ML - General

Sept. 26, 1984

Expert Report by Rutgers Professor:
"Mount Laurel Income Qualification and Housing Deterioration Specification"

pgs. 8

notes: expert report
double-sided pages

ML 000821E

DT-11 ident 9/26/84
EBS
end 10/1/84

ML000821E

MOUNT LAUREL INCOME QUALIFICATION AND HOUSING DETERIORATION SPECIFICATION

by
Robert W. Burchell, Ph.D.
Distinguished Professor
Center for Urban Policy Research
Rutgers University

26 September 1984

INTRODUCTION

The purpose of the report which follows is to discuss the origins of the present need determinations of the Rutgers study, Mount Laurel II: The Challenge and Delivery of Low-Cost Housing.[1] The focus of the information presented here will be on the procedures used for the income determination as well as the definition of deteriorated housing. Further, where possible, the report will concentrate on supplementary information, and verbatim restatements of the contents of the Rutgers Mount Laurel II report will be avoided.

The report begins with the procedures used to delimit low and moderate households by income. It compares Rutgers and Consensus* approaches to specify lower-income households living in deteriorated housing. The report then discusses housing quality estimation procedures over time, as well as the use of historic trends to generate the Rutgers procedure. The pitfalls of using single-index approaches are finally pointed out.

INCOME - MOUNT LAUREL PRESENT NEED (RUTGERS APPROACH)

The Public Use Sample is comprised of computer tapes which contain records for a sample of housing units with information on the characteristics of each unit and the people in it. It is made available by the Census Bureau as an additional information source to the Summary Tape File (STF) -- that data found in Census printed reports. As described by the Census Data User Service Division: "The STF offers structural tables of general interest while a finer level of analysis is made possible by the Public Use Sample."** The value of Public Use is reflected in its widespread utilization. According to the Census Bureau, it has sold/given hundreds of Public Use files in the past two years to universities (e.g., Princeton-Rutgers Consortium, Michigan Inter-University Consortium, etc.), research institutions (e.g., RAND, ABT, Brookings), and governmental agencies (e.g., State Data User offices).

The Public Use Sample is also widely drawn upon in New Jersey. According to Richard Bender of the Association of Public Data Users, the New Jersey Public Use file has been utilized by numerous state, county, and local governments as well as a variety of private businesses and consultants. For example, the State Department of Human Services requested a county-by-county cross-tabulation of specified households (e.g., elderly, Hispanic origin) by income. The published Summary Tape File (STF) data did not allow

---

*Consensus as used here refers to a procedure of housing need determinants developed by planners and attorneys involved in Mount Laurel litigation as reported in Carla L. Lerman, Fair Share Report, Urban League of Greater New Brunswick v. Carteret et al., April 2, 1984, and the opinion rendered in AMC Realty Company vs. the Township of Warren et al., July 16, 1984.

**Robert Clair, Data User Service Division, Bureau of the Census, September 25, 1984.

for this multiple variable analysis. In the opinion of Richard Bender, the Mount Laurel identification of housing quality by household income similarly compels turning to the Public Use Data as opposed to the STF.

The New Jersey Public Use Sample[2] (a five percent sample of all households in New Jersey taken by the U.S. Census Bureau) was used by Rutgers to qualify a household according to HUD Section 8 family income requirements. Information from this file makes it possible to initially eliminate all individuals living in institutions, group quarters or as boarders/lodgers from potential Mount Laurel housing demand. This removes from direct count, those people who comprise prison/sanitorium, college, nursing home and other populations.

Once this procedure is undertaken, the Public Use Sample may be employed to array all households by family size and income status. HUD median income for a region is determined and 80 percent and 50 percent assigned to household sizes of four for the upper limits of moderate and low incomes respectively (see Exhibit 1). Each household size of more or less than four, is allowed a positive or negative adjustment of the 80 percent or 50 percent of median figure and still qualify for moderate- or low-income designation. (This is based on the philosophy that if you have more children/dependents you can earn slightly more and qualify for moderate/low income; in reverse fashion, if you have less dependents, it is made more difficult for you to qualify by requiring less income for qualification.) For instance, a household size of six can qualify for moderate-income designation as long as combined income is less than 90 percent of median family income for the region. On the other hand, a household size of two would not qualify for moderate-income designation even if its combined income was only 65 percent of regional family income (see Exhibit 1).

The income isolation procedure is absolutely imperative in that it clearly disaggregates households within a region by size that meet the definition of moderate or low income. This is aptly shown in Exhibit 2 wherein the Consensus, Rutgers (CUPR), and Consensus Modified methods are compared for their ability to specify the poor living in deteriorated housing. The Consensus method specifies single indices of deterioration and randomly selects 82 out of every 100 cases as housing-deficient units occupied by low-income. The Rutgers procedure qualifies low- and moderate-income population first and then views the type of housing that it occupies according to multiple indices of deterioration. The Consensus Modified method follows the Rutgers income specification procedure and qualifies low- and moderate-income families in deteriorated housing according to single indices of deterioration.

1979 income is taken and extended to 1984 by the CPI. The 80th percentile of that income is compared to the Section 8 moderate-income cutoff for June 1984. One would expect that the 80th percentile of these distributions of supposed lower-income households living in deteriorated housing would be below the Section 8 moderate-income cutoff. The CUPR and the Consensus Modified incomes are; the unaltered Consensus method is not. This method is identifying a much more exclusive population than the others. In some cases

EXHIBIT 1

PERCENTAGES OF AREAL MEDIAN INCOME
USED TO ADJUST FOR HOUSEHOLD SIZE DIFFERENCES
IN THE HUD SECTION 8 PROGRAM

INCOME CATEGORY	HOUSEHOLD SIZE 1	2	3	4	5	6	7	8
Moderate Income (Percent of Median Family Income)	56	64	72	80	85	90	95	100
Low Income (Percent of Median Family Income)	35	40	45	50	54	58	62	66

Source: U.S. Department of Housing and Urban Development Programs Office, Washington, D.C.

EXHIBIT 2

HOUSEHOLD INCOME OF "LOWER" INCOME IN DETERIORATED HOUSING
BY CUPR AND CONSENSUS METHODS

		1979 [1] HOUSEHOLD INCOME (Reported April 1980) 80th Percentile	1984 HOUSEHOLD INCOME* 80th Percentile	1984 HUD [2] SECTION 8 MODERATE INCOME CUTOFF
Northern Region (11 County)	Consensus (Single Index x 82%)	$27,440	$38,416	$25,425 (Bergen-Passaic, Jersey City, Middlesex-Somerset-Hunterdon, Newark PMSA)
	CUPR (Multiple Indices Income Qualified)	$14,278	$19,982	
	Consensus Modified (Single Index Income Qualified)	$16,510	$23,114	
CUPR Region 3	Consensus (Single Index x 82%)	$30,010	$42,014	$27,000 (Middlesex-Somerset-Hunterdon PMSA)
	CUPR (Multiple Indices Income Qualified)	$15,965	$22,351	
	Consensus Modified (Single Index Income Qualified)	$17,790	$24,906	
Subregions 26 and 27	Consensus (Single Index x 82%)	$37,775	$52,885	$27,000 (Middlesex-Somerset-Hunterdon PMSA)
	CUPR (Multiple Indices Income Qualified)	$15,930	$22,302	
	Consensus Modified (Single Index Income Qualified)	$17,500	$23,807	

*1979 Income adjusted by the CPI (all items)

Source: (1) New Jersey Public Use Sample
(2) HUD, Newark, June 1984 (family of four)

the income of lower-income households living in deteriorated housing is twice what has been identified by the CUPR and Consensus Modified methods.

HOUSING QUALITY - MOUNT LAUREL PRESENT NEED (RUTGERS APPROACH)

Mount Laurel present need is defined as those households of low and moderate income that live in deteriorated housing. Deteriorated housing is housing which had multiple deficiencies according to various housing quality indices reported by the 1980 Census of Housing. These indices are covered in detail in the Rutgers report. Their selection follows a forty-year trial and error period in specifying deteriorated housing by the U.S. Census.

Housing Quality and the U.S. Census - A History

The evolution of specific housing quality in the U.S. Census is reported in Exhibits 3 and 4. In a nutshell, it began in 1940 with Census field enumerators making very basic decisions about the housing quality they witnessed, and became increasingly sophisticated using this process through the time of 1960 Census. In the latter part of the 1960's, however, the Census Bureau went back to check units classified as dilapidated or not dilapidated and found that less than one-third of a different group of enumerators could agree with the original classification. Field enumeration of housing quality was stopped in 1970 except for basic information about the availability of plumbing, and has not been reinstituted since then. In 1980, housing characteristics were reported which drew upon associative studies of the 1970s for inference and linkages to deteriorated housing. The point which should be emphasized here, is that until 1960, housing quality determination was a field decision reflecting the observed condition of that housing. After that time, surrogates of deterioration were used which would point to characteristics of units which were also field-evaluated as of poor quality via sample survey. Surrogates such as limited plumbing, overcrowding, lack of central heat, etc. were not determined as one-for-one indicators of housing deterioration, but were found to be present, usually in multiples, in housing that was evaluated by field observers as of poor quality. Thus, throughout the history of housing quality determinations, housing has been evaluated as less than adequate if it had observed serious physical defects, or objective characteristics that were associated with units that were also observed as defective.

1940 Census

In the 1940 Census, a dichotomous choice was to be made by enumerators.[3] Inadequate housing was defined as "needing major repair" -- adequate housing as "not needing major repair." The enumerator determined the repair to be major on the basis of whether the continued neglect of the deficiency would impair the soundness of the structure and create a hazard for the occupants. This was linked with plumbing information on units, i.e., whether there was a complete private bath (toilet, bathtub/shower, running water) and using these criteria, inadequate housing was mapped for a city.

1950 Census

In 1950, the terms "dilapidated" and "non-dilapidated" replaced the terms "needing major repair" and "not needing major repair" of the 1940 Census.[4] It was felt that needing major repairs did not measure the structural quality of the unit or the ability of the house to provide adequate shelter. A dwelling unit was reported as dilapidated if, because of either inadequate original construction or deterioration, it was below generally accepted minimum standards for housing and should be torn down or extensively repaired or rebuilt. The linkage with inadequate plumbing was maintained by housing personnel. It was felt that measures of the quality of housing that combined these items resulted in a more comprehensive measure than evaluating each item independently. Tabular presentations were presented for each city that partitioned housing by the categories "all housing" and "housing which had no private bath or was dilapidated."

1960 Census

In 1960, the terms used to describe dilapidated and non-dilapidated were similar to 1950 except that non-dilapidated was divided into two parts: sound and deteriorating.[5] A sound unit was one that had no defects or slight defects that could be rectified in regular maintenance; a deteriorated unit was one that needed more repair than could be provided during the course of regular maintenance.

In 1967, in Working Paper #25,[6] the Census Bureau reported the results of a check of the 1960 Census ratings of housing quality. The results were disastrous. According to the Census Bureau:[7]

> "The statistics are unreliable; our best estimate is that if another group of enumerators had been sent back to rate the housing units of the United States, only about one-third of the units rated as dilapidated or deteriorated by either group of enumerators would be rated the same by both group of enumerators."

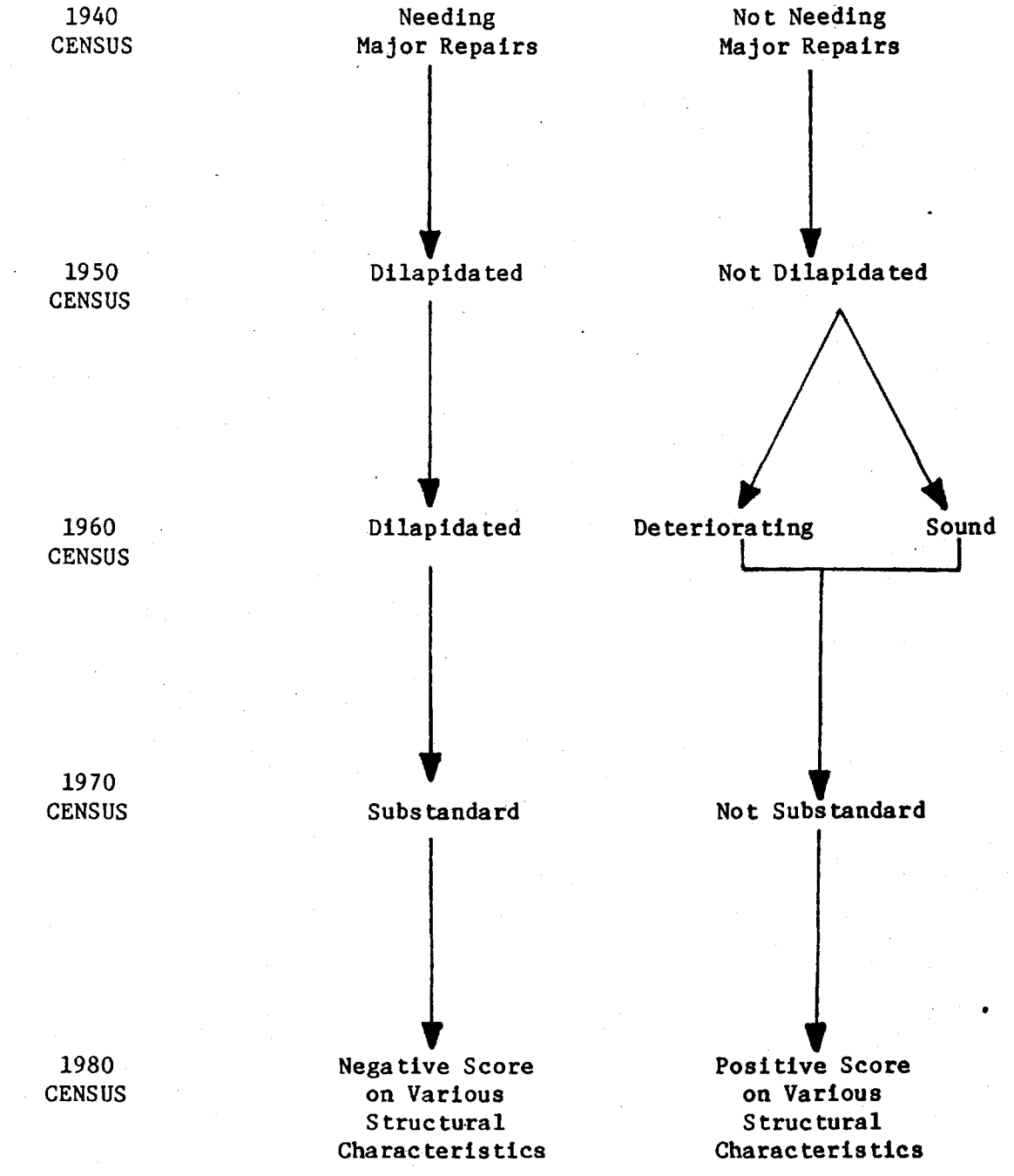
1970 Census

Reflecting the inaccuracy of the data in the 1960 Census of Population and Housing, the 1970 Census collected information about the availability of plumbing facilities but not about the structural condition of the housing unit.

In 1970, in a second thrust, a highly trained group of enumerators attempted to rate 113,000 housing units nationally and also obtain information as to the completeness of plumbing in these units.[8] In each of nineteen geographic areas, a relationship was developed between dilapidated units with complete plumbing and all units with complete plumbing. Since for all housing units nationally, those without complete plumbing for exclusive use was known, all that remained to obtain a local estimate of

EXHIBIT 3

HOUSING QUALITY DEFINITION PROGRESSION
1940 TO 1980



Source: See text and footnotes.

DEFINITIONS OF TERMS USED TO RATE HOUSING QUALITY
PARALLELING PROGRESSION OVER TIME

DATE	TERM	DEFINITION
1940 CENSUS	"needing major repairs"	Parts of the structure such as floors, roof, walls, or foundation require major repairs or replacement. The enumerator determined the repair to be "major" on the basis of whether the continued neglect of the deficiency would impair the soundness of the structure and create a hazard for the occupants. This concept measured only the physical condition of the structure without indicating the level of quality, e.g., a tar-paper shack or a cellar may have been classified as not needing major repairs.
	"not needing major repairs"	Lacking the above-described conditions.
1950 CENSUS	"dilapidated"	A unit was to be reported as dilapidated when it had one or more serious deficiencies or was of inadequate original construction so that it provided inadequate shelter or endangered the safety of the occupants. A unit was also to be classified as dilapidated if it had a combination of minor deficiencies to the extent that it did not provide protection against the elements or was physically unsafe.
	"not dilapidated"	Lacking the above-described conditions.
1960 CENSUS	"dilapidated"	Same as 1950 Census.
	"sound"	Having no defects or only slight defects which normally would be corrected during the course of regular maintenance.
	"deteriorating"	Needing more repair than would be provided during the course of regular maintenance.
1970 CENSUS	"substandard"	Housing units that lack some or all plumbing facilities for exclusive use and those that have all plumbing facilities for exclusive use but which were rated as "dilapidated." The latter was determined by survey indicating the proportional relationship between dilapidated units with complete plumbing and all units with complete plumbing. These proportions were then applied to the corresponding groups of units with all plumbing facilities as tabulated from the 1970 Census to provide estimates of dilapidated units with all plumbing facilities.
	"not substandard"	Lacking the above-described conditions.

EXHIBIT 4

DEFINITIONS OF TERMS USED TO RATE HOUSING QUALITY
PARALLELING PROGRESSION OVER TIME
[continued]

DATE	TERM	DEFINITION
	Structural Characteristics	
1980 CENSUS	"year structure built" .built prior to 1940 .built after 1940	Year when the building was first constructed, not when it was remodeled, added to, or converted.
	"persons per room" .more than 1.01 persons per room	Units occupied by more persons than there are separate rooms.
	"access to unit" .lack of exclusive access	Units which lack direct access from the outside of the building or through a common hall.
	"plumbing facilities" .lack of exclusive plumbing	Includes the following three categories: 1. complete plumbing facilities, but also used by another household; 2. some but not all plumbing facilities; and 3. no plumbing facilities.
	"kitchen facilities" .lack complete kitchen facilities	Units lacking one or more of the following kitchen equipment items: 1. an installed sink with piped water; 2. a range or cookstove; 3. a mechanical refrigerator.
	"heating facilities" .lacking central heating facilities	Includes the following three categories: 1. room heaters with or without flue; 2. fireplaces, stoves, or portable room heaters; 3. no heating.
	"elevator" .lacking elevator in multistory structure of 4 or more stories	Housing units in structures with four or more stories with no passenger elevator or with only elevator service used for freight.

Source: U.S. Department of Commerce, Bureau of the Census, Measuring the Quality of Housing — An Appraisal of Census Statistics and Methods (Washington, D.C.: U.S. Government Printing Office, 1967), Working Paper No. 25; U.S. Department of Commerce, Bureau of the Census, Plumbing Facilities and Estimates of Dilapidated Housing (Washington, D.C.: U.S. Government Printing Office, November 1973); U.S. Department of Commerce, Bureau of the Census, Census of Population and Housing - User's Guide (Washington, D.C.: U.S. Government Printing Office, September 1983).

substandard housing was to determine the category "dilapidated with complete plumbing." This was done by applying the ratio obtained in the Components of Inventory Change (CINCH) Survey to all units with complete plumbing.

1980 Census

In 1980, there were a variety of structural characteristics provided with no explicit attempt to associate any structural characteristic with standard or substandard housing.[9] Information was provided on utilization of housing in the form of persons per room, and additional structural characteristics such as age of housing, number of stories of unit, presence of elevator, etc.

Information was also provided on plumbing in the form of "complete plumbing for exclusive use." Information was provided on equipment and fuels including (a) kitchens, indicating completeness; and (b) heating equipment in two basic groupings of units with and without central heat. The idea of the reported structural characteristics was to be able to draw upon research completed during the past decade such as the Census Bureau's Five City Study[10] and use the structural characteristics to signal deteriorated housing.

CUPR SURROGATES AND DETERIORATED HOUSING

Encompassing the evolution of the concept of deteriorated housing from that which enumerators physically identified to that which has been isolated through surrogates, CUPR used information provided by the 1980 Census to signal housing deterioration. Seven variables were used to signal deficiency. This represented the full range of information available on housing quality in the 1980 Census. It included measures of: (1) age of housing, (2) adequacy of space, (3) access to unit, (4) exclusive use of plumbing, (5) completeness of kitchen, (6) lacking central heat, and (6) height of structure with elevator access. All households defined as deficient were initially qualified as low and moderate income.

A unit thus had to have at least three characteristics to be signalled as deficient. Resident income, housing unit age, and one other structural characteristic in the first case; in the second case, in the absence of the unit-age qualification (i.e. for a unit less than forty years old), income plus two or more of the other structural characteristics signalled housing deficiency.

Exhibit 5 is used to show the importance of multiple characteristics signaling housing deficiency. In the first column is listed the number of indices. In the second column is the cumulative probability of correctly identifying all poor housing, while in the third is the probability of incorrectly identifying good housing as bad. With any one indicator you stand a significant chance of catching bad housing (that has deficiencies) but also a significant chance of erroneously classifying good housing as bad. With ten indicators you stand a very low probability of catching a significant amount of bad housing but a very high probability of not classifying any good housing as bad.

EXHIBIT 5

PERCENT OF HOUSING UNITS CORRECTLY/INCORRECTLY IDENTIFIED AS POOR BY A 10-VARIABLE COMBINATORIAL ANALYSIS [2]

Number of Housing Quality Indicators That Must be Simultaneously Present To Flag Poor Housing [1]	Percent of All Poor Housing Correctly Identified As Poor	Percent of All Good Housing Falsely Identified As Poor
10 of 10	0.10%	0.00%
9 of 10	1.37%	0.00%
8 of 10	7.48%	0.00%
7 of 10	23.75%	0.00%
6 of 10	49.95%	0.09%
5 of 10	76.22%	0.13%
4 of 10	92.56%	1.19%
3 of 10	98.63%	7.27%
2 of 10	99.86%	28.36%
1 of 10	99.97%	68.43%

[1]The ten measures are as follow: 1. family income less than $5,000 (in 1972); 2. unit has over 1.01 persons per room; 3. unit has crumbling plaster and peeling paint over a considerable area or large holes in the walls; 4. unit has rooms without hot-air ducts or registers, radiators, or room heaters; 5. basement has shown signs of water leakage from outside during the past 90 days; 6. toilet facilities unusable for more than 24 hours during the past 90 days; 7. rooms had to be closed during the past winter due to lack of heat; 8. only some light fixtures are in working order (multifamily units); 9. buildings on this block face have boarded-up windows; and 10. condition of other buildings on street described as poor.

[2]Exhibit is to be read as follows: The fewer the number of housing quality indicators required to be present to signal a housing unit as deficient, the greater will be the number of deficient units correctly identifed as deficient. However, at the same time, the percentage of good housing falsely identified as poor will also be large. Conversely, the greater the number of housing quality indicators required to be present to signal a housing unit as deficient, the smaller will be the number of deficient units correctly identified as deficient. However, at the same time, the percentage of good housing falsely identified as poor will also be very small.

Source: W. Patrick Beaton, "The Use of Combinatorial Indices in Housing Quality Specification." Paper to be presented to the October 1984 meeting of the ACSP Conference, New York. Beaton's data are derived from the probabilities of the Five City Study.

At three indicators you still stand a high probability of flagging bad housing yet also a reasonably low probability of including good housing as bad. This approaches the optimal level of assignment which is why CUPR opted for the combinatorial method.

Multiple characteristics in the same unit were sought to avoid the selection of surrogates that would not carefully delimit deteriorated housing -- units which provide inadequate shelter. Separately tabulated individual characteristics might point out an idiosyncrasy in housing as opposed to a seriously deteriorated housing unit. For example, age, in and of itself, is inadequate. Even lack of central heat used as a sole criterion currently would include some luxury units heated by wood-burning fireplaces, etc.

THE BASIS AND ADVANTAGES OF THE CUPR METHODOLOGY

The CUPR procedure avoids the selection of any single characteristic as a dominant means of specifying deteriorated housing. The evolving pattern of specification of dilapidated housing moves away from enumerators' views and a single indicator of housing deterioration (inadequate plumbing) to a variety of surrogates.

Numerous empirical investigations cast further doubt as to the justification of employing a single housing measure as a flag of housing inadequacy. The Annual Housing Survey (AHS) reports the counts and characteristics of housing units lost from the stock -- the latter, a not-unexpected outcome of poor housing quality.[11] If the single-measure approach of housing quality were valid, we would expect that a reasonable share of the lost housing stock measured by the AHS would be characterized by these single indices -- overcrowding, incomplete kitchen facilities, heating equipment, etc. This is not the case, however. The 1981 AHS indicates that a total of 2,891,000 housing units first observed in 1973 (the first year the AHS was conducted) were lost from the inventory by 1981. Yet, few of these units had the single characteristics often utilized to measure housing inadequacy. Of the 2,891,000 total units lost, only 84,000 or 2.9 percent had insufficient heating equipment, 66,000 or 2.3 percent were overcrowded, 60,000 or 2.1 percent were without all plumbing facilities, and 52,000 or 1.8 percent were deficient with respect to kitchen equipment. Only the variable of an aged housing stock (e.g., built 1939 or earlier) was reasonably correlated with removal from the housing inventory; 1,947,000 units, or two-thirds of the 2,891,000 units lost from the stock, were built pre-1939. The AHS data casts considerable doubt as to the justification for using most single housing characteristics (with the exception of age) to flag poor housing quality.

A more definitive indictment of the single-measure methodology is made by HUD's Five City Study.[12] This analysis is unique as an effort to assess housing quality. It combined field-level housing-quality judgments made by experienced enumerators and a set of Census-type housing and household characteristics for a sample of over two thousand dwelling units. The

sample was drawn from, and was designed to reflect, the housing contained in five cities -- in aggregate, 1,271,600 units. The field-level evaluation by the trained enumerators indicated that 52,600, or 4.1 percent of the 1,271,600 total units, were of poor quality, while 1,219,000 or 95.9 percent were satisfactory. The uniqueness and value of the Five City Study was the bringing together of Census-type housing and household characteristics and careful expert ratings of housing quality. This allowed testing of how well the former could predict the latter.

Such testing showed clearly the serious degree of error that can occur with the use of individual surrogates. Overcrowding is an example. Of the total 1,271,600 housing units in the Five City Study area, 151,300 or 11.9 percent were overcrowded (using the threshold of 1.01 persons per room). Yet the expert field-level enumeration of housing quality indicated that a total of 52,600 units were of poor quality. Thus, using overcrowding as a flag of housing inadequacy would have overstated its true incidence by three times.

Similar housing-quality overcounting errors characterize other housing-household characteristics. Of the 1,271,600 units in the Five City Study, 319,100 lacked heating services. In this case, applying the heating variable as an indicator of housing inadequacy would have overstated its actual incidence by six times.

The Census Bureau is currently leaning towards a combinatorial methodology to measuring housing quality:[13]

> By 1980 some of the traditional indicators of housing quality had declined to relatively low levels. . . . Therefore the Bureau asked Federal, state, and local governments what combinations of data items would be most useful for program analysis and review. [emphasis added]

The Census Bureau's analysis on this matter has been ongoing for several years. It considered numerous combinations of measures, encompassing both housing and household characteristics, in order to identify housing inadequacy. Examples include the combination of housing unit age, value, plumbing insufficiency (lacking complete plumbing for exclusive use), as well as numerous occupant characteristics (e.g., poverty, income, age, etc.). As indicated by William Downs of the Census Bureau, "There is widespread support for applying a combination approach to measure housing quality."[14]

In sum, the Rutgers methodology for identifying housing need reflects the combinatorial methodology suggested by the empirical analysis state of the art and currently pursued by the Census Bureau. Its employment of the Public Use Sample to qualify households by income ensures a sample set within Section 8 definitions.

CONCLUSION

Critical to any determination of Mount Laurel need is to specify with the most precise clarity, the income group to be served. The New Jersey Public Use Sample can be used with great accuracy to identify low- and moderate-income households of varying household sizes that meet HUD Section 8 income eligibility requirements.

Once the appropriate households have been identified, it is then necessary to determine the quality of the housing that they occupy. Following Guidelines of the Five City and other studies, surrogates of housing deficiency were selected. An effort was made to select those variables that were reported in the literature to signal housing deterioration as well as to be cognizant of the potential errors that employing single surrogates might occasion.

A unit is deficient if it may be lost from the stock or continue to offer less-than-adequate housing if left unattended. Units with multiple deficiencies appear to best answer this criterion. This seems to target the assignment of deficient status to those units which, had they been inspected, would have been truly found to be deficient.

NOTES

1. Robert W. Burchell, W. Patrick Beaton, and David Listokin. Mount Laurel II: Challenge and Delivery of Low-Cost Housing (New Brunswick, NJ: Center for Urban Policy Research, 1983).

2. U.S. Department of Commerce, Bureau of the Census. The 1980 Census of Population and Housing, Public Use Sample (Washington, D.C.: Series).

3. U.S. Department of Commerce, Bureau of the Census. Housing-Analytical Map Series (Washington, D.C.: WPA War Series, no date).

4. U.S. Department of Commerce, Bureau of the Census. 1950 United States Census of Housing Bulletin H-A - General Characteristics (Washington, D.C.: Government Printing Office, 1952).

5. U.S. Department of Commerce, Bureau of the Census. 1960 United States Census of Housing. Final Report HC(1)-32 (Washington, D.C.: Government Printing Office, 1962).

6. U.S. Department of Commerce, Bureau of the Census. Measuring the Quality of Housing -- An Appraisal of Census Statistics and Methods (Washington, D.C.: U.S. Government Printing Office, 1967), Working Paper No. 25.

7. Ibid.

8. U.S. Department of Commerce, Bureau of the Census. Plumbing Facilities and Estimates of Dilapidated Housing (Washington, D.C.: U.S. Government Printing Office, November 1973).

9. U.S. Department of Commerce, Bureau of the Census. 1980 United States Census of Housing Final Report - HC80 (Washington, D.C.: Government Printing Office, 1982).

10. U.S. Department of Commerce, Bureau of the Census, A Preliminary Look at the Results of the Five City Survey (Washington, D.C.: U.S. Government Printing Office, July 1975).

11. U.S. Department of Commerce, Bureau of the Census. Current Housing Reports - Annual Housing Survey: 1981, General Housing Characteristics, Part A (Washington, D.C.: Government Printing Office, 1983).

12. See footnote 10.

13. U.S. Department of Commerce, Bureau of the Census, Housing Division, "1990 - Whither Housing Quality?" (Washington, D.C.: mimeo, 1984, p. 2.

14. Telephone interview with William Downs, Bureau of the Census, Housing Division, September 20, 1984.