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FINAL REPORT:

MOBILE HOMES
AND
MANUFACTURED HOMES

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STATE OF MINNESOTA

MINNESOTA HOUSING FINANCE AGENCY

MARCH, 1978

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I. SUMMARY OF FINDINGS

A. Introduction

This report was prepared at the request of the 1976 Minnesota Legislature that the Minnesota Housing Finance Agency ". . . research the potential for utilization of resources provided in Minnesota Statutes, Chapter 462A, for the development, purchase or rehabilitation of mobile homes and other alternative housing delivery systems."

In response to this request, the Agency focused its attention on manufactured housing delivery systems which make significant use of factory production and minimize construction activity at the final site. It is important that the term "manufactured home" be understood. Although the mobile home industry has begun to use the term manufactured home as a synonym for mobile home, the term has a broader meaning. Under State law, any home produced in a factory that utilizes enclosed components or building systems not readily inspected at the site is classified as a manufactured home. Under this definition, modular homes, certain panelized homes and mobile homes would all be considered manufactured homes.

Manufactured homes other than mobile homes are subject to the same construction standards as site-built homes. Mobile homes, on the other hand, are exempt from state or local construction standards and subject instead to federal standards which apply exclusively to mobile homes. The federal standards define a mobile home as ". . . a structure, transportable in one or more sections, which is eight body feet or more in width and is thirty-two body feet or more in length, and which is built on a permanent chassis, and is designed to be used as a dwelling with or without permanent foundation, when connected to the required utilities, and includes the plumbing, heating, air-conditioning, and electrical systems contained therein."

Panelized home manufacturers produce roof, floor and wall panels in a factory and deliver the panels to a building site for final assembly on a

permanent foundation. Mobile home and modular home manufacturers produce the same roof, floor and wall panels but also assemble these panels into three-dimensional modules or sections before transportation to a site. The crucial distinction between modular and mobile homes is that mobile homes are constructed on a permanent chassis, are designed for use without a permanent foundation and, under federal law, are exempt from state construction standards. Modular and panelized homes, in contrast, are not constructed on a permanent chassis nor designed for use without a permanent foundation. As a result, these forms of manufactured homes don't meet the federal definition of mobile home and thus are subject to state construction standards.

Research activities were directed toward gaining a clearer understanding of these three manufactured housing delivery systems; the current role of federal, state and local agencies in regulating their construction and installation; and the feasibility of developing financing programs within the Minnesota Housing Finance Agency in those cases where manufactured homes are not already eligible. Research efforts were hampered by a lack of objective data. There was minimal data available on modular and panelized homes. Despite the controversial nature of mobile homes, very little substantive research has been done that would help resolve concerns over the quality, safety and long-term cost of this particular alternative housing delivery system. Nevertheless, this report should provide the Legislature with comprehensive and up-to-date information on manufactured housing.

B. Research Findings

The Minnesota Housing Finance Agency currently provides financing for purchase and rehabilitation of two of the three forms of manufactured housing. Under the Agency's home mortgage program all new homes, site-built or manufactured, are eligible for financing if constructed to HUD-FHA single family Minimum Property Standards and subject to a State warranty or workmanship and materials. Since most modular and panelized homes meet these criteria, most of these types of

manufactured homes are currently eligible for financing. The research showed no significant differences in the construction quality or safety of site-built, modular, and panelized homes. Because any distinctions between site-built homes and modular or panelized homes disappear once construction and installation are complete, these homes are also eligible for loans and grants under the Agency's home improvement programs.

Because modular and panelized homes, though manufactured, are subject to the same State and federal laws as site-built homes and are eligible for Minnesota Housing Finance Agency loans and grants, the research concentrated on the Agency's role with respect to mobile homes. Though information was gathered on all three manufactured housing delivery systems, major emphasis was placed on an analysis of the construction quality, safety and long-term cost of mobile homes and on the feasibility of Minnesota Housing Finance Agency loan and grant programs for mobile homes.

The research examined the potential use of Agency resources in three specific areas: (1) loans for the purchase of mobile homes, (2) loans and grants for the rehabilitation of mobile homes and (3) loans for the development of mobile home parks.

B.1. Rehabilitation of Mobile Homes

In mid-1977 there were an estimated 72,000 mobile homes in Minnesota. The Agency is primarily interested in the approximately 58,500 mobile homes occupied on a year-round basis as permanent residences. Another 13,500 mobile homes are estimated to be in use as temporary or seasonal recreational dwellings.

Mobile homes used as permanent, year-round residences are located throughout Minnesota, though they tend to be concentrated in certain political jurisdictions. The research showed no discernible urban/rural pattern in the distribution of mobile homes. On a regional basis, however, the research showed that mobile homes generally make up a larger share of the total housing stock in northern counties than in southern counties. The seven-county metropolitan area has the

lowest regional concentration of mobile homes, though individual counties and municipalities have concentrations as high or higher than those in many non-metropolitan counties. Both supply and demand characteristics in local housing markets and treatment of mobile homes by local units of government influence the distribution of mobile homes.

Mobile homes by definition are built on permanent chassis and designed for use with or without a permanent foundation. Since few mobile homes are placed on permanent foundations, however, virtually all the mobile homes located in parks and a majority of the mobile homes on individual lots can be relocated from site to site relatively easily. However, once initially placed in a park or on an individual site, year-round mobile homes usually remain in the same location for a period of years. When mobile home owners wish to move, they generally sell their current mobile home in-place and purchase another home at the new location. While some relocation of mobile homes by owners occurs, much of the movement of used mobile homes involve trade-ins or repossessions.

The current Minnesota Housing Finance Agency Home Improvement Loan Program requires that borrowers obtain FHA Title I insurance. Title I regulations require that mobile homes be placed on a permanent foundation on property owned or being purchased by the borrower and that the mobile home is taxed as real property. As a result, approximately 95 percent of the 58,500 year-round mobile homes are not currently eligible for home improvement loans. Under current Agency regulations mobile home owners are not eligible for home improvement grants. Furthermore, owners of mobile homes do not have widespread access to home improvement funds from private lenders.

Information is scarce on the age and condition of existing year-round mobile homes. An estimated 32,500 units, or 55 percent of the year-round mobile homes, were produced after 1972, when the State first adopted mobile home standards and implemented an enforcement system. These mobile homes should comply with to the State mobile home standards or the federal mobile home standards that pre-

empted the State standards in 1976. The remaining 26,000 year-round mobile homes were constructed prior to the adoption of State and federal standards and enforcement systems. Prior to 1972, compliance with industry standards by mobile home manufacturers occurred strictly on a voluntary, self-certification basis.

There is no accurate inventory on the condition of existing mobile homes or the degree of compliance with applicable standards. One study conducted by the National Bureau of Standards suggested that a significant number of mobile homes may have construction-related problems that affect the performance of the mobile home and the health and safety of the occupants. These problems range from life-threatening fire hazards to less serious but major problems related to water leakage and inadequate fastening of materials. There is also widespread concern over the poor performance of mobile homes in the energy conservation area.

B.2. Purchase of Mobile Homes

The research into the need and desirability of a Minnesota Housing Finance Agency program providing loans for the purchase of mobile homes focused on considerations of construction quality, safety and long-term costs. Each segment has produced an increasing share of housing both nationally and in Minnesota. Nationally, the mobile home industry accounted for approximately 20 percent of total housing production between 1970 and 1975 and currently accounts for approximately 15 percent of overall housing production. Generally, mobile home production in Minnesota has paralleled trends nationally. No comparable production information is available on modular and panelized homes, but it is roughly estimated that these two housing delivery systems currently account for approximately 10 percent of the national and State housing production.

Though predominantly owner occupied, mobile homes appear to serve as an alternative to both the ownership of conventional homes and rental of a home or apartment. Mobile home ownership is particularly widespread among young

families purchasing their first home. As a form of transitional housing, mobile homes replace a portion of the demand for rental housing and defer a share of the demand for ownership of conventional site-built, modular and panelized homes. The higher concentrations of mobile homes in non-metropolitan areas may in part be due to the shortage of acceptable rental housing in those areas.

Though mobile home purchasers generally have not had access to conventional real estate mortgage funds from the public or private sectors, alternative sources of financing have been readily available from private financial institutions. Mobile homes are predominantly financed as personal property with installment loans. The most criticized aspect of this financial system is the interest rate, which averages three to four percentage points over rates on conventional mortgage loans.

Because of these high interest rates, the private sector has been quite responsive to the needs of consumers. Lenders have been able to keep initial and monthly loan expenses competitive with other housing alternatives and affordable to a wide range of income groups. One reason for the acceptance by many consumers of mobile homes is a financing system that has provided readily available, fast credit at attractive terms.

One component of the mobile home market that has not received strong support from the private sector is financing of the combined purchase of a mobile home and parcel of land. Mobile homes have traditionally been placed on rented sites, but an increasing number are placed on land owned by the mobile home owner. Despite the existence of federal loan insurance of these types of loans, private lenders have not developed suitable financing instruments that are available on a widespread basis.

B.2.a. Housing Standards

Structures meeting the federal definition of a mobile home are regulated under federal rather than state construction standards. In Minnesota, modular and panelized homes are subject to State construction standards. The State has

established an enforcement system that combines factory inspection by State officials or their agents with local inspection of the installation of the home. Modular and panelized homes are also subject to the same State warranty on workmanship and materials as site-built homes.

Because of these findings research efforts focused on the adequacy of federal and State standards relating to mobile homes. The HUD-promulgated National Mobile Home Construction and Safety Standards became effective in June, 1976 and preempted the State mobile home construction standards that had been in effect since 1972. The Department has established an enforcement system to ensure compliance with the standards. Though HUD has ultimate responsibility for enforcement of the mobile home standards, actual plan approvals and factory inspections are performed by state agencies or private inspection organizations.

To ensure that the federal mobile home standards are properly enforced, HUD has also established a monitoring system utilizing state personnel. In this way, states can assure themselves that mobile homes imported to their states also comply with the federal standards.

State warranty laws provide additional protection to consumers that the mobile homes they purchase comply with applicable construction standards. Under Minnesota law, every sale of a new mobile home is accompanied by a warranty that the unit conforms to State and federal standards for quality and safety. This warranty is in effect for one year from the date of delivery. The State warranty on the sale of other new homes, including modular and panelized homes, is effective in certain instances for ten years from the date of occupancy.

Installation of mobile homes on a support system that is properly designed and constructed for local soil and climatic conditions is crucial to the proper performance of a mobile home. Lacking jurisdiction to establish installation standards, HUD has encouraged states to undertake that responsibility. Minnesota has adopted standards governing the installation of mobile homes including requirements

covering the design of support and anchoring systems. Currently, however, an effective enforcement system has not been established. Under State law, local code enforcement officials will eventually have responsibility for inspecting installations for compliance with the State standards.

The research focused not only on the current status of mobile home construction and installation standards and enforcement systems but also on the performance of these systems. Comparison of federal and State standards raised concerns in several areas.

In the energy conservation area, the performance of mobile homes built under the federal standards is significantly lower than the performance of site-built, modular and panelized homes built to State standards. Exact comparison is difficult because of the differences in the way minimum requirements are applied. However, it was determined that the federal mobile home standards allow less insulation and, as a result, higher heat losses through the building envelope.

The primary reason for the lower performance is HUD's objective of making the federal mobile home standards as uniform as possible. While recognizing climatic differences that affect design requirements, HUD has attempted to limit the number of regional variations in insulation requirements. Minnesota is in a climatic zone with 33 other states. Since the zone includes states with much milder climates, the performance requirements are a compromise which does not reflect the performance requirements necessary in states such as Minnesota.

It could not be determined that fire safety standards for mobile homes are less stringent than State standards for site-built, modular and manufactured homes. However, because of the widespread practice by mobile home manufacturers of using plywood paneling as an interior finish material rather than the costlier but less flammable dry wall materials used by site-builders and by modular and panelized home manufacturers, the interiors of mobile homes continue being more flammable than those in most other homes.

Beyond the energy and life-safety issues, there are concerns with the

habitability and durability of mobile homes. The Federal Housing Administration and the Veterans Administration use HUD's mobile home standards as the minimum property requirements for mobile homes financed under their loan insurance or guarantee programs, even though the standards are less comprehensive and less stringent than the HUD/FHA Minimum Property Standards for single family homes. There are special concerns over space requirements that affect the livability and accessibility of mobile homes.

Beyond the question of the adequacy of the standards, there are concerns over the effectiveness of the system used to enforce those standards. The concern is not over the structure of the enforcement system. Rather, it is over the State's limited participation in the system. The federal mobile home standards authorize states to inspect mobile homes manufactured within their jurisdiction for conformance with the standards, but the State has not assumed this responsibility and private inspection organizations are performing this function. Concerns have been raised that this arrangement does not provide the same assurances of effective enforcement as direct State inspection. Moreover, the State has no personnel on the monitoring teams that evaluate the performance of the enforcement system.

There is little information on the adequacy of the State mobile home installation standards or the effectiveness of the enforcement system currently being established. Further analysis is needed to provide assurances that the current State standards adequately protect the consumer against damage caused by improper installation. Anchoring of mobile homes is not mandatory under the State installation standards, though proper anchoring of mobile homes is an important means of minimizing wind damage. Further research is needed on whether anchoring of mobile homes should be mandatory statewide. Finally, concerns have been raised over whether local code enforcement officials have been adequately trained to effectively enforce the State standards.

B.2.b. Housing Costs

The evaluation of the desirability of a Minnesota Housing Finance Agency loan program for the purchase of manufactured homes examined cost issues as well as issues of construction quality and safety. The research showed no significant differences in the cost of construction or in short-term and long-term occupancy costs between site-built, modular and panelized homes. On the other hand, mobile homes are manufactured at a significantly lower construction cost, to some extent because of lower standards.

In terms of monthly housing costs, the research showed that consumer expenditures for mobile homes are approximately 75 to 85 percent of those for other comparable housing alternatives. However, mobile homes continue to depreciate in value at a higher rate than other homes despite gradual improvements in quality. Because of the greater depreciation, the long-term costs of mobile homes tend to cancel out the benefits of lower short-term monthly costs. Between 1970 and 1975 existing mobile homes tended to maintain their resale value or appreciate slightly, since high inflation rates offset the depreciation in value. During the same period, however, site-built homes and other forms of manufactured housing experienced substantial appreciation in resale values.

B.3. Development of Mobile Home Parks

Currently there is little park development activity in most areas due to a surplus of park spaces and/or restrictive zoning practices. Access to financing has not been a key factor in preventing the development of rental or condominium parks.

The State has established mobile home park standards and an enforcement system. The park standards regulate aspects of park construction affecting the health and safety of residents. State enabling legislation authorizes local units of government to set park development standards more stringent than the State standards, but many jurisdictions have taken no action and park developers are subject only to the minimum requirements under the State standards. Com-

parison of the State mobile home park standards with other park standards revealed the need for upgrading in several areas.

B.4. Program Feasibility

In addition to evaluating the need and desirability establishing Agency programs for mobile homes, the research also focused on questions of technical feasibility. The role of the Minnesota Housing Finance Agency was evaluated in the rehabilitation of mobile homes, the purchase of mobile homes and the development of mobile home parks.

The activity area where consumer needs are greatest and alternative financial resources least adequate is that of mobile home rehabilitation. A significant number of Minnesotans currently live in mobile homes which pose health and safety risks and do not meet even the most minimal energy conservation standards. The Agency could include mobile homes under its current home improvement loan and grant programs by revising its regulations to permit loans and grants on mobile homes classified as personal property. Loan funds would come from bond sales and grant funds from State appropriations. The existing networks of lenders and grant administrators could be utilized to deliver the resources. However, a critical consideration is the security needed to market the bonds. A revision to the FHA Title I insurance program allowing home improvement loans and mobile homes classified as personal property would provide the necessary security. Barring such a revision, a State-appropriated insurance reserve fund would be necessary as an alternative form of security on loans made for mobile home improvements.

Research findings on the quality, safety and cost of mobile homes raise serious questions about the desirability of a Minnesota Housing Finance Agency program for the purchase of mobile homes. In addition, the research showed that financial resources for the purchase of mobile homes are readily available from the private sector. In terms of the technical feasibility of such a purchase program, there are more unresolved questions than under a home improvement program.

Marketability of bonds to fund such a program would depend on the security of either FHA Title I insurance or a State-appropriated insurance reserve fund. There are also serious concerns over the ability of the Agency to establish a statewide delivery system and to attract an experienced mobile home servicer willing to service the loans.

The activity area where program feasibility is most complicated and questionable relates to the financing of mobile home parks. The nature of mobile home park financing would make the program the responsibility of the apartment development division. Because the loans would qualify as loans to sponsors of low and moderate income housing rather than loans to individuals, the Agency would have to limit cash flow, control park rentals and limit occupancy to qualifying individuals. These restrictions plus the low level of park development activity would result in a low volume of loan demand and necessitate funding with proceeds from apartment development notes and bonds. Inclusion of mobile home parks in apartment development bond sales could affect the marketability of the bonds or result in higher interest rates for all apartment developments.

C. Conclusions

1. State loans and grants for the rehabilitation of manufactured homes.

The State should consider necessary statutory and regulatory revisions to enable the Minnesota Housing Finance Agency to make home improvement loans and grants on mobile homes not currently eligible for Agency assistance. The State should also consider necessary appropriations for an insurance reserve fund to enable the Minnesota Housing Finance Agency to issue bonds for home improvement loans on mobile homes not currently eligible for FHA insurance.

2. State loans for the purchase of manufactured homes.

The Minnesota Housing Finance Agency should continue its current

policy of making loans for the purchase of any new single family home, whether site-built or manufactured, that complies with the requirements of the HUD/FHA single family Minimum Property Standards and is subject to State warranty laws.

3. State consumer protection and tax treatment.

The State should examine current statutes and regulations relating to mobile homes and make necessary revisions to ensure that purchasers of mobile homes receive consumer protection and tax treatment equal to that afforded other homeowners.

4. Mobile home construction standards and enforcement system.

The State should develop the capacity to monitor the National Mobile Home Construction Standards to ensure that they provide adequate protection to consumers and make recommendations for revisions. The State should take full advantage of provisions within the National Mobile Home Construction and Safety Standards for State participation in the inspection system and in the overall monitoring of the enforcement system.

5. Mobile home installation standards and enforcement system.

The State should monitor the State mobile home installation standards and make revisions where needed to ensure that they provide adequate protection to consumers. The State should ensure that local code enforcement officials are adequately trained to ensure full compliance with the standards.

6. Mobile home park standards and enforcement systems.

The State should monitor the State mobile home park standards and make revisions where needed to ensure that they provide adequate protection to consumers. The State should also ensure that the mobile home parks remain in full compliance with the standards.

7. State definition of mobile homes.

The State should ensure that statutes and regulations maintain the legal distinction between mobile homes and other site-built and manufactured homes as long as mobile homes are constructed and installed under distinct standards and enforcement systems.

II. OVERVIEW OF MANUFACTURED HOUSING SECTOR

A. Production and Marketing Systems

A.1. Mobile Homes

By far the largest segment of the manufactured housing industry is the mobile home industry. This housing delivery system, which has developed over the last forty years, is the most unique and most controversial of the alternative housing delivery systems. Mobile homes are the purest form of manufactured housing produced in the United States, with manufacturers producing a completely factory finished home that can be transported on its own chassis to a site and prepared for occupancy with an absolute minimum of on-site labor.

Mobile homes are produced to a special set of construction standards, which is the major reason they are classified as a separate manufactured housing system distinct from modular housing. Currently mobile homes must conform to recently-developed federal construction and safety standards. The federal code gives mobile home manufacturers a single set of standards with minor regional variations in structural and energy requirements, eliminating the previous problems of dealing with a multiplicity of state and local codes. In contrast, modular and panelized home manufacturers must still deal with numerous state and local building codes, though the problem has been lessened somewhat by the adoption of state manufactured housing codes and reciprocity agreements between states.

Mobile homes are constructed on an assembly-line basis using many of the building techniques of the traditional site builder but also utilizing unique building systems and processes. The main structural member that differentiates mobile homes from other manufactured housing systems and from site built homes is the steel frame that supports the home and is equipped with axles, wheels and a hitch to facilitate transportation. Though traditionally the predominant exterior siding material has been aluminum, recently wood siding products have seen greater use by manufacturers.

Mobile homes are almost always marketed through dealer networks, with dealers purchasing mobile homes from several manufacturers and maintaining a sales lot inventory of mobile homes in much the same manner as automobile dealers. Markets for manufactured housing, including mobile homes, are regional rather than national, since transportation costs limit the distance manufactured homes can be shipped from a factory while maintaining a competitive price. To serve these regional markets, mobile home companies, even nationwide firms, have established manufacturing plants throughout the United States. In the late sixties and early seventies, numerous mobile home manufacturers established plant facilities in Minnesota. In 1976 there were ten mobile home plants operating in the State.

Minnesota Mobile Home Manufacturers

Bendix Home Systems	Worthington
DeRose Industries	Owatonna
DMH Corporation	Red Lake Falls
Gerring Industries	Blue Earth
Homera Incorporated	Tracy
Moduline Industries	Montevideo
Regal Homes	Montevideo
Schult Homes Corporation	Redwood Falls
Skyline Corporation	New Ulm
Titan Homes	Slayton

Because of the number of mobile home manufacturers with plants in the State, Minnesota has become a net exporter of mobile homes to other states in the region. The production and shipment data in Table 1 shows the trends over the last few years, with Minnesota generally producing and shipping more units than are shipped to Minnesota dealers. These figures, however, obscure what is actually occurring. Most of Minnesota's mobile home manufacturing plants are located in the south and western parts of the State, and a sizable portion of Minnesota's mobile home production is shipped to dealers in other states, primarily Iowa and the Dakotas.

These exported units are partially offset by shipments of mobile homes from other states, primarily Wisconsin. In fact, the largest shipper of mobile homes to Minnesota dealers is not a Minnesota manufacturer, but a firm located in Wisconsin.

Table 1

<u>Mobile Home Production and Shipments</u>			
<u>Year</u>	<u>Production by Minnesota Firms</u>	<u>Shipments to Minnesota Dealers</u>	<u>"Net Exports"</u>
1970	5,470	7,413	(1,943)
1971	5,974	6,783	(809)
1972	8,364	6,421	1,943
1973	9,229	7,336	1,893
1974	7,523	5,769	1,794
1975	4,823	5,180	(357)
1976	6,474	6,089	385
1977	n.a.	6,742 (est.)	-

Source: Elrick and Lavidge, Mobile Home Data Book.

A survey of regional manufactured housing firms including firms with plants in Minnesota identified 25 mobile home manufacturers that had shipped mobile homes to Minnesota dealers in 1975. These firms included 20 exclusive mobile home manufacturers and 5 manufacturers producing both modular and mobile homes. The major mobile home shippers are located in Minnesota and Wisconsin, though several mobile home manufacturers in other states ship significant numbers of mobile homes into Minnesota. Shipments to Minnesota dealers are dominated by single-wide mobile homes rather than double-wide mobile homes. Data from the national mobile home trade association show that in 1975, only 7 percent of all shipments to Minnesota dealers were double-wide mobile homes, compared to 19 percent regionally and 26 percent nationally. The survey reflected this, with twelve of the top fifteen major suppliers of mobile homes producing over 90 percent single-wide mobile homes and four of these twelve, including the two

largest shippers, producing single-wide mobile homes exclusively. This lack of regional production of double-wide mobile homes plus the high transportation expense of shipping double-wide mobile homes from other areas results in the low level of shipments.

A.2. Modular and Panelized Homes

Modular and panelized home manufacturers have been grouped together because of the similarities in their production and marketing systems. A crucial characteristic that sets these forms of manufactured housing apart from mobile homes is that the modular and panelized home manufacturers are regulated by the same set of construction standards as site-builders.

Modular and panelized home manufacturers claim several advantages over site-built housing. In addition to the ability to market a finished home at a price competitive with site-built homes despite transportation and on-site erection costs, manufacturers stress the rapid on-site assembly process and claim improved product quality due to controlled indoor construction, the precision of factory construction techniques, and the presence of quality control programs.

Beyond the difference in the degree of construction that takes place in the factory, modular and panelized manufacturers are closely related and employ many of the same production and marketing techniques. The building technology employed by these manufacturers differs little from that used by site builders. However, the factory setting facilitates greater use of precision assembly forms and labor-saving power tools and the division of the building process into distinct, repetitive operations that permit greater use of semi-skilled labor.

There are two types of panelized construction -- open panel and closed panel. Open panel construction involves factory-assembly of wall, roof and floor framing systems, but leaves the interior and/or exterior unfinished to allow on-site inspection of structural and mechanical systems by local building code officials. Closed panel and modular manufacturers normally finish wall, roof and floor

systems on both sides. This necessitates in-factory inspection since many structural and mechanical components are concealed by the time the home package reaches the building site.

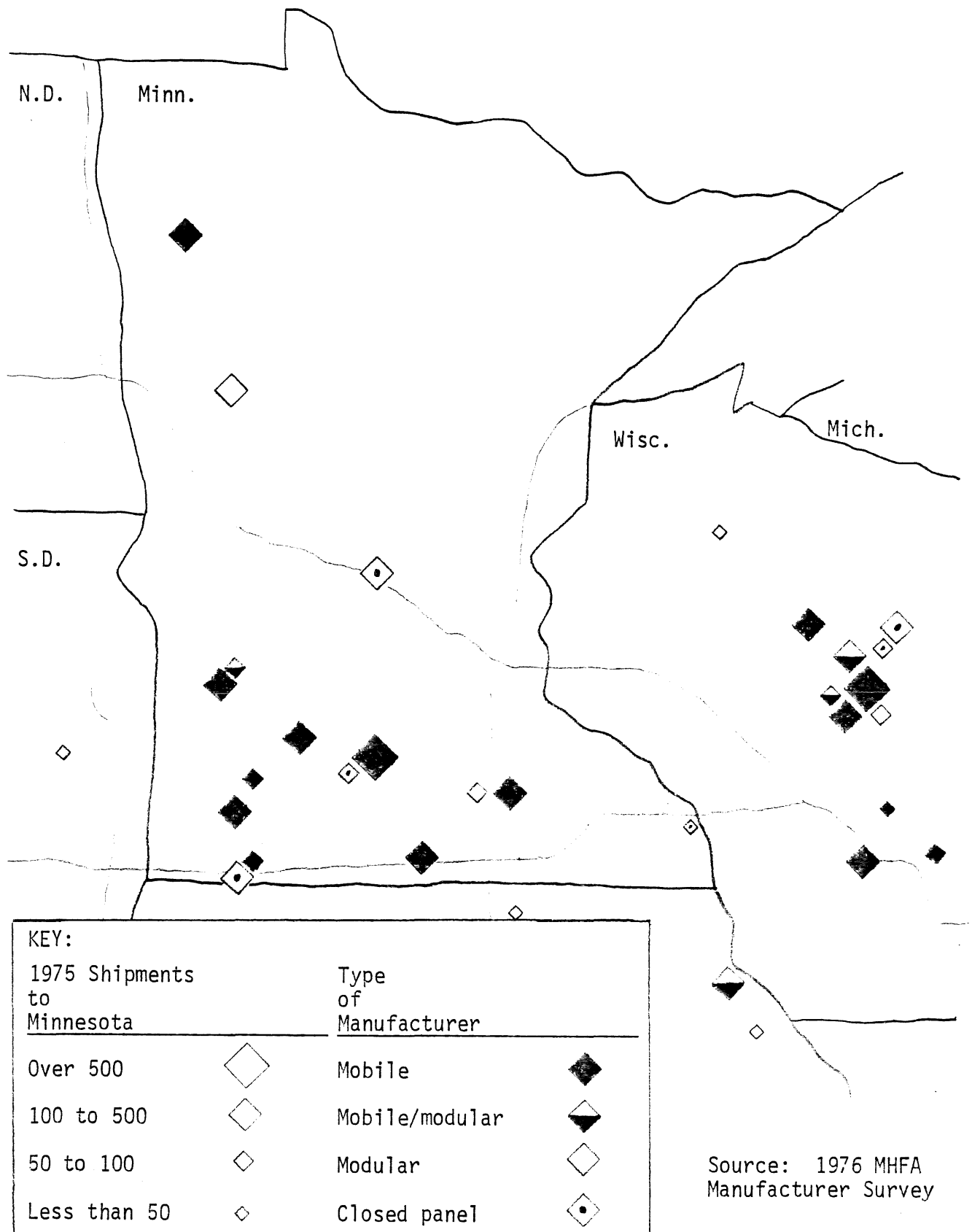
Marketing techniques vary among the modular and panelized home manufacturers. The predominant form of distribution is through dealer networks. Local dealers, in addition to selling the home package and arranging for delivery and erection, frequently assist the buyer with lot purchase, foundation construction, utility installation and financing. The actual erection of the home and finish work, which take several days to a week, may be performed by a local builder or by a factory supplied crew. Often dealers are also builders engaging in on-site construction, allowing the buyer to choose a home according to his preference. Franchised dealer networks are used by some manufacturers with the dealer representing only one manufacturer in return for an exclusive sales territory.

Perhaps the most familiar panelized home manufacturer marketing in Minnesota is Wausau Homes, operating out of a factory in Wausau, Wisconsin. Wausau Homes ships panelized home packages through a franchised dealer network. Site preparation is arranged by the local dealer with erection of the home package by a factory-supplied crew. Buerman Homes of Cold Spring, Fleetwood Homes of Worthington, CBS Homes of LaCrescent, and Stimpert Enterprises of Sleepy Eye are panelized home manufacturers with plants in Minnesota. Dynamic Homes of Detroit Lakes and Design Homes of Waseca are modular home manufacturers.

The survey of regional home manufacturers identified nine exclusive modular home manufacturers that had shipped units to Minnesota locations in 1975, as well as seven panelized home manufacturers. The survey identified only closed panel home manufacturers.

The map on the following page provides a general picture of the location and relative significance of home manufacturing plants that responded to the survey. Plant facilities tend to be located in small to medium sized communities in rural areas, with Minnesota firms concentrated in the southwestern portion of the State.

1975 Shipments to Minnesota
by Home Manufacturers



It is clear that firms in Minnesota and Wisconsin dominate the supply of manufactured homes that are ultimately located in Minnesota.

B. Current Role in Housing Production

Manufactured housing delivery systems have played an increasingly significant role in the production of new housing in recent years. While completely accurate data on production of each form of manufactured housing are not available, estimates provide a generally adequate picture of their role in overall housing production. Table 2 shows housing production over the last two decades for five year periods. While the modular and panelized housing production figures are gross estimates, they still show the increasing role of these forms of housing.

Table 2

Total Housing Production in the United States: 1955-1977

<u>Period</u>	<u>Total Housing Production</u>	<u>Total</u>	<u>Mobile Homes</u>	<u>Modular & Panelized (Est.)</u>
1955-1959	7,570,000 (100.0%)	810,000 (10.7%)	600,000 (7.9%)	210,000 (2.8%)
1960-1964	7,810,000 (100.0%)	1,000,000 (12.8%)	650,000 (8.3%)	350,000 (4.5%)
1965-1969	8,310,000 (100.0%)	1,890,000 (22.7%)	1,400,000 (16.8%)	490,000 (5.9%)
1970-1974	11,600,000 (100.0%)	3,150,000 (27.1%)	2,370,000 (20.4%)	780,000 (6.7%)
1975-1977	5,650,000 (100.0%)	1,240,000 (21.9%)	780,000 (13.8%)	460,000 (8.1%)

Source: U. S. Department of Commerce Housing Starts and MHFA Estimates.

Manufactured housing production is compared with total housing production for several reasons. One is that an unknown segment of the estimated modular and panelized production consists of multi-family units, making a comparison with single family units difficult. Further, though mobile homes are physically single family units, there is uncertainty as to the extent to which mobile home production substitutes for single family homes or multi-family rental housing. To the

extent that mobile homes replace predominantly multiple unit rental housing, a comparison of mobile home production to single family production is inappropriate.

Mobile homes represent the major component of manufactured housing production. Within this segment of the housing delivery system, the five-year totals obscure recent fluctuations in mobile home production and the industry's market share. The mobile home industry experienced significant increases in production during the early seventies and consistently increased its share of the market. During the housing slump of 1974-1975, the production of mobile homes decreased to a much greater extent than production of conventional homes and has also had a slower recovery, as can be seen in Table 3. While conventional production declined 43 percent between 1973 and 1975, mobile home production declined 62 percent.

Table 3

Total Housing Production in the United States: 1968-1977

<u>Year</u>	<u>Total Production</u>	<u>Mobile Home Production</u>	<u>Market Share (Pct.)</u>
1968	1,826,000	318,000	17.4
1969	1,879,000	413,000	22.0
1970	1,835,000	401,000	21.9
1971	2,549,000	497,000	19.5
1972	2,933,000	576,000	19.6
1973	2,612,000	567,000	21.7
1974	1,667,000	329,000	19.7
1975	1,373,000	213,000	15.5
1976	1,784,000	246,000	13.8
1977 (est.)	2,498,000	319,000	12.8

Source: U. S. Department of Commerce Housing Starts.

There are several explanations for this decrease in production. Lenders report that their traditional mobile home market suffered particularly high levels of unemployment during the 1974-1975 recession, resulting not only in

reduced sales but also in a significant increase in the repossession rate, from 4.63 repossessions per thousand loans outstanding in November/December, 1973 to 10.21 repossessions per thousand loans outstanding in January/February, 1975. The combination of reduced sales and a high level of inventory of new and repossessed homes forced mobile home dealers to reduce factory orders. Though retail sales decreased significantly, production decreases were even greater, since sales resulted in large part in an inventory reduction rather than new factory orders. Table 4 presents quarterly data on shipments and placements that reflects this situation.

Table 4

Shipments and Placements of Mobile Homes in the United States: 1974-1976

<u>Year/Quarter</u>	<u>Placements ("Sales")</u>	<u>Shipments to Dealers</u>	<u>Dealer Inventory</u>
1974: I	92,900	86,400	126,300
II	102,800	110,700	121,400
III	93,500	84,300	106,400
IV	56,600	47,800	95,000
1975: I	46,200	41,900	86,700
II	62,100	58,900	83,200
III	67,800	60,600	77,000
IV	53,200	51,100	73,300
1976: I	47,200	54,900	76,800
II	67,500	70,800	75,700
III	73,500	65,800	72,400
IV	57,600	54,700	73,900

Source: U. S. Department of Commerce Housing Starts.

Though production levels have increased since the 1974-1975 recession, mobile homes have not yet regained the twenty percent share of the market that they held between 1969 and 1974. While industry representatives feel that in

some regional markets a shortage of mobile home sites has had a dampening effect on demand and production, others feel that changes in the demographics of the population have reduced the number of households that have traditionally purchased mobile homes. Generally, it can be expected that mobile homes will account for 15 to 20 percent of annual housing production, slightly below the 20 percent level of the early seventies.

There is no reliable source of production data for modular and panelized housing equivalent to that available for mobile homes. Panelized home manufacturers are the more established segment of the non-mobile manufactured housing industry. The modular home industry has developed more recently, experiencing its most rapid growth between 1969 and 1971 during the U. S. Department of Housing and Urban Development "Operation Breakthrough" program that attempted to promote innovative building technologies. Modular and closed panel home manufacturers currently account for approximately 10 percent of the total annual housing production.

Manufactured homes contribute approximately the same share of home production in Minnesota as nationally, though accurate data is not available. Approximately 45,000 mobile homes were shipped to Minnesota dealers between 1970 and 1976, accounting for 21 percent of the estimated total production of 212,000 homes.¹ Modular and panelized production in Minnesota is also assumed to reflect national levels.

¹Based on Manufactured Housing Institute shipment data and National Association of Home Builders production estimates.

III. IMPACT ON MINNESOTA'S HOUSING MARKETS

A. Distribution of Manufactured Homes

Because of their recent development as housing delivery systems and low production levels prior to 1970; mobile, modular and panelized homes have had a relatively minor impact on the statewide housing market. The most reliable data available deal with the location of mobile homes. Because the major distinction between modular and panelized homes and site-built homes is their delivery system; these types of manufactured housing blend into the housing stock and are difficult to identify. Though the 1976 MHFA Manufacturers Survey suggested that these homes are marketed predominantly outside the Twin Cities metropolitan area, little is known about their specific location.

More complete information is available on the location of mobile homes throughout the State, though it is still not completely reliable. There were approximately 30,000 mobile homes occupied as year-round residences in the State in 1970, about two and one-half percent of the total housing stock. Since then the total number of year-round mobile homes and their share of the total housing stock have risen. The most reliable data on the number of mobile homes currently located in Minnesota and their distribution throughout the State are provided by State Department of Revenue assessment records.

The Department of Revenue data requires careful analysis. Most mobile homes are classified as personal property and are aggregated under a separate tax classification, facilitating a county by county count of mobile homes. A number of mobile homes, however, are classified by county assessors as real property and placed on the tax roles in other tax classifications, requiring an estimate of mobile homes in these categories by the assessors. In addition, these counts of mobile homes assessed as personal property and estimates of mobile homes assessed as real property represent all year-round and seasonal mobile homes located in Minnesota. The Agency is primarily interested in mobile homes occupied on a year-round basis, yet seasonal mobile homes comprise a

significant share of the mobile home stock, particularly in recreational areas of the State. Because of these factors, the figures presented are estimates rather than accurate counts.

Assessment records for 1977 show approximately 66,000 mobile homes assessed as personal property in the State. Though there are no records of mobile homes assessed as real property, 6,000 units would be a reasonable estimate, bringing the total number of mobile homes in the State in mid-1977 to approximately 72,000 units. Based on records for homesteaded mobile homes, an estimated 58,000 to 59,000 of these mobile homes are year-round dwellings and 13,000 to 14,000 are seasonal dwellings. The approximate distribution of the year-round mobile homes is presented in Table 5. The table shows the increase in the mobile home share of the housing stock and the distribution of the homes throughout Minnesota.

Table 5

Year-Round Mobile Homes in Minnesota

<u>Region</u>	<u>1970 Census</u>		<u>Mid-1977 Estimate</u>	
	<u>Number</u>	<u>Percent of Occupied Housing</u>	<u>Number</u>	<u>Percent of Occupied Housing</u>
1	1,486	5.1	3,300	10.3
2	1,031	6.4	1,800	9.4
3	3,543	3.4	8,200	7.3
4	2,146	3.9	4,200	6.7
5	1,617	4.7	3,200	7.9
6E	976	3.2	2,200	6.5
6W	514	2.6	1,100	5.3
7E	1,442	6.3	3,000	10.6
7W	2,572	5.8	5,000	9.0
8	922	2.1	1,800	3.8
9	1,982	3.0	3,600	5.0
10	3,613	3.2	7,200	5.5
11	<u>7,896</u>	<u>1.4</u>	<u>13,900</u>	<u>2.1</u>
STATE	29,740	2.6	58,500	4.5

Source: U. S. Department of Commerce Census of Housing and MHFA Estimates.

The aggregation of mobile home data at the regional level tends to obscure higher concentrations of mobile homes at the county or local level. As an example, Anoka County had 2,200 mobile homes in 1970; over a quarter of the regional mobile home stock and 5.5 percent of the county's occupied housing stock. The City of Blaine had 900 mobile homes, 18 percent of the occupied housing stock, in 1970. While such extreme concentrations are not common, mobile homes can constitute a significant share of the housing inventory in local housing markets.

Mobile homes are located in both mobile home parks and on individual lots. In November, 1977, there were 854 mobile home parks licensed by the State Health Department with almost 42,000 available spaces. The size of parks varies widely and the typical park varies from region to region. In Region 11, the Twin Cities metropolitan area, parks tend to be large, with over half the 1975 spaces in parks of 200 spaces or more and only 5 percent in parks of less than 50 spaces. In contrast, 725 out of 860 parks in Regions 1-10 in 1975 had fewer than 50 spaces.

B. Local Zoning Practices

A major factor affecting the location of mobile homes and their placement inside or outside mobile home parks is the treatment accorded mobile homes by local governments through zoning ordinances and other land use regulations. Most local governments in Minnesota; including municipalities, townships, and counties; are permitted through State enabling legislation to zone for the orderly use of land within their jurisdiction. In enacting zoning regulations, the majority of jurisdictions have classified mobile homes and mobile home parks as a use distinct from other forms of residential housing and restricted the placement of mobile homes to some degree. The most common restriction relates to the placement of mobile homes on individual lots in residential districts. While some communities permit such placement, many others prohibit such placement entirely or permit it only on a conditional basis, such as for temporary

or emergency housing or as an accessory use to an industrial, commercial or agricultural operation. National surveys indicate that rural jurisdictions are more likely to permit mobile homes on individual lots, while urban and suburban jurisdictions are more likely to prohibit them entirely or allow them only as conditional uses.

Many communities that plan for the inclusion of mobile homes restrict placement to mobile home parks. The Minnesota Supreme Court has sustained a municipal ordinance restricting mobile homes to licensed parks (State vs. Larson, 292 Minn. 350, 195 N.W. 2d 180, 1972). However, it is doubtful that a jurisdiction can legally exclude all mobile homes from the community entirely. The State Attorney General has indicated that it is most certainly illegal to completely prohibit mobile homes per se (Op. A.G. 283i, 9/21/56).

Local zoning ordinances frequently restrict the location of mobile home parks as well as prohibiting mobile homes outside parks. A common practice is to permit mobile home parks within specific zoning districts by special or conditional permit. The use of the special permit procedure gives the local jurisdiction more control over the location and development of mobile home parks by requiring review and approval of the development plans by both the planning and zoning commission and the governing board or council. The procedure, though more time consuming than the regular permit process, allows for more input by the governing bodies and the public, and is probably justified considering the size, density and complexity of many park development proposals.

Another zoning procedure sometimes used by local jurisdictions is to permit mobile homes only in a special mobile home park zoning district rather than permitting parks by special use permit in residential or other zoning districts. If no undeveloped land is zoned in this district on the zoning map, as is often the case, any park developer seeking to develop a new park in the community must request a rezoning or an amendment to the zoning map. This rezoning procedure also gives the local jurisdiction substantial review over the development proposal,

but may be more time consuming and costly to the developer than the special use permit procedure.

In addition to regulating the location of mobile home parks through zoning ordinances, local jurisdictions in Minnesota are permitted to adopt mobile home park ordinances establishing park development standards. This allows municipalities, townships and counties to enforce more stringent standards than those provided under the State mobile home park standards enforced by the Department of Health with regard to lot size, setbacks, density open space requirements and other provisions.

To gain a better understanding of zoning practices in Minnesota, several surveys were conducted of county and municipal zoning officials. One survey was mailed to the 85 counties empowered to zone by State statute, another was sent to 60 randomly selected outstate municipalities, and a third was sent to 40 Twin Cities area suburbs with developable land.

B.1. County Zoning Regulations

The county survey identified 22 counties out of 85 that are not enforcing zoning ordinances. The majority of these counties are in the northern and western areas of the State. The survey indicated that, despite the lack of zoning regulations, mobile homes were regulated through other controls such as township zoning ordinances, extraterritorial zoning by municipalities and shoreland zoning ordinances. No determination of the impact of these zoning practices on the location of mobile homes was possible from the survey.

County wide zoning ordinances are enforced in the remaining 63 counties. Though there was wide variation in the specific provisions, general conclusions can be reached about the impact of the ordinances on the location of mobile homes. Only two counties prohibit mobile homes on individual lots throughout the county; and only fourteen completely prohibit their location on individual lots in residential zoning districts. Mobile homes on individual lots in agricultural districts are widely accepted in Minnesota, though some counties

restrict mobile homes to accessory uses on agricultural operations.

A summary of county zoning provisions is provided in Table 6. The table shows that northern areas of the State are generally more lenient toward mobile homes. The combination of more counties without countywide zoning ordinances and fewer prohibitions of mobile homes on individual lots in counties with ordinances may partially explain the proportionately greater number of mobile homes in those areas.

Table 6
Summary of County Zoning Provisions

<u>Zoning Districts</u>	<u>Regions 1-5</u>		<u>Regions 6E-11</u>		<u>State</u>	
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
Residential Zones (N=51)						
Permitted Use	12	71%	10	29%	22	43%
Conditional Use	5	29%	10	29%	15	29%
Prohibited	-	-	14	42%	14	28%
TOTAL	17	100%	34	100%	51	100%
Agricultural Districts (N=58)						
Permitted Use	11	67%	11	26%	22	38%
Conditional Use - General	5	23%	8	19%	13	22%
Conditional Use - Agricultural	-	-	23	55%	23	40%
Prohibited	-	-	-	-	-	-
TOTAL	16	100%	42	100%	58	100%

Source: 1977 MHFA County Zoning Survey.

Counties generally permit mobile home parks in residential zoning districts, with 80 percent of the counties allowing park development in residential districts with a conditional use permit. Many counties require that the park be served by public water and sewer systems, which generally restricts parks to sewered areas

near municipalities.

B.2. Municipal Zoning Practices

Unlike counties, almost all of the outstate municipalities surveyed restrict mobile homes to parks. To some extent the treatment of mobile homes was related to the size of the jurisdiction. All twenty municipalities with population over 5,000 prohibit mobile homes on individual lots. Smaller communities are less likely to enforce zoning ordinances and, when they do, prohibit mobile homes on individual lots.

A final survey was made of 40 suburbs in the Twin Cities metropolitan area with undeveloped land that could be used for mobile home park development. The responses indicated a more consistent and more restrictive attitude toward mobile homes by these municipalities than by other municipalities and counties surveyed by the Agency. Of the thirty-five municipalities that responded to the survey, all enforced a zoning ordinance that accorded mobile homes a separate use status. None of the municipalities permitted mobile homes as permanent housing on individual lots in residential districts, though two permitted individual mobile homes in residential districts as a conditional use for temporary or emergency housing.

Only 20 of the 35 municipalities responding to the survey indicated that they would currently permit new mobile home parks in the municipality by special or conditional use permit and 9 of those 20 indicated that no undeveloped land was available in districts where mobile home parks were permitted, necessitating a zoning amendment by the local jurisdiction before a park could be developed.

IV. HOUSING STANDARDS AND ENFORCEMENT SYSTEMS

A. Mobile Homes

A.1. Construction Standards

A major focus of the research on manufactured housing has been on housing standards applicable to mobile, modular and panelized homes. Mobile homes have been and continue to be constructed to a different set of standards than other forms of housing.

Mobile homes have historically been classified as a separate form of housing and been exempted from local and State building codes. While this status enabled the industry to avoid the multiplicity of local building codes and develop regional markets for their product, it also resulted in the production of low quality units and problems of acceptance with many consumers and public officials.

With the growth in sales during the sixties, the mobile home industry realized the need for a set of industry-wide standards. In 1964 the National Fire Protection Association, the Mobile Home Manufacturers Association and the Trailer Coach Association combined their standards -- setting efforts under the auspices of the American National Standards Institute. The Institute is a private federation of industry, government, and professional groups that acts as a clearinghouse for standards to be adopted voluntarily by private industry. The Institute published plumbing, heating and electrical standards for mobile homes in 1964 and construction standards were added to the code in the late 1960's. The standards, referred to as ANSI A119.1 or NFPA 501B, were a step forward but did not solve all the construction problems with mobile homes. The Mobile Home Manufacturers Association and Trailer Coach Association did not require their members to conform with the ANSI standards until 1963 and even then manufacturers self-certified their conformance with the standards, an apparent conflict of interest.

After 1970, many states began adopting laws governing the construction of mobile homes and establishing enforcement systems to ensure that the standards

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were met by manufacturers. Since most states did not have the capacity to develop their own standards, the majority adopted the ANSI standards by reference. Minnesota adopted the ANSI standards in 1972 and granted the Building Codes Division of the Department of Administration enforcement authority. The enforcement powers included the authority to review and approve structural and mechanical systems, to approve quality control procedures, and to perform inspections at manufacturing facilities and dealer lots to ensure that the appropriate standards were being met. Such a system provided a more effective and uniform enforcement system than was provided under the manufacturers' self-certification process.

Enforcement of the ANSI standards was strengthened with the adoption of state codes in the early 1970's. However, no state or federal agency had performed a technical analysis of the ANSI standards though there was continuing concern that sections of the standard were less stringent than comparable sections in other building codes. Although life-safety aspects related to fire safety and windstorm protection received the most publicity, concern was also voiced over less serious but equally important performance problems related to the construction of the mobile home.

Several states and the Canadian government adopted codes more stringent than the ANSI code in an attempt to deal with some of these performance problems. The State of New York adopted a mobile home code that was stricter than the ANSI standard in terms of requirements for flammability of interior materials. The New York code also addressed the durability of mobile homes, stating that "equipment and systems shall be free from defective workmanship, and shall be designed and installed so as to be durable, without need for frequent repairs or major replacements." It also set higher standards for side wall and roof strength. The Canadian code improved upon the ANSI requirement that "roof framing shall be securely fastened to wall framing, walls to floor structure, and floor structure to chassis to secure and maintain continuity . . .," specifying how many bolts are needed to fasten the home securely.

In 1974, an independent evaluation of the ANSI code was finally begun. The U. S. Department of Housing and Urban Development contracted with the National Bureau of Standards for a six-month study of the durability of mobile homes constructed to the ANSI standards and an evaluation of the adequacy of the ANSI code. The objectives of the study were to identify and document significant mobile home performance problems and to determine the relationship of these problems to provisions of the ANSI A119.1 Standard for Mobile Homes, the mobile home enforcement process, and the durability of materials.

Neither HUD nor the National Bureau of Standards were able to conclude that the results of the study are indicative of the performance of mobile homes in the existing inventory, since approximately 75 percent of the 4,100 units were federally-owned mobile homes used as disaster housing after Hurricane Agnes. There appear to be major problem areas, however, with respect to water leakage through roofs and walls, inadequate fastening of exterior and interior finish materials to framing, durability of materials and certain plumbing and electrical components. It can be assumed that privately owned mobile homes manifest similar problems, though not necessarily with the same frequency or severity.

The study represents the largest, most intensive effort to scientifically collect and evaluate problems relating to the performance and durability of mobile homes under actual use. The study was an important step toward developing standards and enforcement procedures that eliminate the problems associated with mobile homes.

A.1.a. Current Status of Standards

Concern that certain provisions of the ANSI standards were inadequate and that the ANSI Committee on Mobile Homes was not actively recommending revisions to deal with recognized problems led to suggestions that it would be preferable for a federal agency to inherit the standard development and enforcement function. Not only would a federal agency be less subject to industry domination, it would also have the resources to finance the research needed as support for further

standard development. As a result, the Housing and Community Development Act of 1974 charged the U. S. Department of Housing and Urban Development with the responsibility for developing federal standards to regulate the construction and safety of mobile homes.

HUD did not adopt the ANSI Standards for Mobile Homes by reference, though significant portions of the final standards were derived from them. In addition to the ANSI Standards, HUD took into consideration the data contained in a National Bureau of Standards report, "Mobile Home Construction Standards Adopted by State Regulatory Programs - An Analysis," and the standards adopted by the Canadian Standards Association.

The National Mobile Home Advisory Council, composed of 24 members selected equally from consumer organizations, the mobile home industry and government agencies, also played a key role in the development of the standards. Two task forces on fire safety and structural integrity addressed specific issues and recommended revisions to the proposed standards.

The National Mobile Home Construction and Safety Standards became effective on June 15, 1976, and were published as Part 280 of Chapter 24 of the Code of Federal Regulations. The standards preempted existing State and local codes regulating the construction of mobile homes.

The federal standards provided more protection to the mobile home owner than previous standards, especially in terms of fire safety. In addition, HUD has committed funds for a number of research projects that may lead to further revisions.

A.1.b. Performance Evaluation of Standards

The federal standards contain several major revisions to previous standards. At the same time, however, some areas of the standards that relate to performance problems have remained intact without substantial revision. To gain a better understanding of the new federal standards and to permit an evaluation of their adequacy the federal standards were compared with the Minnesota State Building

Code, while regulates the construction of all other forms of housing including modular and panelized homes. Both codes are essentially life-safety codes dealing primarily with construction standards that affect the health and safety of occupants. Both codes are also performance codes that permit the use of alternative materials and construction techniques though the State Building Code also specifies acceptable materials and techniques, placing less reliance on testing. Though comparison was in some cases difficult, there were several areas in the federal standards where requirements were less stringent than under State standards. These areas are a cause of considerable concern.

One major area of concern centers around the adequacy of the federal energy conservation requirements for Minnesota's climate. Though exact comparison is difficult because of differences in the performance requirement language, the analysis suggested that the federal requirements for insulation are significantly less stringent than those under the State Building Code that apply to conventional homes.

The federal standards set a composite minimum performance requirement for transmission heat loss through the entire building envelope, allowing the mobile home manufacturer to vary insulation levels in walls, floor, ceiling, doors and windows as long as the system meets the performance standards. In contrast the State Building Code sets separate performance requirements for the roof, walls and floor. This makes comparison difficult because the total permissible transmission heat loss varies with the dimensions of the structure, but some general conclusions can be reached.

The energy efficiency of mobile homes would be increased significantly if mobile homes were constructed to energy standards contained in the State Building Code. If a typical single-wide mobile home met the State Building Code requirements; transmission heat losses would be reduced an estimated 5 to 14 percent and overall heat losses including infiltration losses would be reduced approximately 7 percent. Additional reductions in energy use would occur if the mobile home had the same dimensions as a typical conventional home of the same size,

since the home would have less surface area in the walls. As a more accurate assessment of the impact of higher insulation standards alone, if a double-wide mobile home met the State Building Code requirement applicable to conventional homes of the same size and dimensions; transmission heat losses would be reduced an estimated 12 to 27 percent and overall heat loss reduced approximately 16 percent.

The primary reason for the low standards in HUD's objective of making the federal standards a national code to as great an extent as possible. While recognizing climatic difference, HUD has attempted to limit the number of regional variations in design load and thermal efficiency requirements. The standards divide the states into only three climatic zones with separate performance requirements for Alaska, 34 northern states and 14 southern states. As a result, the thermal performance requirements that apply to mobile homes placed in Minnesota also apply to states with much milder climates such as Virginia, Kentucky and Missouri. Such requirements are necessarily a compromise that does not reflect the performance levels necessary for states with colder climates.

Because of problems with fires in mobile homes, the Housing Finance Agency is especially concerned with aspects of the federal standard related to fire safety. A 1975 study of mobile home fires by the National Fire Protection Association indicated that the existing mobile home inventory is, in important respects, more prone to serious fires than conventional housing. Fire officials warn that this fire problem will increase as the mobile home inventory ages. Statistics from selected insurance companies show that while the incidence of fires in mobile homes is lower than in conventional homes, once a fire begins, losses tend to be greater and the chance of total loss is higher because of the higher flammability of materials commonly used in mobile homes.

In developing the federal mobile home standards, the Department of Housing and Urban Development paid special attention to the fire safety issue. The federal standards establish flame spread requirements for materials in furnace

and water heater enclosures and for surfaces adjacent to kitchen ranges. They also set standards for fire detection equipment and specify where it should be located.

With respect to flame spread limitations, the federal standards and the State Building Code contain similar minimum requirements. In actual practice, however, most site-builders and modular and panelized home manufacturers use dry wall materials as the interior finish material even though plywood paneling, which is more flammable, is allowed under the State code. Most mobile home manufacturers, in contrast, make extensive use of plywood paneling in the construction of interior walls. As a result, though the federal standards deal adequately with flame spread in fire source areas, overall the interiors of the mobile homes built to current standards continue to have a higher degree of flammability than most conventional homes.

The possible need for further revisions to the fire safety requirements has been recognized at the federal level. During the development of the standards the Fire Safety Task Force of the National Mobile Home Advisory Council found test data and other information on mobile home fires to be insufficient to warrant more stringent requirements than proposed by HUD and supported retaining the recommended flame spread values until additional research data was made available. The Department has conducted full-scale mobile home fire testing in cooperation with the National Bureau of Standards. Two reports that are expected to be released in the near future by HUD may result in revisions to the federal mobile home standards. A technical study by the National Bureau of Standards raises concerns over the high fire hazard in the hallways of mobile homes and the flammability of certain fabrics used in mobile home furniture. The other study is a cost/benefit analysis of fire safety improvements in mobile homes which deals with the economic feasibility of requiring that mobile home manufacturers use dry wall, which is more fire proof than plywood but which is also more expensive and technically more difficult to work with in mobile home

construction.

Beyond the life-safety and energy issues, the Housing Finance Agency is also concerned with the habitability and durability of mobile homes, which includes such items as space planning, accessibility, life expectancy and maintenance needs. Therefore, a brief comparison was made between the Department of Housing and Urban Development's mobile home standards and the HUD/FHA Minimum Property Standards for single family homes, which serve as the basic requirements for mortgage loans insured or guaranteed by federal agencies. Overall, the federal mobile home standards are neither as comprehensive nor as stringent as the Minimum Property Standards, yet the Federal Housing Administration and the Veteran's Administration use the mobile home standards as the minimum standards for mobile homes financed under their loan insurance programs.

Space planning is one way to ensure a suitable living environment. In many areas, the mobile home space planning requirements were found to be lower than those under the single family Minimum Property Standards. In other areas the mobile home standards totally ignore issues addressed in the Minimum Property Standards. Table 7 compares the minimum bedroom sizes and room dimensions applicable under the two codes. As can be seen, the mobile home standards permit much smaller bedrooms. The Minimum Property Standards also set minimum room sizes and dimensions for other rooms and combinations of rooms, while the mobile home standards only require that at least one living area have not less than 150 square feet.

The mobile home standards also set lower requirements than the Minimum Property Standards in areas that affect the accessibility of a home. The Minimum Property Standards specify that one exterior door and all interior hallways have a minimum width of 36 inches, while the mobile home standards allow a width of 28 inches for exterior doors and interior hallways.

Table 7

Minimum Bedroom Sizes

	<u>HUD Mobile Home Standards</u>	<u>HUD/FHA Minimum Property Standards</u>
Primary Bedroom		
Minimum size	70 sq. ft. ¹	120 sq. ft.
Minimum dimension	7 ft.	9 ft. 4 in.
Secondary Bedroom		
Minimum size	50 sq. ft.	80 sq. ft.
Minimum dimension	5 ft.	8 ft.

¹ Mobile home standard minimum room requirement for bedroom designed for two people.

Overall, the mobile home standards appear to be less stringent than the Minimum Property Standards, which are intended to define the minimum level of quality acceptable to HUD and to ensure that housing will provide continuing utility, durability and economy of maintenance.

A.1.c. Enforcement System

To ensure that the National Mobile Home Construction and Safety Standards are effective, the Department of Housing and Urban Development has established a comprehensive enforcement system. While HUD has the primary responsibility for enforcement of the standards, the Housing and Community Development Act of 1974 requires that states wishing to assume enforcement responsibilities and meeting specific requirements be given an active role in the enforcement process. The Act also authorizes HUD to make extensive use of private inspection agencies in the day-to-day enforcement of the standards.

Under the enforcement system, states are encouraged to act as State Administrative Agencies. While the basic responsibility of State Administrative Agencies is to handle consumer complaints related to noncompliance with the standards, HUD also encourages these agencies to assume additional responsibilities, including monitoring of dealers' lots for transit damage and dealer

alterations, monitoring the installation of mobile homes, providing for the inspection of used mobile homes for compliance with state adopted minimum requirements for minimum levels of safety and providing for the regulation of mobile home transportation. States may also exercise exclusive authority over in-plant inspections of mobile homes produced in their state.

The Building Code Division of the Department of Administration has been approved as the State Administrative Agency for Minnesota. The Division is currently handling consumer complaints and making dealer lot inspections. The Division has also adopted regulations governing the installation of mobile homes that will be enforced by local code enforcement officials.

The Building Codes Division has not established standards or an enforcement system for used mobile homes. Neither has the Division requested certification as the exclusive inspection agency for Minnesota mobile home manufacturing plants, primarily because of staff limitations.

To ensure that the state and private design approval and inspection agencies properly enforce the mobile home standards, HUD has established a monitoring system. Under a HUD contract, the National Conference of States on Building Codes and Standards is monitoring state and private agency activities. A key aspect of the enforcement program is the composition of the NCSBCS -- coordinated monitoring teams. States are encouraged to supply personnel that are placed on teams monitoring the performance of enforcement agencies in states other than their own. In this way, states can assure themselves that mobile homes imported to their states have been constructed in conformance with federal standards. The Minnesota Building Codes Division is not currently supplying personnel to the monitoring teams, again because of staff limitations. Since mobile homes will continue to be produced in and imported into Minnesota, it might be in the State's interests to participate in the monitoring process and possibly to exercise exclusive in-plant inspection authority within the State. Initiation of these inspection and monitoring functions might require a State appropriation

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to cover start-up expenses, but once begun the functions would be supported by manufacturer's fees authorized under the federal standards.

A.2. Installation Standards

One of the areas where the federal government would like to see state action is in the development of standards related to the installation of mobile homes and an enforcement system to ensure that mobile homes are installed in conformance with these standards. Installation of mobile homes on a support structure that is properly designed and constructed for local soil and climatic conditions is crucial to the proper performance of the mobile home. In addition, because of their light weight and narrow shape, mobile homes are subject to wind damage to a greater extent than conventional homes. Many areas of the United States already require properly designed and installed anchoring or tie down systems. The federal government lacks the jurisdiction to develop and enforce standards and has been limited to encouraging states to perform this function.

The Building Code Division has adopted rules and regulations governing the installation of mobile homes with requirements covering the design of support and anchoring systems. While anchoring systems must conform to the regulations if installed, installation is not mandatory. Under the new statewide building code, which will become effective no later than 1978, local code enforcement officials have responsibility for enforcing the mobile home installation standards. Local governments may adopt mandatory anchoring requirements for mobile homes installed within their jurisdiction, but the Building Code Division has no plans to make anchoring mandatory statewide.

The Building Code Division feels that the adopted installation standards provide adequate protection against damage caused by improper installation and ensure that anchoring systems will be effective. The primary concern of the Housing Finance Agency is whether the regulations, which are a national standard adopted by reference, ensure that support systems are properly designed to minimize frost damage.

A.3. Park Development Standards

Any analysis of the performance of mobile home standards must consider park standards as well as construction and installation standards. In Minnesota, the Department of Health has responsibility for enforcement of mobile home park standards established by statute. The State standards are essentially a health code, regulating aspects of park design and utility systems that affect the health and safety of mobile home residents. The Health Department reviews plans and specifications for proposed park developments and issues licenses that are renewed annually. The Department regularly inspects parks and has the authority to revoke or suspend licenses if it finds that State standards are not being met.

Comparison of the State mobile home park standards with federal standards suggests that the State standards are overly restrictive and may need revision. As examples, State statutes regulating mobile home parks set a ten mile per hour speed limit, prohibit domestic animals from running at large and require an attendant or caretaker in each park.

B. Modular and Panelized Homes

The nature of the modular and panelized home delivery system has necessitated State action, since many structural and mechanical systems are concealed before the home can be inspected by local code enforcement officials. Minnesota adopted a Manufactured Housing Code in 1972 that applies to all modular and closed panel homes manufactured in or ultimately located in the State.

The Manufactured Housing Code is primarily administrative, adopting the State Building Code by reference and establishing an enforcement system. The enforcement system is similar to the system under the National Mobile Home Construction and Safety Standards, except that Building Code Division personnel perform the design approval and plant inspection functions rather than private inspection organizations. Under the system, the Division approves plans, performs in-plant inspections, certifies code compliance and issues State seals. Local code enforcement officials must accept homes displaying a Minnesota seal

or a seal from any state with a reciprocity agreement with Minnesota. Local officials are authorized to approve foundation plans and inspect the construction of the foundation and installation of the home, but may not perform any inspection that requires the removal of permanent components.

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V. CONSUMER HOUSING COSTS

A. Mobile Homes

In addition to the issue of housing standards, a second focus of concern relates to comparative housing costs. Especially with mobile homes, the questions of short and long-term costs relative to other forms of housing have not been resolved. Still, the cost issue is important in making decisions concerning State financing.

An analysis of comparative housing costs should concentrate on the initial and monthly housing expenses faced by consumers and on the long-term cost effects of factors such as depreciation. Purchase prices, while important because of their effect on initial and monthly expenses, should not provide the primary basis for comparison. It is true that with average current sales prices of approximately \$10,500 for single-wide units and \$17,500 for double-wide units, the mobile home industry is producing homes at prices below those of equivalent conventional homes. But sales prices translate into initial and monthly expenses differently for mobile homes than for conventional homes and it is these expenses that determine the affordability of a particular housing alternative.

A.1. Initial and Monthly Expenses

Consumers are primarily concerned with two factors; the initial expense encountered in purchasing or renting a home and the monthly expenses of occupancy. The size of the initial expenses can vary significantly and be an effective barrier to a specific housing option.

Generally, initial expenses for renters are modest, while those for home purchasers are more substantial. Mobile home lenders usually require a minimum downpayment of 10 to 15 percent for single-wide units, which, when applied against the relatively low purchase prices of mobile homes, results in downpayments of approximately \$1,000 to \$1,500. There are generally no closing costs.

Initial expenses for purchasers of conventional homes vary to a greater degree because of a wider range of financing options. Downpayment requirements

applied against higher purchase prices can result in downpayments significantly higher than those on mobile homes. Conventional mortgage financing also generally entails closing costs that add to the initial expense. Private mortgage insurers and federal insurance programs can lower downpayments to a degree, but initial expenses on conventional home purchases usually will be higher than those on mobile homes.

Consumers are also concerned with the ongoing expenses of occupying a home. To a great degree these expenses determine the affordability of various housing options. While there is less reliable data on monthly expenses than on sales prices, reasonable conclusions can be drawn about the relative affordability of the alternative forms of housing.

Few home buyers possess the financial resources to pay cash for either a conventional home or a mobile home. This is especially true of young, first time home buyers and those of low and moderate income. Because of this, most consumers finance the purchase. The type of financing directly affects monthly housing expenses. The size of a homeowner's loan payment depends on the principal financed, the length of the repayment period and the interest rate. Differences in the last two variables are a major reason why sales prices translate into monthly expenses differently for mobile homes and conventional homes. Higher interest rates and shorter terms on mobile home loans mean higher monthly loan payments per thousand dollars of principal, partially offsetting differences in sales prices. In addition, a portion of the principal and loan payment on conventional home mortgages covers land purchase, while mobile home purchasers frequently rent the land, thus incurring an additional monthly expense.

Other homeownership expenses include property taxes, property insurance, maintenance and utilities. Item-by-item comparison is difficult because many mobile home owners pay a portion of these expenses indirectly through park rent. Owners of mobile homes located in rental parks pay property taxes on the mobile home directly and taxes on the land indirectly through their rent. Because

market values on both mobile homes and park spaces tend to be lower than on comparable conventional homes, assessed values and property taxes are usually significantly lower. Property insurance premiums, in contrast, tend to be approximately the same for mobile homes as for higher valued conventional homes since insurers perceive a higher risk and charge higher rates.

Two other expenses are maintenance and utilities. Utility expenses can vary tremendously and may be partially paid indirectly by mobile home owners, making comparison difficult. Lower insulation standards for mobile homes mean higher average heating expenses. Maintenance expense are also difficult to compare, though several sources suggest that maintenance expenses on mobile homes may be somewhat lower than on conventional homes.

Table 8 helps illustrate typical expenses for a consumer purchasing a new mobile home or a new conventional home in 1977. While actual expenses vary considerably, the major point is that monthly expenses for a new mobile home are approximately 20 to 25 percent less than for a similar conventional home.

The most useful data allowing comparison of monthly expenses of mobile homes and conventional single family homes come from the Annual Housing Survey, conducted by the Bureau of the Census and the Department of Housing and Urban Development. The survey presents data on selected monthly housing expenses for the North Central Region of the United States. Table 9 presents a distribution of monthly housing expenses in 1975 for mobile homes and conventional single family homes. The table shows that mobile home expenses are 14 percent lower than conventional home expenses, which is a smaller differential than the previous example. It also shows that the distribution of monthly expenses for mobile home owners overlaps with the distribution of monthly housing expenses for conventional home owners.

Table 8

Comparison of Typical Initial and Monthly Housing Expenses: 1977

<u>Purchase Terms</u>	<u>Conventional Home</u>	<u>Mobile Home</u>
Sales price	\$35,000	\$12,500
Downpayment	10%	10%
Interest rate	9.00%	12.50%
Term	30 years	12 years
<u>Initial Expenses</u>		
Downpayment	\$3,500	\$1,250
Closing expenses	<u>\$ 500</u>	<u>-</u>
Total	\$4,000	\$1,250
<u>Monthly Expenses</u>		
Loan payment	\$255	\$150
Property taxes	\$ 70	\$ 15*
Property insurance	\$ 15	\$ 15
Maintenance	\$ 25	\$ 20
Utilities	\$ 60	\$ 65
Park rent	<u>-</u>	<u>\$ 65</u>
Total	\$425	\$330

*Property taxes on mobile home only; property taxes on land paid indirectly through park rent.

Source: MHFA estimates.

Table 9

Distribution of Selected Monthly Housing Expenses:
North Central Region, 1975 (Units in 1,000's)

Selected Monthly ¹ Housing Expense	Conventional		Mobile	
	Number	Percent	Number	Percent
Units with loan payment:				
Less than \$100	55	1.0	4	1.4
\$100 to \$149	662	11.7	38	13.6
\$150 to \$199	1,360	24.0	114	40.7
\$200 to \$249	1,436	25.3	81	28.9
\$250 to \$299	872	15.4	36	12.9
\$300 or more	<u>1,289</u>	<u>22.6</u>	<u>7</u>	<u>2.5</u>
Total	5,674	100.0	280	100.0
Median	\$224		\$192	
Units owned free and clear:				
Less than \$ 50	407	11.0	43	21.4
\$ 50 to \$ 99	2,123	57.2	103	51.2
\$100 to \$149	892	24.1	51	25.4
\$150 to \$200	203	5.5	4	2.0
\$200 or more	<u>81</u>	<u>2.2</u>	<u>-</u>	<u>-</u>
Total	3,706	100.0	201	100.0
Median	\$83		\$75	

¹May include loan payment, property taxes, property insurance, utilities and site rental.

Source: U. S. Department of Commerce Annual Housing Survey.

Another way of measuring the relative affordability of mobile homes and conventional housing is to examine income distributions of families purchasing either option. Generally, a family should spend an equivalent share of its income on housing, regardless of which housing option it chooses. Table 10 presents income data from the 1975 Annual Housing Survey. The data show a larger difference of approximately 25 percent between median incomes, but the distributions again overlap. Both housing expense and income data suggest that mobile homes are not the sole alternative available for families in any income category.

Table 10

Comparison of Income Distribution of Mobile Home
Conventional Homeowners: 1975 (Units in 1,000's)

<u>Income</u>	<u>Conventional</u>		<u>Mobile</u>	
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
Less than \$ 5,000	1,969	14.7	132	21.2
\$ 5,000 to \$ 9,999	2,452	18.2	156	25.1
\$10,000 to \$14,999	2,881	21.4	188	30.2
\$15,000 to \$24,999	4,079	30.3	129	20.7
\$25,000 or more	<u>2,076</u>	<u>14.5</u>	<u>17</u>	<u>2.8</u>
Total	13,457	100.0	622	100.0
Median	\$14,000		\$10,500	

Source: U. S. Department of Commerce Annual Housing Survey.

While the monthly housing expense and income data tends to support the conclusion that there is a 15 to 25 percent differential in monthly housing expenses, the data should be qualified for several reasons. The fact that mobile homes on the average have less living area and are sited at higher densities than conventional single family homes might account for part of the difference in expenses. In addition the data represent all homeowners rather than recent home buyers. Changes in loan terms may have increased or decreased the cost differential for

current, first time home buyers from what it has been in the past.

The Housing Finance Agency home mortgage program provides shallow interest subsidies that reduce the monthly loan payment and increase the affordability of conventional homes for low and moderate income families. Table 11 presents the income distributions of recent mobile home buyers and of participants in the Agency's mortgage loan program. The comparison is useful because it represents the relative affordability of two housing options for young, primarily first time home buyers. The income differential is 15 percent, compared to the 25 percent differential in the 1975 Annual Housing Survey. The Agency's recently instituted Homeownership Assistance Fund, will make it possible to reach even lower income families.

Table 11
Income Distribution of Recent Home Buyers

<u>Income</u>	<u>MHFA Mortgage Program: 1974 (Percent)</u>	<u>Mobile Home Buyer; U. S.: 1974 (Percent)</u>
Less than \$ 6,000	0.6	18.7
\$ 6,000 to \$ 9,999	11.8	27.1
\$ 9,000 to \$10,999	31.7	18.7
\$11,000 to \$12,999	47.2	14.6
\$13,000 to \$14,999	8.7	8.4
\$15,000 or more	<u>-</u>	<u>12.5</u>
Total	100.0	100.0
Median	\$11,250	\$9,500

Sources: Owens/Corning Fiberglas Corporation The New Mobile Home Market and MHFA files.

The available data, though limited, suggest that while monthly expenses may be somewhat lower for mobile homes than for conventional homes, in most cases consumers are not limited to a single affordable option. The degree of choice may vary by geographic area, based on availability rather than affordability. While

mobile homes are generally not the only housing option available, in some areas they may be the most attractive option for many consumers.

B.2. Long-Term Costs

Consumers are not only concerned with the comparative affordability of mobile homes and conventional housing as reflected in initial and monthly housing expenses, but is also concerned with the long-term costs of these alternatives. Long-term costs reflect not only the initial and monthly expenses of the various alternatives, but also the costs or benefits that accrue to homeowners through appreciation or depreciation in the value of their home. Though the initial and monthly housing expense of a particular housing option are the major concern of most consumers, many are also interested in the long-range benefits of homeownership. The mobile home industry suggests that ownership of a mobile home provides the same benefits as ownership of a conventional single family home. The issue, however, has yet to be resolved. Existing data, though limited, suggest that, in today's market, mobile homes may on the average be appreciating and providing equity to their owners, but the size of this benefit and its effect on the purchase of subsequent homes is less than it would be if the consumer owned a conventional home. The short-term expenses of conventional homes tend to be offset by long-term benefits and bring long-term costs of conventional homeownership into a more favorable comparison with mobile homes.

A major factor affecting the long-term costs of mobile homes and conventional homes is depreciation. Though a hidden cost overlooked by many consumers, depreciation is a very real cost that affects the eventual resale value of a home and the amount of equity that an owner will realize from a sale. Depreciation rates for individual houses depend on numerous factors such as the initial quality of construction, the level of maintenance and the location. Numerous sources indicate a historical depreciation rate for mobile homes of 10 to 25 percent in the first year and 5 to 10 percent for subsequent years. The economic life of mobile homes is estimated to be 20 to 25 years. In contrast, conventional homes depreci-

ate at a much slower rate and are estimated to have economic lives of 40 years.

Several recent factors suggest that mobile homes currently depreciate at a slower rate than in the past. One is that improved construction standards and enforcement have increased the durability of mobile homes. A major factor in the depreciation of mobile homes has been the functional obsolescence created by changes in the size and design of mobile homes, and these changes have been reduced in recent years. Despite these improvements, however, the evidence suggests that mobile homes still depreciate more rapidly than conventional homes.

Though data are minimal, existing information suggests that in recent years mobile home resale values have stayed closer to the original purchase price than in the past and that in some cases individual mobile homes have appreciated in value. This appreciation in value is primarily the result of recent inflation rates rather than a significant reduction in the depreciation rate.

The resale value of any home is determined by both the sale price of new homes and depreciation. Recent high rates of inflation have increased the cost of producing mobile homes in much the same way they have increased the cost of other goods and services. To an extent, escalating prices of new, and consequently existing mobile homes, have offset the depreciation that has taken place. The fact that used mobile homes have just maintained their original value during the early seventies is an improvement over the past. However, it also dramatizes the differences between mobile homes and conventional homes. Sales prices of existing conventional homes increased over fifty percent between 1970 and 1975, providing major benefits to owners as an inflation hedge.

It has been suggested that mobile home owners would realize the same appreciation as conventional home owners if they owned the land where the mobile home is located. While it is true that land ownership will result in more equity for the homeowner, since any appreciation in land values will go to the homeowner rather than a rental park owner, owning the land will not in itself drastically reduce the depreciation in a mobile home. Location of a mobile home on a high-quality

site, whether owned or rented, will increase the potential resale value of a mobile home. However, the fact that a site is owned rather than rented in itself will not have an appreciable effect on the depreciation of a mobile home.

One group of particular concern are the young families who purchase mobile homes as an initial step toward conventional homeownership. These families are attracted by the relatively low initial and monthly housing costs, but they also see ownership as a means of generating the equity needed as a downpayment on a conventional home. As was stated previously, the degree to which a mobile home owner actually accumulates this equity depends to a great extent both on the inflation rate and on the depreciation of the mobile home.

A recent Congressional Budget Office study of the affordability of housing concluded that during periods of high inflation the first time home buyers suffer the greatest decline in the affordability of housing, since initial and monthly housing expenses are affected by increases in all cost components including price increases. For the most part current homeowners and even homeowners moving from one home to another have not been affected by home price increases since the value of their homes has increased proportionately. Renters are the primary group that has realized a decline in the affordability of conventional homeownership, but the previous discussion also suggests that mobile home owners may also be affected since the increase in the resale value of their homes has not matched that of conventional homes. If depreciation erodes the equity that an owner has in a mobile home he may be at a relative disadvantage compared with renters. Generally, a mobile home owner's advantage over renters in terms of equity accumulation will increase with the inflation rate; yet both will be at a disadvantage with conventional home owners when it comes to purchasing a conventional home.

B. Modular and Panelized Homes

Modular and panelized homes are essentially identical with conventional site-built homes and result in identical expenses for property taxes, property

insurance, maintenance and utilities. Since these forms of manufactured housing are eligible for the same mortgage terms as site-built housing, any differences in initial and monthly expenses should result solely from differences in purchase prices.

Unlike mobile homes, modular and panelized home manufacturers have not been able to establish significant price advantages over site-builders. For the most part, any cost savings that have been realized by factory construction have been offset by transportation costs. Table 12 illustrates typical development costs for a site-built home and a factory built modular home. The table suggests little difference in the cost of the structure, including delivery and installation. Some cost savings may result from lower interim financing and overhead costs, since the modular home can be erected on-site much faster than a site-built home.

Table 12
Development and Land Costs: 1977

<u>Cost Element</u>	<u>Site-Built</u>	<u>Modular</u>
Structure	\$18,900	\$18,700
Factory cost	n.a.	\$14,800
Site cost	\$18,900	\$ 3,900
Interim financing	\$ 2,700	\$ 1,400
Overhead and profit	\$ 4,600	\$ 4,200
Miscellaneous	<u>\$ 3,800</u>	<u>\$ 3,700</u>
Development cost	\$30,000	\$28,000
Land cost	<u>\$ 7,500</u>	<u>\$ 7,500</u>
Total cost	\$37,500	\$35,500

Source: MHFA estimates.

Long-term costs of modular and panelized homes should not be significantly different from those of site-built homes. Though the homes are produced using different delivery systems, all three types of homes are constructed to the same set of construction standards. There should be little if any difference in the economic life of a home whether it be produced as a modular, panelized or site-built home.

VI. MOBILE HOME FINANCING

The Housing Finance Agency evaluated the feasibility of several financing activities related to mobile homes. Basically, the Agency was concerned with three major financing areas: consumer financing of mobile homes, construction and permanent mortgage financing of mobile home parks and consumer financing for the rehabilitation of used mobile homes.

A. Rehabilitation of Mobile Homes

A major activity area in which the Minnesota Housing Finance Agency could provide resources is in the rehabilitation of mobile homes. Approximately 45 percent of the year-round mobile home stock, or 26,000 units, were manufactured before Minnesota adopted mobile home standards in 1972. No reliable survey of condition has been made, but it is believed that a significant portion have construction related problems that could affect the health and safety of residents. Fire safety and energy conservation in these homes, as well as in mobile homes built since 1972, are of particular concern.

Private lenders have not provided financing for the rehabilitation of mobile homes on a widespread basis. To our knowledge there are no Minnesota lenders making home improvement loans on mobile homes, though one Twin Cities area utility company is providing funds to mobile home owners to retrofit their units with additional insulation and other energy conserving improvements. Any Agency activity would be expected to provide the major if not the only source of financial assistance for homeowners wanting to upgrade their mobile homes.

In evaluating the technical feasibility of loan and grant programs for the rehabilitation of mobile homes, the Housing Finance Agency must deal with two considerations. One is the development of a statewide delivery system that is efficient and cost effective. The other is the funding of the programs.

It is felt that the existing network of lenders and grant administration centers could be used to deliver loans and grants to low and moderate income mobile home owners. While there might be some resistance on the part of lenders

to make home improvement loans to mobile home owners, this resistance should be less than if the lender were asked to make home purchase loans. Since most home improvement loans are unsecured by a mortgage, lenders are more concerned with the credit worthiness of the loan applicant than with the security provided by the property.

Funding for a home improvement loan program for mobile homes would come from bond sales. The volume of loans would not be sufficient to allow a separate bond sale, necessitating funding with bond proceeds from the regular home improvement loan program. State appropriations would provide funding for the grant program.

The general consensus is that the Agency could market home improvement bonds that permit proceeds to be used for improvements to mobile homes provided that some form of loan insurance provided security to the bond holders. Currently, all home improvement loans made by the Agency are insured under the Federal Housing Administration's Title I Property Improvement Loan Program. This federal loan insurance provides the security that bond holders need and allows the Agency's bonds to be marketed at reasonable interest rates.

Under the present Title I program, mobile homes are eligible for insurance if they meet six criteria. These include requirements that the mobile home has been placed on property owned or being purchased by the borrower, that the wheels have been removed and the unit has been placed on permanent foundation, that the security for the mobile home loan is in the form of a deed of trust or mortgage covering the realty and the unit is no longer capable of being repossessed as personal property and that the unit is carried on the local tax rolls as real property. Few mobile homes, however, meet these criteria and are eligible for Title I property improvement loans.

This situation could be resolved in one of two ways. One would require modifications to the Title I program. The Department of Housing and Urban Development has received Congressional authorization to expand Title I coverage

to personal property mobile homes. HUD is currently preparing proposed rules for such an expansion of eligibility, but no information is available on when rules are expected to be adopted or on the content of the proposed rules. An alternative would be to make uninsured home improvement loans to mobile home owners. Such a decision, however, would probably necessitate a State-appropriated insurance reserve fund to replace the bond security provided by the Title I insurance program.

B. Purchase of Mobile Homes

Private sector financing of mobile homes has developed independently from mortgage lending activities, resulting in several unique characteristics. Under this system, mobile home dealers play a central role in the delivery of consumer financing, acting as an intermediary between the consumer and the lender and originating approximately 90 percent of all consumer financing. This "one-stop shopping" arrangement has been a key element in the mobile home industry's marketing strategy.

Private lenders have generally been able to keep mobile homes affordable to a wide range of income groups. As mobile homes have grown larger over the years and purchase prices have increased, lenders have been able to keep monthly payments down by gradually increasing the repayment period on loans. In addition, downpayments have been kept near 10 to 15 percent of the purchase price and have made access to mobile home financing comparatively easy for many consumers.

Interest rates charged by private lenders on mobile homes have been the most criticized aspect of mobile home financing. Currently, interest rates on conventional mortgage loans are 8 to 9 percent, while interest rates on mobile home loans are 12 to 13 percent. The primary reason for the higher interest rates is that most mobile home loans are installment loans and yields on mobile home portfolios must be competitive with yields on other types of installment loans to attract capital. Despite high interest rates, however, the private finance sector has been responsive to most consumers. In fact, the financing

package has probably been one of the most attractive features of mobile homes for many consumers. One reason for the success of mobile homes is a financing system that has provided readily available, fast credit with initial and monthly costs attractive and affordable to many families.

The Housing Finance Agency could reduce the monthly payments on mobile home loans through a reduction in interest rates and slightly longer maturities. Given reasonable assumptions about the Agency's borrowing and administrative costs under a mobile home program, the Agency could provide loans at an interest rate of 7-1/4 to 7-3/4 percent, compared with private sector interest rates of 12 to 13 percent. The potential interest rate differential on a typical mobile home loan, would reduce the monthly payment by approximately 20 percent, or \$35 per month.

Whether the Housing Finance Agency has an impact on the availability of credit depends to a great extent on how competitive an Agency program would be with private lending activities. It appears likely that a large portion of any Agency lending activity would be business taken away from private lenders, rather than a new addition in mobile home lending activity. Most mobile home purchasers have incomes under the Agency's income limit of \$16,000; and unless a program were limited to lower income groups, the Agency would be in direct competition with private lenders across their entire market.

One component of the mobile home market that has not received strong support from private lenders is financing of the combined purchase of a mobile home and land. While mobile homes have traditionally been located in mobile home parks on rented spaces, an increasing number of mobile homes are placed on land owned by the mobile home owner. Private lenders have not been entirely responsive in providing a financing instrument that meets the needs of these consumers, possibly because of the legal problems involved in combining real and personal property under one loan.

The Housing Finance Agency has two key concerns in evaluating the feasibility

of financing the purchase of new or used mobile homes with or without a parcel of land. One is the ability of the Agency to raise funds in the bond market. The other is the feasibility of developing an effective, cost efficient system for delivering the funds to low and moderate income families.

To fund a mobile home loan program and to provide significant benefits to consumers, the Housing Finance Agency must be able to sell bonds at a reasonable rate. The most desirable approach would be to issue separate bonds for mobile homes rather than fund a program out of proceeds from homeownership bond sales. Not only would shorter maturities on mobile home loans make the structuring of a combined bond sale difficult, but the Agency would not want to risk affecting the marketability or cost of homeownership bonds.

The general consensus is that the Agency could market bonds for a mobile home program at reasonable borrowing costs provided that some form of loan insurance was available to provide security on the loans. Currently the Federal Housing Administration and the Veterans Administration have mobile home loan insurance programs that would provide this security. The VA program covers both new and used mobile homes and allows combination purchases of mobile homes and land. The FHA program is similar but excludes used mobile homes. If the Agency could not operate under these programs, an appropriated insurance reserve fund would be necessary to provide the security.

The Agency must also develop a delivery system for a mobile home program. The success of a program will depend to a great extent on the ability of the Agency to establish a statewide network of dealers or lenders willing to originate mobile home loans for a reasonable fee and to attract an experienced mobile home servicer willing to service the Agency's loans.

The most effective delivery system would probably utilize mobile home dealers since consumers are not accustomed to seeking financing directly from lenders. However, there would be serious shortcomings in using dealers. Currently, all lenders participating in Agency programs must be FHA-approved and eligible to

sell loans to the Federal National Mortgage Association or the Federal Home Loan Bank Board. This provides a screening process that ensures that lenders are qualified. The absence of such a screening process would create difficulties in selecting dealers for participation. An alternative would be to use lenders currently participating in the homeownership and home improvement loan programs, but there it is questionable whether lenders will be willing to originate mobile home loans, since few lenders currently engage in and are familiar with mobile home financing.

Equally important to the success of any mobile home financing program is the ability to find a lender or service company willing and able to service mobile home loans for a reasonable fee. Considering the anticipated low volume of loans under a mobile home program and the complex nature of mobile home servicing, it is likely that only a few lenders currently servicing mobile homes could perform the servicing.

C. Park Development

Another loan activity in which the Housing Finance Agency could become involved is the financing of mobile home parks. Such a program could include construction and permanent mortgage financing of rental parks as well as construction financing for condominium parks and subdivision development. The research indicated that the need for such a program activity is limited.

There has been relatively little park development in Minnesota in recent years due to overbuilding during the early seventies and because of local zoning practices in some areas. Lack of financing has not been a key factor preventing the development of parks.

Though the Agency could have an impact on debt service costs through reduced interest rates and longer maturities, the monthly cost savings would be minimal due to the relatively small development cost per individual park space. The key role the Agency could play would be in reducing the equity requirements placed on park developers and in increasing the availability of loan funds in

the State. Whether Agency involvement would increase park development activity is questionable. It is also questionable whether developers would even participate in an Agency program given expected program requirements and the necessity for continued Agency involvement to control rents and restrict occupancy to low and moderate income families.

As with a loan program for individual mobile homes, any evaluation of a park financing program must take into consideration the ability of the Agency to raise and deliver funds. A system to deliver program funds already exists within the Agency's Apartment Development Division. The development review and loan underwriting process for mobile home parks is similar to the process the Agency uses for apartment development. A key concern, however, is the additional workload that a park development program would place on Agency staff. The staff time and expense necessary to underwrite park proposals would not be significantly less than the effort of underwriting apartment developments. However, the typical apartment development financed by the Agency has approximately 65 apartments and a mortgage of \$2,000,000 to \$2,500,000, while a typical park development might have 100 spaces and a mortgage of \$500,000. Unless fee schedules for underwriting, construction administration and management were revised to reflect this lower per unit development cost, fee income could not be expected to generate sufficient revenue to cover Agency expenses.

The most crucial concern with a park financing program lies not with the delivery system but with the ability to raise funds for a program. Given the level of park development activity in the State, the volume of activity under an Agency loan program would probably be too low to justify a separate bond issue. The alternative would be to finance park developments with proceeds from apartment development notes and bonds. The Agency, however, should consider such an alternative with extreme caution. Since the apartment developments financed by the Agency are uninsured, the marketability of the bonds used to finance the developments is tied closely to the ability of the Agency to convince

the bond market of the financial soundness of the individual apartment developments. The Agency must give serious consideration to the possible effect that inclusion of park developments would have on the ability of the Agency to market apartment development bonds at a favorable interest rate. A park mortgage insurance program is available through the Federal Housing Administration, but this program has experienced high foreclosure rates and it is uncertain whether it would provide the security sought by the bond market.

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