WN-8574-HUD

PROGRAM STANDARDS FOR SITE I

Ira S. Lowry
Barbara M. Woodfill
Tiina Repnau

HOUSING ASSISTANCE SUPPLY EXPERIMENT

A WORKING NOTE

This Note was prepared for the DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT, under Contract No. H-1789. It is intended to facilitate communication of preliminary research results. Views or conclusions expressed herein may be tentative and do not represent the official opinion of the sponsoring agency.

Rand
SANTA MONICA, CA. 90406

WN-8574-HUD

PROGRAM STANDARDS FOR SITE I

Ira S. Lowry
Barbara M. Woodfill
Tiina Repnau

January 1974

This Note was prepared for the DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT, under Contract No. H-1789. It is intended to facilitate communication of preliminary research results. Views or conclusions expressed herein may be tentative and do not represent the official opinion of the sponsoring agency.

Rand
SANTA MONICA, CA. 90406

PREFACE

This Working Note was prepared for the Office of Research and Technology, U.S. Department of Housing and Urban Development. It proposes a schedule of R^*s, the standard cost of adequate housing, for households of various sizes, which is to be used in computing allowance payments to households enrolled in the Housing Assistance Supply Experiment in Site I, Brown County, Wisconsin. These costs reflect circumstances at the site in the fall of 1973 and have not been adjusted to account for any changes since that time.

The Note was prepared pursuant to HUD Contract H-1789, as amended in June 1973, and fulfills Task 2.4.

The text was written by Ira S. Lowry and Barbara M. Woodfill. Tiina Repnau prepared weights for individual screener records and programmed many of the calculations. Several other persons contributed to the preparation of this Note. George Genung and Saul Jones drafted the HAO standards for dwelling unit evaluation. David Lewis and Michael Shanley worked with the panel of experts. The estimates of utility costs were made by Timothy Corcoran and Joseph Grundfest. Edward Woo programmed the R^* estimating procedures from the screener, and Larry Day programmed numerous tabulations. The typescript was edited by Charlotte Cox, and Doris Dong prepared the graphics.

CONTENTS

FIGURES

TABLES

I. INTRODUCTION

The experimental housing allowance program to be conducted in Brown County, Wisconsin,* is designed to enable low-income households to afford adequate housing in the private market. It is open to all renters and homeowners whose incomes are below a limit that varies with household size, provided the household meets other requirements relating to its composition and length of residence in Brown County.** Allowance payments will be made to a household only while it is occupying a housing unit whose quality has been certified by the Brown County Housing Allowance Office (HAO), and which contains adequate space for a household of that size.

A participating household is free to choose any unit in Brown County that meets or surpasses the HAO certification standards. It can spend any amount it chooses to obtain such a unit without affecting its eligibility for assistance or its allowance entitlement, except that allowances in excess of actual housing expenses will not be paid. This upper limit on allowance payments will only rarely be binding, inasmuch as allowance entitlement will generally be less than the cost of certifiable housing, the balance being covered by the participant from other sources of income. The payment formula is designed to enable an eligible household of any size or income to occupy a certifiable unit with a housing expenditure that consists of its allowance entitlement plus 25 percent of its adjusted gross income.

Eligibility for assistance and the amount of allowance entitlement are thus linked to the HAO's housing certification standards and to local housing costs. In this Note, we review certification standards to be adopted by the HAO and provide estimates of the typical costs of certifiable units of various sizes in Brown County in late 1973. These estimates, in turn, provide the basis for a proposed

---

*Green Bay Standard Metropolitan Statistical Area.

**Single persons under 62 years of age and certain groupings of unrelated individuals are excluded, and there is a 12-month residency requirement.

schedule of values of R^*, the "standard cost of adequate housing," varying with household size.

This schedule, if approved by HUD, will then determine the income limits for participation in the experimental program and the amount of each participant's allowance entitlement. By the same token, it will determine the maximum size of the program and its maximum costs.* Approval of this schedule is therefore a key action, powerfully affecting the nature of the experimental program, hence of the experiment. In this section, we briefly present the conceptual basis for determining the standard cost of adequate housing, review the accessible sources of data available to assist in this determination, and summarize the methods employed. The remaining sections of this Note amplify these topics and report our conclusions.

DEFINING "ADEQUATE HOUSING"

The concept of "adequate" housing is by nature a social judgment, only partly reinforced by scientific standards. Yet, in order to measure standard cost, it is necessary to fix upon a reasonably precise definition of what is included in the housing package. We distinguish three aspects of the problem, each discussed below.

Housing Quality

Federal legislation offers only the most general guidance as to the minimum standards of housing quality to be ensured by public intervention. The recurrent phrase is "decent, safe, and sanitary housing," most often interpreted to mean "housing that complies with local codes." For the experimental allowance program, Rand is designing a housing certification procedure that entails inspection of the premises for their compliance with standards of health, safety, and comfort based on a national model code, modified to fit conditions in Brown County. Only housing units that pass this inspection will be certified for

*Actual size and program costs will be less than their maxima because not all eligible households will choose to participate. See Ira S. Lowry, Barbara M. Woodfill, and Tiina Repnau, *Program Size and Cost for Site I: New Data From the Screener Survey*, The Rand Corporation, WN-8545-HUD, December 1973, for estimates of participation and costs in Brown County under the program standards described here.

occupancy by program participants. Thus, the HAO's code, described in more detail in Sec. II, defines "adequate" housing quality in the way that is most relevant to determining its standard cost.

However, empirical data on current housing costs in Brown County cannot be related to the detailed quality standards contained in the HAO code. We also explain in Sec. II the proxy tests of minimum quality that we actually employed to estimate values for R^* from the available data.

We also emphasize that the concept of adequate housing relates to the flow of housing services available to the occupant of a housing unit, not merely to the characteristics of the structure. For program purposes, this flow has been defined to include heating, cooking fuel, power for illumination and household appliances, water and sewer service, and trash disposal.

Occupancy Standards

It is established that the value of R^* should vary with household size, essentially because larger households need more space, and larger housing units are more expensive to supply. The way in which space is measured, however, makes a difference.

Local housing codes usually include minimum requirements for floor area or cubic volume per occupant, especially for bedrooms; these requirements presumably reflect health considerations. However, such codes are usually silent on the number of separate rooms that should be provided for households of different sizes, an issue regarded by many housing professionals as an important determinant of domestic comfort (more rooms permit separation of incompatible activities) and personal privacy, even where bodily health is not at issue. In most federally assisted housing programs, occupancy guidelines of the latter type are used, expressed in terms of the number of rooms or bedrooms required for households of different sizes, but allowing flexibility to accommodate variations in household composition among households of a given size.

In Sec. III, we discuss the merits of both types of occupancy standard as the basis for housing certification in the experimental allowance program. Whichever is chosen, we find it feasible to express the results in terms of compatible numbers of rooms and bedrooms for each size of household, allowing a narrow range of values for each household size. Using numbers of rooms and bedrooms as measures of the sizes of housing units in Brown County, we are then able to associate current housing costs with unit size, hence with household size.

Neighborhood Amenities

The quality of the residential environment is inseparable from the location of the residence; neighborhood amenities and locational convenience are often therefore included in the concept of "adequate" housing. However, the allowance program will have no minimum standards for neighborhoods; participants may choose housing anywhere in Brown County, so long as the unit itself meets the HAO quality and occupancy standards.

Because the cost of otherwise identical packages of housing services tends to vary with location, the schedule of values selected for R^* may limit the range of neighborhood choices available to program participants. According to HUD, this schedule should cover the cost of adequate housing "in a modest neighborhood."

This result should emerge without separate calculation of allowances for location rents: Our empirical methods rely on central tendencies in distributions of housing costs without regard for location, and a "modest neighborhood" in Brown County is assumed to be a typical one, neither the best nor the worst. Direct evidence supporting this conclusion comes from a panel of local experts, who estimated current rents for standard housing separately for each of 14 neighborhoods delineated so as to vary in neighborhood amenities.

DEFINING STANDARD COST

In concept, the standard cost of adequate housing is the price at which specified packages of housing services can be supplied by the private market on a continuing basis, in quantities that meet the

program's objective of enabling all assisted households to secure adequate housing. The Supply Experiment is designed to test whether program participants, given financial assistance and counseling, are able to secure such packages through private-market channels. Their ability to do so depends largely on the elasticity of supply in the vicinity of the designated standard cost.

Thus, it should not be assumed that, at the inception of the allowance program, Brown County must contain enough certifiable housing to accommodate all prospective program participants at costs equal to or less than the program values of R^*. One reason for experimenting with housing allowances is evidence (a) that such housing is *not* now available in adequate quantities, because of a shortage of effective demand; and (b) that those low-income households spending less than R^* generally get less than adequate housing by program definitions. The experimental housing allowance program is intended to provide a credible signal to the suppliers of housing services that there is a market for increased output, achievable by improving the existing stock and by raising the level of maintenance and services provided.

ESTIMATING STANDARD COST

Ideally, the standard cost of adequate housing should be estimated from detailed local data on the costs of supplying housing services. Such data will be gathered in the course of the experiment, but are not now available. It is therefore necessary to begin program operations with estimates based on more accessible data. The best available evidence is the price at which housing services are actually supplied in the local market.

For rental housing, such data are available from several sources, described below. They are not available for owner-occupied homes. However, the real costs of housing services to an owner-occupant are approximately the same as those that are incurred by a landlord supplying equivalent services to his tenant, though they may be differently

perceived by the owner-occupant. They include maintenance and operating expenses, repairs, real estate taxes, and the market rate of return on the current capital value of the property. The owner may choose to use his own labor for maintenance and repairs, thereby reducing his out-of-pocket expenses; and he may not perceive that the cost of owning his home includes the foregone income that he might obtain by investing his equity in other ways.

The cost of rental housing to a tenant may be measured in various ways. One common measure is *contract rent*, the amount that a tenant pays his landlord; it covers use and enjoyment of the premises and may or may not include utilities. *Gross rent* is contract rent plus any additional payments made by the tenant for heating or cooking fuel, electric power, water and sewer service, and trash disposal. For our purposes, the appropriate measure is gross rent, including the costs of all utilities used by the tenant, whether or not they are provided by the landlord and included in contract rent.

SOURCES OF DATA FOR BROWN COUNTY

To estimate the standard cost of adequate housing in Brown County, we analyzed data from four distinct sources: consumer budgets compiled in 1969 by the U.S. Bureau of Labor Statistics (BLS); tabulations of the 1970 Census of Population and Housing; tabulations of records from a large sample survey of households in Brown County in September and October, 1973; and reports from a panel of local experts convened in Green Bay in October 1973. Prior to the fall of 1973, we relied on BLS and census data exclusively; this report also reflects the more detailed and more current data from the sample survey and the panel of experts.

Below, we briefly describe the data obtained from each of these sources.

Bureau of Labor Statistics

Periodically, the BLS compiles data on living costs for urban households, including their housing expenses. Three standards of living for a four-person household are defined--Lower, Intermediate, and

Higher--and current costs of each standard are estimated by field surveys of the current prices of the items included in each standard. Data are published separately for each of about sixty Standard Metropolitan Statistical Areas, one of which (the Green Bay, Wisconsin SMSA) consists of Brown County.

Our earlier estimates of the standard cost of adequate housing in Brown County were principally based on the shelter cost component of the BLS Intermediate Budget for 1969. The Intermediate Budget is intended to provide a "modest but adequate" level of living.

The BLS definition of "modest but adequate" housing for an urban family of four is based on standards promulgated by the American Public Health Association and the U.S. Public Housing Administration for sleeping space, essential household equipment, adequate utilities and heat, structural condition, and neighborhood amenities.* In 1969, a sample of rental units meeting these standards for four persons was selected in Brown County by field inspection; the rents paid by tenants of these units are ascertained periodically by telephone survey.

The shelter cost component of the BLS Intermediate Budget for four persons is calculated from these sample data; it is the average gross rent for all units falling in the middle third of the rent distribution for the entire sample. We estimated corresponding gross rents for households of other sizes, using equivalence scales developed by Rand in connection with its analyses of housing costs in New York City.**

1970 Census of Population and Housing

As part of the 1970 census, each household was asked to report its tenure, the size of its housing unit (number of rooms), its bathroom and kitchen facilities, and (for renters only) contract rent; a 20-percent sample of renter households was also asked to report on

---

*Bureau of Labor Statistics, *City Worker's Family Budget*, Bulletin No. 1570-1, Autumn 1966.

**Ira S. Lowry, Joseph S. DeSalvo, and Barbara M. Woodfill, *Rental Housing in New York City*, Vol. II, *The Demand for Shelter*, The New York City-Rand Institute, R-649-NYC, June 1971.

utility costs. No information on the condition of the housing unit was collected. Data for Brown County are available in the form of summary tabulations, but not unit records.

These tabulations show the distribution of gross rents by size of unit for units with and without complete plumbing facilities. Nearly all dwellings classified as housing units by census definitions have "complete" plumbing facilities. Since few other housing quality indicators are reported, and none of these is crosstabulated with rent, it is difficult to determine what parts of the rent distributions refer to "adequate" housing as defined in this report. Nonetheless, the census data provide an April 1970 benchmark for gross rent by size of unit in Brown County.

Screening Survey

In September and October of 1973, Rand's fieldwork subcontractor, Mathematica, Inc., conducted a sample survey of residential properties in Brown County. The survey had two purposes. One was to screen residential properties for inclusion in our baseline survey; another was to collect current data on rents and housing conditions for use in estimating the standard cost of adequate housing.

The sample included owner-occupied homes, but was heavily weighted toward rental properties, including all single-family rental houses, about half of all small (2-4 units) multiple dwellings, and all large (5+ units) multiple dwellings. The survey consisted of brief interviews with occupants of housing units on the sampled properties.

"Field-complete" instruments were returned for 8,674 housing units, and vacancy reports for 518 housing units. A field-complete instrument is one for which an interview was conducted and in which the respondent answered a specified subset of questions. A vacancy report was filed by the interviewer when on-site evidence indicated that the unit was unoccupied.

For this report, we analyzed data from 5,692 field-complete records for occupied rental units. All but a handful of these contained adequate data on the size of the unit and its quality. Gross rent, however, could not be computed for 415 records.

Weighting this sample to obtain population estimates is a complex operation that cannot be completed until all discrepancies in survey records are resolved. Preliminary weights computed for the analyses reported here indicate that our 5,692 field-complete records represent a population of 13,444 rental units, occupied and vacant. The 1970 census reported 12,262 rental units in Brown County.

Panel of Local Experts

The Demand and Administrative Experiments were also faced with the necessity of estimating the standard cost of adequate housing in the localities where these experiments are being conducted. Instead of obtaining pertinent data from field surveys, panels of local experts were assembled to estimate the appropriate values. These panels followed a formal procedure, developed at Rand, for securing consensus among expert judgments; it is known as the Delphi method. The adaptation of the method to this problem was done by Abt Associates.

At HUD's request, a similar panel of 25 local experts was convened in Brown County in October 1973 to provide their estimates of the standard cost of adequate housing, following the procedures that were employed in the other experiments. Under subcontract to Rand, Abt Associates directed these proceedings and tabulated the results.

The panelists included local housing officials, real estate brokers, county welfare officials, and other persons with knowledge of the local housing market. They were asked to estimate gross rents for "adequate standard" units with different numbers of bedrooms in each of 14 delineated neighborhoods. Following the first session, each participant submitted estimates for each of the neighborhoods with which he was familiar. These estimates were compiled; the distributions were shown to all the panelists and were discussed at a second session. Each panelist was then given an opportunity to modify his initial estimates. Finally, the modified estimates were tabulated and analyzed.

METHODS USED TO ESTIMATE R^*

Data from all the sources described above were considered in arriving at our recommended schedule of values for R^*; however, we relied

most heavily on the data from the screening survey, for several reasons:

1. The data were current, reflecting housing market conditions in the fall of 1973. By contrast, the basic BLS field survey was four years old, and the census data were three years old. Only the report of the panel of experts was equally current.
2. The data were systematic, based on a large scientific sample of rental properties throughout Brown County. The BLS sample was small and poorly maintained over time; the census sample on questions required to determine gross rent was about half the size of the screening survey sample. The opinions of the panel of experts do not constitute a scientific sample in the customary sense of the word.
3. Although the amount of information that could be gathered in a brief (15-minute) interview was limited, questions about rent and housing characteristics were explicitly designed to serve the present analysis. Neither BLS data nor the reports of the panel of experts include specific descriptions of particular housing units for which rent data were gathered. Census data were more precise than the screening survey with respect to utility expenditures, but less detailed with respect to housing characteristics.
4. Since Rand had access to the unit records of the screening survey, the data were more manipulable and could be more thoroughly analyzed than those from any of the other sources.

From the answers to questions on the screening survey, we were able to classify each housing unit in the sample as to quality (standard or substandard), size of unit (number of habitable rooms and number of bedrooms), and monthly gross rent (contract rent plus an estimate of the monthly cost of specific utilities for which the tenant paid directly).

Following a plan devised before the screening survey was conducted,* our first step was to classify the housing-unit records by number of rooms (or bedrooms). For each size of unit, we then crosstabulated gross rent and quality, weighting each unit record appropriately. For a given size of unit and for specified gross-rent intervals, we thus obtained an estimate of the distribution of rental units by quality (standard or substandard). As we expected, the percentage of standard units in each rent interval increases with gross rent, but nearly all gross-rent intervals contain both standard and substandard units.

To fix a standard cost for adequate housing of a given number of rooms, we needed a decision rule reflecting the underlying intent of the analysis. We wanted to select the lowest gross rent at which units meeting our standards could be profitably supplied to the market. As noted earlier, this is not the same as ensuring that the existing inventory contains a supply of adequate units sufficient to accommodate all allowance recipients at or below the standard cost. Rather, we sought evidence that an efficient landlord would be willing to provide adequate housing at or below our standard cost if he thought there was a market for it. In an allowance-stimulated market, many units now failing our test might be improved to program standards.

We concluded, therefore, that the appropriate test is not the *number* of adequate units below a given level of gross rent, but the *proportion* of units in each rent interval that are classified as adequate. The exact criterion is necessarily arbitrary. Before examining the data, we proposed a lower bound of 50 percent and an upper bound of 75 percent, with the precise figure to be selected after reviewing the data. Formally, then, we defined the standard cost of adequate housing with a given number of rooms (or bedrooms) as *the midpoint of the lowest gross-rent interval within which X percent of all rental units of that size meet our quality standard, with the value of X set somewhere between 50 and 75 percent.*

---

*See David B. Lewis and Ira S. Lowry, *Estimating the Standard Cost of Adequate Housing*, The Rand Corporation, WN-8105-HUD, March 1973.

This step established a range of gross rents for units of standard quality for each given number of rooms or bedrooms. To translate these values into standard costs of adequate housing for specific households, it was also necessary to link unit sizes with household sizes. We developed explicit occupancy standards, as explained above. Because space requirements for households of a given size vary with the type of housing and with household composition, these standards do not provide a one-to-one correspondence between unit size and household size; rather, they yield ranges that translate into ranges of standard cost.

With these two sets of ranges, we thus established boundaries for the standard cost of adequate housing for households of specified sizes. The next steps were to compare the data from other sources with the screening survey data and to test the feasibility of alternative values for R^*, in terms of the adjustments in the Brown County housing stock that would be required to enable program participants to obtain adequate housing at gross rents of R^* or less. Playing these considerations back and forth, we arrived at specific values for R^* by size of household, values we believe to be reasonable in the light of program objectives and current market conditions in Brown County.

The standards of housing quality and occupancy that we selected are described in Secs. II and III, respectively, In Sec. IV we present our analysis of the local costs of standard housing and propose a schedule of R^*s. The last section presents the results of the feasibility tests we performed on our tentative R^*s.

II. STANDARDS OF HOUSING QUALITY

Since the schedule of the standard cost of adequate housing will be used to determine the amount of assistance that program participants need to afford housing certified by the Housing Allowance Office (HAO), it is obvious that the quality standards we use in setting standard costs should reflect the certification standards to be used by the HAO.

In this section, we summarize the HAO certification standards that have been submitted to HUD for approval as part of the HAO Handbook and describe the related measures of housing quality that were used in analysis of rent data for Brown County.

HAO HOUSING CERTIFICATION STANDARDS

Each enrollee in the experimental allowance program must indicate to the HAO the housing unit he proposes to occupy--either his present residence, or some other. HAO inspectors will evaluate the unit to determine whether it meets program standards. If it does not, the enrollee must either arrange for its deficiencies to be corrected or select another unit. No allowance payments will be made to occupants of uncertified units.

The standards to be used by HAO inspectors in evaluating these units were designed with four objectives in mind:

1. The standards should ensure that allowance recipients will live only in safe, sanitary, and decent housing.
2. The standards should be consistent with existing housing codes in Brown County.
3. Conformance of a housing unit with the standard should be determinable by an on-site inspection requiring an average of 30 minutes or less.
4. The standards and their relevance to housing quality should be readily understandable by the HAO housing evaluators, the program participants, and their actual or prospective landlords.

HAO certification standards were developed by the following procedure: First, municipal housing codes of the principal jurisdictions

in Brown County were reviewed and found to be very similar both in language and content. Next, these codes were compared with municipal codes for other places with similar climates, with various national model codes, such as the Building Official's Code of America (BOCA), the Uniform Code of the International Conference of Building Officials, standards promulgated by the American Public Health Association and the U.S. Public Health Service, and with model rehabilitation standards promulgated by HUD.* These different codes vary more in form and detail than in functional requirements.

The BOCA format, with minor modifications, was selected by the HAO. It has the advantages of being readily translatable to an evaluation form (it uses performance rather than design standards); its framework separates the exterior from the interior requirements; it does not concern itself with legal or administrative issues, such as the locus of responsibility for maintenance and repairs; and it can be easily adapted to reflect provisions of local codes and special conditions in a local housing market.

A draft evaluation standard, reflecting details of the Brown County codes, was then compared with the standards used in the Demand Experiment, and some further modifications were made for the sake of consistency. As a final step, the draft was reviewed with Brown County code officials; recently enacted changes in the Green Bay city housing code prompted some upgrading of the draft HAO standards.

The draft submitted to HUD as part of the HAO Handbook is reproduced in Appendix A of this Note. It contains three broad classes of requirements, covering (a) the physical environment of the structure and its exterior and interior condition; (b) the space, facilities, and equipment of the individual housing unit and their maintenance; and (c) protection against fire and other hazards. These are summarized below. Special requirements are included for rooming houses, nursing homes, and mobile homes.

---

*The quality standards of the APHA-PHS Recommended Housing Maintenance and Occupancy Ordinance (1967); the BOCA Basic Housing Code (1964); The ICBO Uniform Building Code (1967); and the Southern Standard Housing Code (1965) are summarized in Eric W. Mood, Barnet Lieberman, and Oscar Sutermeister, *Housing Code Standards*, Research Report No. 19, 1969, prepared for the National Commission on Urban Problems. Provisions of nine state and 16 local codes are also reviewed there.

The HAO requirements for each residential property include minimum standards for sanitation, grading and drainage, and general condition of accessory structures and fences; they also require that the grounds be maintained free of noxious plants, vermin, or other dangers to health or safety. For the exterior of the structure, acceptable conditions are specified for the foundation, walls, roof, stairs, porches, windows, screens, and doors. The interior areas are required to be dry, have sound structural members, safe stairs and railings, waterproof floors in kitchens and bathrooms, and generally be maintained in a clean and sanitary condition. Further, all partitions, walls, floors, and ceilings must be capable of affording privacy and must be kept in good repair.

The space and equipment requirements cover four topics: the basic facilities that must be present; their proper installation and maintenance; light and ventilation of the unit; and occupancy standards. To be certifiable, a unit must contain complete private bath and kitchen facilities connected to a sanitary water supply and an approved sewage disposal system. Standards are set for the provision of both hot water and space heat, and for the storage and disposal of rubbish and garbage.

Requirements for light and ventilation include natural lighting in habitable rooms, artificial or natural lighting in corridors, halls, and nonhabitable work space, and electrical outlets and lighting fixtures in all rooms. Habitable rooms are required to have an openable window or other ventilating device; bathrooms may be windowless if adequately ventilated.

Occupancy standards are expressed in terms of minimum floor space per occupant for the unit as a whole and for bedrooms; these are discussed in Sec. III. There are also standards for the configuration of rooms in terms of access to bedrooms and bathrooms, and in terms of separation of housing from commercial facilities on the premises.

Standards for protection against fire and other hazards relate to the storage and handling of combustible materials; for rooming houses, nursing homes, and mobile homes, there are requirements for fire exits. Finally, the use of lead-based paints is restricted.

if fuel used is other than electricity, a flue, vent, or chimney to remove smoke, fumes, and combustion gases.

5. Exits: Two exits from the floor on which the unit is located that lead to safe open space at ground level.
6. Ventilation: All habitable rooms must have at least one openable window or skylight.*

THE QUALITY OF RENTAL HOUSING UNITS IN BROWN COUNTY

Usable responses to housing quality questions on the screening survey were obtained for 5,685 occupied rental housing units. From this sample, we have estimated the percentage of all rental units in Brown County that would pass or fail each test. The results are shown in Table 1.

Three conditions caused most of the failures: inadequate fire exits (9.9 percent); inadequate electrical service, either in bathrooms or in other habitable rooms (8.6 and 6.9 percent, respectively); and unheated bathrooms (4.9 percent).** The various deficiencies did not overlap as much as one might expect: We estimate that 26.6 percent of all rental units in Brown County have *at least* one of these deficiencies (other than one or more unventilated rooms); if no unit had *more than* one deficiency, only 36.3 percent would have failed the test.

As shown in the first column of the table, we included all these items in Standard A. Upon reviewing the data and discovering that 26.6 percent of all units failed this standard, we reexamined the criteria, testing alternatives. Standard B excludes the most frequently deficient conditions, inadequate fire exits and

*A housing unit that included rooms that failed this test was not treated as substandard; that room, however, was not counted in measuring size.

**The screening survey found only 2.5 percent of all rental units lacking some or all plumbing facilities, in contrast to the 1970 census, which reported that 8.4 percent of all rental units were deficient in this respect. The definitions of complete plumbing facilities were identical in the two surveys, but the definition of a housing unit differed in a way that may account for part of the discrepancy. Our screening survey records do not separately enumerate rented rooms in single-family homes or rooming houses, many of which would have been classified by census standards as housing units lacking complete plumbing facilities. Our baseline surveys will clarify the housing circumstances of such single-room occupants.

Table 1

DISTRIBUTION OF RENTAL HOUSING UNITS BY CONFORMANCE TO SPECIFIC QUALITY REQUIREMENTS: BROWN COUNTY, WISCONSIN, 1973

Items Included in Standard			Quality Requirement	Percent of All Rental Units		
A	B	C		Pass	Fail	Total
X	X	X	Complete plumbing facilities	98.1	1.9	100.0
X	X	X	If complete, plumbing facilities not shared	99.4	0.6	100.0
X	X	X	Complete kitchen facilities	99.1	0.9	100.0
X	X	X	If complete, kitchen facilities not shared	99.8	0.2	100.0
X		X	All habitable rooms have electric switch and outlet	93.1	6.9	100.0
X		X	One or more bathrooms have electric switch and outlet	91.4	8.6	100.0
X	X	X	Heat in kitchen, living room, and dining room	97.9	2.2	100.0
X	X	X	Heat in one or more bathrooms	95.1	4.9	100.0
X	X	X	Vents for heating equipment	99.8	0.2	100.0
X			Two or more exits	90.1	9.9	100.0
X	X	X	One or more ventilated rooms	99.9	0.1	100.0
(a)	*(a)*	*(a)*	No unventilated rooms	92.5	7.5	100.0

SOURCE: Tabulations by HASE staff of data from the Site I Screening Survey.

NOTE: Percentage distributions are based on 5,685 unit records with usable responses on all items listed above. Prior to tabulation, unit records were weighted to reflect basic stratum sampling rates and field completion rates.

[a]Unventilated rooms are excluded from measures of unit size.

inadequate electrical service. By this standard, only 8.7 percent of all units failed. Finally, we considered an intermediate Standard C, which drops the requirement for two or more fire exits but retains the requirements for electrical service both in bathrooms and other habitable rooms. We found that 20.1 percent of all units failed Standard C. The results of each of these composite tests are shown in Table 2.

The HAO certification standards were being drafted concurrently with this analysis. Comparing our list of criteria to those proposed by our housing evaluation consultants, we found that even though a requirement for two or more exits may be desirable from the standpoint of fire safety, it is not a requirement in Brown County for units in structures containing fewer than four housing units; nor is it included in national model codes or required by national fire insurance companies. Our consultants recommended against including this requirement in the HAO certification standard, except for rooming houses, nursing homes, and mobile homes. In their view, the problem of fire exits is insignificant for one-story units at ground level, and modification of otherwise adequate small multiple dwellings to meet this requirement would be prohibitively expensive.

The electrical service requirements, on the other hand, are included in the codes of local jurisdictions in Brown County, as well as in national model codes. Our consultants recommended that they also be included in the HAO certification standard.

Following these recommendations, we adopted Standard C as the test of housing quality in our analysis of rent data from the screening survey. As shown in Table 2, we estimate that 20 percent of all rental units in Brown County would fail to qualify under this standard.

CONCLUSIONS

In principle, a participant in the experimental housing allowance program in Brown County should be able to obtain certifiable housing in the private market at a cost no greater than the scheduled value of R^*

Table 2

DISTRIBUTION OF RENTAL HOUSING UNITS BY QUALITY OF UNIT UNDER ALTERNATIVE STANDARDS: BROWN COUNTY, WISCONSIN, 1973

Quality Standard	Percent of All Rental Units		
	Pass	Fail	Total
A	73.4	26.6	100.0
B	91.3	8.7	100.0
C	79.9	20.1	100.0

SOURCE: Tabulations by HASE staff of data from the Site I Screening Survey.

NOTE: Items included in each quality standard are listed in Table 1. Percentage distributions are based on 5,685 unit records with usable responses on items included in the quality standards.

for his household. Consequently, the definition of "adequate" housing used in estimating its standard cost (R^*) should be consistent with the certification standards used by the HAO.

The HAO standards are quite detailed, setting requirements for the physical environment of the structure and for its exterior and interior condition; the space, facilities, and equipment of the individual housing unit and their maintenance; and protection provided against fire and other hazards. A careful inspection of the premises will be required to determine whether a particular housing unit complies with all requirements.

Existing records for Brown County that relate housing characteristics to housing costs include only minimal data on the features and conditions covered by the HAO standard. Of these sources, the 1973 screening survey conducted as part of the Supply Experiment contains the most extensive information of this kind, reporting on a selected subset of HAO requirements for each housing unit surveyed.

From responses to questions on the screening survey, we are able to classify each housing unit as either "standard" or "substandard," using criteria that are central to, but by no means exhaust, HAO certification requirements. We believe, though we cannot demonstrate, that nearly all screened housing units qualifying under our Standard C would either pass HAO inspection or could pass after trivial repairs or improvements; and that nearly all units failing to qualify under our Standard C would require significant expenditures to bring them up to HAO standards.

In Sec. IV, we use Standard C to separate standard from substandard housing in order to estimate the standard cost of adequate housing. However, we must first consider another aspect of housing adequacy--the size of the unit in relation to the number of its occupants. This is the topic of Sec. III.

III. OCCUPANCY STANDARDS

The housing quality standards described in Sec. II are independent of the size of the housing unit and the characteristics of its occupants. For this reason, they are incomplete as tests of the adequacy of a housing unit for a specific household. In addition to such quality standards, we also require occupancy standards, which relate the size of the housing unit to the size of the occupying household, to determine whether the housing is "adequate."

Occupancy standards will be applied by the HAO in certifying units for program participants; the larger the household, the more space it will require. Since the cost of supplying housing also increases with size of unit, the occupancy standards used in the experimental allowance program should be taken into account in setting the standard cost of adequate housing.

The argument above is clear in principle, but its empirical application entails a host of difficulties. The first problem is selecting a suitable measure of the size of a housing unit--one that relates intelligibly to sanitation, decency, and comfort, yet can be economically measured. The second problem is selecting specific standards in terms of this measure, applicable to *classes* of households, such as those with a given number of members or those with a specific composition by age, sex, or relationship. The third problem is to measure the variation in housing costs with size of unit, as "size" is defined for the occupancy standards.

In this section, we review the occupancy standards in general use, describe those proposed by the HAO, and relate these standards to the measures of unit size available for estimating a schedule of values for R^*. We also show how the present housing stock of Brown County is distributed by size of unit and size of household.

OCCUPANCY STANDARDS IN GENERAL USE

At least some elements of the housing quality standards discussed in Sec. II have a clear and demonstrable connection with specific

threats to the health and safety of the tenants. For occupancy standards, the case is less clear. Overcrowding, measured by number of square or cubic feet per person, may increase the communication of disease, although there is little scientific evidence that it does so except at extreme densities. A more sensible view, we think, is that overcrowding is uncomfortable; the activities of individual household members--e.g., sleeping or watching television--interfere with each other when they must be conducted in a small space, leading to domestic tensions. This kind of interference, however, may have as much to do with the lack of separate rooms with closable doors as with floor space. Preferences or psychological needs for personal privacy also reflect more clearly in requirements for separate rooms than in requirements for space per se.

Where science is lacking, conventional wisdom is our only guide. Most municipal housing codes, presumably concerned with sanitation rather than comfort or convenience, express occupancy standards in terms of square feet of habitable floor space or cubic feet of air space per occupant. The standards of housing assistance programs, on the other hand, are generally in terms of number of rooms or bedrooms per person, and often take into account household composition by age, sex, and relationship.

In some model housing codes, the requirement for total habitable floor space is 150 square feet for the first person and 100 square feet for each additional person; in others, the space for each occupant beyond the fourth is reduced to 75 square feet.* The minimum number of square feet required in rooms used for sleeping varies with the number of persons to occupy the room and, in some codes, with their ages. The model codes cited all require a minimum of 70 square feet of habitable floor space in a bedroom occupied by one person; but their requirements differ substantially for occupancy by two or three persons.

The Green Bay municipal housing code follows these models, requiring at least 150 square feet of habitable floor space for the

*Eric W. Mood, et al., op. cit.

first occupant of a housing unit and another 100 square feet for each additional occupant. Sleeping rooms must have 70 square feet for the first occupant and another 60 square feet for each additional occupant; these requirements are halved for children under 12 years of age. There is also an implicit standard for cubic feet of air space, inasmuch as all habitable rooms must have a clear minimum ceiling height of seven feet.

One model code, promulgated by the American Public Health Association, provides space standards as described above, but also recommends that the number of occupants should not exceed twice the number of habitable rooms.* The Community Council of New York City bases its "low-to-moderate" family budget for housing on an occupancy standard of one room plus one room per person for families of one to four persons, and one room per person for families with five or six persons.**

For federally subsidized public housing, HUD provides general guidelines that are translated into specific occupancy standards by each local housing authority. These usually specify minimum and maximum numbers of bedrooms by size of household, the range allowing for variations in household composition. The standards set by the Housing Authority of San Diego County, shown in Table 3, are typical. Such housing units usually include two habitable rooms (living room and kitchen-dining room) in addition to the bedrooms; the implied total room counts are also shown in the table.

The standards shown in Table 3 allow a considerable range of unit sizes for most household sizes, particularly for smaller households. In part, this range reflects allowances for differences in household composition. For instance, a three-person household could consist of a married couple and an infant child, all of whom could sleep in one bedroom; or such a household could consist of an adult female with two teenage children of opposite sexes, in which case three bedrooms might

*American Public Health Association-Public Health Service, *Housing: Basic Health Principles and Recommended Ordinance*, APHA Inc., 1971.

**Budget Standard Service, Research Department, Community Council of Greater New York, *A Family Budget Standard*, 1963.

Table 3

TYPICAL OCCUPANCY STANDARDS FOR FEDERAL PUBLIC HOUSING PROJECTS

Number of Persons	Number of Bedrooms		Equivalent Number of Rooms[a]	
	Minimum	Maximum	Minimum	Maximum
1	0	1	2	3
2	0	2	2	4
3	1	3	3	5
4	2	3	4	5
5	2	3	4	5
6	3	4	5	6
7	3	4	5	6
8	4	5	6	7
9	4	5	6	7
10	5	6	7	8

SOURCE: Housing Authority of San Diego County, California.

[a]Estimated by HASE staff.

be desirable. The range also reflects in part the difficulty of matching applicant families to available units.

There is, of course, no precise translation from standards expressed in terms of floor space to standards expressed in terms of number of rooms or bedrooms. But in housing designed for occupants of low or moderate incomes, bedrooms are seldom smaller than 8 by 10 feet or larger than 12 by 12 feet (80 to 144 square feet); the living room is likely to contain 140 to 180 square feet, and the kitchen and dining room about 130 square feet.* Overall, the model code standards described above (150 square feet for the first occupant plus 100 each for the second, third, and fourth, and 75 square feet for each person in addition to the fourth) are roughly equivalent to the Community Council standard described above (one room plus one room per person up to four persons; one room per person for five or six persons).

HAO CERTIFICATION STANDARDS

While the HASE staff had no difficulty in reaching a consensus on the housing quality standards the HAO should promulgate, such a consensus is so far lacking with respect to occupancy standards. The issues are less matters of principle than of administrative feasibility, and their resolution has been hampered by deadline pressures of two concurrent enterprises: preparation of the HAO Handbook and the exercise reported here.

Our housing-evaluation consultants have recommended occupancy standards based on those in the Green Bay municipal housing code, expressed in terms of minimum square footage of habitable space and bedroom space per person. As detailed in Appendix A, the proposed HAO standards require 150 square feet of habitable space for the first occupant of a unit and 100 square feet for each additional occupant; however, they also provide that no more than two persons can occupy a one-room housing unit, regardless of floor space. They also include standards for bedrooms: at least 70 square feet for one

*Cf. HUD, *Minimum Property Standards for Multifamily Housing*, FHA2600, 1969; and HUD, *Minimum Property Standards for Low-Cost Housing*, FHA451511, 1968.

occupant and another 60 square feet for each additional occupant; these requirements are reduced by one-half for persons under 12 years of age. Only one bath and toilet are required, regardless of household size. The rooms must be arranged so that each bedroom has separate access both to a bathroom and to a common area of the unit.

For mobile homes, standards for habitable space are reduced to 70 square feet for each occupant after the first, and no standards are imposed on bedroom sizes. For rooming houses and nursing homes, there are additional requirements as to the number of persons per toilet, lavatory basin, and bath.

Appendix B contains an alternative set of standards drafted by one of the authors of this Note as guidelines for housing certification. Here, the emphasis is on the separation of incompatible domestic activities as a function of the size and composition of the household, rather than on square feet of floor space. Separate guidelines are suggested for occupancy of conventional housing units, rooming houses or nursing homes, and mobile homes. The guidelines are meant to be applied flexibly, taking into consideration any unusual characteristics of the housing unit or the household, and accepting the program participant's preferences in marginal cases. Undoubtedly, they would be more cumbersome to administer than the simpler standards proposed in Appendix A; it can be argued, however, that they offer better guidance to certification decisions that would support program purposes.

They have another advantage in that they can be directly interpreted in terms of room and bedroom counts, the measures of size associated with our housing cost data. Table 4 shows the minimum numbers of rooms and bedrooms implied by these standards for households of different sizes; the ranges given for each household size reflect plausible variations in household composition.*

*Unlike Table 3, which gives occupancy standards for public housing tenants, Table 4 does not show maximum numbers of rooms or bedrooms. In a public housing project, excess space consumption adds to public cost; under HASE it does not, so such maxima are not required.

Table 4

OCCUPANCY STANDARDS FOR HOUSING CERTIFICATION, BY SIZE OF HOUSEHOLD

Number of Persons	Minimum Number of Rooms	Minimum Number of Bedrooms
1	1-2	0-1
2	2-3	1-2
3	3-4	1-2
4	4-5	2-3
5	5	3-4
6	5-6	3-4
7	6	3-4
8	6-7	3-5
9	7	3-5
10	7-8	4-5

SOURCE: Proposed by HASE staff.

NOTE: Minimum number of rooms or bedrooms vary for a given number of persons, depending on age, sex, and relationship. See detailed guidelines in Appendix B.

OCCUPANCY PATTERNS IN BROWN COUNTY

The occupancy standards described above are normative; they do not necessarily reflect the way most people actually live. It is useful therefore to measure the gap between the norms and reality, by comparing them with actual occupancy patterns.

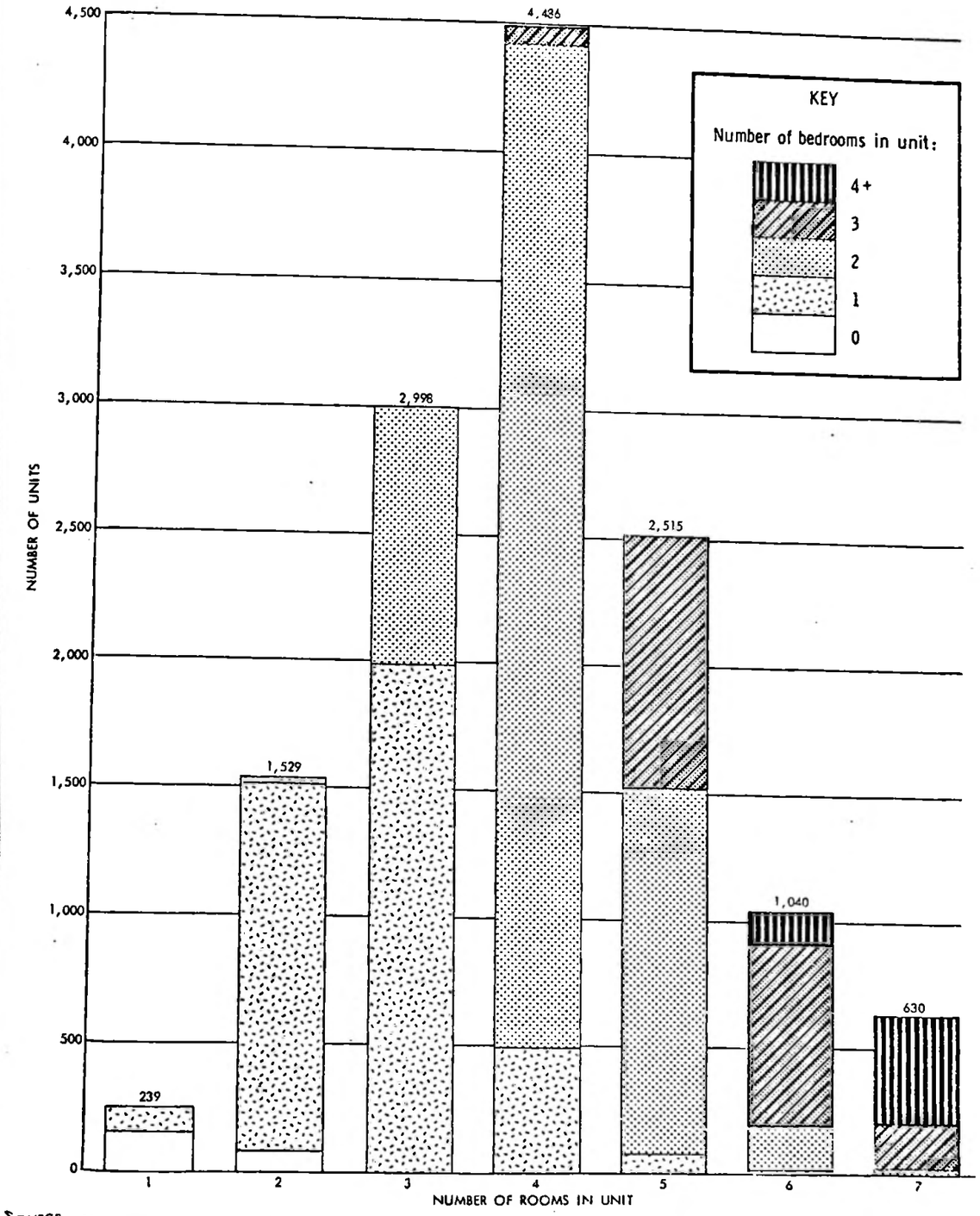
Our two sources of systematic data on housing and population characteristics in Brown County are the 1970 census and our 1973 screening survey. Neither collected any information on the amount of floor space in Brown County's housing units; both report numbers of rooms and bedrooms. Thus, any analysis of existing occupancy patterns in Brown County must rely on room or bedroom counts to measure the sizes of housing units.

Figure 1 is based on data from the 1973 screening survey. It shows the distribution of rental housing units (both apartments and single-family houses) in Brown County by number of ventilated rooms.* For units of each size, the figure also shows the distribution by number of bedrooms.

Four-room units are the most common, accounting for fully one-third of the rental stock. Units of three to five rooms together account for almost three-quarters of the total; the remaining quarter is nearly equally divided between smaller and larger units. Single-room units are rare in any case, but their number is understated in the figure, which does not separately account for single, rented rooms in owner-occupied homes or in rooming houses.

Not surprisingly, the number of bedrooms tends to increase with the number of rooms. Units with one bedroom usually have either two or three rooms altogether; units with two bedrooms usually have three to five rooms, four rooms being the most common case. Most three-bedroom units have either five or six rooms, and most four-bedroom units have seven rooms. About 30 percent of all rental units have one bedroom, and about 45 percent have two.

*As in the 1970 census, and in the occupancy standards discussed above, the room count includes full kitchens but excludes bathrooms, halls, foyers, unfinished attics and basements, and unenclosed porches. A "ventilated" room is one with an openable window or skylight, which is a usual code requirement for "habitable" rooms.



SOURCE: 1973 Screening Survey records.

Fig. 1--Distribution of rental housing units by numbers of rooms and bedrooms: Brown County, Wisconsin, 1973.

Comparing Fig. 1 with Table 4, it is clear that the room and bedroom counts associated in the table reflect the prevailing arrangements of interior space in the rental stock. Thus, for a two-person household, the table associates two or three rooms with one or two bedrooms. In the figure, we see that two-room units nearly all have one bedroom, and that three-room units all have either one or two bedrooms.

Tables 5 and 6 show how Brown County renter households of each size are distributed by size of unit. Table 5 measures size by number of ventilated rooms, Table 6, by number of bedrooms. By either measure, there are strong central tendencies in the distributions, unit size increasing with household size.

Comparing Table 5 with Table 4, it is evident that small households in Brown County exceed our proposed occupancy standards more often than do large ones. Thus, nearly 73 percent of all one-person renter households in Brown County occupy units of three or more rooms, as compared to our standard of one or two rooms. About 43 percent of all three-person renter households occupy units of five or more rooms, as compared to our standard of three or four rooms. About 22 percent of all six-person renter households occupy seven or more rooms, as compared to our standard of five or six rooms. And only among the large households do significant proportions live in units that are clearly too small by our standards.

Comparing Table 6 with Table 4, we find that renter households in Brown County generally follow our proposed standards for numbers of bedrooms. The principal exceptions are one-person households, 34 percent of whom occupy units with more than the one bedroom we allow; and five-person households, 22 percent of whom manage with only two bedrooms, as against our standard of three to four bedrooms.

CONCLUSIONS

In estimating the standard cost of adequate housing for program purposes, it is necessary to construct a schedule relating specific values of R^* to particular classes of households. In principle, a household spending the amount scheduled for its class should be able

Table 5

PERCENTAGE DISTRIBUTION OF RENTER HOUSEHOLDS BY NUMBER OF HABITABLE ROOMS, BY SIZE OF HOUSEHOLD: BROWN COUNTY, WISCONSIN, 1973

Number of Persons[a]	Percentage Distribution by Number of Rooms[b]							Total
	1	2	3	4	5	6	7+	
1	4.8	22.2	36.0	22.7	9.2	1.8	3.1	100.0
2	1.3	10.2	23.8	41.5	17.0	4.2	2.0	100.0
3	0.3	2.5	12.3	41.8	28.8	8.3	5.9	100.0
4	0.2	0.5	4.7	39.6	30.1	18.1	6.5	100.0
5	0.0	0.0	2.4	14.8	46.8	25.1	10.6	100.0
6	0.0	0.0	0.0	13.3	26.6	36.0	22.4	100.0
7+	0.0	0.0	0.0	5.8	25.8	30.3	38.1	100.0
All households	1.7	9.7	20.7	34.3	20.5	8.0	5.0	100.0

SOURCE: Preliminary tabulations by HASE staff of data from the Site I Screening Survey.

NOTE: Percentages may not add exactly to 100.0 because of rounding.

[a] Roomers and boarders are counted here as members of the household with whom they reside.

[b] Excludes bathrooms, halls, foyers, unfinished attics and basements, unenclosed porches, and rooms lacking an openable window or skylight.

Table 6

PERCENTAGE DISTRIBUTION OF RENTER HOUSEHOLDS BY NUMBER OF BEDROOMS, BY SIZE OF HOUSEHOLD: BROWN COUNTY, WISCONSIN, 1973

Number of Persons[a]	Percentage Distribution by Number of Bedrooms[b]						Total
	0	1	2	3	4	5+	
1	5.4	60.9	26.9	3.6	3.2	0.0	100.0
2	0.6	33.0	58.5	6.7	1.1	0.1	100.0
3	0.3	7.5	69.6	17.9	3.2	1.6	100.0
4	0.2	1.4	55.9	36.8	5.1	0.6	100.0
5	0.0	0.9	22.2	68.1	5.8	2.9	100.0
6	0.0	0.5	13.4	62.5	13.1	10.5	100.0
7+	0.0	0.0	7.6	45.9	32.5	14.0	100.0
All households	1.6	28.8	49.1	16.0	3.4	1.1	100.0

SOURCE: Preliminary tabulations by HASE staff of data from the Site I Screening Survey.

NOTE: Percentages may not add exactly to 100.0 because of rounding.

[a]Roomers and boarders are counted here as members of the household with whom they reside.

[b]Excludes bedrooms without an openable window or skylight.

to afford certifiable housing. To ensure that the program meets its objectives of housing improvement for low-income families, certification standards must relate to the minimum size of the unit as well as to its quality.

In matching particular housing units to particular households, case-by-case decisions must be made. Guidelines need not be detailed, but they must be flexible enough to do justice to the enormous variety of possible configurations of housing units and of households. Two approaches have been suggested in this section. One entails rigid space standards in terms of square feet per person, with minimum sizes for sleeping rooms that vary with the ages of the occupants. The other entails more flexible guidelines, which emphasize the number and type of rooms relative to household size and composition.

Whichever is eventually chosen, it seems clear to us that the schedule of values for R^* should be kept simple, varying only with number of persons in a household and disregarding their distribution by age, sex, or relationship. Enrolled households that differ in these latter respects will undoubtedly (and correctly) perceive their housing needs differently; but even with a fixed R^*, the program offers them the latitude to select housing according to their needs. The housing market offers a variety of accommodations at any given price; and for units of a given overall size, it offers a variety of room configurations and special features over a range of prices in the vicinity of R^*. Once a household has nominated a unit, the HAO is obliged to make sure it is adequate by comparing housing and household characteristics--in other words, to ensure that the housing allowance is not being applied contrary to program purposes.

Whether square feet or number of rooms or number of bedrooms is the final unit of account for certifying unit size, the standards that emerge will translate approximately to those contained in Table 4, above. That table specifies for each size of household a range of housing unit sizes, expressed compatibly (as we have shown) in number of rooms and number of bedrooms. These units of space measurement are the only ones our data enable us to associate with housing costs in estimating R^*. In the next section, we undertake that step.

IV. ESTIMATING STANDARD COSTS

Having explained our proposed measures of adequate housing quality and adequate space for different sizes of households, we now turn to the next step: estimating the cost at which adequate housing could currently be supplied to households in Brown County.

As indicated in the Introduction, our schedule of standard costs, when approved by HUD, will serve as one basis for calculating how much assistance each program participant needs to obtain housing that meets program objectives; the other basis is the income of the participating household. In concept, the standard cost of adequate housing is the price at which packages of housing services that meet the specifications described in Secs. II and III can be supplied by the private market on a continuing basis, in quantities that enable all program participants to secure adequate housing.

Ideally, the standard cost of adequate housing should be estimated from detailed local data on the costs of supplying housing services. Such data will be gathered in the course of the experiment but are not now available. Therefore, we propose to begin program operations with estimates based on the prices at which housing services are actually supplied in the local market.

Although the experimental allowance program will serve both renters and homeowners, market prices for flows of housing services (as distinguished from the capital cost of housing units) can be obtained much more easily for rental properties than for owner-occupied homes. Our proposed measure of standard cost is therefore *gross rent*, the amount a tenant pays his landlord, plus any additional payments he makes directly for utilities such as heating or cooking fuel, electric power, water or sewer service, or trash disposal.

Below, we review data on gross rents for rental housing in Brown County that were gathered in our screening survey, conducted there in September and October, 1973. The first step is to estimate the minimum gross rent at which housing units of a given size seem generally

to meet our quality standards. The second step is to compare these results with estimates of standard cost that were compiled from the opinions of a panel of local experts convened in October 1973. These data all relate gross rents to size of *unit*; for program purposes, however, the schedule of standard costs must relate to size of *household*. We therefore use the occupancy standards proposed in Sec. III to relate unit sizes to household sizes, thus arriving finally at estimates of standard cost by size of household.

RENT DATA IN THE SCREENING SURVEY

In the screening survey, information on gross rent was sought in as much detail as the necessarily brief interview would allow. Each respondent in a rented housing unit was asked to report his monthly contract rent--the amount paid to the landlord. He was also asked a series of questions designed to discover if this payment was less than the full market rent for the property, either because of a special relationship between landlord and tenant, or because the tenant made repairs or performed services for the landlord. In such special circumstances, the respondent was asked to estimate the full market rent of his unit.

In addition to contract rent, many tenants pay for some of their utilities. Within a local housing market, how landlords and tenants divide utility costs is variable. Moreover, the cost of most utilities varies from month to month, often with sharp seasonal fluctuations. Tenants do not ordinarily have good estimates of average monthly costs at their fingertips.

Consequently, in the screening survey, respondents were asked to list the utilities for which they, rather than the landlord, were responsible; but they were not asked to report monthly costs of those utilities.* Instead, we devised estimating formulas based on

*In the baseline surveys, where longer interviews are planned, both tenants and landlords will be asked detailed questions about utility costs.

consumption patterns and unit costs obtained from local utility companies, scaled to the size of the housing unit. Checking the results against average monthly utility costs in Brown County reported by respondents to the 1970 census (and adjusting for subsequent rate changes), we concluded that these estimates were fairly good approximations of actual utility costs.

To obtain monthly gross rent for each respondent, we summed contract rent (or estimated full market rent) and the estimated average monthly cost of the utilities paid by the tenant. Table 7 shows the distribution of monthly gross rent by number of rooms for all rental housing units in Brown County, based on the screening survey sample. Table 8 shows a similar distribution by number of bedrooms.

The reader will note the wide range of rents for units of any given size, the range usually lacking a strong central tendency. For units with only one room (Table 7) or no bedrooms (Table 8), the distributions are distinctly bimodal, suggesting that they include two very different kinds of accomodations. Although the distributions for larger units are not so distinctly multimodal, they show clusters of units in particular rent intervals, with fewer units in the intervening rent intervals.

Three-fourths of all units have monthly gross rents of between $90 and $180. As indicated by the median rents shown at the bottom of the tables, rents tend to increase with size of unit up to five rooms (three bedrooms), but not above that size.*

GROSS RENT AND HOUSING QUALITY: SCREENER DATA

The next step was to classify each rental unit as either standard or substandard in quality. Here, we used Standard C, whose derivation is explained in Sec. II. Briefly, a standard unit is one with complete plumbing and kitchen facilities for the exclusive use of its occupants and with properly vented heating supplied at least to the

*Landlords often market large units at prices comparable to those of smaller units by cutting corners on services and amenities of design and equipment. In particular, they use the inventory of older and less desirable housing to supply large units at rents within reach of large families with low or moderate incomes.

Table 7

DISTRIBUTION OF RENTAL HOUSING UNITS BY MONTHLY GROSS RENT, BY NUMBER OF ROOMS: BROWN COUNTY, WISCONSIN, 1973

Monthly Gross Rent ($)[a]	Percentage Distribution by Rent, by Number of Rooms[b]							
	1	2	3	4	5	6	7+	All Sizes
Under 50	4.7	0.7	0.6	0.2	0.1	—	0.2	0.4
50-59	12.5	3.3	1.5	1.0	0.3	—	—	1.3
60-69	3.1	2.9	2.0	0.8	0.7	—	0.3	1.3
70-79	11.7	1.0	6.5	2.1	0.7	0.4	0.2	2.7
80-89	3.6	3.9	5.0	3.1	4.0	1.7	1.6	3.6
90-99	11.9	5.5	8.8	5.7	3.3	2.9	1.2	5.6
100-109	6.9	4.3	11.7	9.3	6.0	3.4	3.1	7.9
110-119	6.1	3.3	9.0	8.5	9.0	7.0	7.5	7.9
120-129	8.3	17.7	10.1	10.6	9.9	10.3	12.2	11.1
130-139	25.7	13.1	7.5	9.2	10.3	11.9	5.7	9.8
140-149	3.7	22.7	6.2	6.0	6.5	7.1	19.9	8.7
150-159	0.8	6.3	4.9	8.2	13.8	13.9	5.7	8.5
160-169	1.0	11.3	8.5	10.3	5.8	13.0	7.0	9.0
170-179	—	3.4	5.3	12.9	5.2	6.3	3.5	7.5
180-189	—	0.5	4.9	5.7	5.2	6.9	2.6	4.7
190-199	—	—	2.2	2.8	3.9	1.2	2.6	2.4
200-209	—	—	0.3	1.9	4.7	2.0	3.8	1.9
210-219	—	—	—	1.0	3.5	3.6	5.4	1.5
220-229	—	—	—	0.2	1.7	2.7	6.6	0.9
230-239	—	—	—	—	1.3	2.3	0.3	0.4
240-249	—	—	0.7	—	0.1	0.5	3.7	0.4
250-259	—	—	—	0.3	3.6	0.6	0.5	0.9
260 or more	—	—	4.2	0.2	0.6	2.3	5.6	1.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of Units	239	1,529	2,998	4,486	2,515	1,040	631	13,436
Median Rent	$104	$136	$125	$139	$153	$154	$148	$138

SOURCE: Tabulations by HASE staff of data from the Site I Screening Survey.

NOTE: Percentage distributions are based on 5,277 field-complete records which contained all data needed to compute gross rent. Numbers of units are based on 5,692 field-complete records, including 415 for which gross rents could not be computed. Percentages may not add exactly to 100.0 because of rounding.

[a]Contract rent plus an estimate by HASE staff of the average monthly cost of any utilities not included in contract rent.

[b]Room counts exclude bathrooms, halls, foyers, unfinished attics and basements, unenclosed porches, and rooms lacking an openable window or skylight.

Table 8

DISTRIBUTION OF RENTAL UNITS BY MONTHLY GROSS RENT, BY NUMBER OF BEDROOMS: BROWN COUNTY, WISCONSIN, 1973

Monthly Gross Rent ($)[a]	Percentage Distribution by Rent, by Number of Bedrooms[b]						
	0	1	2	3	4	5+	All Units
U ler 50	3.2	0.8	0.1	0.1	—	0.9	0.4
50-59	18.3	2.1	0.6	0.4	—	—	1.3
60-69	7.9	2.7	0.6	0.1	0.6	0.9	1.3
70-79	10.1	5.2	1.8	0.4	—	—	2.7
80-89	9.7	4.8	2.6	4.2	0.9	1.7	3.6
90-99	14.8	9.3	4.1	3.2	0.6	1.7	5.6
100-109	16.2	11.0	7.3	3.4	4.0	2.6	7.9
110-119	4.1	9.9	7.7	5.3	8.1	5.1	7.9
120-129	7.2	14.9	9.7	8.5	13.1	6.8	11.1
130-139	4.9	12.0	9.3	8.5	7.1	6.0	9.8
140-149	3.4	12.9	6.5	4.5	25.6	4.3	8.7
150-159	—	4.7	10.6	11.2	2.7	16.2	8.5
160-169	—	5.7	11.7	7.7	10.2	4.3	9.0
170-179	—	2.2	11.7	6.1	4.3	5.1	7.5
180-189	—	0.4	7.3	6.0	3.4	—	4.7
190-199	—	0.6	3.2	3.5	3.1	1.7	2.4
200-209	—	0.1	1.9	5.7	3.3	0.9	1.9
210-219	—	0.1	0.6	7.6	2.4	1.7	1.5
220-229	—	—	0.2	3.4	2.7	22.2	0.9
230-239	—	—	0.3	1.4	2.2	0.9	0.4
240-249	—	0.5	—	1.0	2.7	—	0.4
250-259	—	—	0.1	5.5	0.9	0.9	0.9
260 or more	—	—	2.0	2.5	2.1	14.5	1.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of Units	230	4,102	6,590	1,957	423	138	13,442
Median Rent	$91	$123	$150	$160	$146	$169	$138

SOURCE: Tabulations by HASE staff of data from the Site I Screening Survey.

NOTE: Percentage distributions are based on 5,277 field-complete records which contained all data needed to compute gross rent. Numbers of units are based on 5,692 field-complete records, including 415 for which gross rents could not be computed. Percentages may not add exactly to 100.0 because of rounding.

[a]Contract rent plus an estimate by HASE staff of the average monthly cost of any utilities not included in contract rent.

[b]Excludes unventilated bedrooms.

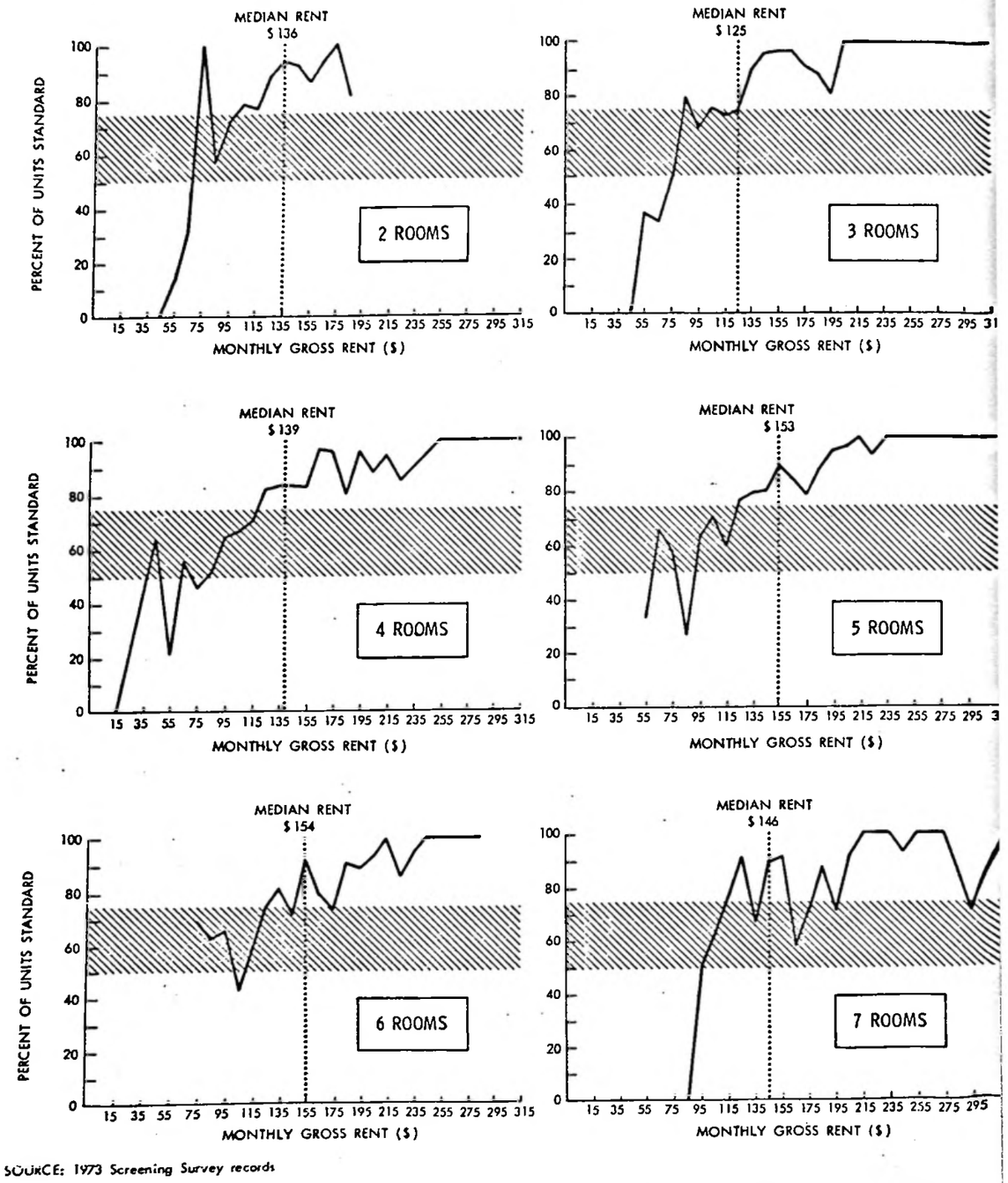
kitchen, living room, dining room, and bathroom. All habitable rooms and at least one bathroom must have switch-controlled electric lighting and an electrical outlet; and all habitable rooms (those counted in measuring unit size) must have an openable window or skylight.

As reported earlier in Table 2, approximately 80 percent of all rental units in Brown County qualify as standard by this test. As we expected, however, the proportion that qualifies as standard increases fairly consistently with gross rent. Figure 2 displays this relationship separately for units of different sizes, where size is measured by number of habitable rooms.

To construct Fig. 2, we crosstabulated percent standard against monthly gross rent by $10 intervals; the plotted points are the midpoints of these intervals. Of course, rent intervals in the vicinity of the median contain many more cases than those at the extremes. Because the graphic display appears to weight all points equally, we have not plotted values for intervals at the extremes with fewer than 8 cases.

As shown in the figure, there are some substandard units in nearly every rent interval for every unit size; this is expectable, given the many factors that may enter into market rents in addition to unit size and our standards of quality. The hypothesis, however, is that a high proportion of standard units in a given rent interval evidences the market's ability to supply standard units at that rent. In line with program objectives, we seek the minimum rent at which this condition holds.

Each separate graph in Fig. 2 is overlaid with a band covering a range on the vertical axis from 50 to 75 percent standard. This range seems to bound reasonable definitions of minimum standard cost. If fewer than half of all units at a given rent are standard, it is difficult to argue that such a rent would typically support standard quality; if as many as three-quarters are standard, it seems clear that most landlords can supply adequate housing at that price, and that higher rents usually reflect amenities that may be desirable but are not essential to our standard.



SOURCE: 1973 Screening Survey records

Fig. 2--Percentage of rental units in each $10 rent interval that meet Quality Standard C, by number of rooms: Brown County, Wisconsin, 1973.

Figure 3 also plots the percentage of units that are standard against unit size; but here the measure of unit size is number of bedrooms. The pattern is quite similar to that in Fig. 2; in both figures, the percentage of units that are standard increases fairly regularly with gross rent, up to a rent level at which nearly all units are standard. For the largest units, however, the relationship between quality and rent is rather weak.

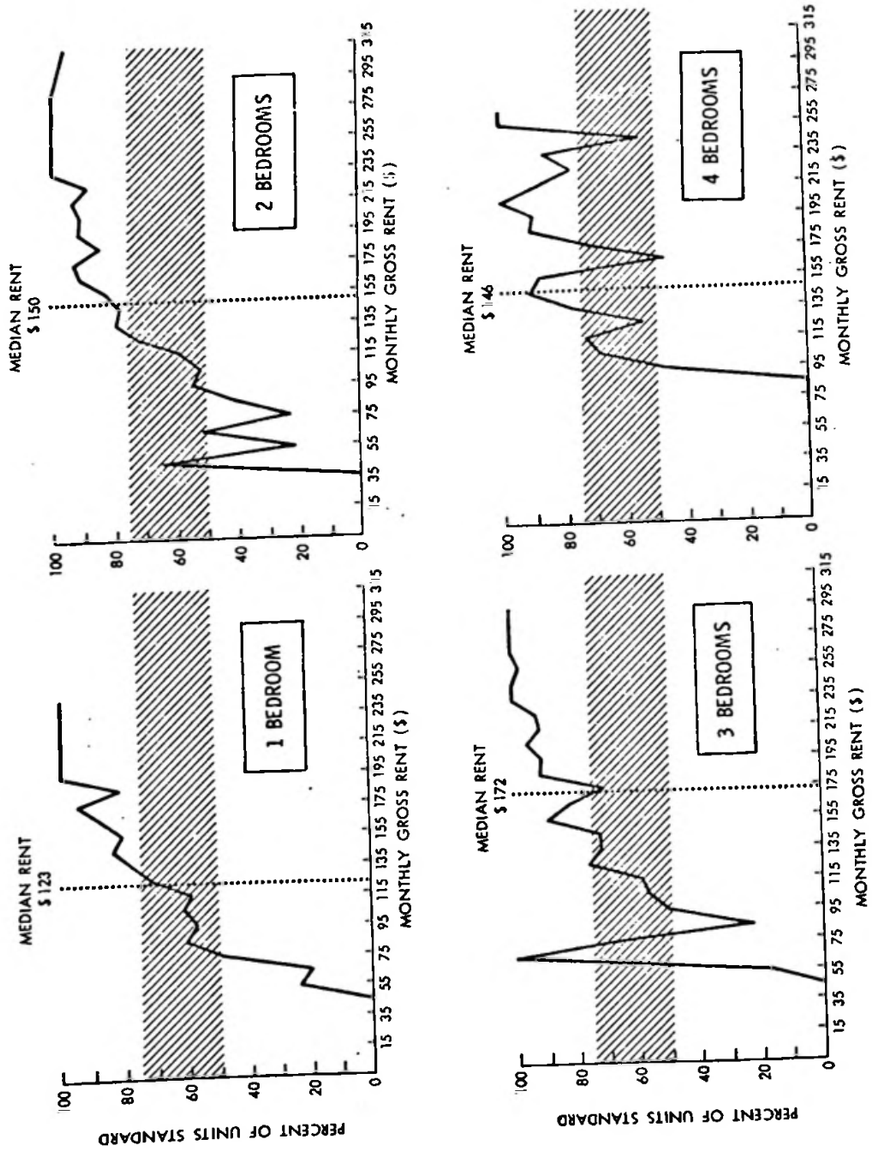
Table 9 gives limiting values for the standard cost of adequate housing by size of unit, derived by the method explained above. Values are shown both by number of rooms and number of bedrooms. For comparison, the last two columns show median rents by size of unit, for all units and for all standard units. This table includes entries for very small and very large units, where (despite a sampling rate of nearly 50 percent) population sizes are too small to support strong conclusions.

From the first two columns, it is clear that, although our limiting values generally increase with size of unit, the relationship is far from regular; if the values for very small and very large units are included, there are even exceptions to the monotonic trend one would expect to find as a reflection of the effect of unit size on market value. That these irregularities are not artifacts of our methods of measurement is indicated by the last two columns of the table. Median rents, both for all units and for all standard units, show the same tendency to increase with size of unit and the same irregular relationship.

GROSS RENT AND HOUSING QUALITY: PANEL OF EXPERTS (DELPHI METHOD)

A second current source of information on the standard cost of adequate housing by size of unit is the opinions of local experts. As noted in the Introduction, 25 individuals selected for their knowledge of Brown County real estate markets were asked to estimate current gross rents for housing units that meet quality standards essentially the same as those included in Standard C.* Each panelist

*See Sec. II, "Instructions to the Panel of Local Experts."



SOURCE: 1973 Screening Survey records.

Fig. 3--Percentage of rental units in each $10 rent interval that meet Quality Standard C, by number of bedrooms: Brown County, Wisconsin, 1973.

Table 9

MONTHLY GROSS RENTS REQUIRED FOR HOUSING UNITS OF STANDARD QUALITY: INDICATORS FROM SCREENING SURVEY, BROWN COUNTY, WISCONSIN, 1973

Size of Unit	Lowest Rent ($) at which Indicated Percentage of All Units are Standard[a]		Median Rent ($)	
	50 Percent	75 Percent	All Units	All Standard Units
Number of Rooms				
1[b]	90	90	104	123
2	70	100	136	139
3	75	125	125	133
4	85	120	139	149
5	90	125	153	154
6	110	150	154	157
7	195	195	146	147
8[b]	170	170	155	154
Number of Bedrooms				
0[b]	70	95	91	101
1	75	130	123	127
2	90	130	150	155
3	95	180	160	168
4	165	180	146	146
5[b]	110	200	162	218

SOURCE: Tabulations by HASE staff of data from the Site I Screening Survey.

[a]See text for explanation. Values shown are those above which nearly all $10 rent intervals contain at least the indicated proportion of standard units.

[b]Based on fewer than 100 observations.

prepared his first estimates independently of the others. The results were compiled and discussed by the panelists; then each was given an opportunity to modify his original estimates. The procedure followed was an adaptation of the so-called Delphi method of securing consensus among expert opinions.

The panelists were given a map of Brown County divided into 14 "neighborhoods" which varied in social and physical "amenities." Each panelist was asked to provide estimates only for those neighborhoods with which he was familiar. Within each neighborhood, separate estimates were requested for units of different sizes, as measured by the number of bedrooms. The values to be estimated were described to the panelists as the level of rent at which housing units meeting the specified quality standards could be obtained within a reasonable period of search, i.e., 60 days.

Not surprisingly, there was a good deal of variance in the first round of estimates, reduced somewhat in the second round by a controlled exchange of information. At the end of the exercise, all the revised estimates for each neighborhood were compiled, and median rents were computed for each size of unit. These median values were averaged across two sets of neighborhoods to obtain the results shown in the first two columns of Table 10. One set consisted of all 14 neighborhoods; the other consisted of eight "modest" neighborhoods, excluding two that we judged from other evidence to be "luxury" neighborhoods and four that were notably lacking in amenities. In each case, neighborhood medians were weighted in proportion to the total number of rental units reported for each neighborhood by the 1970 census.

Because the eight "modest" neighborhoods occupy the central position on the rent scale among the 14 neighborhoods, averaging neighborhood-specific estimates in both cases leads to practically the same results. In no instance do the entries for a given size of unit differ by more than four dollars, always in favor of the "modest neighborhoods."

If the panelists followed instructions, the rents they reported would be, in effect, those a new tenant would have had to pay in each neighborhood in October 1973. The rents reported by the screening

Table 10

MONTHLY GROSS RENTS REQUIRED FOR HOUSING UNITS OF STANDARD QUALITY, BY NUMBER OF BEDROOMS: INDICATORS FROM PANEL OF EXPERTS, BROWN COUNTY, WISCONSIN, 1973

Number of Bedrooms	Monthly Gross Rent ($) for Standard Units			
	New Tenants[a]		All Standard Units[b]	
	All 14 Neighborhoods	8 Modest Neighborhoods	All 14 Neighborhoods	8 Modest Neighborhoods
0	98	101	93	96
1	127	131	118	122
2	156	160	143	147
3	184	187	166	168
4	216	219	193	195
5	251	254	227	230

SOURCE: Tabulations prepared for HASE by Abt Associates and computations by HASE staff.

NOTE: Each expert provided estimates for each neighborhood with which he was familiar. The entries shown are averages across neighborhoods of median estimates within neighborhoods.

[a] Rent at which standard housing could be obtained within a reasonable period of search (60 days).

[b] Current average rent for all standard units.

survey were for all units, without regard for how recently the tenant had moved in or how recently his rent had been changed by the landlord.*

To make the panelists' estimates more comparable to the screener data, each was also asked to estimate by what percentage average rents in Brown County differed from rents for new tenants. Their responses to this question, given separately by size of unit, varied from zero to 30 percent, reflecting either different perceptions of recent trends or different interpretation of the original instructions. There was, however, general agreement that rents for large units were rising more rapidly than rents for small units.** The average differential between rents for new tenants and rents for all standard units was 4.6 percent for units with no bedrooms, rising to about 10 percent for units with three or more bedrooms. The last two columns of Table 10 give values for average rents of all standard units, calculated by adjusting the figures in the first two columns downward by these average estimated differentials.

COMPARISON OF SCREENER AND DELPHI ESTIMATES

Above, we described two independent sources of data on housing costs in Brown County in 1973, either or both of which might serve as the basis for program values of R^*, the standard cost of adequate housing. Before proceeding to construct a schedule of R^* values, it is useful to compare these sources, noting how they differ and what factors may account for the differences.

Tables 9 and 10 showed several sets of housing cost estimators from each source. The most comparable figures are (a) the estimates of median monthly gross rents for standard units from the screener survey, and (b) the average monthly gross rents for all standard

*In fact, however, 47 percent of all screener respondents indicated that the rents they reported had been set during calendar 1973, and 23 percent reported that their rents had been set during calendar 1972. Thus, only 30 percent of all rents reported in the screener were set more than 20 months previously.

**This conclusion is inconsistent with other evidence of rent increases between 1970 and 1973, which indicates that they were largest for small units. See Appendix Table C-3 and associated text.

units in all neighborhoods, as estimated by the Delphi method. These are compared in Table 11.

Both sets of values in Table 11 refer to the same universe of rental housing units at the same point in time. They differ formally in their measures of central tendency: the screener data are simple median values, while the Delphi data are more complex, being population-weighted averages of median values reported for each neighborhood for "new tenants," which are then adjusted by county-wide estimates of the differential between new-tenant rents and average rents for standard units.

The values also differ in their derivation. The screener estimates are based on a scientific sample in which explicit quality standards were systematically applied to each housing unit in the sample to define the universe of s.andard units. The Delphi estimates, on the other hand, are based on individual judgments as to the appropriate contents of the universe and the typical monthly rents within this universe.

On all counts, we judge that the screener data more accurately reflect the actual distributions of monthly gross rents for standard housing in Brown County in the fall of 1973. We therefore consider the comparison in Table 11 to be a test of the bias in the Delphi data.

For standard rental units with less than three bedrooms, the Delphi estimates are consistently about 8 percent lower than the screener estimates. For units with three or five bedrooms, the Delphi estimates are nearly the same as the screener estimates. The only large discrepancy is for units with four bedrooms, where the Delphi estimate exceeds the screener estimate by 32 percent. Note that the screener estimate for these units is peculiar in that it does not fit the otherwise orderly progression of rents by size of unit. However, the estimate is based on a sample of nearly half of all such units in Brown County; and the sample shows a marked concentration (32 percent of all standard units) in the rent interval of $140 to $149.*

*See Table 8, above, which shows the distribution of *all* rental units by gross rent. The distribution for standard units only is not very different for units of this size.

Table 11

COMPARISON OF DIFFERENT ESTIMATES OF MONTHLY GROSS RENTS FOR ALL STANDARD RENTAL UNITS, BY NUMBER OF BEDROOMS: BROWN COUNTY, WISCONSIN, 1973

Number of Bedrooms	Median or Average Monthly Gross Rent ($)		Ratio, Delphi Estimate to Screener Estimate
	Screener Estimates	Delphi Estimates	
0	101[a]	93	.92
1	127	118	.93
2	155	143	.92
3	168	166	.99
4	146	193	1.32
5	218[a]	227	1.04

SOURCE: Tabulations by HASE staff of data from the Site I Screening Survey and tabulations by Abt Associates of data from Delphi proceedings in Site I.

NOTE: Screener estimates are median values for Brown County. Delphi estimates are population-weighted averages of medians of neighborhood estimates by individual experts. See text for additional details.

[a]Based on fewer than 100 records.

Especially since the distribution of standard units with five bedrooms also shows a noticeable concentration in an adjacent rent interval ($150 to $159), we believe that the unexpectedly low median rent for four-bedroom units reflects a genuine anomaly of the Brown County housing inventory that was overlooked by the panel of experts.*

Having thus calibrated the most comparable rent estimates from these two sources against each other, we now turn to comparisons of data from each source that bear most directly on the selection of program values for R^*. Table 12 compares the proposed limiting values for R^* that were derived from screener data with the Delphi estimates of R^* for modest neighborhoods. For the latter, we show both the estimates for new tenants, which are comparable to the Delphi estimates used in the Demand and Administrative Agency Experiment, and the estimates for all standard units, which are more nearly comparable to our limiting values.

Clearly, the criteria applied by the panel of experts were more stringent than those reflected in our lower limiting values from the screener data, i.e., the minimum rent at which at least 50 percent of all units met Quality Standard C. The panel of experts even exceeded our upper limiting values in all their corresponding estimates for new tenants and in all but two of their corresponding estimates for all standard units, with a maximum difference of 25 percent.

If comparability to other allowance experiments is sought, we judge that the program values for R^* ought to fall in the ranges for

*The Delphi estimate of $227 for five-bedroom units is consistent with our screener data for the few units of this size in Brown County. Our sample of 48 such units represents a population of 82, of which 68 qualified as standard. Of the latter group, 19 percent had gross monthly rents between $150 and $159, and 31 percent had rents between $220 and $229; the intervening rent intervals contained a total of only 9 percent of all standard units. Thus, the distribution is bimodal, and the panel of experts selected values near the primary mode.

There is no such second mode in the screener data for standard four-bedroom units in the vicinity of the Delphi estimate of $193. The surrounding rent interval from $180 to $209 contains a total of only 12 percent of all standard units of that size.

Table 12

COMPARISON OF DIFFERENT ESTIMATES OF R^*, BY NUMBER OF BEDROOMS: BROWN COUNTY, WISCONSIN, 1973

Number of Bedrooms	Monthly Gross Rent ($)				
	Screener Minimum by Incidence of Standard Units		Delphi Average for Modest Neighborhoods		Proposed Range of Values for R^*
	50% or more	75% or more	New Tenants	All Standard Units	
0	70	95	101	96	95-101
1	75	130	131	122	122-131
2	90	130	160	147	130-160
3	95	180	187	168	168-187
4	165	180	219	195	180-219
5	110	200	251	230	200-251

SOURCE: Tables 9 and 10.

each different number of bedrooms shown in the last column of Table 12. With two exceptions, the minimum value is taken from the second column of the table (minimum rent at which at least 75 percent of all units met Quality Standard C); the maximum is always taken from the third column (Delphi rent for new tenants).

A PROPOSED SCHEDULE OF VALUES FOR R^*

Table 12 presented a proposed range of program values for R^* by size of unit, based jointly on screener and Delphi data for 1973. Unit size was measured there by number of bedrooms, the unit of account common to both sources. The next steps are to relate these values to size of household and narrow the resulting ranges to specific values for each size of household. These steps are shown in Table 13.

The stub of the table lists household sizes; for each household size, the first two columns show a range of housing unit sizes, expressed first in number of rooms, then in number of bedrooms. These ranges reflect the occupancy standards discussed in Sec. III.

Columns 3 and 4 give ranges of monthly gross rent for "adequate" housing, corresponding to the ranges of housing-unit sizes. The rent ranges based on room counts come from screener data on the minimum rents at which 75 percent of all units meet Quality Standard C. The rent ranges based on bedroom counts incorporate similar data from the screener together with Delphi estimates, as shown in the last column of Table 12.

Table 12 revealed that the Delphi estimates by number of bedrooms are consistently higher than the screener estimates by number of bedrooms. We do not have corresponding Delphi estimates by number of rooms to compare with screener data based on room counts; but we presume that Delphi estimates based on room counts would also be higher than the screener estimates shown in the third column of Table 13.

Having thus narrowed the range of possibly appropriate program values for R^*, we are still compelled to exercise judgment. Thus, for a single person, our ranges run from a lower limit of $90 (based on a one-room unit) to $131 (based on a unit with one bedroom and at least

Table 13

PROPOSED PROGRAM VALUES FOR R^* BY SIZE OF HOUSEHOLD: BROWN COUNTY, WISCONSIN, OCTOBER 1973

Number of Persons	Size of Unit (Range)		Corresponding Ranges of Monthly Gross Rent ($)		Proposed Program Values for R^* ($)	
	Number of Rooms	Number of Bedrooms	Based on Room Count	Based on Bedroom Count	First Approximation	Smoothed Progression
1	1-2	0-1	90-100	95-131	113	125
2	2-3	1-2	100-125	122-160	141	135
3	3-4	1-2	120-125	122-160	141	145
4	4-5	2-3	120-125	130-187	158	155
5	5	3-4	125	168-219	194	165
6	5-6	3-4	125-150	168-219	194	175
7	6	3-4	150	168-219	194	185
8	6-7	3-5	150-195	168-251	210	195
9	7	3-5	195	168-251	210	205
10	7-8	4-5	170-195	180-251	216	215

SOURCE: Tables 4, 9, and 12 and computations by the HASE staff.
NOTE: See text for explanation of entries in each column.

one other room). Where within this range should we set our program standard?

A first approximation of an R^* value for each size of household was constructed by taking the midpoint of the range of monthly gross rents based on bedroom counts. This procedure is somewhat less than satisfactory where the range of unit sizes and rents does not shift with each change in household size. Thus, for households of five, six, and seven persons, our first approximation of R^* is identically $194. Still, the first approximation is a useful step in reducing the problem.

The last column of Table 13 gives the proposed schedule of values for R^*. It begins with $125 per month for a single person and increases by $10 for each additional person. We judge that this schedule comes as close as any *regular* progression could to the empirical evidence on the typical cost of standard housing in Brown County in October 1973, given our occupancy standards; and we think that such a regular schedule will seem more equitable to the public than one that shifts erratically.

Referring back to households of five to seven persons, it seems reasonable to allow a higher value of R^* for the larger households. Even though there may be seven-person households that could fit into a five-room, three-bedroom house without violating our occupancy standards, usually such households will require more than the minimum space for a five-person household. Thus our proposed schedule of $165 for five persons, $175 for six persons, and $185 for seven persons progresses across the lower part of the range of monthly gross rents for units with three and four bedrooms ($168 to $219). However, even the value proposed for seven persons ($185) is below the midpoint of the range based on bedroom counts, reflecting our doubts about the panelists' estimates of market rents for four-bedroom standard units. The screener data suggest that 75 percent of such units renting for more than $180 are of standard quality.

Our schedule rises to a maximum of $215 for ten persons, almost precisely the midpoint of the range of monthly rents for four to five

bedrooms. Despite this neat outcome, we should note that standards for very large households and very large housing units are arbitrary. This is because both are so rare; the screener data, for instance, indicate that Brown County contains no more than 138 rental housing units with five or more bedrooms.

The standards for smaller households are of much greater significance for the program. We estimate that 88 percent of all eligible renter households and 77 percent of all eligible owner households in Brown County contain fewer than five persons, and that nearly 60 percent of both classes of eligibles contain only one or two persons.*

The last column of Table 13 proposes a standard cost of adequate housing for single persons of $125, near the upper end of the rent range for units with no more than one bedroom. Because there are a large number of income-eligible single elderly persons compared to the number of small housing units (see Sec. V), many single program participants will necessarily exceed our space standards and occupy units of three rooms (one bedroom). For them to secure units of standard quality will require, we think, gross rents in the vicinity of $125 per month.

The values proposed for households of two to four persons are those in which we have the greatest confidence, because data on market rents for units of one to three bedrooms are abundant. Such units account for 94 percent of the rental stock in Brown County, and both screener data and Delphi estimates agree fairly well on the current cost of adequate housing of these sizes.

Even so, we should emphasize that our proposed schedule of program values for R^* reflects a series of judgments to which others might take exception. The critical issues include our choice of quality standards, our choice of occupancy standards, our weighting of evidence from different sources, our preference for a regular progression of values with household size, and only finally our calibration of that schedule against empirical data.

*See Sec. V, Table 15.

However, we think this schedule is a reasonable reflection of program purposes and current housing costs in Brown County. The next section examines additional data from the screening survey to help the reader judge whether the scheduled values of R^* will enable eligible households to obtain housing that meets HAO certification requirements.

We should finally note that our proposed schedule reflects housing costs in Brown County in October 1973. Such costs have been rising at an annual rate of 5 to 10 percent in recent years,* and 1974 will clearly bring no exception to this trend. Therefore, a final policy issue for Rand and HUD to address jointly is to what extent program values of R^* should anticipate background inflation.

*See Appendix C.

V. FEASIBILITY TESTS

The standards proposed for the experimental housing allowance program in Secs. II, III, and IV reflect program purposes as we understand them. A decision to adopt them, however, must also reflect other considerations. The choice of standards can have a powerful effect on the size and cost of the allowance program; it may also affect the responses of potential participants to the program and the kinds of housing market disturbances likely to ensue from program implementation.

Estimates of program size and cost under these standards were reported separately.* We do not review the construction of those estimates here; but, for the reader's convenience, we reproduce the estimates themselves and comment briefly on their implications.** Then, we relate the program standards to the current housing circumstances of those eligible to participate, to form some judgment about how much housing improvement and movement within the housing stock would be required to achieve the program's housing objectives. At the same time, we examine the housing circumstances of ineligible households, to help us judge how they might be affected.

HOUSEHOLDS ELIGIBLE FOR ASSISTANCE

Under program rules, a household will be eligible for assistance if its annual income (as defined for program purposes) is no more than four times the annualized value of R^* for households of that size. This is also the level of income (Y) at which allowance entitlement (A) falls to zero under the formula

$$A = R^* - .25Y. \tag{1}$$

*Ira S. Lowry, Barbara M. Woodfill, and Tiina Repnau, *Program Size and Cost for Site I: New Estimates from the Screener Survey*, The Rand Corporation, WN-8547-HUD, December 1973.

**Revised in some details to reflect the resolution of certain ambiguities in preliminary tabulations of screener data.

However, a household will not be enrolled if its annual allowance entitlement under this formula is less than $120, so the income ceiling for enrollment is

$$Y_{max} = 4R^* - \$120. \tag{2}$$

Table 14 shows the maximum incomes for eligibility by size of household, based on Eq. (2) and the schedule of values for R^* we have proposed. These maxima range from $5,580 for a single person to $10,200 for a ten-person household. It is important to note that the income figures shown in the table are not gross incomes. As explained in the note to the table, they are at most 95 percent of gross cash income and may be substantially less for large households.

Applying these standards to the records of the screening survey, we estimate that in October 1973 there were about 14,100 eligible households in Brown County out of a population of about 47,000 households. The distribution of eligible households by number of persons and tenure is shown in Table 15.

A striking feature of this distribution is that nearly 60 percent of all eligible households consist of either one or two persons--despite the fact that single persons under 62 years of age are categorically ineligible.* Thus, the size of the housing allowance program, its cost, and its effects on the housing market are especially sensitive to the program standards for small households.

PROGRAM SIZE AND COST

As shown in the remainder of Table 15, we estimate that about 8,300 households (nearly 60 percent of those eligible) would choose to participate in the experimental allowance program under an open

*We should also note that Table 15 excludes unrelated individuals living as roomers in private homes or rooming houses. There are about 500 such persons in Brown County, but we do not now have enough information about them to determine how many are eligible. See Appendix D, "Rented Rooms."

Table 14

INCOME LIMITS FOR ENROLLMENT IN THE HOUSING ALLOWANCE PROGRAM, BY SIZE OF HOUSEHOLD: BROWN COUNTY, WISCONSIN, 1973

Number of Persons	Proposed Value for R^* ($)		Maximum Income for Eligibility ($)[a]
	Monthly	Annual	
1	125	1,500	5,580
2	135	1,620	6,360
3	145	1,740	6,840
4	155	1,860	7,320
5	165	1,980	7,800
6	175	2,100	8,280
7	185	2,200	8,680
8	195	2,340	9,240
9	205	2,460	9,720
10	215	2,580	10,200

SOURCE: Table 13 and computations by HASE staff.

[a]Income as defined for program purposes. For programs funded under Sec. 23, this consists of 95 percent (90 percent for elderly households) of the cash income of all household members over 18 years of age, less $300 per dependent other than spouse and $300 for each earner other than the first.

Table 15

ESTIMATES OF PROGRAM SIZE AND ALLOWANCE COSTS UNDER OPEN ENROLLMENT PLAN AND BROOKE INCOME DEFINITION: BROWN COUNTY, WISCONSIN, 1973

Item	Household Size[a]							Total, All Sizes
	1[b]	2	3	4	5	6	7+	
Eligible households:								
Homeowners	2,035	3,269	826	849	702	545	871	9,097
Renters	1,028	1,940	955	459	340	116	140	4,978
Total	3,063	5,209	1,781	1,308	1,042	661	1,011	14,075
Participating households:								
Homeowners	1,521	1,876	425	256	239	116	198	4,631
Renters	778	1,499	695	300	215	69	65	3,621
Total	2,299	3,375	1,120	556	454	185	263	8,252
Average allowance ($):								
Homeowners	850	722	899	605	915	456	754	778
Renters	907	861	964	1,000	1,114	1,131	1,296	930
Total	870	783	939	818	1,010	708	886	845
Total Payments ($000):								
Homeowners	1,293	1,354	382	155	219	53	149	3,605
Renters	706	1,290	670	300	240	78	84	3,368
Total	1,999	2,644	1,052	455	459	131	233	6,973

SOURCE: Tabulations by HASE staff of data from the Site I screening survey.

NOTE: See Ira S. Lowry, Barbara M. Woodfill, and Tiina Repnau, *Program Size and Cost for Site I: New Data from the Screener Survey*, WN-8547-HUD, December, 1973 for a description of eligibility and allowance computations.

[a]Excludes persons in rooming-houses and persons in households who are unrelated to the head and pay rent to the head.

[b]Excludes single persons under 62 years of age.

enrollment plan that provided assistance on equal terms to both renters and homeowners and that allowed for changes in tenure. The average annual allowance payment to participating households would be about $850; with the program operating at full scale, total payments could reach $7 million annually.

These estimates of potential program size and cost are considerably higher than those based on earlier program standards and on 1969-1970 data on Brown County's population of households and their incomes. Because the earlier estimates were used by Rand and HUD in planning for program funding, there are serious questions whether a program of the size indicated here can be supported. For a discussion of these issues, we refer the reader to Sec. V of WN-8547-HUD, op. cit.

Here, we note only that program size and cost are directly sensitive to the values chosen for R^*, in two ways. First, any change in R^* changes the income limit for eligibility by four times as much, increasing or decreasing the number of eligible households. Second, for participating households, a change in R^* has a dollar-for-dollar effect on allowance entitlement. (These relationships are explicit in Eqs. (1) and (2), above.)

Thus, reducing the monthly value of R^* for single persons by 20 percent, from $125 to $100, would cause the income limit to drop from $5,580 to $4,380 per year. The lowered income limit would render only about 120 persons ineligible, because few elderly single persons have incomes in this range; and since only about 40 percent of these 120 persons would have participated in any case, the effect on the number of participants is negligible. However, the effect on allowance payments is impressive: The average annual allowance payment to single persons would drop by $300, for an annual reduction in allowance costs of nearly $700,000. For two-person households, even a 10-percent reduction in R^* would reduce total allowance costs by nearly $550,000; a 20-percent reduction would save $1.1 million.

These comments should not be read as a recommendation to reduce the values of R^* proposed in Sec. IV. Such a step has obvious implications for the experimental program's success at improving the housing

of participants and also for its ability to show compliance with certain requirements of Sec. 23, the statute under which the program will be funded.* But lowering program standards must be considered along with other measures (such as limiting enrollment) in balancing experimental objectives against the available resources.

CERTIFIABILITY OF HOUSING OCCUPIED BY ELIGIBLES

An enrollee in the housing allowance program may wish to stay in the housing unit in which he lives at the time of enrollment, or he may wish to move immediately to a different unit. In either case, the housing unit he chooses must be certified by the HAO before allowance payments can commence. This certification entails judgments about the general quality of the unit and its appropriateness for that particular household.

One test of the problems likely to be encountered by enrollees is the frequency with which their preenrollment housing is judged unsuitable by the HAO. In such cases, the (renter) enrollee must either persuade his landlord to make the necessary repairs or improvements, or he must locate a unit that meets HAO standards.

If all the allowance-eligible population already lived in certifiable housing, this might imply that certification standards were lax, or that housing allowances were not needed to achieve the program's housing objectives, or that the program had somehow managed to exclude those actually in need of help. On the other hand, if all the allowance-eligible population lived in uncertifiable housing, the program might exert extreme pressure on the housing market's ability to provide the necessary housing improvements.

The probable (and preferable) situation lies between these extremes. In terms of experimental purposes, it is important that the allowance program exert considerable pressure for housing improvement, but not so much as to discourage program participation or to cause rapid price inflation.

---

*See below, "Rent Expenditures by Eligible Households."

Table 16 summarizes screener evidence bearing on this issue. The top half of the table deals with renter households eligible for allowances; for purposes of comparison, corresponding data for ineligible households are presented in the bottom half of the table. Two aspects of housing condition bearing on certifiability are considered: general housing quality, as measured by Standard C; and overcrowding. Because occupancy standards are intended to be flexible, and are dependent on composition as well as size of household, the second test is necessarily crude. Our count of overcrowded households includes all those "clearly overcrowded" plus half those "possibly overcrowded" under the standards explained in Sec. III.

Nearly 25 percent of all eligible renter households lived in substandard housing at the time of the survey, with little variation by size of household. Overcrowding was an insignificant problem for those in substandard housing, slightly more of a problem for those in standard housing.* Altogether, nearly a third of all eligible renter households were either living in substandard housing or were overcrowded, or both. This figure is our best a priori estimate of the proportion of enrollees who would have to take some action (either arrange for housing improvements, or move) before their allowance payments could begin.

Although the proportion of ineligible households living in substandard housing (17.8 percent) is well below the corresponding figure for eligible households, it is by no means insignificant. Overcrowding among ineligibles is also generally less of a problem than among eligibles. Presumably, these households could all afford standard units of adequate size, but do not choose to spend enough for this purpose. While the significant frequency with

*More frequent overcrowding in standard units is not surprising. These tend to be newer units, and newer housing is generally designed for smaller families than older housing. The occupants of old structures tend to get more space, but space that is less adequately equipped and maintained. The incidence of overcrowding does increase sharply with size of household. However, large households (i.e., six or more persons) account for only about 5.1 percent of all eligible renter households and 2.5 percent of all ineligible households.

Table 16

DISTRIBUTIONS OF ELIGIBLE AND INELIGIBLE RENTER HOUSEHOLDS BY HOUSING CONDITION, BY SIZE OF HOUSEHOLD: BROWN COUNTY, WISCONSIN, 1973

Housing Condition, by Program Status	Percentage Distribution of Households, by Number of Persons							
	1	2	3	4	5	6	7+	All Sizes
Eligible Households								
In substandard units	26.6	26.3	20.3	24.8	22.9	22.7	32.7	24.8
Overcrowded	*0.9*	*1.6*	*2.0*	*6.9*	*6.4*	*8.3*	*7.5*	*2.7*
Not overcrowded	*25.7*	*24.7*	*18.3*	*19.9*	*16.5*	*14.4*	*25.2*	*22.1*
In standard units	73.4	73.7	79.7	75.2	77.1	77.3	67.3	75.2
Overcrowded	*0.9*	*5.1*	*9.6*	*18.2*	*14.3*	*21.7*	*27.1*	*8.0*
Not overcrowded	*72.5*	*68.6*	*70.1*	*57.0*	*62.7*	*55.6*	*40.2*	*67.2*
Totals	100.0	100.0	100.0	100.0	100.0	.00.0	100.0	100.0
Ineligible Households								
In substandard units	21.2	15.1	20.9	13.1	7.5	17.4	23.7	17.8
Overcrowded	*6.6*	*1.0*	*1.7*	*2.8*	*1.2*	*7.1*	*13.2*	*1.6*
Not overcrowded	*14.6*	*14.1*	*19.2*	*10.3*	*6.3*	*10.3*	*10.5*	*16.2*
In standard units	78.8	84.9	79.1	86.9	92.5	82.7	76.3	82.2
Overcrowded	*2.3*	*5.7*	*7.3*	*21.6*	*13.8*	*11.2*	*31.6*	*7.1*
Not overcrowded	*76.5*	*79.2*	*71.8*	*65.3*	*78.7*	*71.5*	*44.7*	*75.1*
Totals	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

SOURCE: Tabulations by HASE staff of data from Site I screening survey.

NOTE: Tabulations are based on 4,686 screening survey records for which gross rent and eligibility could be calculated. Eligibility determination is based on Brooke adjusted gross income and on values of R^* given in Table 13. Housing quality determination is based on Quality Standard C, as described in Table 1. Households were classified as overcrowded on the basis of the number of rooms for each household size given in Table 4; see text for details.

which they occupy substandard units may raise questions about the reliability of the screening survey's tests of housing quality, it must also be recognized that a consumer's housing priorities are likely to differ from those underlying public policy. (If this were not so, the argument for housing allowances as opposed to income supplements would be very weak.)

In our judgment, the conclusion that about a third of all eligible households would have to improve their housing before they could receive allowance payments is evidence that certification standards for housing quality and space are reasonably appropriate. However, we should remind the reader that the tests of housing quality and space consumption we applied to screener data to obtain these results are by no means identical to a housing inspection and a case-by-case consideration of household space requirements. In any event, the HAO may decline to certify as few as one-fourth or as many as one-half of all units occupied by qualifying households when they enroll; and some--perhaps many--of those whose housing is certifiable will nonetheless seek other quarters.

RENT EXPENDITURES BY ELIGIBLE HOUSEHOLDS

A fundamental issue is whether program participants are likely to be able to obtain certifiable housing units for rents in the vicinity of R^*. Their ability to do so is a crucial premise of the experimental design; it also bears heavily on the legal status of program operations, inasmuch as a periodic showing that certification standards are consistent with R^* values seems to be implied by the Brooke Amendment.

Over time, the answer will of course depend on how the market responds to the increased rent-paying ability of program participants. But some notion of the scale of the required market adjustments can be obtained from an examination of preprogram rent expenditures by eligible households.

Table 17 presents evidence on this point from the screener survey. The column headings indicate the R^* values proposed for each size of household. The entries in the body of the table indicate the proportions of renter households paying gross rents well below the

Table 17

DISTRIBUTIONS OF ELIGIBLE AND INELIGIBLE RENTER HOUSEHOLDS BY HOUSING QUALITY AND GROSS RENT EXPENDITURES, BY SIZE OF HOUSEHOLD: BROWN COUNTY, WISCONSIN, 1973

Gross Rent Expenditures, by Program Status and Housing Quality	Percentage Distribution of Households, by Number of Persons							
	1 $125	2 $135	3 $145	4 $155	5 $165	6 $175	7+ $185+	All Sizes
Eligible Households								
In substandard units:								
Less than R^*	87.5	57.8	55.1	56.7	68.3	84.1	97.1	66.4
Approximately R^*	8.5	31.6	24.4	37.3	17.4	10.5	2.9	23.6
More than R^*	4.1	10.5	20.4	5.9	14.0	5.3	—	10.0
Totals	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
In standard units:								
Less than R^*	41.3	30.4	36.7	43.4	24.1	63.9	62.1	34.8
Approximately R^*	22.6	36.4	38.2	35.5	22.8	25.3	19.7	33.8
More than R^*	36.1	33.2	25.2	21.0	53.2	10.5	18.2	31.4
Totals	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Ineligible Households								
In substandard units:								
Less than R^*	65.0	37.5	57.9	78.7	66.5	93.2	83.3	55.3
Approximately R^*	27.9	28.7	15.4	13.3	25.2	6.8	—	24.7
More than R^*	7.3	33.8	26.8	8.2	8.4	—	16.7	20.0
Totals	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
In standard units:								
Less than R^*	27.7	13.7	24.8	29.2	32.2	50.7	58.6	22.8
Approximately R^*	39.0	34.0	23.9	26.2	23.8	19.4	13.8	32.1
More than R^*	33.4	52.1	51.3	44.6	44.2	29.9	27.6	45.1
Totals	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

SOURCE: Tabulations by HASE staff of data from Site I Screening Survey.
NOTE: Tabulations are based on 4,686 screening survey records for which gross rent and eligibility could be calculated. Eligibility determination is based on Brooke adjusted gross income and on values of R^* indicated in table headings. Housing quality determination is based on Quality Standard C, as described in Table 1. Rents are considered approximately equal to R^* if they fall within $15 of the relevant value of R^*.

relevant value of R^*, rents in the vicinity of R^*, and rents well above R^*. These distributions are shown separately for eligible and ineligible households; and within these categories, separately for those occupying standard and substandard housing.

As the table indicates, nearly two-thirds of the eligible households living in substandard units pay rents that are well below our proposed values of R^*, and only 10 percent pay rents that are well above these values. For eligible households living in standard units, the rent distribution is neatly centered on R^*. For both substandard and standard housing, the relation of current rent expenditures to the proposed values of R^* do differ by size of household; in general, very small and very large households are most likely to spend less than R^*.

Whether they live in substandard or in standard units, ineligible households tend to spend more for rent than eligible households. This finding is expectable, since ineligible households are almost by definition more prosperous than eligible households.

The data in the table support three important inferences. One is that our standard of housing quality is powerfully reflected in market rents, an encouraging observation from the point of view of program purposes. The second is that in late 1973, housing that met our standard was readily available at rents below or in the vicinity of R^* for each household size. The third is that a substantial fraction of program participants are likely to choose to spend more than R^* for their housing, inasmuch as many eligible households did so prior to receiving assistance.

Taking these facts jointly, we believe they also support the conclusion that the values of R^* we have proposed are high enough to serve program and experimental purposes well but not so high as to create windfalls for program participants. Our main concern is whether, in view of the rapid pace of inflation, values of R^* that were appropriate in late 1973 will continue to be so throughout 1974.

AVAILABILITY OF RENTAL HOUSING UNITS

We have seen that about a third of all potential allowance recipients would have to alter their housing circumstances in order to meet HAO certification standards. Their attempts to do so, combined with their ability to pay for better housing if they get it, are expected to stimulate landlords to provide certifiable housing.

A housing unit may be uncertifiable either because its quality is deficient or because it is too small for the household that nominates it as a dwelling place. In the former case, a landlord can participate in the allowance-stimulated market only by making the necessary repairs or improvements or by providing the required services. In the latter case, he may simply wait for a smaller family of program participants (or rent the unit to nonparticipants). However, the HAO certification standards will affect the distribution of housing demand by size of unit. Suppose there is excess demand for units of n rooms and excess supply of units with $2n$ rooms. One option open to the owner of a building containing units with $2n$ rooms is to subdivide and remodel his units. With opposite demand-supply relationships, he may have the option of merging existing units to create larger ones.

Altering the sizes of housing units in these ways is quite common; but if the subdivided or merged units must also meet HAO quality standards, the alterations may be fairly expensive. As part of the experiment, we are interested to discover how much such flexibility there is in the housing stock when effective demand is available to stimulate the changes.

On the other hand, the allowance program is so structured that participants unable to find units of minimum certifiable size may instead choose larger units because they are available, even though they rent for more than R^*. As Table 16 shows, most eligible households now live in standard units of adequate or more-than-adequate size; and as Table 17 shows, about a third of those pay rents that are substantially above R^*. With housing assistance, we assume that more households would follow this course.

Table 18 casts some light on the feasibility of the implied rearrangements of households and housing units. There, we estimate

Table 18

INDICATORS OF HOUSING SURPLUS OR DEFICIT UNDER EXPERIMENTAL ALLOWANCE PROGRAM, BY RENT, CONDITION, AND NUMBER OF ROOMS: BROWN COUNTY, WISCONSIN, 1973

Types of Households or Housing Units	Numbers of { Households by Persons per Household / Housing Units by Rooms per Unit						
	1	2	3	4-5	6-7	8+	All Households
	1-2	3	4	5	6	7+	All Housing Units
Eligible renter households	1,028	1,940	955	799	182	74	4,978
Units renting for R^* or less:							
Available units	671	1,771	2,404	1,693	844	478	7,861
Standard units	429	1,284	1,714	1,236	644	409	5,716
Housing surplus (deficit):							
Available units below R^*	(357)	(169)	1,449	894	662	404	2,883
Standard units below R^*	(599)	(656)	759	437	462	335	738
Ineligible renter households	2,378	2,730	1,435	1,003	171	19	7,736
Units renting for more than R^*:							
Available units	1,097	1,227	2,082	822	196	153	5,577
Standard units	1,008	1,096	1,893	753	183	92	5,025
Housing surplus (deficit):							
Available units above R^*	(1,281)	(1,503)	647	(181)	25	134	(2,159)
Standard units above R^*	(1,370)	(1,634)	453	(250)	12	73	(2,711)
All renter households	3,406	4,670	2,390	1,802	353	93	12,714
All rental housing units:							
Available units	1,768	2,998	4,486	2,515	1,040	631	13,438
Standard units	1,437	2,380	3,607	1,989	827	501	10,741
Housing surplus (deficit):							
Available units	(1,638)	(1,672)	2,096	713	687	538	724
Standard units	(1,969)	(2,290)	1,217	187	474	408	(1,973)

SOURCE: Tabulations by HASE staff of data from the Site I Screening Survey.

NOTE: Where more than one household size is included in a column heading, the value of R^* is the value for the larger household size.

the current surplus or deficit of rental housing units of each size, relative to the requirements of all eligible renter households. Because the estimates rest on a number of crude assumptions, fine detail should not be taken too seriously. However, the conclusions below transcend such details.

The upper section of the table indicates that the Brown County housing stock does not now contain enough small housing units renting for R^* or less to meet the needs of all one- and two-person renter households who are eligible to participate in the program. These households exceed by about 1,250 the number of standard units of one to three rooms available to them. If we assume that substandard units of these sizes could be upgraded to acceptable quality, the deficit of small certifiable units decreases to about 500.

This deficit is not as serious as it might seem at first glance; it could partially be filled by placing some small households in standard units of four rooms, and completely filled if the substandard units of this size were improved. To achieve this result by market processes, however, at least some of the one- and two-person households would almost certainly have to pay more than the scheduled R^* ($125 and $135 for one and two persons, respectively).

For all larger household sizes, there is a surplus of certifiable housing at rents below scheduled values of R^*. Some of these units, conceivably, could be subdivided to accommodate small households.

In the middle section of Table 18, we compare the stock of units renting for more than R^* to the numbers of *ineligible* renter households. Except for our judgment that ineligible households could afford to spend more than R^*, there is no compelling reason for us to confine their choices to this sector of the housing stock; screener data indicate that about 28 percent of such households now spend less than the scheduled value of R^* for their size of household.* However,

*We should also remind the reader that low-income single persons are excluded from the allowance program unless they are at least 62 years of age. If income were the only criterion, about 1,000 single renters under 62 would qualify. These doubtless account for most of the 1,281 ineligible single renters who now spend less than R^* for housing.

once the allowance program is under way, landlords now renting to ineligible households for less than R^* may well find it advantageous to improve the properties to HAO certification standards and seek higher rents.

In any event, the figures shown in the middle section of the table make it clear that the shortage of small units is not confined to low-rent housing. As compared with 5,100 ineligible households of one or two persons, there are less than 2,800 housing units of three rooms or less renting for more than R^*; and of these units, more than 200 are substandard. Of course for those small households who prefer more space and can afford it, the scarcity of small units is irrelevant. But as the preceding footnote indicates, at least 1,000 low-income single persons have been categorically excluded from the allowance program and may therefore find it difficult to pay for even small units of standard quality, much less larger units.

The figures in the lower section of Table 18 confirm the relative scarcity of small units at all rent levels. Altogether, there are about 8,000 households in Brown County consisting of one or two persons, but there are fewer than 4,800 housing units of three rooms or less to accommodate them; and of these small units, about 950 are substandard.

It is not clear to what extent the shortage of small units reflects the pattern of market demand (i.e., preferences of small households for units larger than our occupancy standards require) and to what extent it reflects lags in supply response to changing consumer demands. In view of the current large deficit in small units, it seems to us pertinent that screener data show an astonishing 50-percent increase in the number of two-person renter households since 1970, amounting to more than 1,500 such households. Whichever size of unit most such households seek, it should certainly be in short supply and subject to especially severe price increases.

There is some evidence that this has been the case, and also that the market has responded admirably to this specialized increase in demand. As shown in Appendix Tables C-3 and C-4, median rents for three-room rental units rose by 36 percent between 1970 and 1973, a larger increase than for any other size of unit (except for one-room units,

for which our 1970 and 1973 data are not comparable); over the same period, the inventory of three-room units increased by more than 800 units (38 percent). These very crude measures of price and quantity changes suggest a supply elasticity in the neighborhood of unity for a period of 3.5 years.

Our general point, however, is that events in the market for small housing units will critically test the effectiveness of the experimental allowance program. If the market is able to supply small standard units at prices in the vicinity of R^*, the program will succeed, almost regardless of events in other parts of the market. We emphasize this point because we think it has heretofore received insufficient attention from either Rand or HUD.

PROGRAM STANDARDS FOR OWNER-OCCUPANTS

Although the experimental allowance program is designed to include assistance for homeowners as well as for renters, we have based our program standards for housing costs entirely on data for rental housing. Our exclusive reliance on such data reflects their ready availability and, we judge, the equivalence of the real costs of housing services for renters and owners. Especially because we do not think that the experimental program should favor one form of tenure over another, we propose to apply these standards to renters and owners alike. Thus, eligibility and allowance entitlement for homeowners would reflect the schedule of values for R^* presented in Table 13.*

The preceding pages have reported on various tests of the probable effects our program standards will have on the rental housing

*We would prefer, and have recommended, that the income of a homeowner be defined to include an imputed annual return on the value of his equity, equivalent to the cash income he could obtain from this amount of capital otherwise invested. However, if the homeowner assistance program is funded under Sec. 23, this provision would require a special administrative regulation for the experimental program. In other Sec. 23 programs, only cash income is counted; since these other programs are for renters only, the value of homeowner equities does not arise. See WN-8547-HUD, op. cit., for estimates of the effects of such a provision on program size and allowance costs.

market and on program participants who are renters. While we have data from the screening survey to perform some (not all) of these tests for homeowners, we have yet to do so. We assigned a low priority to such tests because we think they would be less informative than those for renters.

We have several reasons for this view. One is that we cannot classify the inventory of owner-occupied homes, as we can rental housing, according to monthly costs (e.g., above or below R^*); our screener data contain only an estimate by the owner-occupant of the market value of his home. Nor can we classify owners, as we can renters, according to monthly housing expenditures. So a critical factor in most of the comparisons made earlier in this section is missing.

Second, even if monthly homeowner costs were available, our a priori tests of potential market effects would be inconclusive or even irrelevant. For one thing, the proposed homeowner program is much smaller than the rental program--smaller, that is, in relation to the size of the homeownership market. We estimate that about 25 percent of all homeowners in Brown County would be eligible for assistance under our proposed program standards, vs. 43 percent of all renters; and that 13 percent of all homeowners would participate, vs. 28 percent of all renters.

Moreover, the homeowner assistance program is unlikely to stimulate as much market activity as the rental program. For eligible renters, housing improvements can be sought as readily by moving as by negotiating with the landlord for repairs, etc. This fact is likely to influence both the choices of tenants and the responses of landlords. For eligible homeowners, moving is a much less accessible alternative, at least in the short run. Those whose homes are below standard will usually have to improve them if they want to participate. Such home-improvement activities may increase the values of these homes, but will have no direct impact on other homeowner properties.

It would be useful, nonetheless, to know how many eligible homeowners would be able to obtain certification of their homes without making repairs or adding rooms, and how many would not. Estimates of these numbers can be obtained from the screener data. They will be prepared by HASE staff after other more urgent tasks are completed.

Appendix A

HAO-PROPOSED MINIMUM STANDARDS FOR HOUSING UNIT EVALUATION

The proposed HAO certification standards, which are presented below, were delivered to HUD in mid-December 1973. They specify requirements for the physical environment of the structure and its exterior and interior condition; the space, facilities, and equipment of the individual housing unit and their maintenance; and protection against fire and other hazards. Special requirements for rooming houses, nursing homes, and mobile homes are also included.

The Housing Allowance Office of Brown County, Inc.

MINIMUM STANDARDS FOR HOUSING UNIT EVALUATION

1.0 ENVIRONMENTAL REQUIREMENTS

1.1 Exterior Property Areas

A housing unit shall not qualify for the housing allowance program unless or until it complies with the following requirements.

1.11 Sanitation. All exterior property areas shall be maintained in a clean and sanitary condition, free from any accumulation of rubbish or garbage.

1.12 Grading and Drainage. All exterior premises shall be graded and maintained so as to prevent the accumulation of stagnant water thereon, or within any building or structure located thereon.

1.13 Noxious Weeds, Trees and Shrubs. All exterior property shall be kept free from species of weeds or plant growth, which are noxious or detrimental to public health. All trees, shrubs and bushes shall be maintained in such a manner that they will not be a danger to the health, safety and welfare of the housing occupants.

1.14 Insect and Rodent Harborage. Every property shall be kept free from the harborage of insects, rodents, vermin and other pests in all exterior areas of the premises.

1.15 Accessory Structures and Fences. All necessary structures and fences, including attached garages, shall be maintained structurally sound and in good physical condition.

1.2 Exterior Structure

1.21 Foundation, Walls, and Roof. Every foundation, exterior wall, and roof shall be weathertight, watertight, and insect and rodent proof. They shall be kept in a good state of maintenance and repair at all times.

1.211 Foundations. The foundation eleements shall adequately support the housing unit at all points.

1.212 Walls and Exterior Wood Surfaces. Every exterior wall, including the skirting around the base of the housing unit, shall be free of holes, breaks, loose or rotting boards or timbers. All exterior surfaces shall be protected from the elements and against decay be paint or other approved protective coating applied in a workmanlike fashion, shall be in good repair and condition and shall provide a moisture barrier.

1.213 Roofs. The roof shall be tight and the rainwater so drained and conveyed from every roof to prevent dampness in walls, ceilings, or floors of any room.

1.22 Stairs, Porches, and Railings. Every inside and outside stairway, every porch, and every appurtenance thereto shall be constructed so as to be safe to use and capable of supporting the load that normal use may cause to be placed thereon; and shall be kept in sound condition and in a good state of maintenance and repair.

1.23 Windows, Doors and Hatchways. Every window, exterior door, and basement hatchway shall be weathertight, and shall be kept in a good working condition and state of maintenance and repair.

1.231 Windows to be Glazed. Every window shall be fully supplied with window panes which are without open cracks or holes.

1.232 Windows to be Tight. Every window sash shall be in good condition and fit tightly within its frame and capable of being easily opened.

1.233 Doors to Fit in Frame. Every exterior door, when closed, shall fit tightly in its frame.

1.24 Screening. Every window used for ventilation in each habitable room, shall be supplied with a screen covering. Screens shall be installed in place by June 1st of each year and shall not be removed before October 1st. Exterior (exit and entrance) doors, that would normally be used for ventilation from June to October shall be equipped with a self-closing device. Screens shall have a wire mesh that will effectively prevent the entrance of insects and rodents.

1.241 Screens on Basement Windows. Every basement or cellar window, used for ventilation, shall also be supplied with a screen or such device as will effectively prevent the entrance of insects and rodents.

1.3 Interior Structure

1.31 Free from Dampness. Every building, its cellars, basement and crawl space, shall be maintained at all times, reasonably free from dampness to prevent conditions conducive to decay or deterioration.

1.32 Structural Members. The supporting structural members of every building shall be maintained structurally sound, exhibiting no evidence of deterioration which would render them incapable of carrying the imposed loads.

1.33 Interior Stairs and Railings. Stairs shall be kept in safe condition and sound repair.

1.331 Maintained in Good Repair. All interior stairs in every structure shall be maintained in sound condition and good repair. Treads and risers that evi-

dence excessive wear or are broken, warped or loose shall be replaced. Every inside stair shall be so constructed and maintained as to be safe to use and capable of supporting imposed loads.

1.332 Stair Rails. Stair rails should be properly installed and maintained in good condition.

1.34 Bathroom and Kitchen Floors. Every bathroom and kitchen floor surface shall be constructed and maintained so as to be reasonably impervious to water and so as to permit such floors to be kept in a clean and sanitary condition.

1.35 Sanitation. The interior of every housing unit and structure shall be maintained in a clean and sanitary condition free from any accumulation of rubbish or garbage. Rubbish, garbage and other refuse shall be kept in suitable containers.

1.36 Insect and Rodent Harborage. The interior of every building shall be kept free from insect and rodent infestation, and where insects and rodents are found, they shall be promptly exterminated by acceptable processes which will not be injurious to human health. After extermination, precautions shall be taken to prevent reinfestation.

1.37 Interior Walls, Ceilings and Floors. Every interior partition, wall, floor and ceiling shall be capable of affording privacy, kept in good state of repair and maintained so as to permit them to be kept in a clean and sanitary condition.

2.0 SPACE AND OCCUPANCY REQUIREMENTS

2.1 Basic Facilities

A housing unit shall not qualify for the housing allowance program unless or until it complies with the following space and occupancy requirements.

2.11 Sanitary Facilities. Minimum sanitary facilities shall be provided in every housing unit and shall be maintained in a sanitary, safe working condition.

2.111 Lavatory and Water Closet. Every housing unit shall contain a room which affords privacy to the person within such room and which is equipped with a flush toilet and bathroom sink in good working condition. Said room could also be used for the bath tub and shower.

2.112 Bath Tub and Shower. Every housing unit shall contain a room which affords privacy to a person in said room and which is equipped with a bath tub or shower in good working condition. Said room could also be used for the lavatory and water closet.

2.113 Kitchen. Every housing unit shall contain a kitchen which is equipped with a kitchen sink, a range or stove, and a refrigerator all in good working condition or an adequate space for this equipment with the appropriate utility attachments. A kitchenette that meets three standards shall also qualify as a kitchen.

2.114 Water Heating Facilities. Every housing unit shall be supplied with water heating facilities which are properly installed, are maintained in reasonably good working condition, are properly connected to

hot water lines and are capable of heating water to such a temperature as to permit an adequate amount of water to be drawn at every bath, kitchen sink and lavatory basin at a temperature of not less than 120°F. Such supplied water heating facilities shall be capable of meeting these requirements when the housing unit's heating facilities are not in operation.

2.115 Plumbing Fixtures. All plumbing fixtures from these basic facilities shall be properly connected to an approved water system and to an approved sewage disposal system which is properly maintained and functions in a sanitary manner.

2.12 Water and Sewer System. Every kitchen sink, toilet, lavatory basin and bath shall be in good working condition and properly connected to an approved sanitary water supply and an approved sewage disposal system.

2.13 Heating Facilities. Every housing unit shall have heating facilities which are properly installed, are maintained in a safe and good working condition, and are capable of safely and adequately heating all habitable rooms, bathrooms and toilet rooms contained therein, to a temperature of 70°F, at a distance of three (3) feet above floor level, at all times when the outdoor temperature is at or above 15°F below zero. This provision shall not permit the use of portable electric heaters where they would be the primary source of heat.

2.131 Operation of Heating Facilities. Every heating facility shall be properly installed and vented and shall be maintained in a safe manner. Where central heating is provided it shall be in good operating condition.

2.132 Heat Ducts, Steam Pipes and Hot Water Pipes. Every heat duct, steam pipe and hot water pipe shall be free of leaks and shall function so that an adequate amount of heat is delivered to every habitable room where intended.

2.133 Seals. Every seal between the sections of a warm air furnace shall be tight so as to prevent the escape of noxious gases into heat ducts.

2.134 Space Heaters. Every space heater, where used, shall comply with all of the following requirements:

(1) Every space heater, burning solid, liquid or gaseous fuels shall be properly vented.

(2) Every coal burning or oil burning space heater shall have a fire-resistant panel placed immediately beneath it.

(3) The location of space heaters, the insulation of walls and ceilings close to such heaters, the construction, installation and guarding of smoke pipes and walls, or ceilings which they enter, exit or penetrate shall be done in a manner that will afford maximum safety to the housing unit occupants.

2.14 Rubbish Storage Facilities. Every housing unit shall be provided with adequate facilities or suitable containers with covers for storage of rubbish.

2.15 Garbage Storage or Disposal Facilities. Every dwelling unit shall be provided with adequate facilities for the storage or disposal of garbage.

2.2 Installation and Maintenance

A housing unit shall not qualify for the housing allowance program unless and until it complies with the following requirements pertaining to installation and maintenance.

2.21 Facilities and Equipment. All provided equipment and building space and parts in every building shall be constructed and maintained so as to properly and safely perform their defined functions.

2.22 Maintained Clean and Sanitary. All building facilities shall be maintained in a clean and sanitary condition so as to prevent the breeding of insect and rodent or produce dangerous or offensive gases and odors.

2.23 Plumbing Fixtures. All plumbing fixtures and water and waste lines in the housing unit shall be properly installed and maintained in working order and shall be kept free from obstruction, leaks and defects, and capable of performing the functions for which they are designed.

2.24 Plumbing Systems. Every plumbing stack, waste and sewer line of the housing unit shall be so installed and maintained as to function properly and shall be kept free from obstructions, leaks and defects to prevent structural deterioration or health hazards.

2.25 Heating Equipment. All space heating, cooking and water heating devices located in the housing unit shall be properly installed, connected and maintained and shall be capable of performing the functions for which it was designed.

2.26 Electrical Outlets and Fixtures. All electrical outlets and fixtures of the housing unit shall be properly installed, shall be maintained in good working condition and shall be connected to the available source of electrical power in a proper manner.

2.3 Occupancy Requirements

No housing unit shall qualify for the housing allowance program unless or until the following occupancy requirements are complied with.

2.31 Minimum Ceiling Heights. All habitable rooms in each housing unit shall have a clear minimum ceiling height of not less than seven feet (7') or shall permit the average person to move about comfortably and create no unpleasant sensation because of ceiling being of insufficient height.

2.32 Required Space in Sleeping Rooms. Every room of the housing unit used for sleeping purposes, shall contain at least seventy (70) square feet of floor space, for the first occupant and at least sixty (60) square feet for each additional person occupying the room, except that these requirements shall be reduced by one half for children under twelve (12) years of age.

2.33 Required Minimum Floor Space in Housing Unit. Every housing unit consisting of one habitable room shall contain at least 150 square feet of habitable room floor space for the first occupant thereof, and at least 100 additional square feet of habitable room floor space for each additional occupant. No housing unit consisting of only one habitable room shall be occupied by more than two (2) occupants.

2.34 Access Limitations of Housing Units to Commericial Use. No habitable room or bathroom which is accessory to a housing unit shall open directly into or shall be used in conjunction with a food store, barber or beauty shop, doctor's or dentist examination or treatment room, or a similar room used for public purposes.

2.35 Locations of Bath and Second Sleeping Room. No housing unit containing two or more sleeping rooms shall have such room arrangement that access to a bathroom or toilet room intended for use of occupants of more than one (1) sleeping room can be had only by going through

another sleeping room; nor shall room arrangements be such that access to sleeping rooms can be had only by going through another sleeping room, bathroom or toilet room.

2.36 Occupancy of Housing Units below Grade. No housing unit partially below grade shall be used for living purposes unless:

(1) The floors and walls shall be damp proof and waterproof.

(2) The total of window area in each room is equal to at least the minimum window area is located entirely above the grade of the adjoining ground.

(3) The total of openable window area in each room is equal to at least the minimum standards for ventilation, unless there is supplied some other approved device.

(4) Every habitable room in a basement shall be at least 7'6" high from the floor to the ceiling, and the ceiling shall be at least 4' above the outside ground grade level.

2.4 Light and Ventilation

No housing unit shall qualify for the housing allowance program unless or until the unit complies with the following requirements.

2.41 Natural Light in Habitable Rooms. Every habitable room shall have at least one (1) window facing directly to the outdoors. The minimum total area shall be at least 10% of the floor space of the room, but not less than 12 square feet.

2.42 Light in Non-Habitable Work Space. Every laundry or furnace room and all similar non-habitable work space shall have at least one (1) working electric light fixture available at all times.

2.43 Light in Public Halls and Stairways. Every common hall and interior stairway in every housing unit containing

four (4) or more housing units shall be adequately lighted at all times.

2.44 Electric Outlets Required. Every habitable room shall contain at least two (2) separate floor or wall type electric convenience outlets, or one such convenience outlet and one supplied ceiling or wall type electric light fixture. Every public hall, bathroom or water closet, kitchen, laundry room, furnace room shall contain at least one ceiling or wall-type electric light fixture. Every outlet and fixture shall be properly installed, shall be maintained in good and safe working condition and shall be connected to the source of electric power in a safe manner.

2.45 Adequate Ventilation. Every habitable room shall have at least one (1) window which shall be easily opened or such other device as will adequately ventilate the room.

2.46 Ventilation and Light in Bathroom and Water Closet. Every bathroom and water closet compartment shall comply with the light and ventilation requirements for habitable rooms except that no window shall be required in bathrooms or water closets equipped with an adequate ventilation system.

3.0 MINIMUM REQUIREMENTS FOR SAFETY AND FIRE

No housing unit shall qualify for the housing allowance program unless or until it complies with the following requirements regarding safety and fire.

3.1 Storage of Flammable Liquids Prohibited. No housing unit shall be located within a building containing any establishment handling, dispensing, or storing flammable liquids.

3.2 Free from Fire Hazards. No housing unit shall contain

conditions or materials that would be a threat to spontaneous combustion or the igniting of a fire.

3.3 Free from Lead Based Paint Hazards. No housing unit shall contain conditions that would be a threat to health due to use of lead based paint.

4.0 ROOMING HOUSES AND NURSING HOMES

4.1 Basic Requirements

A rooming house or nursing home shall not qualify for the housing allowance program unless or until it complies with the following requirements, as well as those applicable provisions of Sections I and II.

4.11 Toilets and Lavatory Basins. At least one toilet and one lavatory basin, properly connected to an approved water and sewer disposal system and in good working condition, shall be supplied for each ten persons, or fraction thereof, residing within a rooming house or nursing home, including members of the operator's family wherever they have use of said facilities.

4.12 Baths. At least one bath, properly connected to an approved water and sewer disposal system and in good working condition shall be supplied for each eight persons, or fraction thereof residing within a rooming house or nursing home, including members of the operator's family wherever they share the use of said facilities.

4.13 Location of Sanitary Facilities. Every toilet, lavatory facility and bath shall be located within a room or rooms, which affords privacy to a person within such room or rooms. All such facilities shall be located within the rooming house or nursing home and be accessible to the occupants of each rooming unit sharing such facilities, without going outside the housing unit, and without going through another housing unit, or through a rooming unit of another occupant.

4.14 Minimum Floor Space for Sleeping Purposes. Every room occupied for sleeping purposes, by one person, shall contain at least 70 square feet of floor space, and every room occupied for sleeping purposes by more than one person shall contain at least 60 square feet of floor space for each additional occupant.

4.15 Storage and Disposal of Garbage and Rubbish. Adequate garbage and rubbish storage facilities and containers shall be provided and maintained in a clean and sanitary manner.

4.16 Maintenance. Every rooming house and nursing home shall be maintained in a clean and sanitary manner including walls, floors and ceilings.

4.17 Insect and Rodent Control. Every rooming house and nursing home shall be maintained in a condition that will prevent the harborage of insects and rodents and shall be properly screened to prevent the entrance of insects and rodents.

4.18 Exits. Every rooming unit in every rooming house or nursing home shall have two means of egress for each floor other than the ground floor and shall conform with the following requirements.

4.181 Exits shall be easily accessible from every room unit by passageway, without passing through any part of any other rooming unit or housing unit.

4.182 All exit doors shall be kept in good repair to assure an easy means of egress.

5.0 MOBILE HOMES

5.1 Basic Requirements

A mobile home shall not qualify for the housing allowance program unless or until it complies with the following requirements, as well as those applicable provisions of Sections I, II or III.

5.11 Sanitary Facilities. Minimum sanitary facilities shall be provided in every mobile home unit which shall include:

5.111 Lavatory and Water Closet. Every mobile home unit shall contain a room which affords privacy to the person within such room and which is equipped with a flush toilet and bathroom sink in good working condition. Said room may also contain a bath tub and/or shower.

5.112 Bath tub and/or Shower. Every mobile home unit shall contain a room which affords privacy to a person in said room and which is equipped with a bath tub and/or shower in good working condition. Said room may also contain a lavatory and water closet.

5.113 Kitchen Facilities. Every mobile home unit shall contain a kitchen sink, range and refrigerator in good working condition.

5.12 Water Heating Facilities. Every mobile home unit shall be equipped with water heating facilities which are properly installed, maintained in good working condition, properly connected to hot water lines and are capable of heating water to such a temperature as to permit an adequate amount of water to be drawn at every bath, kitchen sink and lavatory basin at a temperature of not less than 120°F.

5.13 Water and Sewer Systems. Every kitchen sink, toilet, lavatory basin and bath shall be in good working condition and properly connected to an approved sanitary water supply and an approved sewage disposal system.

5.14 Heating Facilities. Every mobile home unit shall have heating facilities that are properly installed, maintained in a safe and good working condition and are capable of safely and adequately heating all habitable rooms, bathrooms and toilet rooms therin, to a temperature of 70°F at a distance of three (3) feet above floor level, at all times when the outdoor temperature is at or above 15°F below zero. Every heating facility within the mobile home unit shall be properly installed and vented and shall be maintained in a safe manner.

5.2 Installation and Maintenance

A mobile home unit shall not qualify for the housing allowance program unless or until it complies with the following requirements, as well as those applicable provisions of Section I and II.

5.21 Facilities and Equipment. All equipment and mobile home space and parts shall be constructed and maintained so as to properly and safely perform their defined functions.

5.22 Plumbing Systems. Every plumbing stack, waste and sewer line of the mobile home unit shall be so installed and maintained as to function properly and shall be connected to an approved waste and sewer disposal system, shall be kept free from obstruction, defects and leaks to prevent structural deterioration of health hazards.

5.23 Electrical Outlets and Fixtures. All electrical outlets and fixtures of the mobile home unit shall be properly installed, shall be maintained in good working condition and shall be connected to the available source of electric power in a safe and prop r manner.

5.24 Sound Construction. The mobile home unit must be of basic sound construction, waterproof and weathertight.

5.3 Occupancy Requirements

A mobile home unit shall not qualify for the housing allowance program unless or until it complies with the following requirements, as well as those applicable provisions of Sections I and II.

5.31 Minimum Ceiling Heights. All habitable rooms in each mobile home unit shall have a clear minimum ceiling height of not less than seven (7) feet and shall permit the average person to move about comfortably and create no unpleasant sensation because of ceiling being of insufficient height.

5.32 Required Minimum Floor Space. Every mobile home unit shall contain at least 150 square feet of floor space for the first occupant thereof and at least 70 square feet of floor space for every additional occupant. This additional space requirement shall be reduced by one half for children under twelve (12) years of age.

5.4 Minimum Requirements for Safety

A mobile home unit shall not qualify for the housing allowance program unless or until it complies with the following requirements, as well as those applicable provisions of Sections I and II.

5.41 Electrical Systems.

5.411 Power Lines. No electrical power lines shall be located directly above any portion of the mobile home unit.

5.42 Gas Systems.

5.421 No liquefiable petroleum gas vessel shall be stored or located inside or beneath any storage cabinet, carport or any other part of the mobile home unit.

5.422 Liquefied petroleum gas containers shall be securely but not permanently fastened to prevent accidental turning over.

5.423 All fuel, oil storage tanks or cylinders shall be securely fastened in place and shall not be located inside or beneath any mobile home unit.

5.43 Fire Protection.

5.431 No mobile home unit shall contain conditions or materials that would be a threat to spontaneous combustion or the igniting of a fire.

5.432 Portable fire extinguishers shall be located conveniently and readily accessible for use by all occupants and shall be maintained in good working condition.

5.5 Space and Location

A mobile home unit shall not qualify for the housing allowance program unless or until it complies with the following requirements as well as those applicable provisions of Sections I and II.

5.51 Mobile Home Stand. A stand shall be provided on every mobile home lot to accomodate the mobile home unit and its accessory structures. The stand shall be capable of providing an adequate anchoring facility to secure the unit against accidental movement.

5.511 The mobile home stand shall be durable and capable of supporting the expected load regardless of weather conditions.

5.512 Anchors shall be provided at least at each corner of the mobile home unit and shall be capable of firmly supporting its load.

5.52 Site Conditions. All sites selected for mobile home unit shall be well drained and free from topographical or geographical hindrances or from other conditions unfavorable to a proper residential enviroment.

5.521 A site shall not be located near swamps, marshes, or other breeding places of insects and rodents or near zones of heavy industry with objectionable odors or noises.

5.53 Density. No mobile home unit shall be located closer than 10 feet from any other mobile home or permanent building within a development.

5.6 Light and Ventilation.

A mobile home unit shall not qualify for the housing allowance program unless or until it complies with the following requirements, as well as those applicable provisions of Sections I and II.

5.61 Habitable Rooms. Habitable rooms in the mobile home unit shall be provided with exterior windows or doors having a total glazed area of not less than 10 percent of the floor space.

5.611 An area equivalent to not less than 5 percent of the floor space shall be available for unobstructed ventilation.

5.612 Glazed areas with a mechanical ventilation system may not be openable if the mechanical system is capable of producing a change in air in the rooms every thirty (30) minutes with not less than one-fifth of the air supply taken from the outside of the mobile home unit.

5.62 Bathroom. Each bathroom shall be provided with artifical light, and in addition, be provided with external windows or doors having not less than 1 1/2 square feet of fully openable glazed area.

5.621 Where a mechanical ventilation system is provided, it shall be capable of producing a change of air every twelve (12) minutes and shall exhaust directly to the outside of the mobile home unit.

5.63 Exit Facilities. Every mobile home unit shall have a minimum of two (2) exterior doors located remote from each other and so arranged as to provide a means of unobstructed travel to the outside of the mobile home unit.

5.631 Exterior doors shall be no less than a 28 inch wide clear opening.

5.632 Every room designed for sleeping purposes, unless it has an exit door, shall have at least one outside window which can be opened from the inside and provide a clear opening of not less than twenty-two (22) inches in least dimension and five (5) square feet in area with the bottom of the opening not more than four (4) feet above the floor.

Appendix B

ALTERNATIVE OCCUPANCY STANDARDS

The occupancy standards proposed in the draft HAO Handbook and reproduced in Appendix A follow municipal codes in expressing space requirements in terms of square feet of floor space and minimum ceiling heights. Such standards do not directly address the problems of overcrowding that stem from the lack of separate rooms with closable doors. They cannot therefore ensure an acceptable separation of incompatible domestic activities or adequate personal privacy.

Alternative standards, addressed to these problems, are proposed below. They measure "space" in terms of numbers of rooms of different types and relate space requirements to household composition as well as household size.

These standards are intended as guidelines for the HAO in approving or rejecting specific housing units for occupancy by specific households, once an inspection has been conducted and the facilities and condition of the unit have met the quality standards contained in Appendix A. The guidelines should not be applied rigidly, but interpreted by the HAO staff to fit the peculiarities of individual cases, with certification the favored decision.

SINGLE PERSONS

Under program rules, unrelated individuals living alone are eligible for assistance only if they are over 62 years of age. For these elderly individuals, any of the accommodations discussed below is acceptable.

House or apartment. A separate housing unit for a single person must contain at least two habitable rooms and must include complete kitchen facilities (stove, refrigerator, and sink) and complete plumbing facilities (toilet, basin, tub, or shower). One room may be used for food preparation, eating, and sitting, and the other for sleeping; or one room may be used as a bed-sitting room and the other for food

preparation and eating. Sleeping, cooking, and bathroom facilities must be in separate rooms.

Rooming house or nursing home. A unit of this type is acceptable for a single person if it consists of at least one private bed-sitting room, with access by way of a public hall to toilet and bathing facilities, shared with no more than eight other persons. The minimum size of the private room is 100 square feet. Such accommodations are acceptable only if regular hot meals are available on the premises.

Mobile Home. A mobile home containing complete kitchen and plumbing facilities is an acceptable accommodation for a single person.

TWO PERSONS

An eligible two-person household may consist of a married couple, a parent and child, brother and sister, or other related persons. Except for married (i.e., cohabiting) couples, separate bedrooms are required for persons of opposite sexes, unless the younger is under 12 years of age.

Home or apartment. A separate housing unit for a two-person household must contain at least two habitable rooms (three rooms if separate sleeping rooms are required) and must be equipped with complete kitchen and plumbing facilities. One room may be used for food preparation, eating, and sitting, and the other(s) as bedroom(s); or one room may be used for food preparation and eating, one as a bed-sitting room (and the third as a bedroom).

Rooming house or nursing home. A unit of this type is acceptable for a married couple, provided it consists of at least one private bed-sitting room, with access by way of a public hall to toilet and bathing facilities shared with no more than eight other persons. The minimum size of the room is 170 square feet. Such accommodations are acceptable only if regular hot meals are available on the premises.

If one member of the household is a child under 12 years of age, the unit must have a private toilet and wash basin. But such a unit is not acceptable at all if one member is a child under six years of age; in that case, a complete, separate housing unit is required.

An additional bedroom is required for persons of opposite sexes, unless the younger is under 12 years of age.

Mobile home. A mobile home containing complete kitchen and plumbing facilities is an acceptable accommodation for a two-person household, if it provides separate bedrooms for noncohabiting persons of the opposite sex when the younger is 12 years of age or over.

THREE PERSONS

An eligible three-person household may consist of a married couple with one child, a single parent with two children, or a variety of other combinations. Except for married couples, separate bedrooms are required for persons of opposite sexes, unless the youngest is under 12 years of age; and a married couple may not share a bedroom with anyone over six years of age.

House or Apartment. A separate housing unit for a three-person household must contain at least three habitable rooms and must be equipped with complete kitchen and plumbing facilities. One room may be used for food preparation, eating, and sitting, with two bedrooms; or one may be used as a separate sitting room, with one bedroom. A bed-sitting room or bed-kitchen combination is not acceptable.

Thus, four habitable rooms will be required if (a) kitchen, eating, and sitting activities cannot feasibly be combined in one room, and (b) household composition is such that two bedrooms are required.

Rooming house. Rooming house units lacking full private kitchen and plumbing facilities are not acceptable for a three-person household except under special circumstances of household composition.

Mobile home. A mobile home containing complete kitchen and plumbing facilities is an acceptable accommodation for a three-person household, provided the room configuration meets the requirements outlined above for a house or apartment.

FOUR OR MORE PERSONS

An eligible household of four or more persons most often consists of either one or two parents and their minor children. However, the

number of possible configurations of age, sex, and relationship is too great to be readily enumerated. Except for married couples, separate bedrooms are required for persons of opposite sexes, unless the youngest is under 12 years of age; and no more than three persons may share a single bedroom except under special circumstances. A married couple may not share a bedroom with anyone over six years of age.

House or apartment. A separate housing unit for a household of four or more persons must contain a separate kitchen or kitchen-dining room; and a separate sitting room or sitting-dining room, used neither for food preparation nor for sleeping. The number of bedrooms required depends on the distribution of family members by age, sex, and relationships as described above. As with all separate housing units, complete kitchen and plumbing facilities are required.

Rooming house. Rooming house units lacking full private kitchen and plumbing facilities are not acceptable for a household of four or more persons.

Mobile home. A mobile home containing complete kitchen and plumbing facilities is an acceptable accommodation for households of four or more persons, provided that the room configuration meets the requirements outlined above for a house or apartment. This will rarely be the case, however.

Appendix C
PRIOR ESTIMATES OF STANDARD COST IN BROWN COUNTY

Prior to the completion of our screening survey and the formal consultation with the panel of local experts, HASE staff were asked to prepare estimates of the size and cost of an experimental housing allowance program in Brown County.* Preparing these estimates required assumptions about the program standards that were as yet unsettled and data about the numbers of Brown County households, classified by income and size of household.

In preparing these estimates, we relied on two sources of data: 1969 rental housing expenditure budgets for Brown County, prepared by the Bureau of Labor Statistics; and the 1970 Census of Population and Housing, which reported household incomes for 1969. From these data, we prepared estimates of the standard cost of adequate housing by size of household for 1969, which we subsequently projected to 1974, allowing for intervening price inflation.

Below, we describe the basic data and how they were used to estimate a schedule of values for R^*, the standard cost of adequate housing. Later, we will compare these values with those obtained from the 1973 screening survey and the panel of experts.

BLS ESTIMATES AND RAND EXTENSIONS

The values that we selected for R^* in our preliminary eligibility and allowance estimates were based on the Intermediate consumption budget for the Spring of 1969, prepared by the Bureau of Labor Statistics (BLS) for urban households of four persons. The BLS annually prices three standards of living--Lower, Intermediate, and Higher--for

*See Barbara M. Woodfill and Tiina Repnau, *Estimates of Eligibility and Allowance Entitlement under Alternative Housing Allowance Programs*, The Rand Corporation, WN-7974-HUD, September 1972; and Barbara M. Woodfill, Tiina Repnau, and Ira S. Lowry, *Estimates of Eligibility, Enrollment, and Allowance Payments in Green Bay and Saginaw: 1974 and 1979*, The Rand Corporation, WN-8439-HUD, September 1973.

a family consisting of an employed husband, age 38; a wife not employed; and two children, ages 8 and 13.* The budgets do not represent how much the average family spends. Rather, each is constructed from a list of goods and services that allows for the maintenance of physical health and social well-being, the nurture of children, and participation in community activities at a specified level of living. The different levels are distinguished by varying the assumptions concerning the manner of living and by providing different quantities and qualities of the necessary goods and services. The content of the budgets, last set in 1967, is based on the manner of living and consumer choices of the 1960s. We selected the Intermediate budget as our standard because it is intended to represent a "modest but adequate" standard of living. The 1969 budget was used because we could combine these data with household income data from the 1970 census, which is for the calendar year 1969.

The BLS allowance for shelter rent is intended to reflect American Public Health Association (APHA) and U.S. Public Health Administration standards for sleeping space, essential household equipment, adequate utilities and heat, structural safety, and neighborhood facilities. For renter households, the shelter standard is an unfurnished five-room unit (house or apartment) in sound condition and with a complete private bath; a fully equipped kitchen; all utilities; access to public transportation, schools, and grocery stores; play space for children; and location in residential neighborhoods free from hazards or nuisances. The rent allowance in the Intermediate budget is the average of the middle third of the rent distribution for all units meeting these specifications in the Consumer Price Index survey in Brown County.

There remained the problem of translating this rent allowance, which is for a four-person household, into rents for households of various sizes. The BLS has developed scales for determining the incomes required by different household configurations to maintain

*The concepts and estimating procedures are described in Bureau of Labor Statistics, *Three Standards of Living for an Urban Family of Four Persons*, Bulletin No. 1570-5, 1969.

equivalent levels of consumption, based on the relationship between food expenditures and income. They caution, however, that the scales cannot be used to estimate the component costs of consumption such as food or housing. We therefore used scales implied by the housing components of equivalent low-to-moderate consumption budgets for households of different sizes in New York City for 1968.* The housing expenditures, estimated by the New York City-Rand Institute as the full cost of adequate housing, are based on APHA standards, which are also used by the BLS.

The 1969 values of R^* extrapolated from the BLS data are shown in Table C-1. Also shown are two estimates for 1974, a "Most Probable" set of values and an "Upper Bound" set. To obtain the "Most Probable" case we inflated the 1969 values by 25 percent. Between the spring of 1969 and the fall of 1972, the shelter component of the Intermediate budget in Green Bay increased by 18.6 percent. Linear extrapolation of this change through 1973 implied an additional increase of 6.4 percentage points. Comparison with census data (discussed in the next subsection) and discussions with BLS led us to suspect that the BLS figure might be low; so we inflated the "Most Probable" values by another 10 percent to yield the "Upper Bound" values.

CENSUS MEDIAN RENTS

In the 1970 Census of Population and Housing (CPH), gross rent is a computed rent; it is the sum of reported contract rent and an estimated average monthly cost of utilities and fuels, if these items are paid for by the renter in addition to rent. All renter households were to report contract rent, but only a 20-percent sample of these households was asked to report the remaining components of gross rent. For households paying no cash rent or less than full rent, no attempt was made by the Bureau of the Census to impute the full rent.

*Ira S. Lowry, Joseph S. DeSalvo, and Barbara M. Woodfill, *Rental Housing in New York City*, Vol. II, *The Demand for Shelter*, The New York City-Rand Institute, R-649-NYC, June 1971.

Table C-1

ESTIMATES OF THE STANDARD COST OF ADEQUATE HOUSING, BY SIZE OF HOUSEHOLD OR SIZE OF HOUSING UNIT, BASED ON BLS DATA: BROWN COUNTY, WISCONSIN, 1973

Number of Persons	Number of Rooms	Monthly Gross Rent ($)		
			1974	
		1969	Most Probable[a]	Upper Bound[b]
1	1-2	77	96	106
2	3	86	107	118
3	4	96	120	132
4	5	102	128	141
5	5	108	135	148
6	6	115	144	158
7	6	118	148	163
8+	6+	121	151	166

SOURCE: Barbara M. Woodfill and Tiina Repnau, *Estimates of Eligibility and Allowance Entitlement under Alternative Housing Allowance Programs*, WN-7974-HUD, The Rand Corporation, September 1972; and Barbara M. Woodfill, Tiina Repnau, and Ira S. Lowry, *Estimates of Eligibility, Enrollment and Allowance Payments in Green Bay and Saginaw: 1974 and 1979*, The Rand Corporation, WN-8439-HUD, September 1973.

NOTE: Standard is based on the Bureau of Labor Statistics' Spring 1969 Urban Family Budget, Intermediate level.

[a] A 25-percent increase over 1969. Estimated by extrapolating change between BLS Urban Family Budgets of Spring 1969 and Autumn 1972.

[b] An additional 10-percent increase over the "Most Probable" to compensate for a suspected underestimate by the BLS.

Table C-2 shows the median rents (averages are not published and cannot be computed from published tallies) for rental units in Brown County in April 1970 by number of rooms per unit. Bathrooms, foyers, utility rooms, unfinished attics or basements, etc., are not included in the count of rooms. The table also shows the ratio of the CPH medians to the 1969 Rand-BLS *R**s given in Table C-1. Although both measure essentially the same thing, the differences are not insignificant. Because the Rand-BLS values for four-person households were not affected by our method of extrapolation to other household sizes, it is best to compare rents for units of five rooms, the standard for that number of persons. The median rent for five-room rental units is 14 percent higher than the BLS figure.

This big a difference is not likely to be explained either by inflation in the year separating the BLS and CPH surveys or by the mathematical difference between a median value (CPH) and a mean value (BLS). Conversations with BLS staff members indicated they think the small size of the BLS sample of five-room units in Brown County makes their rental values questionable. It was for this reason that we introduced our "Upper Bound" estimate in the BLS-based numbers.

Table C-2

MEDIAN MONTHLY GROSS RENT BY SIZE OF UNIT: BROWN COUNTY, WISCONSIN, 1970

Number of Rooms	Amount ($)	Ratio to 1969 BLS-Rand *R**
1	52	.99
2	97	
3	90	1.07
4	107	1.05
5	116	1.14
6	120	1.04
7	138	1.11
8+	125	

SOURCE: Table A-2, Census of Population and Housing 1970, *Metropolitan Housing Characteristics*, Green Bay, Wisconsin, SMSA, and Table C-1.

RENT INFLATION, 1969 TO 1973

As noted above, the shelter component of the BLS Intermediate budget for Brown County increased by 18.6 percent between the spring of 1969 and the fall of 1972, a period of 3.5 years. By their reckoning, the average annual increase in the cost of a fixed package of housing services during this period was 5.3 percent. The BLS has not yet published budgets for 1973.

With the completion of the screening survey in October 1973, we now have an alternative way of estimating changes in housing costs in Brown County in recent years. We can compare rent data from the screening survey with similar data from the 1970 Census of Population and Housing. The two surveys also bracket a period of 3.5 years, 2.5 of which overlap with the BLS data.

Such a comparison is made in Table C-3, by size of housing unit. To make the screener measure of unit size more comparable to the CPH

Table C-3

CHANGES IN MEDIAN MONTHLY GROSS RENTS:
BROWN COUNTY, WISCONSIN, 1970 TO 1973

Number of Rooms	Median Gross Rent ($)		Percentage Change	
	CPH Spring 1970	Screener Fall 1973	1970-1973	Average Annual[a]
1	52	78[b]	50	14.3
2	97	123	27	7.7
3	90	122	36	10.3
4	107	142	33	9.4
5	116	151	30	8.6
6	120	155	29	8.3
7	138	147	7	2.0
8+	125	160	28	8.0
All sizes	106	138	30	8.6

SOURCES: Tabulations by HASE staff of data from Site I screening survey and Table C-2.

NOTE: Changes in median rents reflect both price inflation and changes in the housing inventory. Room counts for the screener are equivalent to the CPH and are not limited to ventilated rooms, the count used elsewhere in this Note.

[a]Estimated by dividing the total increase between April 1970 and October 1973 by 3.5 years.

[b]Excludes rented rooms in single-family homes and rooming houses, many of which qualify as housing units by CPH definitions.

measure, we have tabulated screener rents by total number of rooms rather than by number of ventilated rooms, the unit of account used elsewhere in this Note.* However, the data for one-room units are not closely comparable because our screener tabulations exclude rented rooms in single-family homes and rooming houses, many of which qualify as housing units under CPH definitions.

Perhaps because of this inconsistency in coverage, the median rent for one-room units counted in the screener tabulations is 50 percent greater than the corresponding figure from the 1970 census. For larger units, the change in median rents between 1970 and 1973 ranged from 27 to 36 percent, except for seven-room units, where the change was only 7 percent. We have no ready explanation for this anomaly. For units of all sizes, the median rent rose from $106 to $138, an increase of 30 percent.

These changes in median rents cannot be interpreted strictly as price changes because the housing inventory of Brown County also changed during this period. Some units present in 1970 were subsequently demolished, and some units in the 1973 inventory were constructed after 1970; even units present in both inventories may have deteriorated or may have been improved in ways that altered their market values. We have no data on changes in existing units, and only partial data on demolitions, which were rare (we estimate that fewer than 400 units were demolished during this 3.5-year period).

However, new construction substantially changed the Brown County housing stock between 1970 and 1973. For the years 1970 through 1972, building permits were issued for nearly 5,200 housing units, equal to 12 percent of the 1970 inventory. About 2,600 of these permits were for units in multiple dwellings, nearly all of which would surely be rental units. New rental units are also likely to be above the 1970 median in both quality and rent, thus accounting for some of the observed increases in median rents between 1970 and 1973.

*From the screening survey responses, we estimate that about 7.5 percent of all rental units in Brown County contain one or more unventilated rooms. The CPH room-count is based on responses to the question, "How many rooms do you have in your living quarters? (Do not count bathrooms, porches, balconies, foyers, halls, or half-rooms.)" Responses to this question would presumably include unventilated rooms.

Table C-4 compares the numbers of rental units of each size estimated from 1973 screener data with corresponding figures reported by the 1970 CPH. The table indicates a net loss of 485 one-room units (which is at least partly spurious for the reasons explained above) and a much smaller net loss of units with six or more rooms. However, the table shows a net gain of 1,700 units of two, three, and four rooms, and about 150 units of five rooms.

The relatively small change in the stock of five-room units is fortuitous, because this is the size on which the BLS based its estimate of changes in shelter costs. For this size of unit, the screening survey and the 1970 CPH appear to report on nearly the same population of housing units; if so, the 30-percent increase in median rent for five-room units reported in Table C-3 is attributable almost entirely to inflation.

Thus, for the overlapping periods 1969-1972 and 1970-1973, we have two different estimates of the rate of inflation. According to the BLS, the rate was 5.3 percent annually; according to the screener-census comparison in Table C-3, it was 8.6 percent. Neither estimate is foolproof, and the estimates do not cover identical periods; but we judge that the BLS substantially understated the rate of inflation.

COMPARISON TO REVISED R^* ESTIMATES

In Sec. IV of this Note, we proposed a schedule of values for R^* based on data from the 1973 screening survey and on estimates provided by a panel of local experts. In Table C-5, this new schedule is compared to our earlier estimates, based on BLS data for 1969 and projected to 1974.

The new estimates are 50 to 60 percent higher than the 1969 BLS-based estimates and 20 to 30 percent above our "Most Probable" projections for 1974. They even exceed our "Upper Bound" projections for 1974 by 10 to 18 percent. However, the relative values of R^* for households of different sizes changed only trivially.

There are three possible reasons for the discrepancy between our earlier estimates and our current estimates of R^*. One is that the BLS Intermediate budget for housing costs was badly off the mark, given

Table C-4

CHANGES IN THE STOCK OF RENTAL HOUSING, BY SIZE OF UNIT: BROWN COUNTY, WISCONSIN, 1970 TO 1973

Number of Rooms	Number of Units		Percentage Change 1970-1973
	CPH Spring 1970	Screener Fall 1973	
1	590	105[a]	-82.2
2	609	710	+16.6
3	2,133	2,951	+38.4
4	4,252	5,031	+18.3
5	2,669	2,816	+ 5.5
6+	2,009	1,830	- 8.9
All Sizes	12,262	13,443	+ 9.6

SOURCE: Tabulations by HASE staff of data from the Site I Screening Survey; and 1970 Census of Population and Housing, *Metropolitan Housing Characteristics*, Green Bay, Wisconsin SMSA, Table A-2.

NOTE: Room counts for the screener are equivalent to the CPH and are not limited to ventilated rooms, the count used elsewhere in this Note.

[a]Excludes about 500 rented rooms in single-family homes and rooming houses, many of which would qualify as housing units by CPH definitions.

Table C-5

COMPARISON OF ESTIMATES OF R^* FROM 1969 BLS DATA AND 1973 SCREENING SURVEY AND DELPHI DATA: BROWN COUNTY, WISCONSIN

Number of Persons	Estimates of R^* (Current $)				Ratio to BLS-Rand 1969		
		BLS-Rand 1974		Screener-Delphi 1973	BLS-Rand 1974		Screener-Delphi 1973
	BLS-Rand 1969	Most Probable	Upper Bound		Most Probable	Upper Bound	
1	77	96	106	125	1.25	1.375	1.62
2	86	108	118	135	1.25	1.375	1.57
3	96	120	132	145	1.25	1.375	1.51
4	102	127	140	155	1.25	1.375	1.52
5	108	135	148	165	1.25	1.375	1.53
6	115	144	158	175	1.25	1.375	1.52
7	118	148	162	185	1.25	1.375	1.57
8	121	151	166	195	1.25	1.375	1.61
9	—	—	—	205	—	—	—
10	—	—	—	215	—	—	—

SOURCES: Woodfill, Repnau, and Lowry, WN-8439-HUD, Table 7; and analysis of data from Site I Screening Survey and Delphi Proceedings in Brown County.

NOTE: The 1969 BLS data estimated the cost of adequate housing (Intermediate Budget) for four persons. HASE staff estimated corresponding values for other household sizes. In WN-8439-HUD, these figures were inflated by 1.25 to allow for inflation to 1974 (Most Probable Case) and by an additional 10 percent to compensate for a suspected underestimate by the BLS (Upper Bound Case).

the housing standards on which it was based. Another is that rent inflation after 1969 was more rapid than reported by the BLS through the fall of 1972 (18.6 percent). There is also the possibility that higher standards of housing quality were invoked in our current estimates than in the BLS Intermediate budget. In our judgment, all three factors play some part; but the principal culprit seems to be a substantial underestimate of the rate of rent inflation since 1969.

From sources other than BLS data, we are now able to estimate the annual rate of price inflation for the type of housing surveyed by BLS at 8.6 percent annually for a 42-month period from the spring of 1970 to the fall of 1973. Applying this rate to the full 57-month period from the spring of 1969 through the end of 1973 yields a total inflation factor of 41 percent, vs. the 25-percent factor used in constructing our "Most Probable" estimates for 1974.

If 41 percent is taken as the true inflation factor and is subtracted from the ratios shown in the last column of Table C-5, there remains a difference of about 10 percent between our new estimates of R^* and those for 1969. This residual difference could reflect either underpricing of standard housing in 1969 by the BLS (a possibility discussed earlier in this appendix); or an upward shift in our quality standards as we moved from the BLS definition to the screener-Delphi definition of standard housing; or both.

Appendix D
UNCONVENTIONAL HOUSING IN BROWN COUNTY

This Note's discussion of program standards, housing costs, and the utilization of the housing stock has focused on single-family homes and apartments in multiple dwellings. Such units dominate the market, but it would be a mistake to ignore two less conventional kinds of housing in Brown County: mobile homes, and rented rooms in single-family homes and rooming houses.

These housing resources have been slighted in part because our screener data for them are less adequate than for conventional units, a circumstance we propose to remedy in our baseline surveys. Here, however, we can report briefly on what we know about the incidence and characteristics of each type in October 1973 and explain how such units were treated in the tabulations presented in the body of this Note.

MOBILE HOMES

The screening survey located 14 mobile home parks in Brown County, ranging in size from 14 to 269 units. About 113 additional mobile homes were found either alone on a parcel of land or sharing a lot with conventional housing. These records represent an estimated population of 1,231 mobile homes.

The tenure of mobile-home residents can be complicated. They may own both the vehicle and the land on which it is located, or they may rent either or both. Our data indicate that 91 percent owned the vehicle, but only 11 percent of these also owned the land. We classified all those who owned their vehicles as homeowners, and all others as renters. By this definition, most residents of mobile home parks are treated as owners, even though they lease "spaces" for their units and may pay fees for other services to the managers of the parks.

We have included mobile homes and mobile home residents in all the tables of this report that enumerate housing units or households. Room counts, equipment, etc., were reported by the occupants of mobile homes in response to questions identical to those addressed to occupants of conventional housing. For the few mobile-home occupants classed as renters, gross rent was calculated so as to include both rent paid for the vehicle and rent paid for the space it occupied (unless the space was owned by the occupant).

The HAO certification standards detailed in Appendix A include special provisions for mobile homes that are in some respects more stringent than requirements for conventional housing. For instance, two exits are required for mobile homes but not for single-family houses or apartments. The reader may recall that the housing quality test (Standard C) applied to housing units for which we have screener records did not include a two-exit requirement. Therefore, we doubtless rated some mobile homes as standard, even though they would not meet HAO requirements.

Although mobile homes now constitute only about 2.5 percent of all housing units in Brown County, they are worthy of special attention both in the experimental allowance program and the accompanying monitoring plan. Nationally, they constitute a rapidly increasing form of housing; they accounted for 22 percent of all new units completed in 1972. In Brown County, the 1970 CPH reported only 692 such units, as compared with 1,231 estimated from the 1973 screening survey, an increase of 77 percent in 3.5 years.

RENTED ROOMS

At one time, rooming houses and boarding houses were common in this country, housing single persons and transients, but with some couples and larger families. Lodgers and boarders in private homes were also common. With increasing prosperity and simplified housekeeping, such living arrangements have become relatively rare--a trend opposite to the growing incidence of mobile homes.

Accounting for such living arrangements is at best difficult, because they shade into conventional apartment living on the one hand and into sharing of household expenses by unrelated persons on the other. The Bureau of the Census counts a rented room as a separate housing unit if its occupant(s) "live and eat separately" from others in the structure and if the rented room has a separate entrance to the outside or to a common hallway. A lodger, by the census definition, is someone who shares a housing unit with others, but who is not related to the head of the household and who pays rent to the head of the household. Thus, not all unrelated individuals living with families are lodgers, nor are all persons who live alone in single rooms. The bureau also has a separate category, "group quarters," for structures housing six or more unrelated individuals. This category includes dormitories, barracks, custodial institutions, nursing homes, and large rooming houses. Persons living in group quarters are not counted as members of households; however, if fewer than six unrelated persons live together and share expenses, they comprise a household whose head is self-identified.

The 1970 CPH reported 590 one-room housing units, 479 of them occupied, in Brown County, most of which would certainly be described in common speech as "rented rooms." The CPH did not enumerate lodgers per se, but reported 2,231 persons who were members of households to whose heads they were not related. How many of these persons paid rent to the household head is not known.

In our 1973 screening survey, we located 36 properties described by the interviewers as "rooming houses," only a third of which contained as many as nine lodgers, the maximum number our interviewers tried to list. From these data, we calculate that the minimum number of rooming-house lodgers in Brown County is 226, and estimate that the maximum is less than 300 (see Table D-1).

In addition, our sample of conventional housing units included some with lodgers. From the sample, we estimate that there are 149 owner-occupied homes containing one or more lodgers (unrelated persons paying rent to the head of the household) and 98 rented homes

Table D-1

NUMBERS OF PROPERTIES THAT HOUSE LODGERS, BY TYPE OF PROPERTY AND NUMBER OF LODGERS: BROWN COUNTY, WISCONSIN, 1973

Number of Lodgers	Number of Properties, by Type			
	Rooming House	Owner-Occupied Home	Rented Home	All Types
1	2	128	89	219
2	—	19	9	28
3	2	2	—	4
4	9	—	—	9
5	—	—	—	—
6	5	—	—	5
7	3	—	—	3
8	4	—	—	4
9+	11	—	—	11
Total number of properties	36	149	98	283
Total number of lodgers	226[a]	172	107	505[a]

SOURCE: Tabulations by HASE staff of data from the Site I Screening Survey.

NOTE: Lodgers are persons unrelated to the head of the household (or proprietor of the rooming house) who pay rent to the head.

[a]Because the exact number of lodgers in rooming houses with nine or more is unknown, this is a minimum count.

with rooms sublet to lodgers. Our estimate of the total number of lodgers in private homes is 279 persons. Combining these with rooming-house lodgers, we obtain a total of 505 to 580 lodgers.

Finally, the screener sample also included some one-room housing units. Our instructions to interviewers defined a housing unit in the same terms used by the CPH, except that a structure containing five or more unrelated lodgers was classified as a rooming house even though the CPH might have described each rented room as a separate housing unit. Under our more restricted definition, we estimate that there are 109 one-room housing units in Brown County, substantially fewer than the CPH estimate of 590 in 1970.

In the screening survey, we did not interview persons classified here as lodgers, whether in private homes or rooming houses. Thus, we do not know anything about their ages, their incomes, or the amount of rent they pay. More information will be obtained from lodgers in the baseline survey of tenants.

In our general tabulations of numbers of households and housing units, we have excluded rooming houses altogether; we have counted lodgers in private homes as members of the households with whom they dwell and counted their rented rooms as part of the larger housing unit. Depending on the purposes for which a tabulation is used, these conventions may be appropriate or inappropriate. Thus, an elderly couple with two lodgers in a six-room house would be reported as a household of four persons in a housing unit of six rooms. At most, 170 owner-occupied units and 107 rental units are thus affected by the presence of one or two lodgers. (Two owner-occupied homes had three lodgers, and four "rooming houses," excluded altogether from these tabulations, had three or fewer lodgers at the time of the survey.)

In our estimates of the numbers of households eligible for housing allowances, we proceeded differently: Because we lack adequate information to determine the eligibility of lodgers for assistance, we have excluded them altogether. For these estimates, lodgers in private homes were *not* counted as members of the households with

whom they lived, nor were their incomes (which are unknown to us) counted as part of household income. Lodgers in rooming houses were also excluded. Occupants of one-room housing units, on the other hand, were interviewed and counted in the eligibility estimates.

Out of the 505 to 580 lodgers in Brown County, perhaps 200 to 300 may be eligible for allowances. Almost all lodgers are single persons who qualify only if they are at least 62 years of age; probably nearly all who meet that requirement would also meet the income test.