information was derived from the Foremost^(2,3,4) reports and is included here as an update and regionalization of the demographic and attitudinal information presented in Hendrickson et al.⁽¹⁾

3.2.1 Consumer Demographics

The tables which follow present a fairly consistent picture of MH consumer characteristics with that described in the Hendrickson et al.⁽¹⁾ report. The age distribution (Table 3.3) of MH consumers appears bimodal with few consumers in the 40-49 age category. The age distribution appears to be remaining fairly consistent over time, with the exception of a slight reduction in the under 30 group and increases in the older age brackets. The average age of a MH consumer has increased 5.1 years between 1982 and 1984 which is reflective of the shifts mentioned above, and the general aging of the population in the U.S.⁽¹⁾

The employment (Table 3.4) and occupation (Table 3.5) information presented is interesting in that while a large majority of MH household heads are employed full time, that percentage is decreasing. In light of the increasing

TABLE 3.3. MH Household Head Age^(2,3,4)

Age of Household Head	1982				1984			
	WA	OR	ID & MT	Region Ave.	WA	OR	ID & MT	Region Ave.
Less than 30 years	23%	14%	22%	19.7%	11%	9%	22%	14.0%
30-39 years	24	17	26	22.3	26	15	24	21.7
40-49 years	9	12	19	13.3	9	15	14	12.7
50-59 years	14	13	9	12.0	16	11	12	13.0
60-69 years	18	24	12	18.0	20	29	10	19.7
70 years and over	12	21	12	15.0	19	21	19	19.7
Total percentage	100	101	100	100.3	101	100	101	100.7
Number responding	241	243	74	558	210	162	59	431
Average age (years)	46.2	52.6	45.1	48.0	51.3	55.2	46.8	51.1

TABLE 3.4. MH Household Head Employment Status^(2,3,4)

	1982				1984			
	WA	OR	ID & MT	Region Ave.	WA	OR	ID & MT	Region Ave.
Full time	60%	50%	72%	60.7%	51%	44%	64%	53.0%
Part time	6	7	9	7.3	5	6	10	7.0
Retired	23	38	15	25.3	35	40	19	31.3
Not employed	10	5	4	6.3	9	10	7	8.7
Total percentage	99	100	100	99.7	100	100	100	100
Number responding	240	243	74	557	162	162	59	431

TABLE 3.5. MH Household Head Occupation^(2,3,4)

	1982 Regional Average	1984 Regional Average
Retired	25.3%	31.3%
Operator/laborer	19.0	13.3
Technical/sales/administrative support	14.3	9.7
Craftsman/repairman	10.0	10.3
Managerial/professional	7.3	8.0
Service	10.7	9.7
Student/armed forces/other	5.7	7.7
Farming/forestry/fishing	7.7	10.7
Total percentage	100.0	100.7
Number responding	558	431

age of these consumers, it is not surprising that the number of those retired has increased over the same period of time. It would appear that the older age groups, especially retired individuals, are becoming a more important target audience for BPA marketing activities designed to promote the sale of energy-efficient MHs.

Because there were no significant differences found among states, data in Tables 3.5 and 3.6 are presented for the Northwest region as a whole. Data presented in Table 3.5 indicate that while there have been some shifts in the

TABLE 3.6. Education Levels of MH Household Heads (2,3,4)

	1982 Regional Average	1984 Regional Average
Attended grade school	1.0%	2.0
Graduated from grade school	7.7	5.3
Attended high school	11.0	14.3
Graduated from high school	41.0	44.7
Attended college	24.3	23.3
Graduated from college	9.7	7.3
College post graduate	4.7	3.3
Total percentage	100.0	100.0
Number responding	558	430
Median education level (years)	12.73	12.63

occupational distribution since 1982, the majority of MH consumers appear to be either retired or employed in the semi- or skilled-blue collar occupations. These findings are consistent with the data presented in Table 3.6 and 3.7 concerning education and income levels of MH household heads respectively. Typically, the MH consumer has graduated from high school and a large percentage have attended some college. Median education does however, appear to be slightly declining. MH consumers are also characterized by lower incomes with 65.4% of MH households having an income of less than \$20,000 annually in 1984. The median income is however on the rise and is attributed to the increase of MH consumers in the \$30,000-\$39,000 and over \$40,000 categories.

It is also interesting to note that the median incomes for MH households were very consistent between states in 1982. In 1984, however, there was a 23.3% increase in median income for Washington MH households, and a 6.7% decrease in median household income for those in Oregon, with Idaho and Montana's income levels remaining virtually unchanged. These incomes changes resulted in the increase in the average regional income of 5.1% for MH households, but it should be noted that only MH households in Washington contributed to this increase.

TABLE 3.7. Annual Household Income^(2,3,4) (current dollars)

	1982				1984			
	WA	OR	ID & MT	Region Ave.	WA	OR	ID & MT	Region Ave.
Less than \$10,000	25%	30%	23%	26.0%	21%	37%	31%	29.7%
\$10,000 - \$19,999	43	38	50	43.7	38	33	36	35.7
\$20,000 - \$29,999	24	24	16	21.3	20	18	17	18.3
\$30,000 - \$39,999	4	4	9	5.7	14	8	8	10.0
\$40,000 and over	4	5	1	3.3	7	4	8	6.3
Total percentage	100	100	100	100	100	100	100	100
Number responding	241	243	74	558	210	162	59	431
Median income level	\$14,400	\$14,900	\$14,800	\$14,700	\$17,750	\$13,900	\$14,700	\$15,450

Table 3.8 presents data which indicate that there has been virtually no change in MH household size between 1982 and 1983 with the average size for a Northwest MH household being 2.43 members. Data are presented for the region only as there were no significant differences found among states.

The information in Tables 3.9 and 3.10 indicate that the majority of MH consumers are married, but there also appears to be a significant and growing number of widowed females living in MHs in the Northwest. Table 3.10 reveals that the two most significant segments of MH consumers in terms of family household designation are "husband and wife" households and "female living alone." The data on household designation presented in Table 3.10 is

TABLE 3.8. MH Household Size^(2,3,4)

Household Size	1982 Regional Average	1984 Regional Average
1 member	27.0%	23.3%
2 members	37.0	40.3
3 members	13.3	15.0
4 members	14.7	13.7
5 or more members	8.0	7.7
Total percentage	100.0	100.0
Number responding	558	431
Average household size	2.43	2.43

TABLE 3.9. Marital Status of MH Consumers (2,3,4)

<u>Marital Status</u>	<u>1982 Regional Average</u>	<u>1984 Regional Average</u>
Married	65.3%	66.7%
Never married - female	6.7	4.7
Divorced - female	9.0	8.0
Widowed - female	12.3	14.3
Separated - female	0.3	1.0
Never married - male	3.0	2.0
Divorced - male	2.0	1.3
Widowed - male	0.0	1.0
Separated - male	0.0	0.0
Total percentage	99.0	99.0
Number responding	558	431

TABLE 3.10. Family Household Designation (2,3,4)

<u>Family Household Designation</u>	<u>1982</u>				<u>1984</u>			
	<u>WA</u>	<u>OR</u>	<u>ID & MT</u>	<u>Region Ave.</u>	<u>WA</u>	<u>OR</u>	<u>ID & MT</u>	<u>Region Ave.</u>
Husband and wife	60%	74%	62%	65.3%	68%	63%	69%	66.7%
Male (no wife); child and/or other relative is present	0	0	0	0.0	0	0	0	0.0
Female (no husband); child and/or other relative is present	8	5	5	6.0	8	9	10	9.0
Male living alone	6	1	8	5.0	5	2	5	4.0
Female living alone	23	19	23	21.7	18	25	15	19.3
Male living with non- relative	0	0	0	0.0	0	1	0	0.3
Female living with non- relative	2	0	1	1.0	1	0	0	0.3
Total percentage	99	99	99	99.0	100	100	99	99.7
Number responding	241	243	74	558	210	162	59	431

presented by state as there appear to be differences which may become important in developing marketing plans to encourage the purchase of energy efficient MHs if geographic segmentation is used.

As far as location and siting of the MH is concerned, there does seem to be a significant difference among states. Clearly, MHs are not typically found in urban (metro) areas as often in Idaho and Montana as they are in either Washington or Oregon. But, even when MHs are sited in urban (metro) areas, they tend to be located in smaller metro centers rather than larger cities (Table 3.11).

TABLE 3.11. MH Siting Locations(2,3,4)

Population Densities	1982				1984			
	WA	OR	ID & MT	Region Ave.	WA	OR	ID & MT	Region Ave.
Non RMA	54%	62%	88%	68.0%	46%	65%	86%	65.7%
Ranally Metro Areas (RMA's)								
50,000 - 499,999	20	18	12	16.7	21	17	14	17.3
500,000 - 1,999,999	26	20	0	15.3	2	19	0	7.0
2,000,000 and over	0	0	0	0.0	30	0	0	10.0
Total percentage	100	100	100	100.0	99	101	100	100.0
Number responding	241	243	74	558	210	162	59	431

In summary, the demographic profile of the typical MH consumer in the Northwest region would be:

- Either less than 40 years old or older than 50,
- Either retired or employed full time in a semi- or skilled-blue collar occupation
- Graduated from high school with a significant percent attending at least some college,
- Earning an annual household income of \$20,000 or less
- Have an average household size of 2.43 persons,
- Are either married or a widowed female,
- Are either a "husband and wife" or "widowed female living alone" in the home, and

- Depending on the state, likely to site the MH outside of (large) urban or metropolitan areas.

These of course are only averages and paint a very broad picture of a typical MH consumer in the Northwest. More refined segments descriptions are necessary to target particular market segments more effectively. The next section will supplement these demographics with attitude and opinions information concerning MH buyers which help give a more complete description of these consumers.

3.2.2 MH Consumer Opinions and Trends Concerning MH Living

The opinions expressed by MH consumers in the Foremost report are in general, very consistent with those stated in the Hendrickson et al. report. Information presented in Table 3.12 indicate that a majority of MH owners are quite satisfied with MH living. This general satisfaction has also remained virtually constant since 1982. Data presented here are for the BPA region as a whole since individual state responses showed similar trends and tendencies. This is somewhat contradictory of the national data presented in the Hendrickson et al. report which indicates (Table 6.16) that there has been a decrease in overall MH satisfaction. The differences in the time frame (1974-1981 vs 1982-1984) and the sample frame (national vs Northwest region) of the two studies probably contribute to these difference.

The respondents of the Foremost study were asked about specific advantages and disadvantages associated with MH living. Table 3.14 presents respondents perceived advantages with living in a MH. Data is presented by state to

TABLE 3.12. Overall Satisfaction With MH Living^(2,3,4)

	<u>1982 Regional Average</u>	<u>1984 Regional Average</u>
Very satisfied	59.3%	59.7%
Somewhat satisfied	33.3	31.0
Somewhat dissatisfied	5.0	7.7
Very dissatisfied	2.0	1.7
Total percentage	99.0	100.0
Number responding	484	423

highlight some interesting differences among respondents within states. Table 3.13 indicates the number of respondents who perceived there to be advantages to MH living and, thus, comprise the sample for the responses presented in Table 3.14.

The variation between states is interesting to note on variables such as "less upkeep inside/outside," especially in 1984, and in "movability" with Idaho and Montana respondents claiming to a significantly greater degree that this is a major advantage of MH living.

As far as energy efficiency is concerned, there has been a significant drop in the number of respondents who claim that it is a major advantage to MH living (17.7% in 1982 to 7.3% in 1984). Washington respondents showed a 42.8% drop, Oregon a 57.8% drop and Idaho and Montana showing an 84.6% drop in those who believe energy efficiency is a major advantage to MH living. By examining the perceived disadvantages of MH living, one can gain further insights into the problem areas which MH consumers believe exist with their home or living situation as it relates to their home.

Table 3.15 indicates the percentage and number of respondents who believe that disadvantages exist with MH living. Table 3.16 indicates what those disadvantages are perceived to be, and the magnitude of the perception by state. Data are only presented for 1984, as no comparable data was available from the 1982 (or earlier) survey.

TABLE 3.13. Percentage of MH Owners Perceiving Advantages to MH Living, By State^(2,3,4)

	1982				1984			
	WA	OR	ID & MT	Region Ave.	WA	OR	ID & MT	Region Ave.
Percentage stating there are ADVANTAGES to MH living	81%	80%	70%	77.0%	79%	78%	81%	79.3%
Number responding	240	240	74	554	204	158	59	421

TABLE 3.14. Perceived Advantages of MH Living^(2,3,4)

	1982				1984			
	WA	OR	ID & MT	Region Ave.	WA	OR	ID & MT	Region Ave.
Less upkeep inside/outside	45%	52%	35%	44.0%	21%	58%	21%	42.0%
Less expensive to buy	34	32	40	35.3	30	23	31	28.0
Compact/space well utilized/cozy	27	26	25	26.0	16	13	17	15.3
Less expensive to maintain energy efficient	21	19	13	17.7	12	8	2	7.3
Economical/less expensive	15	15	17	15.7	10	9	10	9.7
Furnished/instant house	10	6	4	6.7	10	13	6	9.7
Movability	17	11	23	17.0	10	7	35	17.3
Security of park living	--	--	--	--	8	9	0	5.7
Low/no taxes	5	12	8	8.3	7	11	6	8.0
Convenient	5	4	6	5.0	5	5	10	6.7
Activities/neighbors like park living	3	5	0	2.7	3	7	2	4.0
Private/quiet	3	1	0	1.3	3	3	2	2.7
Good for singles/retireds/ newlyweds	--	--	--	--	2	2	4	2.7
Pride of ownership/it's mine	--	--	--	--	2	4	2	2.7
Build equity/pay off quicker	--	--	--	--	2	4	2	2.7
No steps	--	--	--	--	1	0	0	0.3
Low/no rent	--	--	--	--	0	3	4	2.3
Miscellaneous	15	16	13	14.7	6	7	4	5.7
Number responding ^(a)	187	188	48	423	154	120	48	322

(a) The percentage totals over 100% due to multiple responses.

Respondents from each state did consistently rank "poor construction and difficulty of repair" as the major disadvantage with MH living. Idaho and Montana respondents, however, also listed "poor insulation/hard to heat/cool" as a tie for the major disadvantage of MH living. This is an interesting

TABLE 3.15. Percentage of MH Owners Perceiving Disadvantages to MH Living^(2,3,4)

	1984			Region Ave.
	WA	OR	ID & MT	
Percentage stating there are major DISADVANTAGES to MH living	51%	44%	66%	53.7%
Number responding	197	152	59	408

TABLE 3.16. Perceived Disadvantages of MH Living^(2,3,4)

	1984			Region Ave.
	WA	OR	ID & MT	
Poor construction/difficult to repair	43%	43%	47%	44.3%
Too small/no storage space	35	30	32	32.3
Depreciates quickly	12	3	5	6.7
Appearance of MH's/difficult to decorate/rearrange furniture	12	7	5	8.0
Poor insulation/hard to heat/cool	10	12	47	23.0
Don't like MH park/restrictions/manager	5	4	5	4.7
Fire/storm danger	4	4	3	3.7
No basement/attic	4	0	3	2.3
Close/noisy neighbors/no privacy	3	13	5	7.0
Zone restrictions/no good areas for MH's	1	4	8	4.3
Can't/Don't Own Land	1	1	0	0.7
Increasing park rental fees/have to pay park rent	0	7	0	2.3
No garage	0	1	0	0.3
Others' opinions of MH owners	0	1	0	0.3
Difficult to entertain/have guests	0	1	3	1.3
Miscellaneous	14	7	5	6.0
Number responding ^(a)	99	67	38	204

(a) Percentages do not add to 100% due to multiple responses.

observation given the ratings of these variables by both Washington and Oregon MH respondents. This may indicate that Idaho and Montana may be the most receptive targets for marketing energy efficient MHs above the thermal performance standards in the HUD MHCSS.

Besides demographic and attitudinal changes, there are other trends in the MH market which are worth noting. Table 3.17 indicates clearly that most MHs are never moved from their original site. Idaho and Western Montana are again an outlayer in terms of number of moves with 23% of respondents indicating their MH had been moved twice as compared to 4% for Washington and 9% for Oregon. This is consistent with their high ranking of "movability" as an advantage to MH living.

The information presented in the following tables helps explain the past housing situations of current MH owners as well as present their expectations in terms of expected tenure in their current MH and plans for their next residence. It appears from Table 3.18 that about half of the MH owners previously owned a site built home with the second largest group previously owning another MH. Data did not significantly vary between states and is, therefore, presented as a regional average only. It also appears that these breakdowns of previous residence type are remaining fairly constant over time.

Respondents were also asked about their current and expected tenure in a MH (Tables 3.19 and 3.20). While there is some variation between states, it appears that most MH owners have had a tenure of less than 10 years (cumulatively) in a MH. There also appears to be a shift toward longer tenure between

TABLE 3.17. Number of Times MH has been Moved^(2,3,4)

	1982				1984			
	WA	OR	ID & MT	Region Ave.	WA	OR	ID & MT	Region Ave.
0 times	71%	81%	67%	73.0%	75%	75%	58%	69.3%
1 time	18	14	16	16.0	16	14	11	13.7
2 times	7	3	12	7.3	4	9	23	12.0
3 or more times	4	2	4	3.3	5	3	9	5.7
Total percentage	100	100	99	99.7	100	101	101	100.7
Number responding	238	237	73	548	206	158	57	42.1

TABLE 3.18. Previous Residence Type^(2,3,4)

	1982	1984
	<u>Regional Average</u>	<u>Regional Average</u>
Site built house	50.7%	54.3%
MH	23.7	22.7
Apartment	17.0	18.0
Lived with parents/relatives	5.3	4.7
Other	3.0	1.0
Total percentage	99.7	100.7
Number responding	555	421

TABLE 3.19. Years Ever Owned/Lived in a MH^(2,3,4)

	1982				1984			
	WA	OR	ID & MT	Region Ave.	WA	OR	ID & MT	Region Ave.
1 - 3 years	28%	25%	22%	25.0%	14%	10%	17%	13.7%
4 - 6 years	31	25	29	28.3	25	24	16	21.7
7 - 9 years	16	13	23	17.3	24	22	24	23.3
10 - 12 years	16	17	11	14.7	14	14	21	16.3
13 - 15 years	5	8	7	6.7	13	11	3	9.0
16 or more years	4	12	8	8.0	9	20	19	16.0
Total percentage	100	100	100	100	99	101	100	100
Number responding	237	247	73	552	209	161	58	428
Average years in a MH	6.6	8.3	7.5	7.5	8.9	10.3	9.7	9.7

1982 and 1984 with the average number of years living/owning a MH increasing from 7.5 to 9.7 years for the region. This trend is also reflected in the 18% increase in the number of MH consumers who expect to live in their current MH indefinitely (Table 3.20). This trend is consistent with the general aging of MH consumers and growing number of retired MH owners as mentioned earlier.

This information can become important in developing marketing strategies for energy efficient MHs. If tenure (and ownership) expectations are long, investments in energy efficiency for the MH make more economic sense in terms of paybacks and savings (returns) over longer periods of time.

TABLE 3.20. Expected Tenure in Current MH^(2,3,4)

	1982				1984			
	WA	OR	ID & MT	Region Ave.	WA	OR	ID & MT	Region Ave.
1 year	11%	6%	11%	9.3%	10%	10%	9%	9.7%
2 - 3 years	18	13	17	16.0	12	9	15	12.0
4 - 5 years	14	10	14	12.7	11	3	20	11.3
6 - 10 years	8	5	14	9.0	5	9	7	7.0
11 or more years	2	4	3	3.0	2	2	0	1.3
Always	45	63	41	49.7	61	67	48	58.7
Total percentage	98	101	100	99.7	101	100	99	100
Number responding	218	224	71	513	198	155	54	407

When asked about the respondents plans in terms of the type of their next residence, most planned to remain in the current MH. If a switch was planned, it would most likely be to a site built home as indicated in Table 3.21. This together with the tenure information lends strong support to marketing energy efficiency to all MH buyers, including first time buyers, as it appears as if they will remain in that home for a long period of time. The opportunity to upgrade the MH stock, given its slow rate of turnover, appears to be at the time of initial sale of the home.

TABLE 3.21. Next Residence Type^(2,3,4)

	1982				1984			
	WA	OR	ID & MT	Region Ave.	WA	OR	ID & MT	Region Ave.
Plan to remain in current MH	43%	60%	41%	48.0%	59%	65%	44%	56.0%
Site built house	27	19	33	26.3	24	21	31	25.3
Another MH	20	14	14	16.0	8	9	12	9.7
Other	6	4	7	5.7	4	2	3	3.0
Do not know	4	4	5	4.3	5	3	10	6.0
Total percentage	100	100	100	100	100	100	100	100
Number responding	232	237	73	542	205	160	59	424

3.2.3 Consumer Purchase and Finance Information

The information presented in this section discusses purchase information concerning the respondents current home. This discussion will also present information on financing options used by these MH owners.

As is clear from Table 3.22, the majority of respondents purchased their MH from dealers. This supports the conclusion on the Hendrickson et al. report which suggests that dealers are an important link between the manufacturer and consumer and as such, could plan a potentially large role in a marketing program to encourage the purchase of energy efficient MH. The second purchase source which appear large and growing in importance is the secondary market; i.e., purchasing a used home from a private party.

A used home would need to be retrofitted with energy conservation measures to improve its thermal performance. Most existing MHs do not contain cost effective levels of thermal integrity.⁽⁶⁾ This highlights the importance of the initial home sale in terms of purchasing energy savings options above those required by HUD. By increasing the number of MHs originally sold with upgraded

TABLE 3.22. MH Purchase Source^(2,3,4)

	1982				1984			
	WA	OR	ID & MT	Region Ave.	WA	OR	ID & MT	Region Ave.
New from dealer	56%	52%	59%	55.7%	57%	47%	56%	53.3%
New from MH park	2	2	0	1.3	2	1	0	1.0
New from MH broker	--	--	--	--	5	3	0	2.7
New from other sources	--	--	--	--	0	0	0	0.0
Used from dealer	3	7	3	7.7	5	5	3	6.0
Used from private party	26	31	26	27.7	24	32	32	29.3
Used from MH park	0	0	1	0.3	1	0	0	0.3
Used from real estate agent	4	4	4	4.0	2	6	2	3.3
Used from MH broker	2	4	1	2.3	1	6	0	2.3
Used from other sources	1	0	0	0.3	1	0	2	1.0
Total percentage	99	99	100	99.3	98	100	100	99.3
Number responding	227	238	73	538	207	161	59	427

thermal options, homes sold as used will be improved in terms of energy use, and the overall MH stock's thermal performance for the region will improve over time.

The second interesting point to be made about MH purchases in the Northwest are the purchase prices paid for the home. Table 3.23 indicates that while the regional average home price has remained fairly constant since 1982, there has been dramatic differences within states. The average MH purchase price in Washington increased about 13% since 1982 while the average price paid in Idaho and Montana decreased almost 19%, with Oregon remaining constant. This pattern follows those found concerning income levels of MH owners in these states and may represent a positive correlation between income and MH purchase price.

What is clear from Table 3.23 is that in 1984, roughly half of MH purchased were priced between \$7,500 and \$15,000 with the remainder split about evenly above and below this range. This data includes the purchase of both new and used MH's. Given the number of moderately priced MH's purchased, and the apparent positive relationship between income and purchase price, keeping in mind the average MH owners income level, the additional cost of energy efficiency upgrades may be a major barrier to their market penetration. This coupled with the estimates of price elasticity for MH purchases⁽¹⁾ may prove to be the major barrier to purchasing MHs above HUD thermal standards.

TABLE 3.23. MH Purchase Price^(2,3,4)

	1982				1984			
	WA	OR	ID & MT	Region Ave.	WA	OR	ID & MT	Region Ave.
Less than \$5,000	7%	9%	11%	9.0%	6%	10%	14%	10.0%
\$ 5,000 - \$ 7,499	7	12	10	9.7	11	18	18	15.7
\$ 7,500 - \$ 9,999	15	13	16	14.7	13	11	10	11.3
\$10,000 - \$14,999	28	28	29	28.3	24	22	28	24.7
\$15,000 - \$19,999	21	14	13	16.0	13	14	10	12.3
\$20,000 - \$24,999	9	6	10	8.3	10	6	10	8.7
\$25,000 and over	12	17	11	13.3	23	19	10	17.3
Total percentage	99	99	100	99.3	100	100	100	100
Number responding	192	201	62	455	181	139	50	370
Average purchase price	14,750	14,791	15,139	14,893	16,662	14,797	12,593	14,684

There are also some interesting trends worth noting in terms of how MH buyers are choosing to pay for their home. The information presented in the following tables indicate that there are fewer MH owners currently financing their home, and that fewer buyers choose to finance the home at the time of its purchase. For those who do finance their home, longer term financing is selected with the average finance term increasing from 10.5 to 11.4 years since 1982.

TABLE 3.24. Percentage of MH Owners Who Use Financing Alternatives^(2,3,4)

	1982				1984			
	WA	OR	ID & MT	Region Ave.	WA	OR	ID & MT	Region Ave.
Percentage currently financing MH	51%	46%	54%	50.3%	52%	36%	48%	45.3%
Number responding	239	241	74	554	207	161	58	426
Percentage financing at time of MH purchase	68%	63%	71%	67.3%	70%	61%	64%	65.0%
Number responding	228	239	73	540	210	162	59	431

TABLE 3.25. Financing Term^(2,3,4)

	1982				1984			
	WA	OR	ID & MT	Region Ave.	WA	OR	ID & MT	Region Ave.
1 - 3 years	10%	13%	12%	11.7%	10%	10%	10%	12.0%
4 - 6 years	17	16	14	15.7	14	14	11	13.0
7 - 9 years	9	10	10	9.7	10	14	8	10.7
10 - 12 years	30	29	42	33.7	22	22	43	29.0
13 - 15 years	19	16	20	18.3	26	12	19	19.0
16 years and over	15	17	2	11.3	18	29	3	16.7
Total percentage	100	101	100	100.3	100	101	100	100.3
Number responding	149	147	50	346	135	93	37	265
Average finance term (years)	10.9	11.0	9.7	10.5	12.0	12.4	9.7	11.4

Table 3.26 indicates the size of the down payment made by MH purchasers. While the single largest category are those who make no (zero) cash down payment, a substantial number of MH buyers make a cash down payment of \$5,000 and over, especially in Washington and Oregon. This corresponds to the higher average value (purchase price) of MH purchased in these two states.

In terms of financing sources, banks, while showing a decrease since 1982, are still the major source of financing for MHs. This indicates that there may

TABLE 3.26. Amount of Down Payment^(2,3,4)

	1984			Region Ave.
	WA	OR	ID & MT	
No cash down payment made	29%	30%	34%	31.0%
\$1 - \$999	8	8	3	6.3
\$1,000 - \$1,999	15	13	31	19.7
\$2,000 - \$2,999	10	11	6	9.0
\$3,000 - \$4,999	11	12	14	12.3
\$5,000 and over	28	25	11	21.3
Total percentage	101	99	99	99.7
Number responding	136	89	35	260

TABLE 3.27. Finance Source^(2,3,4)

	1982				1984			
	WA	OR	ID & MT	Region Ave.	WA	OR	ID & MT	Region Ave.
Bank	51%	50%	50%	50.3%	42%	41%	50%	44.3%
Savings and loan	16	13	4	11.0	22	5	0	9.0
Credit union	14	10	11	11.7	11	11	11	11.0
Finance company	8	19	24	17.0	10	17	29	18.7
Mortgage company	9	2	4	5.0	7	3	8	6.0
Former owner/land contract	--	--	--	--	6	6	3	5.0
Other	2	7	7	5.3	3	17	0	6.7
Total percentage	100	101	100	100.3	101	100	101	100.7
Number responding	144	111	46	301	139	93	38	270

be a potential role for banks in developing a marketing program to encourage the purchase of energy efficient MH's. It is also interesting to note that savings and loans appear to be a much more important financing source in Washington than the other states.

3.3 MH INFORMATION AND CHARACTERISTICS

The information presented in this section describes the characteristics of MH in the Northwest. The information in Table 3.28 indicates that the average age of the MH stock in the Northwest is newer by approximately 1 year since 1982. The average age of MH's in Oregon, however, remained unchanged in this period and is below the regional average.

While there are more multiple wide MH's sold in the Northwest than in the rest of the country,⁽¹⁾ information presented in Table 3.29 indicate that single wide MH's continue to dominate in the Northwest region. This is especially true in Idaho and Western Montana. In Washington, however, double wides have increased by 40% with the distribution in Oregon remaining virtually unchanged.

The total square footage of Northwest MH's is presented in Table 3.30. The data is presented for 1984 only as no comparable question was included in

TABLE 3.28. MH Model Year^(2,3,4)

	1982				1984			
	WA	OR	ID & MT	Region Ave.	WA	OR	ID & MT	Region Ave.
Before 1970	24%	24%	17%	21.7%	21%	24%	14%	19.7%
1970-1972	15	23	22	20.0	15	24	21	20.0
1973-1975	21	24	22	22.3	18	16	21	18.3
1976-1978	25	17	24	22.0	19	13	26	19.3
1979-1981	15	13	15	14.3	17	17	12	15.3
1982-1985	0	0	0	0.0	10	6	7	7.7
Total percentage	100	100	100	100	100	100	100	100
Number responding	233	234	72	539	206	157	58	421
Median model year	1974	1973	1974	1973.7	1975	1973	1975	1974.3

TABLE 3.29. MH Width^(2,3,4)

	1982				1984			
	WA	OR	ID & MT	Region Ave.	WA	OR	ID & MT	Region Ave.
Single wide	65%	54%	72%	63.7%	51%	54%	71%	58.7%
Double wide	35	44	28	35.7	49	45	29	41.0
Triple wide	0	2	0	0.7	0	1	0	0.3
Total percentage	100	100	100	100	100	100	100	100
Number responding	238	230	71	539	208	157	59	424

TABLE 3.30. Total Square Footage^(2,3,4)

	1984			
	WA	OR	ID & MT	Region Ave.
Less than 750 sq. ft.	19%	31%	19%	23.0%
750 - 999 sq. ft.	35	23	53	37.0
1,000 - 1,249 sq. ft.	18	18	8	14.7
1,250 - 1,499 sq. ft.	14	13	12	13.0
1,500 sq. ft. and over	14	16	8	12.7
Total percentage	100	101	100	100.3
Number responding	208	157	59	424
Median square feet	980	980	980	980

the 1982 survey. Regardless of the differences between the numbers of single or multiple wide MHs within states, the total square footage is remarkably consistent among states and for the region. This is explained by the average lengths of MH's, with Idaho and Montana having more single wides, but longer units in comparison to the more common shorter and multiple wide units for Washington and Oregon. Table 3.31 presents 1984 data for overall unit length.

The following tables present general information about the regions MH's in terms of construction and siting. Of note are the number of MH's now constructed with masonite or wood exterior siding rather than aluminum (Table 3.32). It also appears in Table 3.33 that shingled roofs are gaining

TABLE 3.31. Overall MH Length^(2,3,4)

	1984			
	WA	OR	ID & MT	Region Ave.
Less than 50 feet	15%	11%	8%	11.3%
50 59 feet	29	33	24	28.7
60 feet	17	25	17	19.7
61 - 69 feet	23	15	24	20.7
70 feet or over	16	15	27	19.3
Total percentage	100	99	100	99.7
Number responding	209	157	59	425

TABLE 3.32. Exterior Siding^(2,3,4)

	1982				1984			
	WA	OR	ID & MT	Region Ave.	WA	OR	ID & MT	Region Ave.
Aluminum	93%	96%	89%	92.7%	85%	91%	85%	87.0%
Masonite	2	1	3	2.0	7	5	5	5.7
Wood	4	3	7	4.7	6	4	10	6.7
Other	1	0	1	0.7	1	1	0	0.7
Total percentage	100	100	100	100	100	100	100	100
Number responding	240	242	72	554	206	159	54	424

TABLE 3.33. Roof Type^(2,3,4)

	1982				1984			
	WA	OR	ID & MT	Region Ave.	WA	OR	ID & MT	Region Ave.
Metal	82%	79%	85%	82.0%	66%	66%	80%	70.7%
Shingles	18	21	15	18.0	29	25	19	24.3
Double Metal Roof	--	--	--	--	3	4	2	3.0
Polyurethane/foam	--	--	--	--	--	--	--	--
Other	--	--	--	--	3	5	0	2.7
Total percentage	100	100	100	100	100	100	100	100
Number responding	240	240	73	553	206	160	59	425

at the expense of aluminum. Data on foundations (Table 3.34) and attached structures (Table 3.35) are presented for 1984 only as no comparable data was collected in 1982.

TABLE 3.34. MH Foundation^(2,3,4)

	1984			Region Ave.
	WA	OR	ID & MT	
Cement pilings/piers	47%	47%	45%	46.3%
Cement slab/runners	23	18	12	17.7
The ground/nothing	20	21	33	24.7
Blocks cemented together around entire base	7	9	5	7.0
Other	3	9	5	5.7
Total percentage	100	100	100	100
Number responding	206	158	58	422

TABLE 3.35. Permanent Structures Attached to MH^(2,3,4)

	1984			Region Ave.
	WA	OR	ID & MT	
None	45%	45%	50%	46.7%
Carport/garage	23	27	14	18.0
A room or rooms	15	17	16	16.3
Screened/enclosed porch	13	13	27	17.7
Deck	11	8	4	7.7
Storage/utility shed	7	3	2	4.0
Porch	5	6	4	5.0
Awning	1	1	0	0.7
Patio/patio cover	0	2	0	0.7
Storage/utility room	0	1	0	0.3
Other	2	4	4	3.3
Number responding ^(a)	205	159	56	420

(a) The percentage totals over 100% due to multiple responses.

One interesting MH characteristic is the number with a woodburning stove or fireplace. As is indicated in Table 3.36, there has been an 28% average increase in the number of MHs with such equipment. It also appears that wood stoves or fireplaces are more common in Idaho and Montana than in the other states. These numbers are consistent with, if not higher than those reported by Hendrickson et al.⁽¹⁾

In terms of MH siting, Table 3.37 indicates that the largest single siting category is the owners private property, with MH "park" as a second. For those MHs sited in parks, Tables 3.38 and 3.39 present information on facilities and rents respectively.

TABLE 3.36. MH's with Woodstoves or Fireplaces^(2,3,4)

	1982				1984			
	WA	OR	ID & MT	Region Ave.	WA	OR	ID & MT	Region Ave.
Percentage with a wood-burning stove or fireplace	24%	34%	49%	35.7%	42%	39%	56%	45.7%
Number responding	241	242	74	557	209	161	59	429

TABLE 3.37. MH Location^(2,3,4)

	1982				1984			
	WA	OR	ID & MT	Region Ave.	WA	OR	ID & MT	Region Ave.
Park	37%	39%	36%	37.3%	31%	42%	34%	35.7%
Subdivision	5	5	7	5.7	5	2	2	3.0
Condominium MH park	0	0	0	0.0	2	1	0	1.0
Owner's private property	36	41	39	38.7	48	38	46	44.0
Private property of relative/friend	15	10	16	13.7	11	15	15	13.7
Land leased from private party	5	3	0	2.67	2	2	2	2.0
Other	1	1	1	1.0	1	1	2	1.3
Total percentage	99	99	99	99	100	101	101	100.7
Number responding	240	241	74	555	208	161	59	428

TABLE 3.3B. Community Facilities^(2,3,4)

	1982				1984			
	WA	OR	ID & MT	Region Ave.	WA	OR	ID & MT	Region Ave.
Percentage with community buildings/ at MH location	55%	57%	27%	46.3%	58%	60%	15%	44.3%
Number responding	110	111	33	254	79	73	20	172

TABLE 3.39. Monthly Park Space Rental Fee^(2,3,4)

	1982				1984			
	WA	OR	ID & MT	Region Ave.	WA	OR	ID & MT	Region Ave.
Less than \$50	2%	4%	8%	4.7%	3%	0%	10%	4.3%
\$50 - \$74	11	12	42	21.7	2	6	45	17.7
\$75 - \$99	27	29	46	34.0	12	10	25	15.7
\$100 - \$124	28	27	4	19.7	14	25	20	19.7
\$125 - \$149	25	14	0	13.0	35	22	0	19.0
\$150 - \$199	6	13	0	6.3	29	34	0	21.0
\$200 and over	1	0	0	0.3	5	1	0	2.0
Total percentage	100	99	100	99.7	100	98	100	99.3
Number responding	85	92	26	203	65	67	20	152
Average monthly rental fee	\$106	\$106	\$72	\$94.67	\$134	\$132	\$76	\$114.0

REFERENCES AND NOTES FOR SECTION 3.0

1. Hendrickson, Mohler, Taylor, Lee, Onisko. October, 1985. Marketing Energy Conservation Options to Northwest Manufactured Home Buyers. PNL-5496 Rev.
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3. Foremost Insurance Company. Manufactured Homes: The Market Facts, A Special Report on Manufactured Homes and Their Owners - Oregon. (Data collected) October 1984. Report date, August 1985.
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5. Churchill, Gilbert A. Jr. 1983. Marketing Research, Methodological Foundations. Third Edition, Dryden Press, pg. 382.
6. Onisko, S. A., R. Van Orden. February 1985. Mobile/Manufactured Home Retrofit Study. Bonneville Power Administration, Office of Conservation, Consumer products branch - KRP, Residential Programs.

4.0 OPTIONS FOR INCLUDING MH IN SGC PROGRAM

The objective of this chapter is to discuss various options for including HUD-Code manufactured housing (MHs) in the BPA's SGC program. In order to develop a plan for successfully incorporating MHs into the existing SGC program, several factors must be addressed including: differences in MH versus site-built home markets that may affect the application of the SGCs program to MHs, certification and promotional options for the MH market, information and training needs of key actors in the MH industry, and implementation options.

4.1 DIFFERENCES IN MH VERSUS SITE-BUILT HOME MARKETS

The key participants in the construction and sale of a SGC site-built home are the

- local utility
- builder
- consumer.

Typically a builder will construct various styles of homes, depending upon what he believes will sell in the marketplace. If the builder feels that there is a market for energy efficient homes, he will include a number of SGC homes. The consumer selects a home based on several factors and, in some cases, the level of energy conservation. A SGC-certified home should appeal to consumers because of the reduced electricity bills, increased comfort and enhanced resale value of the home.

With custom-built homes, the consumer will contract with the builder to construct a house, and jointly they will decide on the various options to be included. If the consumer wants a SGC home, the builder will suggest energy conservation options that could qualify the home for the SGC certificate. The floor plan can then be taken to a local utility for evaluation by the Wattsun III computer program. If the floor plan meets SGC criteria, the house is inspected during construction to ensure that the structure is being built to comply with SGC standards. This inspection is conducted by a representative from a local utility. When completed the house receives the SGC certificate.

A somewhat different set of participants are involved in the construction and sale of MHs including MH manufacturer, dealer and consumer. Typically, MHs are constructed at regional factories and are then shipped to dealers within the manufacturer's sales territory for sale to consumers. Options can be added-on to the MH after it leaves the manufacturer; however significant structural changes, such as adding wall insulation, are extremely difficult and costly. It is also difficult to measure or verify the amount of insulation in an MH after it leaves the manufacturer.

Approximately 70% of MHs are purchased "off-the-lot" from a dealer.⁽¹⁾ The MH dealers will, therefore, be left to determine the number and variety of MHs which are ordered for sales inventory. Dealers have a large impact on the number of SGC MHs constructed through such orders. The possibility of the MH being relocated out of the dealers or manufacturers sales territory and into a different climate zone presents an additional problem to including MH in the SGC program in terms of appropriate certification for particular climate zones.

4.2 SGC PROGRAM FOR MH

Extending the SGC program to MH requires the identification of certification and promotional options, information and training needs, and implementation options. Because of the differences in the MH and site-built markets identified above, it appears as if a SGC program to include MH would have to differ from that of site-built homes. The options and characteristics for an MH SGC program are discussed below.

4.2.1 Certification Options

The certification of an MH as a SGC home meeting the MCS standards for the particular climate zone, requires that the MH be inspected by qualified personnel while the MH is under construction. Inspectors for the certification process could be provided by a variety of organizations including the following:

- DAPIA/IPIA
- BPA
- local utilities
- MH manufacturers.

DAPIA/IPIA Inspectors

One method of inspecting and certifying that a MH meets the MCS is to use Design Approval Primary Inspection Agency (DAPIA) and/or Inspecting Primary Inspection Agency (IPIA) inspectors.⁽²⁾ DAPIA inspectors are consultants that review the design of proposed MHs to ensure that the structure meets the minimum HUD standards for safety. These inspectors are paid by the MH manufacturers to review their proposed designs. Once a design is approved, the MH manufacturer can build as many units as needed without further DAPIA approval.

IPIA inspectors are state government employees who inspect MH during and after construction to ensure that the units are being built according to the DAPIA-approved design. A fee is charged to the MH manufacturer for that IPIA inspections.

Both DAPIA and IPIA inspectors could be used to help inspect and certify that MHs are being built to MCS so that they can be certified as SGC homes. Use of these inspectors would require that they be included in technical training seminars so that they are familiar with the MCSs for MHs. Benefits of using DAPIA and IPIA inspectors is their familiarity with the MH technology and industry, and the fact that they are already involved in the MH inspection process.

BPA Inspectors

A second option would be to have the BPA hire and train MH inspectors. The costs of hiring and training these individuals would be borne by the BPA. Inspector training would cover the MCS for all three climate zones in BPA's service territory unless prospective inspectors were targeted for employment in specific climate zones.

Local Utilities

A third certification option is for the local utility to provide inspectors for MHs being either constructed or sited in the utility's service area. These utility inspector's could certify that homes constructed in its territory meet the MCS climate zone standards regardless of where the home is sited, or only certify those homes which will be sited in its service territory. Given

the mobility of these homes, and the number purchased "of the lot," the option would appear to be a large burden on utilities and appropriate certification may be more difficult to obtain for each climate zone.

Manufacturer

A fourth MH certification option would be for the manufacturer to inspect and certify MHs being constructed at their own facilities as meeting MCS standards for all climate zones in BPA's service territory. This option would require that appropriate MH manufacturer's employees be trained to inspect and certify that homes meet appropriate MCS standards and are certifiable as SGC homes. The labor costs of the inspector could either be borne entirely by the MH manufacturer or a cost sharing arrangement with BPA could be developed. Similarly training expenses could either be borne by the MH manufacturer or shared with BPA and/or the local utility.

4.2.2 Promotional Options

The purpose of SGC promotional effort is to stimulate primary demand for SGC-certified MHs and develop consumer "pull" for SGC MHs. Two promotional options are presented in this section. The first, Co-op advertizing, is a cost sharing technique that is currently being used by local utilities that participate in the site-built SGC program. The second option, advertizing allowances, provides a direct payment to program participants that are interested in promoting the SGC homes and program.

Co-op Promotion

In the SGC program for site-built homes, the BPA will reimburse up to 50% of the utility's cost for local SGC advertizing. However, only those utilities that have signed long-term BPA conservation contracts are eligible. This option reduces the overall promotional costs the utility, provides BPA guidance and support in terms of developing and implementing SGC promotional materials, and encourages utility participation in the program.

The Co-op promotion technique could also be adapted to the MH market as well. Specifically, promotion expenses could be shared by the BPA and either MH manufacturers, dealers, and/or utilities. The extent of the cost sharing,

and the specific SGC promotional campaign would be determined through negotiations with BPA and the SGC MH program participants. This option helps encourage participation by:

- reducing promotional costs, and
- providing BPA guidance and support in promotional program development and implementation.

Advertizing Allowances

A second promotional option that could be used to stimulate the demand for SGC MHs would be the granting of promotional allowances to MH manufacturers, dealers, or other appropriate program participants. This option differs from the co-op advertizing technique in that the participants would receive direct payments from BPA to develop and implement a promotional campaign. The specific amount of such an allowance would be determined by the BPA and the program participants. While this is a more costly option to BPA, it may help foster program participation by

- reducing promotion costs,
- allowing greater flexibility in promotional program development and implementation by the program participants, and
- giving the program participants more control and independence in promotion.

Depending on the participants involved, their size and access to resources, and market experience, co-op promotion or allowances may be more appropriate and should be used situationally.

4.2.3 Information and Training Needs

Extending the SGC program to include MH will require providing both information and training to key participants, including consumers, manufacturers, dealers and inspectors. The specific nature form and content of information and/or training can be determined only after the roles of each potential participant is clearly defined.

Consumers

In order for consumers to make an informed decision about a MH purchase and the SGC certification, they must be aware of the program, its features, purpose and benefits to them. Promotional efforts should focus on explaining what is meant by a SGC MH, identifying the three climate zones within the BPA region, and highlighting the benefits of purchasing an SGC MH. The SGC MH certificate could be used in promotional efforts to help consumers associate the certificate with the SGC program as well as to inform them on how to read and use the information provided on the certificate. Lists of participating MH manufacturers and brand names, as well as dealers within their region could also be incorporated into the ads to help direct potential consumers to SGC program participants.

Manufacturers

MH manufacturers require two types of information. The first is to solicit MH manufacturer participation in the SGC program and focuses on the purpose of the program, the costs and benefits of participation, and the terms of the agreement. Once the MH manufacturer has decided to participate in the SGC program, information is provided on the technical aspects of the program. This technical training focuses on the construction and certification of SGC MHs in the three climate zones. Information will also be provided on the promotion of SGC MHs.

Dealers

The MH dealer is a key participant in promoting the SGC program to the consumer since they provide the primary point of contact between the consumer and the MH industry as well as acting as the primary link to MH manufacturers. Regional marketing seminars could be designed for this group and should focus on strategies for promoting and selling SGC MHs as well as familiarizing them with selling tools which may be available. Dealers will also require the technical training on the program so that they are familiar with the MCS for the various climate zones and the options available to build MHs to meet SGC standards.

Certifiers

Several options have been suggested for the inspection and certification process including the use of DAPIA/IPIA inspectors, BPA contractors, local utility representatives, and MH manufacturers. All SGC inspectors will require technical training to familiarize them with the SGC program, the MCS, the certification process, and the relationship between program participants.

4.3 OVERALL PROGRAM ELEMENTS AND OBJECTIVES

The objective of including MHs in the SGC program is to encourage the use of energy conservation in the BPA region and the use of SGC MHs is one way of achieving this goal. The problem then becomes one of encouraging consumers to purchase and manufacturers to produce SGC MHs. This section will address several alternatives for stimulating the participation in the program.

4.3.1 Consumer Incentives

The primary market pull strategy used to increase consumer participation is a comprehensive promotional campaign. This campaign will highlight the benefits to the consumer of program participation and will inform them as to what is meant by an SGC MH, who is producing SGC MHs, and what is a SGC certificate.

Other means of stimulating consumer demand should also be used including

- reimbursements to consumers who purchase thermal upgrades on their homes
- electric rate discounts
- direct rebates
- electricity bill credits.

Reimbursement

Consumers could be reimbursed for all or a portion of the additional costs of purchasing an SGC versus a standard MH. The amount to be reimbursed could be reduced over time as innovators and early adopters purchase SGC-certified MHs. Research indicates that these consumers relate their experiences with new

technologies with other potential customers and, in effect, become salesman of the technology. Therefore a reimbursement schedule could be developed that would decline overtime as more SGC MHs are sold. The MH design used as the standard for estimating the amount to be reimbursed would be determined by the BPA.

An alternative to this option would be to reimburse the MH manufacturer for building an SGC MH. The amount to be reimbursed would be based on the manufacturer's incremental costs of producing an SGC MH versus some standard design. Again the standard used for determining the amount to be reimbursed would be negotiated by BPA and the MH manufacturer. An advantage of reimbursing the manufacturer is that a portion of this reimbursement could be passed along to the consumer (in the form of lower home prices) of the SGC MH, providing both a technology push and a market pull incentive.

Reduced Electrical Rates

Since the increased use of SGC MHs in a local utility's service area should reduce the cost of supplying electricity to its consumers, the utility could offer rate reductions to SGC MH owners. Such an approach has been used by Duke Power⁽³⁾ to increase the use of energy conservation in individually metered residences, condominiums, MHs, or apartments. Homes that qualify receive a 1-17% discount depending on location and electricity consumption. The program has been successful in increasing the number of energy-efficient residences.

Rebates

An alternative to the reimbursement option would be for the BPA to provide a rebate to either customers buying SGC MHs or to manufacturers for building SGC MHs. This option differs from the reimbursement option in that it is a fixed dollar amount per MH and the amount of the rebate is not tied to price or cost differentials. Advantages of this option are similar to those of the upgrade reimbursement option; however, it does not require making an estimate of the difference between the cost of a standard and SGC MH.

Energy Credits

Another option for encouraging consumer participation is to offer those consumers who purchase an SGC MH an energy credit. A similar option has been used by Florida⁽⁴⁾ Power to encourage MH energy conservation. Florida Power offers both an Energy Saver and Super Saver awards depending upon the type of energy-conserving options used. Those units receiving the Super Saver award also receive a \$350 credit once permanent electrical service is connected.

4.3.2 Reducing the Costs to Manufacturers

Manufacturers will want to participate in the SGC program if they view their participation as a net benefits to their company. One way of increasing the willingness of manufacturers to participate is to increase the benefits to them from participation. Options for enhancing the benefits include:

- production planning assistance
- cost reimbursement.

Production Planning

Manufacturers of MHs usually produce several different styles of MHs. The production mix for any one manufacturer is based on past sales and the manufacturer's judgment of future demands of MH consumers. Incorporating MHs into the production mix presents a risk to manufacturers since no prior sales information is available for these units. Consequently, the manufacturers will be reluctant to produce a significant number of SGC MHs during the first few years of the program.

Production planning assistance could be provided to the MH manufacturer by the BPA, and could help reduce the risk of adding SGC MHs to the production mix. This assistance could include estimates of the potential SGC MH sales within each of three climate zones. Such market information would only be provided for the first few years of the program, i.e., it would no longer be provided once a time series of SGC MH sales trends were established.

Most MH manufacturers already offer energy conservation options or packages on their MHs. An additional production cost will be incurred by the MH manufacturer if they include conservation options which meet the MCS since construction requirements of SGC units are higher than those of the currently

available energy upgrade packages. A portion of these increased production costs could be passed-along to the MH consumer. However, the price elasticity of demand for MH is estimated to be $-2.5^{(1)}$ and a significant increase in the price of MH will significantly reduce the quantity demanded. Therefore it is more likely that only a portion of these increased costs will be passed onto the consumer.

A strategy to help offset the additional production costs would be to reimburse the manufacturer for the incremental costs of upgrading an MH to the SGC standards. The amount to be reimbursed to the manufacturer could be based on the difference between the production cost of their most energy efficient unit and the costs of the SGC unit. It could also be based on the difference in production cost for producing a SGC home less the amount which could be passed onto consumers without significant reductions in demand. Again, this reimbursement option would only be used in the early stages of the program and it would help to increase manufacturers participation in the program as well as reducing the cost (and potentially increase the profit margin) of SGC MHs to the consumer.

4.4 SUMMARY

This chapter presents several options for including MHs in the SGC program as well as strategies for encouraging program participation. The options presented are based on methods used by other utilities throughout the U.S. to encourage the use of energy efficient MHs.

Specifically, options are discussed for certifying SGC MHs including inspection by DAPIA/IPIA, BPA, local utilities, or manufacturers. Promotional options are necessary to encourage the use of SGC MHs while minimizing the costs to manufacturers and dealers, and could include either co-op advertising, or advertising allowances. Several methods are discussed for stimulating program participation of consumers, and manufacturers.

The information presented in this chapter was used to develop the specific program recommendations discussed in the following chapter.

REFERENCES AND NOTES FOR SECTION 4.0

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3. Op cit p. A.4.
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5.0 RECOMMENDATIONS AND RESEARCH NEEDS

The objective of this chapter is to develop recommendations for designing a program and delivery mechanism for incorporating MHs into the BPA SGC program. These recommendations will be primarily based on the information presented in this document and the Hendrickson et al.⁽¹⁾ report. The relevant market for MHs, in terms of consumers, will be described in Section 5.1. Other programs which are designed to stimulate sales of energy-efficient MHs will be reviewed in Section 5.2. Programmatic recommendations will be presented in Section 5.3 based on these existing programs and consumer characteristics. Throughout this chapter, current research and/or informational deficiencies will be pointed out and approaches to filling these voids will be suggested.

5.1 MH CONSUMER DESCRIPTION

From the demographic data presented in Chapter 3.0 of this report, and the attitudinal data presented in Chapter 6.0 of the Hendrickson et al.⁽¹⁾ report, a description of the typical MH buyer can be derived. Demographically, MH consumers typically exhibit the following characteristics

- either less than 40 years old or older than 50,
- either retired or employed full time, in a semi- or skilled-blue collar occupation,
- graduated from high school with a significant percent having attended at least some college,
- earning an annual household income of \$20,000 or less,
- have an average household size of 2.43 persons,
- are either a "husband and wife" or "widowed female living alone" in the home, and
- depending on the state, are likely to site the MH outside of (large) urban or metropolitan areas.

In terms of attitudes, MH consumers tend to hold the following beliefs and/or concerns:⁽¹⁾

- are concerned about the energy situation, especially its cost
- do not believe there is a current energy supply problem
- are satisfied with their home and believe it is energy efficient; thus, they are not interested in retrofit activities. As a result, they believe that behavior changes are the best way to reduce energy bills in their current home. These attitudes were found to vary by the age of the current home in the PNWRES^(a) data,⁽²⁾
- exhibit positive intention to purchase more energy-savings options in their next home,
- are independent, practical and typically characterized as "home bodies,"
- 60% plan to live in the home at least 5 years,
- have observable attitudinal and behavioral differences from other single-family home residents,
- are classified primarily as nonprospects for future weatherization or conservation equipment investments for their current home,⁽⁵⁾ and,
- show little intent to engage in conservation measures (for their current home, i.e. retrofit) in the future.

While these attitudes and demographic characteristics describe the "generic" MH consumer, they do not adequately describe the subset of MH consumers who are interested in energy efficiency. The consumers who comprise the market segment for energy-efficient MHs needs to be identified and described so that marketing efforts can be efficiently designed and targeted toward them. By knowing who likely purchasers of energy-efficient MHs are, marketing and sales efforts can be channeled in directions which will result in a more efficient use of resources rather than spreading resources over all MH consumers, some of whom are not prospects for purchasing energy-efficient MHs.

(a) Pacific Northwest Residential Energy Survey.

There are a number of ways BPA could go about improving the targeting of its marketing efforts to potential consumers of energy efficient MHs. They include:

- collecting demographic and psychographic data on purchasers of energy-efficient MHs through surveys or personal (depth) interviews
- conducting analysis on existing data sets such as PNWRES, Assessment of the Market for Conservation in the Northwest: Phase I (1983) and Phase II (1985), or the ELCAP^(a) Resident Occupant (mail and telephone) Survey data to determine who the consumers are that are most interested in energy efficient homes, and what demographic and psychographic characteristics they exhibit. Utilizing the Phase I and Phase II data would allow a time series comparison of these consumers which will allow for tracking and comparisons over time.

A second problem with the data used is that it is associated with individuals who currently own or live in a MH. It is not data collected from (recent) home purchasers and thus may not accurately reflect the attitudes, intents or characteristics of potential MH consumers currently in the market. The best way to solve this problem is to collect this data using a survey instrument or personal interview to insure that accurate information is used in designing and implementing a marketing plan for SGC homes.

5.2 OTHER EXISTING PROGRAMS

5.2.1 Identification of Other Relevant Programs

Several utilities have initiated programs to help reduce the electricity consumption of MHs these programs are described in detail in the Hendrickson et al report in Appendix A. One utility, Arkansas Power and Light (AP&L) has established the "Energy Saver Manufactured Home Award"⁽³⁾ program within their service area which appears to have potential for application in the Northwest. The certificate and decal identify MHs that meet the program's thermal performance criteria. The decal is placed on the home's electrical panel by

(a) End Use Load and Conservation Assessment Program.

the manufacturer. Consumers are encouraged to look for this seal of certification when shopping for a MH. The performance standards required for program participation are based on 40% improvement over the minimum thermal performance standards in the MHCSS^(a) and the use of a properly-sized, high-efficiency heat pump.

The "Energy Saver" manufacturers' Agreement outlines the specific requirements for program participation and establishes the MH qualifications for certification. The program allows the manufacturer flexibility in meeting the performance criteria in the least-cost manner available. The MH manufacturer submits Energy Saver MH designs to the DAPIA for approval. Once the units have been approved, the IPIAs inspect the units at the manufacturer's factory to ensure that the units meet the current HUD requirements. Certification that the MH meets the Energy Saver performance standards is provided by the MH manufacturer itself, not by the IPIA's.

Dealers that want to participate in the "Energy Saver" program must sign an "Energy Saver" Dealer Agreement. The specific elements of this agreement include that:

- The dealer shall provide AP&L with a list of certified homes that they have sold in the AP&L service region,
- The homes are to be accessible to AP&L employees for observation during setup and installation of outside equipment, and
- Dealers must be a member of the Arkansas Manufactured Home Association.

A two-phase advertising and promotional campaign has been developed for the Energy Saver program. The first phase of the advertising program was designed to announce the basic program and to provide incentives (i.e. consumer awareness and initial primary demand) for manufacturers to build and offer homes to dealers. These advertisements, which were targeted at consumers, attempted to achieve the following goals:

- identify manufacturers that are participating in the program,

(a) HUD Manufactured Home Construction and Safety Standards.

- explain the Energy Saver Package in terms of energy savings to potential buyers,
- create a prominent identity for the certification seal and urge prospective buyers to search for the seal before purchasing a MH, and,
- alert prospective buyers to watch for upcoming local dealer advertising.

The second and ongoing phase of the advertising program provides incentives for dealers to inventory Energy Saver MHs and to increase sales efforts of these homes to AP&L customers. The specifics include:

- offering a cooperative advertising allowance of \$300 to any dealer that inventories at least two Energy Saver MHs at the start of the dealer's program participation,
- offer dealers an additional cooperative advertising allowance of \$150 for each Energy Saver MH sold and sited in the AP&L service territory. The dealer must also have at least one Energy Saver MH on their lot at the time advertisements are placed. The allowance only applies to radio and print advertisements.

The AP&L program is underway and has experienced some success. Currently, 18 MH manufacturers and 65 dealers have signed agreements to participate in the program. Also, the utility has audited several of the Energy Saver MHs and has found the electricity consumption to be significantly less than conventional MHs with similar design features. This indicated to AP&L that the manufacturers' self-certification process is working well and that potential certification "cheating" has not been a problem.^(a)

Three major problems have been identified with the program thus far.

1. The energy-saving package adds an estimated \$2800 to the total price of the home. Dealers contend that this discourages too many potential sales.

(a) Telephone conversation with Roy Paulette, Customer Service Representative, Arkansas Power and Light Company.

2. Dealers are expected to inventory and to bear all related costs of the heat pump equipment which is required for certification.
3. Dealers are not knowledgeable of the energy-saving components of the homes and, therefore, can not properly sell these components to (potential) MH consumers.

AP&L is seeking solutions to each of these problems. The higher cost is being approached through promotional appeals. Since the use of a heat pump eliminates the need for an air conditioner, AP&L contends that avoided air-conditioning costs can be deducted from the package cost for promotional purposes.

The second problem is difficult to solve. The HUD requirements state that the MH must leave the manufacturer's plant with an indoor furnace installed. Currently, AP&L recommends a Coleman model because it can easily be converted to a heat pump. However, parts for conversion and the external equipment must be stored at the dealers sales location. AP&L is investigating the possibility of allowing dealers to arrange for the heat pump installation at the setup site through an independent heat-pump sales outlet, eliminating the need to inventory heat pump equipment.

The third problem, that of dealer education, is being resolved through the initiation of a comprehensive dealer educational program. AP&L feels that one of the primary reasons for customer resistance to the Energy Saver MH has been the lack of knowledge on the part of the dealers concerning technical dimensions resulting in energy efficiency.

5.3 APPROACH/DELIVERY RECOMMENDATION

The objective of this section is to recommend a specific program for including MHs in the BPA's SGC program. These recommendations are based on the premise that the program should encourage the manufacture, sale and occupancy of SGC MHs through the use of effective technology push and market pull mechanisms. To minimize the cost of including MHs in the SGC program, particular elements of these specific mechanisms could be phased-out overtime as the marketplace recognizes and responds to the merits of the SGC MH.

Recommendations are presented as to the specific role that each participant could play in a strategy designed to include MHs in the SGC program. Information is also presented on the advantages and costs of each mechanism used to stimulate participation. Finally, recommendations are made as to the promotional activities required to successfully include MHs in the SGC program.

5.3.1 Key Participants

Because site-built homes are the major competition for MHs, and BPA does not want to be in a position of promoting one hometype over the other; treatment and provisions for site-built and MHs within the program must be similar. Therefore, the objective of the program should be the same for either type of home. The mechanisms and participants differ in delivering the program to either type or consumer because of the differences in the market and participants. The key participants in the SGC MH program are:

- Manufacturers
- Dealers
- Consumers
- Lending institutions
- Utilities

The role that each participant could potentially play in the program, as well as the mechanisms which could be used to stimulate their participation are summarized in the following sections.

5.3.1.1 Manufacturers

The role of the MH manufacturers would be to build and to certify SGC MHs. Without the participation of the manufacturers, inclusion of MHs in the SGC program would be impossible.

Once manufacturers are aware of the technical requirements of the SGC MH, they should be given maximum flexibility in meeting these standards by the least expensive and disruptive means possible. A manufacturer will submit a SGC design to DAPIAs for approval, like any other MH design, and the units will be inspected at the factory by the IPIAs to ensure that the units comply with HUD requirements. However, SGC certification will be the responsibility of the manufacturer. The only SGC inspection recommended is a periodic audit by a

participating utility of a sampling of SGC unit sold in its service territory. During this audit, electricity consumption could be gathered from utilities billing history or end-use meters provided by the utility, BPA, or are built into the home itself. This data would then be compared to the electricity consumption of conventionally-designed MHs to see if the SGC unit's consumption is within acceptable limits to retain certification. MH manufacturers that have certified non-SGC units or have not constructed the home to SGC standards will be terminated from the program. A careful selection of comparison homes is required to ensure that the home and occupants provide a meaningful comparison.

Specific mechanisms required to induce MH manufacturer participation include educational, promotional and marketing assistance such as the following:

- MH manufacturer education. MH manufacturers will need to be informed and trained as to:
 - the purpose, objectives and benefits of participating in the SGC program,
 - the requirements which will have to be met within climate zones to certify homes as SGC, and,
 - the construction options available for meeting the MCS for each climate zone.

Education can take several forms, but because of the complexities of the program, and the potential for resistance, personal contact is recommended. Seminars and (regional) training seminars could be held with several manufacturers to explain the basics of the program. Because construction practices may be proprietary, discussion of construction options etc. should be conducted with individual manufacturers on a one-to-one basis. A BPA technical representative should be assigned to each manufacturer (much like an account executive) to provide technical assistance when needed. This not only

provides consistent information to the manufacturer, but also gives the manufacturer a consistent point of contact for program related assistance.

- Allow the manufacturers to certify that their MHs meet the SGC standards. This is a self-certification process as used by AP&L.
- Provide the manufacturers with (current) market and consumer information concerning the market potential and consumer intentions and trends within their sales territories. This information could be most useful in production and market strategy planning, as well as in reducing the risk and uncertainty of producing SGC homes on a speculative basis. This type of information could be provided for the first few years of the program and then gradually phased out or sold on a subscription basis. Research may need to be conducted to determine the form and content of this information to insure its usefulness.

The advantages of using these mechanisms include the following:

- Allows the maximum amount of flexibility to manufacturers to meet the MCSs.
- Minimizes the cost to BPA of certifying the units, and allows the MH manufacturer to feel like a part of the SGC team.
- Reduces the risks to the manufacturer of producing unsellable units by providing them with comprehensive and current market information.
- Educates manufacturers on the SGC program and construction options, and provides them a consistent and personal technical SGC contact at BPA.

The costs of these mechanisms include the following:

- Increases the possibility of MH manufacturers certifying homes which do not meet SGC standards.
- Represents a cost to participating utilities in terms of auditing the electricity consumption of installed, SGC and conventional MHs (described below).

- Represents a cost in terms of providing market information and (personal) technical contacts.

5.3.1.2 Dealers

The primary role of the MH dealer in the SGC program is to sell the benefits of a SGC MH to the potential consumer. In order for the dealer to be able to effectively represent the SGC MHs and explain the benefits to consumers, they must be knowledgeable of the purpose, objectives, costs, and benefits of owning a SGC MH. Dealers must also understand the potential benefits to them of program participation as well as the responsibilities assumed. Specific mechanisms to encourage dealer participation include the following:

- MH dealer education. MH dealers will also need to be educated and trained to act as credible representatives of the SGC program and be more effective at selling SGC homes. Education and training should include:
 - Seminars and training sessions to educate dealers as to the purpose, objectives, benefits and responsibilities of program participation. Dealers could be included in the generic portions of the manufacturers sessions, with dealer specific information presented separately. A second alternative is to hold specific dealer training sessions regionally as dealers join the program.
 - Sales training, techniques and tools as related to selling SGC homes. Promotional aids such as point of purchase display items could be made available as could sales tools such as estimated electricity cost savings materials. The sessions should also include sales techniques used successfully in other programs (such as the "cut-away" rooms used by WAUSAU homes).

Where dealer education can not be combined with that of manufacturers, it would be provided by the (participating) electric utility serving the dealers sales territory in conjunction with a SGC representative from BPA. This would insure consistency across territories and integrate utilities in to the program in a functional way.

- Provide dealers similar market information which indicate the market potential in their sales territory as was suggested to manufacturers. This data could identify specific market segments and give a detailed profile of those consumers who are potential target consumers of SGC MHs, thus, increasing dealers effectiveness in selling SGC units. This information could be provided to dealers initially, and later sold by subscription if desired. Research as to the form and content of such information would need to be conducted to insure the usefulness of these reports.
- Provide a financial incentive, such as a rebate of purchase allowance, to help reduce the cost of purchasing a SGC MH from a manufacturer. The rebate could be progressive, based on the number of SGC MH purchased. This would also help reduce the risk to dealers of inventorying SGC MH which may take longer to sell.
- Selling tools, such as point of purchase displays and estimated electricity cost savings materials, or access to interactive computer programs (such as WATTSON III) could also be provided to dealers to help close a sale with prospective consumers.

The advantages of these mechanisms include the following:

- Educational programs will help dealers better represent the SGC MHs to potential consumers. Market information for the dealers sales territory will help them to identify specific consumers and market segments to target with SGC promotions. This type of market information will also reduce the risk to the dealer of purchasing SGC MHs as well as help better plan inventory levels to reduce carrying and insurance costs.
- Rebates will help to reduce the additional out-of-pocket costs as well as some risk associated with ordering and inventorying a SGC MH. This rebate could be phased out over time as demand increase and stabilizes.

- Provision of selling tools and aids help sales efforts become more productive and professional while helping to spark consumer interest and conviction to SGC homes.

The costs of these mechanisms include the following:

- Initial cost of providing detailed marketing information as well as a continuation of these costs if the information is provided rather than sold in the long term.
- The rebate or purchase allowance represents a cost to BPA of this type of program.
- Some cost associated with dealer education and sales tools.
- Costs associated with developing and providing dealers with sales tools.

5.3.1.3 Consumers

The potential SGC MH consumer is the target of the marketing strategy employed as well as the ultimate decision maker. Marketing strategies should be implemented which include mechanisms to stimulate interest in SGC MHs, motivate information gathering and shopping behavior, establish a preference in the mind of potential consumers for SGC MHs and lastly, generate conviction toward the purchase of such a home. The problem to overcome in developing such a program is to realize that different consumers can be of various stages in the product adoption process; that is, not all consumers are starting without interest or even some information. Any marketing program must be implemented in such a way as to appeal to consumers in each stage. This can be accomplished through a "phased" or "step" approach, which is designed to appeal to different consumer groups at different times, or through a "time series" or "flow" approach which is designed to bring a single group of consumers through the process from its beginning and "pick up" other consumers who are at more advanced stages as all consumers are brought to equal levels in the decision process.

Either of these approaches are primarily educational and/or informational in nature and can be accomplished through a comprehensive promotional campaign

which is carefully targeted at the most promising consumer groups. Promotional recommendations include:

- Granting promotional allowances to participating MH manufacturers who can then either promote their own brands or subsidize their dealers promotional efforts. This is a costly option to BPA but it does allow maximum flexibility in promotion to the manufacturers.
- Co-op advertising between BPA and participating manufacturers or BPA and participating dealers. Cost sharing of promotional efforts with program participants reduces the costs to participants and BPA, and provides BPA some control over form and content of the promotion.

In either case, the promotion should emphasize all benefits of owning a SGC home in terms of increased comfort, reduced electricity bills and potential increase in the homes resale value. Research may be needed to determine what the most important or motivating expected benefits of a SGC home are for potential consumers. Analysis could be conducted on the BPA Phase II^(a) data tape to provide some of this information as questions concerning expected benefits and the SGC program. A strong awareness and recognition of the SGC "seal" or logo must also be established to aid consumer interest, acceptance and conviction to the SGC program.

Some of the promotional material, such as television or radio presentations, will need to be generic enough to apply to both MHs and site built homes to prevent consumer confusion. Specific program information for either type of home could be made available through participating utilities, contractors, MH dealers, BPA or WATTS lines. Other mechanisms which could be used to stimulate consumer demand (pull) for SGC MHs include the following:

- Offer consumers a rebate or other financial incentive to purchase an upgraded (SGC) MH. This incentive could either be applied to the down payment of the home, or it could be used by the consumer in some other way. Financial incentives of some type could help offset the

(a) Phase II refers to the BPA project entitled "Analysis of the Market for Conservation in the Northwest: Phase II." This data set contains questions concerning the meaning and expectations of a SGC home.

increased cost (price) of a SGC home which would (at least) partially negate the strong negative price elasticity (-2.5) exhibited by MH consumers.^(1,6) These incentives could be offered during the initial introduction of the SGC program. As innovators and early adopters begin to purchase SGC homes, these incentives could be discontinued and word-of-mouth and formal (discussed above) promotion relied upon for further sales. The financial incentives could be reinstated at various times to stimulate sales as needed or desired. Consumer research also suggests that print media may be viewed as more credible, and thus have a greater impact than television or radio for a large portion of MH consumers.⁽⁷⁾ Given its cost advantages and pass along readership, as well as the ability to target desired consumers more cost efficiently, print media is recommended for promoting the MH SGC program.

Advantages of these demand stimulation mechanisms include the following:

- Minimizes the cost of stimulating consumer demand since promotional activities can be reduced once innovators and early adopters enter the market. Promotion costs are minimized through Promotional Allowances, and/or co-op advertising. Utilizing Print media is also less expensive than other mass media channels and allows for more precise targeting.
- Allows flexibility and control over sales "spurts" by phasing out the promotional rebate once sales levels are acceptable then reinstituted it if sales begin to sag.

The costs of these mechanisms include the following:

- The cost to BPA of promoting the SGC MH program throughout the region in terms of (co-op) promotion campaigns with dealers and/or promotional allowances to manufacturers.
- The cost to BPA of providing a rebate or financial incentive to consumers.

Each of the key groups previously discussed: manufacturers, dealers and consumers, assume some degree of risk, real or perceived, with SGC homes.

Manufacturers and dealers take the risk of building and inventorying SGC homes without any assurance of sales. Consumers take the risk of the home not performing as promoted, and thus, getting less of a return on their investment. The key to the SGC program success is to reduce the risks to all parties concerned. The options and mechanisms described above make progress toward that goal.

5.3.1.4 Lending Institutions and Insurance Companies

While lending institutions are not direct participants in the SGC program, they could potentially play an important role in qualifying more buyers for financing of SGC homes by reducing the lending requirements. Some lenders have been willing to exceed their normal debt to income guidelines because of the expectation that the buyer can apply the money saved on reduced electricity bills to debt service.⁽¹⁾ Typically, lending institutions that follow this practice will allow up to 30% of a buyer's gross monthly income to apply to their house payment instead of the normal limit of 28%.⁽⁴⁾ In 1984, 9 Northwest lending institutions were allowing their normal loan/income guidelines to be exceeded for buyers of energy-efficient homes. It may be possible to extend this practice to MH buyers.

Similarly, insurance companies may be willing to reduce the premiums on SGC MHs if they are convinced that these MHs are safer and better constructed (ie, less of a risk) than conventionally-built MHs. Specific mechanisms required to encourage the participation of these groups include the following:

- Develop a specialized promotional effort targeted at banks and insurance companies that emphasize the benefits associated with the banks ability to make more loans and the insurance companies ability to write more policies. Again, the risks to these institutions need to be addressed. Perhaps loan/premium guarantees could be developed for the first year of (SGC) home ownership. Personal contact with these institutions is recommended to develop and implement a specialized program for each participating institution.

The advantages of this mechanism includes the following:

- increases the number of loans a lending institution is able to make
- reduces insurance company risk through coverage of higher quality homes as well as allows for more policies to be written
- increases the public image of both banks and insurance companies.

The costs of this mechanism includes the following:

- increases the promotional costs to the BPA through personal contacts with each institution.
- exposes BPA to potential cost of default on premium or loan payments

5.3.1.5 Utilities

Participating utilities play a key role in the implementation of the SGC program just as they do for site-built homes. Utilities would provide the necessary training and promotional tools required for participating dealers in the utilities service territory where such training was not included with manufacturers. This training would be conducted in conjunction with a BPA SGC training representative. BPA would focus its training and other implementation efforts on participating MH manufacturers and utilities, and provide only a support role in training dealers. Because of the self certification by manufacturers, the utilities would also be responsible for auditing a sample of SGC MHs sited in their service territory as to electricity consumption to ensure that the home was built to SGC standards (as inferred from electricity consumption and occupant characteristics such as family size). This information, as discussed above, could be gathered through utility billing histories comparing SGC to conventional MH's or through end-use metering equipment if it is installed in SGC homes. The cost of dealer training and home metering/auditing would be shared with BPA as both the utility and BPA benefit from program participation and should, therefore, share the cost.

Because the utility, as well as the MH dealers, have direct contact with the relevant consumers, it is imperative that these participants are

well trained and benefits to them are substantial and clear as they have the potential to either make the program a success or failure. For the dealers, the benefits are clear:

- increased sales
- filling consumer needs
- profit margins on upgrades.

For utilities, benefits of participation are less obvious and need to be articulated. The obvious benefits center around energy conservation and replacing the resource with plant construction. A second is (strategic) load growth through the sale of more homes (MHs) within their service territories assuming MHs are substituted for site built (given their cost advantage) for those consumers who would not otherwise purchase a home. Other incentives/mechanisms to encourage utility participation would be similar to those used by BPA for the site-built program.

5.3.2 Related Recommendations

Because of the self certification role of manufacturers, an agreement between participating manufacturers and BPA will need to be developed and signed. This agreement should spell out the terms of program participation, both benefits due and responsibilities, participation expectations, and penalties for certification "cheating". It should make clear what BPA's obligations and responsibilities delegations to the manufacturers are for their participation and program support.

A similar agreement should also be developed for the dealers who participate in the SGC program. This agreement would be between the dealer and the Utility serving their sales territory. Because BPA will have agreements in place with Utilities for the site-built SGC program, no agreement between dealers and BPA should be required. The agreement between the Utility and BPA will need to be modified to include MHs. Again, the terms, conditions, benefits due and costs (responsibilities) should be clearly stated and considered with those of the site-built program in the agreement between the utilities and BPA and between utilities and dealers. Using the AP&L manufacturer and dealer agreements (as discussed in Section 5.2) as a model may be helpful.

The State Manufactured Housing Associations should be contacted and solicited as partners to implementing the SGC program. AP&L required manufacturers and dealers to be association members prior to allowing them to participate in their program. The association in Arkansas helped print and distribute program materials as well as train member dealers and manufacturers. The association name also appeared on promotional materials and the certification seal. A similar arrangement could be pursued with Northwest State Associations to help reduce costs of implementing the SGC program. The Association could be used to:

- Print and distribute program materials (both promotional and sales tools),
- Assist in training of (member) dealers and manufacturers, and,
- Assist in the development and placement of Program advertisements.

A last suggestion for the promotion of the SGC MH would be to use the 5 demonstration homes constructed for testing as promotional tools. These homes could be set up with cut away walls and other features which highlight the characteristics of a SGC MH. The end-use consumption data could also be used as a promotion tool. These homes could be displayed at MH shows throughout the region, or set up in communities for local display in supermarket or shopping mall parking lots. Media promotion and dealer support could be combined with these events.

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