



MANUFACTURED HOUSING: REFLECTIONS FROM HUD LEADERSHIP

A HUD 50TH ANNIVERSARY PUBLICATION



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Manufactured Housing: Reflections From HUD Leadership

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Contents

Introduction..... 1

Profile of Rick Mendlen..... 3

Profile of Pamela Danner 5

Profile of Bob Fuller 6

Profile of David Nimmer..... 7

Profile of William Matchneer 8

Conclusion..... 9

Introduction

One of the U.S. Department of Housing and Urban Development's (HUD's) major contributions to affordable housing is its Manufactured Housing Program, which began operation in 1976. Congress gave HUD preemptive authority to regulate the design and construction of manufactured housing (mobile homes) and to protect the purchasers of those homes. As part of HUD's celebration of its 50th anniversary, the Office of Policy Development and Research (PD&R) profiled five individuals who were key to the development, administration, and maturation of HUD's Manufactured Housing Program.

- Rick Mendlen. Branch Chief and Division Director, 1976 to 1984; senior structural engineer, 1984 to 2016. Mendlen, who has been with the HUD Manufactured Housing Program since August 1975, is the longest serving program staff person in the program.
- Pamela Danner. Attorney advisor for the Manufactured Housing Program, 1977 to 1979; Manufactured Housing Program Director, 1982 to 1984; Administrator, Office of Manufactured Housing Programs, March 2014 to present.
- Bob Fuller. Senior engineer. Fuller, who began his government career with the Federal Housing Administration (FHA) as a structural engineer in 1970, was brought on as Chief of the Manufactured Housing Compliance Division in the Manufactured Housing Program from 1985 to 1994.
- David Nimmer. Director, Office of Manufactured Housing Programs, 1986 to 1999.
- William Matchneer. Administrator, Office of Manufactured Housing Programs, 2002 to 2003; Associate Deputy Assistant Secretary, Office of Regulatory Affairs and Manufactured Housing Act, 2003 to 2009.

Manufactured Housing

Manufactured housing and the federal government are not commonly associated with one another. In

regard to housing, the federal government is more often associated with large markets, financial issues, or mortgage insurance. On the other hand, most mobile homes are modest housing types, constructed in factories, and marketed in the private sector.

Moreover, building codes and the federal government also have limited interactions. Building codes historically have been the responsibility of local and state governments. Congress, however, authorized the federal government's Manufactured Housing Program because manufactured homes are products subject to interstate commerce and, therefore, open to be regulated by the federal government.

Congress charged HUD with the responsibilities of regulating the design and construction of manufactured housing and of enforcing how mobile home manufacturers respond to defects and complaints about the design and construction of those homes.

How did the federal government get involved in the building standards business—usually the prerogative of local governments?

Mobile homes have been popular as an affordable housing option for many years, but states did not begin creating and enforcing their own building codes for manufactured housing until the 1950s. These codes were based primarily on the National Fire Protection Association's (NFPA's) 501 standard for manufactured housing and on the American National Standards Institute's A119.1 standard for Mobile Homes—Body and Frame Design and Construction: Installation of Plumbing, Heating and Electrical Systems. Because a manufacturing plant in one state might serve retail and installation sites in multiple states, however, compliance with multiple building standards was increasing the cost of the housing and testing the limits of a low-cost industry. Coupled with concerns about the growing number of fire deaths in mobile homes and President Lyndon B. Johnson's focus on urban communities and housing after the riots of 1968, congressional hearings in the 1960s and 1970s led to the Housing and Community Development



Act of 1974.¹ Title VI of this act, administered and enforced by HUD, operates as the only national building code in the United States. Operating now for 40 years, the Manufactured Housing Program has updated and improved the code, responded to consumer concerns regarding design and construction, and followed congressional direction to administer and enforce how homes are installed and how disputes are brought to resolution.

This report highlights the accomplishments of five key leaders in HUD's Manufactured Housing Program who were fundamental in implementing key program elements that have improved the safety and affordability of these homes—a primary part of HUD's legacy as it celebrates its 50th anniversary.

¹ 12 United States Code §1706e.

Profile of Rick Mendlen

1975–present Engineer

1976–1984 Branch Chief and Division Director

1984–present Senior Structural Engineer

Early Years of the Program

Congress passed the Manufactured Housing Construction and Safety Standards Act² in 1974, giving HUD until mid-June 1976 to create the standards and regulations by which it would regulate the design and construction of all manufactured homes in the United States and to create a program office to oversee complaints regarding design or construction. Staff worked continually with program counsel to write the building standards that would become 24 CFR Part 3280 of the Code of Federal Regulations and then to complete Part 3282 to allow for the program to commence on June 15, 1976.

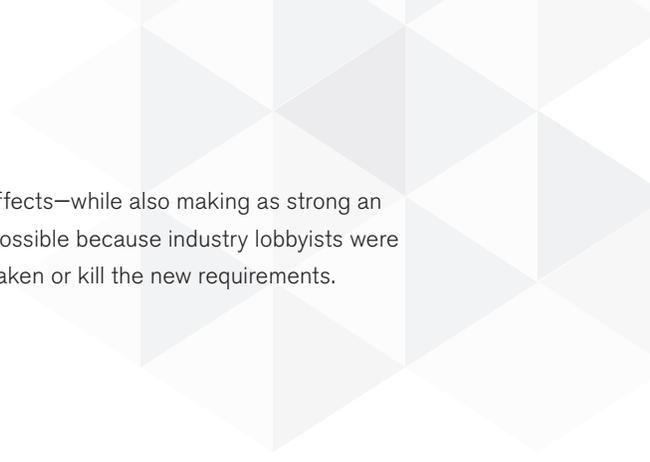
The primary goal of the team pulled together for this task was to publish the final rule in the Federal Register so that the program could start by the statutory June 15 deadline. Rick was the principal author of the standards but still a relative novice to federal work. He was one of the few staff members in the office the day the final rule was to be reviewed by the Under Secretary's Office and sent to the Federal Register. Rick—as the only staff person available to answer questions that day and as one of the writers of the rule—was called to the Office of the Under Secretary. Before signing the package, including the two final rules that were headed to the Federal Register for publication, Under Secretary John Rhinelander seemed to be seeking some assurance from program staff. According to Rick, the Under Secretary did not engage in a great deal of conversation but looked Rick in the face and asked, “Is this thing okay?” Even with the Under Secretary’s limited knowledge of the program, Rick convinced Rhinelander to sign the proposed rule and send it forward for publication in the Federal Register.

After the final rule was published, but before the program was implemented, the Department invited manufactured housing industry leaders to HUD to hear staff provide a briefing about what the program would do and what HUD would require of the manufacturers. Rick led the 2-day discussion as the questions arose: “How will *this* be interpreted?” “How will *this* be enforced?” The questions kept coming and, according to Rick, have been coming ever since. The Manufactured Housing Program Director, Harvey Weiner, turned to Rick to work with program counsel, Bill Jordan, to draft the program regulations for publication as 24 CFR Part 3282.

In the first years of the program, the Department still had a great deal to learn about manufactured housing. From 1976 to 1980, HUD conducted research on structural durability and fire safety—only two of multiple research areas. HUD staff agreed that a great deal about the manufactured housing standards still needed examination and possible enhancement. Some of the research was conducted in coordination with the National Bureau of Standards (now the National Institute of Standards and Technology, or NIST), some with the Southwest Research Center in Texas.

At that time, HUD administered the Federal Disaster Assistance Administration (FDAA, which was the predecessor of the Federal Emergency Management Agency, or FEMA) and the National Flood Insurance Program. After the Johnstown floods of July 1977, Rick was called by the Assistant Secretary for Housing and told, “You need to be in Johnstown this afternoon.” Temporary housing needed to be purchased immediately, and, although the FDAA held most of that responsibility, the Office of Manufactured Housing Programs had a role.

² 42 U.S.C. 5401–5426.



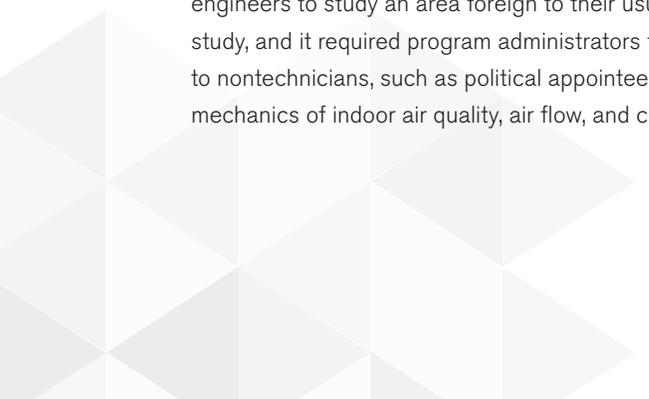
Over time, with his increasing experience and knowledge, Rick has become the primary technical and historical resource on the overall interpretation and enforcement of the standards for manufactured housing. For 40 years, Rick has provided ongoing support and technical assistance to assistant secretaries, program directors, and colleagues. He played a key role in the Department's development of stronger design requirements for homes to be placed in high-wind areas and a key role in developing more recent changes to the standards put forward by the program's advisory council—the Manufactured Housing Consensus Committee—including the congressionally mandated Model Manufactured Home Installation Standards.

and medical effects—while also making as strong an argument as possible because industry lobbyists were working to weaken or kill the new requirements.

The Formaldehyde Issue

Rick Mendlen considers one of the greatest challenges in his work in the manufactured housing program to have been the formaldehyde issue. Formaldehyde, a colorless, flammable, strong-smelling chemical, is used in pressed wood products, such as plywood, that are important for manufactured housing, but it has been proven to have negative health effects. The challenge in the Manufactured Housing Program was for engineers and program administrators to identify and understand the medical distinctions and terminology, such as whether formaldehyde was a carcinogen or an irritant, because it affects different people in different ways. The U.S. Environmental Protection Agency, along with epidemiologists, had conducted quite a bit of research on the issue. In 1984, HUD published the regulation requiring plywood and particleboard panels to be tested in air chambers according to requirements outlined by the American Society for Testing and Materials and not to exceed limits outlined by HUD in its standards.

The formaldehyde issue was a challenge to the industry, because manufacturers were concerned that requiring formaldehyde testing would raise the fears of potential purchasers, reduce sales, and increase the production cost and, therefore, the price of homes. Requiring chemical testing and setting an emissions limit required engineers to study an area foreign to their usual areas of study, and it required program administrators to explain to nontechnicians, such as political appointees, the mechanics of indoor air quality, air flow, and chemical



Profile of Pamela Danner

1977–1979 Program Counsel

1982–1984 Director

2014–present Administrator

Pamela Danner began as an attorney in HUD's Office of General Counsel and served as the program counsel for the Manufactured Housing Program from 1977 to 1979. One of her greatest challenges was serving as the lead attorney and winning the case on egress windows. The question was whether egress windows conformed to the HUD manufactured housing standards in 24 CFR Part 3280. Pamela made a satisfactory case against the Phillips Window Company before the Administrative Law Judge, who required the company to notify owners of manufactured homes with windows manufactured by the Phillips Company that they were allowed free inspection and free replacement of noncompliant egress windows.

After leaving the government for 3 years, Pamela returned as a political appointee from 1982 to 1984, tackling important technical and safety issues, including the publication of the formaldehyde standard and coordination with the Office of Single Family Housing as FHA developed requirements for permanent foundation that would qualify manufactured homes for FHA Title II mortgage insurance. She also coordinated with PD&R and NFPA when stronger fire safety standards were implemented. Pamela spent a great deal of energy working with staff members during the governmentwide reductions in force as they applied to HUD and the Manufactured Housing Program. Using retirements and reassignments, Pamela and others were able to develop a strategy for staff to leave the program or the government without anyone losing his or her job.

Pamela returned to the private sector in 1985 and returned again to HUD's Manufactured Housing Program in 2014. In her private-sector work, Pamela undertook a number of cases related to manufactured housing,

representing clients regarding compliance with the federal manufactured housing standards and procedural and enforcement regulations, and she has brought that experience and perspective back to the program.

Pamela returned to the program as Administrator of the Office of Manufactured Housing Programs in 2014 and, since then, has implemented long-delayed goals of the program, undertaking a full launch of both the installation program (in 13 HUD-administered states) and the dispute resolution program (in 23 HUD-administered states), obtaining contractor services for each.

Profile of Bob Fuller

1985–1994 Chief, Manufactured Housing Compliance Division

In 1985, the Acting Assistant Secretary for Housing asked Robert (Bob) Fuller to move from FHA's Office of Housing, where he served as a senior structural engineer, to the Manufactured Housing Program, where he would continue to use his engineering and management skills as Chief of the Compliance Division. At first, Bob was not interested in the position because, as a professional engineer, he had concerns the job would not be sufficiently challenging. After several weeks and convincing by others, however, he agreed to take the position—and he certainly found the job challenging. In 1990, he became Director of the Manufactured Housing and Construction Standards Division. He said that two of the more notable accomplishments of that period were (1) the creation of the standard regulating levels of formaldehyde outgassing allowed in products used in manufactured housing and (2) increased structural requirements to withstand high winds as had been experienced in Hurricane Hugo in 1989 and Hurricane Andrew in 1992. Regarding the high-wind standards, industry fought the revisions and upgrades to the construction requirements for reasons similar to those they had for fighting the formaldehyde standard—the potential loss of customers due to bad publicity and costlier products.

As frequently occurs with regulatory programs, nearly all decisions and plans of the Manufactured Housing Program were challenged by the industry, represented by two primary trade associations: (1) the Association for Regulatory Reform, which is now the Manufactured Housing Association for Regulatory Reform, and (2) the Manufactured Housing Institute. Every program director has cited these two organizations as the external political pressure groups working to influence program direction and decisions. In 1992, Bob was called into a meeting with Secretary Henry Cisneros and Assistant Secretary Nicholas Retsinas concerning the proposed changes to the standards that would increase the wind resistance of manufactured housing. Secretary Cisneros expressed

his concern about pressures from the industry to weaken the proposed standards. According to Bob, the Secretary made it clear that he wanted HUD to “make these homes as strong as you can” because, where he grew up in San Antonio, Texas, many people he knew had relied on those homes. The “Wind Standard,” as the upgrade to the design and construction requirements for homes in high-wind areas is referred to, became effective in 1994. Bob left the program in the same year and was pleased to say when he retired, “It’s a much safer home.”

Profile of David Nimmer

1986–1999 Director

In 1986, David Nimmer became Director of the Manufactured Housing Program. After a long career at HUD, David had worked in multiple parts of the Department, including the Office of Public and Indian Housing, the Office of Multifamily Housing Programs, the New Communities and Model Cities programs, and the Office of Single Family Housing, and he was interested in joining the Manufactured Housing Program. Assistant Secretary for Housing Tom Demery expressed interest in David's moving to the Director's position, where he served for approximately 12 years. David was Program Director when Hurricane Andrew hit Florida in August 1992. Congressional hearings sent multiple HUD leaders to Congress to explain what HUD would do to minimize future devastation in similar events. David sent program engineers to Florida to examine mobile home parks and manufactured housing located in the storm path and, from their research, to develop "lessons learned" to shape future HUD actions. The most important lesson, David said, was that in the relatively few units that were well anchored to the ground, the chassis and the floor remained, but everything else blew away because the structural connections to the chassis and floor were inadequate. Drawing from the lessons of Hurricane Andrew, program staff developed new wind standards—standards that strengthened support and anchoring to foundation systems, fastening of roof framing to wall framing, and connections of wall to floor. In place of the wind map with two "wind zones" used previously for manufactured housing construction standards, the new wind standards created a third high-wind zone that is shaped by its proximity to the U.S. coastline—primarily from Texas eastward around Florida and up through the Carolinas, although not limited exclusively to states in these areas. While industry bitterly fought HUD's efforts to strengthen its construction requirements to withstand high winds, many manufacturers moved immediately into marketing their "stronger" homes—required by the new

HUD construction standards—as "Better! Stronger! Safer!" The years that have passed have proven that the new standards did produce better, stronger and safer homes. Of course, the matters of program administration were ongoing, which, among other things, included improvements to HUD's oversight of home construction in factories and consumer assistance in the states, changes and improvements to the construction standards, research, and enforcement of the standards when manufacturer or supplier violations of the standards were discovered.

Profile of William Matchneer

2002–2010 Administrator

In 2002, William (Bill) Matchneer became the first and, so far, only politically appointed Administrator of the Office of Manufactured Housing Programs, when the program was reorganized under the Manufactured Housing Improvement Act (Title VI of the American Homeownership and Economic Opportunity Act of 2000).³ The act provides the opportunity for (but does not require) an administrator who can be a noncareer appointment. Bill's previous work at the Occupational Safety and Health Review Commission provided him familiarity with national regulatory program administration required for the Manufactured Housing Program work.

Bill joined the Manufactured Housing Program charged with implementing the new requirements outlined in the 2000 act. Although the act did not create a new Manufactured Housing Program, it did make major changes and additions that required implementation: establishing a new federal advisory committee, the Manufactured Housing Consensus Committee; implementing regular review and updating of the standards; and creating two new programs: (1) standards and inspection of home installation and (2) a new dispute resolution program.

In addition, Bill refocused the enforcement aspect of the program to emphasize quality control (QC), followed by enforcement. This refocusing involved working with manufacturers to maintain the quality of units during manufacturing and ensuring that each manufacturer's QC process was enforced as a condition for the plant to maintain its certification by HUD and continue operations. Bill observed that QC in modern manufacturing is required in the production of nearly any manufactured product. In manufactured housing, the Department had been primarily emphasizing steps different from those historically emphasized in the QC process. The HUD review and approval process was to ensure that a manufacturing

plant passed its initial certification inspection. HUD then counted on the plant to keep its QC manual up to date with its ongoing designs and operations. Manufacturing processes and products change all the time, however, and QC manuals often become out of date. Bill set out to change the program's assumption that the operative QC manual and QC process reflected the designs and construction practice that were operative on the floor. In many instances, HUD's Manufactured Housing Program discovered that when QC manuals, staff training, and overall communication within plants were brought up to date and improved—reflecting current practices, designs, and processes—employees were more satisfied with the quality of their own work. They expressed professional satisfaction that the plant was better organized, was better run, and produced a higher-quality product. Bill then ensured that HUD program staff would work with each manufacturer and its primary inspection agency to review and consistently update QC manuals and practices.

³Public Law 106–569 (December 27, 2000).

Conclusion

These profiles of a handful of key leaders in the federal Manufactured Housing Program provide a portrait of some of the important accomplishments of this HUD program. Congress created and HUD established this program to protect the health and safety of purchasers of a significant component of affordable housing in the United States. The accomplishments of the program are recognized in the multiple assessments and measurements that have been carried out since the program's inception. For example, in fires reported from 2007 to 2011, NFPA measured the number of civilian deaths per 100 fires in manufactured homes constructed before HUD's administration of the program at 3.1 civilian deaths compared with 1.3 civilian deaths per 100 fires since HUD's administration of the program began—a decrease of more than 50 percent.

HUD was the agency that took the lead on recognizing formaldehyde's health impact in housing and housing products and on limiting the amount of formaldehyde and indoor occupancy exposure. Subsequent to HUD's actions to limit the level of formaldehyde that specific products can emit in manufactured homes, the International Agency for Research on Cancer has classified formaldehyde as a human carcinogen. Formaldehyde exposure is also known to cause respiratory problems and sensory irritant responses in humans at various levels of exposure.

The improved integrity of manufactured homes as they perform in high-wind events could be observed during and after many high-wind events after HUD increased its standards requirements for homes installed in high-

wind areas. After the Florida hurricanes in August 2004, a damage assessment of homes affected by Hurricane Charley concluded that manufactured homes produced after HUD's post-1994 enforcement of the high-wind requirements performed significantly better than pre-1994 homes. In addition, homes built before the implementation of the HUD Code in 1976 were much more severely damaged than post-HUD Code units.

The leaders of HUD's Manufactured Housing Program profiled in this report agree: manufactured homes are now safer, more energy efficient, and longer lasting; have remained affordable; and are regulated by a program that has improved consumer satisfaction, securing its role as a fundamental element in America's housing market.

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