

HUD/FHA-Insured Rental Housing:
Physical and Financial Condition of Multifamily Properties
Insured Before 1975

HUD-4842



ORIGINAL

HUD/FHA - Insured Rental Housing

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HUD/FHA-INSURED RENTAL HOUSING

Physical and Financial Condition of
Multifamily Properties Insured Before 1975

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April 1987

U.S DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
OFFICE OF POLICY DEVELOPMENT AND RESEARCH

EXECUTIVE SUMMARY

Nearly 1.7 million American families rent apartments in privately owned and financed properties whose mortgages are insured by the Federal Housing Administration (FHA) of the U.S. Department of Housing and Urban Development (HUD). Sixty-four percent of these families live in properties that receive HUD subsidies to keep rents affordable for lower-income households. About half of the insured properties are over ten years old.

Individuals in the Administration, Congress, and housing industry have been concerned that for many of these older properties, the cost of replacing roofs, heating, cooling, and other critical capital systems might exceed available resources. This could lead to physical deterioration affecting habitability or structural soundness, financial default, and high insurance claims against HUD. In response to these concerns, HUD's Office of Policy Development and Research undertook a study of the physical and financial condition of the older portion of the HUD/FHA multifamily rental inventory.¹ This older inventory contains 7,266 properties with over 880,000 units. The study addressed the following questions:

- o What are the current and projected repair and replacement costs of the older insured inventory through the year 2000?
- o What proportion of properties is likely to have difficulty paying these costs from income and replacement reserves?
- o What is the nature of properties for which HUD has provided or obtained special assistance to alleviate physical or financial problems?

The study is based on two types of information: (1) for the entire older insured rental stock, computerized administrative records which provided physical, geographic, and programmatic background; and (2) for a representative sample of 500 older properties, detailed files, financial statements, and specially conducted physical inspections. Based upon analysis of the sample properties, we projected the physical and financial condition of the entire older inventory, as shown in the following table.

The study's major findings are:

- 1. There is no evidence that otherwise sound properties are about to be financially overwhelmed by an increase in capital replacements.**

¹ For the purposes of this study, the older FHA inventory was defined as all multifamily rental properties with mortgages insured by HUD prior to 1975 that, in 1985, were either still insured or had had their mortgages assigned to HUD because of default. This definition excluded properties that were publicly owned, nonresidential, nonrental, or uninsured (such as Section 202 elderly or state-financed, uninsured Section 236).

Ex-1: PHYSICAL AND FINANCIAL CONDITION OF THE OLDER INVENTORY*
 (Number and percent of properties by category of condition)

Physical Condition: 5-year repair needs/yr**	Financial Condition: Average Annual Cashflow**				TOTAL
	Very Weak (under -\$600)	Weak (-\$600 to -120)	Breakeven (-\$120 to 120)	Strong (\$120 or more)	
Very High Needs (Over \$900)	# 63 % 0.9	76 1.0	196 2.7	270 3.7	605 8.3
High Needs (\$600-900)	# 69 % 0.9	56 0.8	392 5.4	576 8.0	1093 15.1
Standard Needs (\$300-600)	# 100 % 1.4	190 2.6	569 7.8	1414 19.5	2273 31.3
Low Needs (Under \$300)	# 107 % 1.5	299 4.1	760 10.5	2129 29.2	3295 45.3
TOTAL	# 339 % 4.7	622 8.6	1916 26.4	4389 60.4	7266 100.0

* HUD/FHA-insured and HUD-held multifamily rental housing insured before 1975, excluding Sections 608 and 803, HUD-acquired properties, uninsured Sections 202 and 236, cooperatives, condominiums, and nursing homes. Based on data collected in 1985 on a representative sample of properties.

**Financial condition based on average annual residual cash (net before-tax cashflow) per unit using actual data for 1980 to 1984. Physical condition based on annual repair and replacement needs per unit, 1986 to 1990, as estimated on-site by professional inspectors. Physical condition categories based on prior research and historic data on repair and replacement expenses. All dollar amounts are in 1985 dollars per unit per year.

- o Almost 80 percent of the properties (5,600 properties containing over 700,000 units) are in good physical condition and need only moderate levels of nonroutine repairs and replacements.

Through 1990 these 5,600 properties will need under \$600 per unit annually (constant 1985 dollars) for nonroutine repairs and replacements. This is well within the normal range based on past expenditure patterns.

The remaining 1,700 properties (containing 188,000 units) face annual costs of over \$600 per unit for nonroutine repairs and replacements. Many properties have been making comparable repair expenditures in the past. Nearly half of the needed expenditures are for items only tangentially related to physical viability (e.g., replace carpeting or repave parking areas). Owners could choose, as many have in the past, to defer or spread some of these expenditures over time.

- o Focusing strictly on capital replacements--roofs, heating, cooling, and other core systems--over the next 15 years there is no projected increase in yearly capital replacement needs.

Annual estimated replacement needs through the year 2000 generally remain constant at a level no higher than recent replacement expenditures. Furthermore, among these ten-year-and-older properties, the oldest do not show significantly higher needs than do newer properties. Age is not a good predictor of capital needs, perhaps because original construction quality, coupled with varying patterns of maintenance, use, and abuse can greatly extend or reduce the useful life of building components.

- o Sixty-five percent of the properties (4,700 properties containing over 565,000 units) appear to have adequate resources from annual cashflow and accumulated replacement reserves to meet capital replacement needs projected through year 2000. This includes many properties that have much higher than average needs. The remaining 35 percent of properties (2,500 properties containing 318,000 units) appear to have inadequate resources to meet needs; however, many may be able to improve their cashflow sufficiently to overcome estimated shortfalls. The properties with resource shortfalls fall into two groups:

Nearly 2,000 properties (containing over 230,000 units) face annual resource shortfalls of \$120 to \$600 per unit. This level of needed cashflow improvement (equivalent to rent increases, occupancy improvements, and operating efficiencies totaling \$10 to \$50 a month per unit) seems feasible for many properties, particularly those with annual shortfalls below \$400.

Nearly 600 properties (containing 83,000 units) face annual shortfalls of more than \$600 per unit, for a combined shortfall of \$98 million per year. This level of cashflow improvement probably

cannot be met through routine measures. Almost 89 percent of these properties (497) have a negative cashflow even before dealing with future physical needs and face generalized financial problems; 41 percent (over 200) have already had their mortgages assigned from the private lender to HUD. On the positive side, however, almost half have recently undergone ownership changes (with HUD/FHA mortgage in place--"Transfer of Physical Assets") and may be in the process of making the major management and physical improvements needed; and over half receive Section 8 loan management assistance and may be in a position to increase rents without overwhelming low-income tenants.

In summary, it appears that a majority of properties will be able to meet physical needs; a minority may be able to meet needs with management improvements and HUD participation in approving increases in rents and reserve escrow contributions (both of which could increase Federal costs in properties receiving rental assistance through Section 8); and a smaller minority is unlikely to meet needs without extraordinary changes such as new ownership coupled with funding infusions from new owners.

2. Physically or financially weak properties do not cluster into neatly defined groups with such general characteristics as age, mortgage program, subsidy program, building type (e.g., high rise), size, owner's profit status, or location. More complex factors such as management quality, owner behavior, local market conditions, or original construction quality apparently overwhelm the more modest effects of the general characteristics measured in this study. This study did not identify any general characteristics that would aid the Federal government in channeling its management and financial resources to remedy problems.

- o Statistical tests revealed little systematic relation between a property's repair and replacement needs and characteristics. Even age has very little relation to physical needs.
- o Similarly, statistical tests revealed only weak relations between cashflow and property characteristics. Surprisingly, the oldest of these 10-year and older properties tend to have better cashflow than relatively newer ones, even after accounting for other differences such as HUD mortgage and subsidy programs. Overall, however, property characteristics are poor predictors of financial status.

3. A large portion of older properties have received special loan management assistance through the Section 8 Loan Management Set Aside Program (LMSA), the Flexible Subsidy Program, or a Transfer of Physical Assets where HUD required the owner to make financial contributions. These programs are generally intended to assist financially or physically troubled properties.

- o LMSA provides rental assistance to low-income tenants. Over a third of the units in the older inventory are assisted by LMSA (284,000 units). The properties with LMSA do not differ significantly in financial condition from their counterparts that are not so assisted; they do, however, have a higher projected need for nonroutine repairs and replacements for the period 1986-2000. This study was not designed to

assess program impact. Therefore, it is not possible to estimate the degree to which conditions may have improved because of rental assistance.

- o The Flexible Subsidy program, designed to help troubled properties, provides grants or loans for physical and other improvements, and may require a matching contribution from owners. About 8 percent of the older inventory (nearly 600 properties) have received Flexible Subsidy, with an average grant of \$2,600 per unit coupled with an average owner contribution of \$400. Properties with Flexible Subsidy did not differ from others in physical condition, but on average, had lower cashflow and higher reserve fund balances. This could indicate that while their financial condition remains weak, these properties have been brought up to average physical condition. Because of the small sample size, this finding is tentative.
- o Transfers of Physical Assets (TPAs) are ownership changes with the FHA mortgage in place. Under pre-1985 tax codes, TPAs could confer substantial tax benefits to new owners. HUD can make its approval of a TPA conditional on owners' contributing funds to the property. Twenty-eight percent of the older inventory (over 2,000 properties) have undergone TPAs since 1979 and over half included owner contributions to the property. Because of changing Federal tax laws, most TPAs occurred after 1982 and before 1985; therefore, it is too soon to assess their effects using our 1984 and 1985 data. Properties receiving owner contributions did not differ significantly from their counterparts in physical condition. It is clear from annual cashflow records (1980 to 1984), however, that a large percentage of them had a history of highly negative cashflows or mortgage default; therefore, they appear to have been appropriate recipients of this tax-expenditure-derived assistance.

4. A large portion of owners have apparently invested in multifamily housing for financial benefits other than current income.

- o About 40 percent of properties have low or negative average cashflow. Many owners, therefore, seem to have relied on financial returns other than current income (such as tax benefits or property value appreciation) to achieve net positive returns on their investments. Recent changes in Federal tax laws reduced key tax benefits for many owners and, therefore, the investment value of properties that are not good income producers.

5. The conclusion that most of the older insured stock is not facing a capital needs crisis is based on the assumption that past patterns of income, owner investment, and management will continue. In fact, these patterns may change in response to significant changes in the environment in which properties operate--reductions in Federal tax incentives, lowering of inflation and fuel costs, and major increases in liability insurance rates. This study was not designed to examine the effects of these factors. The net impact of these changes on properties will depend on the specifics of each project's ownership and local housing market.

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I. INTRODUCTION

This report presents the findings of research conducted on multifamily rental housing with mortgages insured by the Federal Housing Administration (FHA) of the Department of Housing and Urban Development (HUD). The study was conducted in 1985 and 1986 by the HUD Office of Policy Development and Research. It examines the physical and financial condition of the older FHA-insured stock, which has been defined as residential rental properties with mortgages that were originally insured before 1975, and that were still insured or HUD-held at the close of 1984.

At the end of 1984 the FHA-insured multifamily rental housing stock comprised about 13 percent of the nation's total multifamily rental housing. This consisted of nearly 1.7 million housing units in nearly 15,000 properties. Approximately 1.1 million of these units were in properties receiving HUD subsidies that reduced rents for low- and moderate-income households, nearly as many units as in the entire Public Housing program.

The FHA-insured mortgages in force in 1984 had an original value at the time of mortgage endorsement of \$33.8 billion. Most of this mortgage principal was still outstanding because the mortgages had 40 year terms and only a small portion of the principal had been repaid. Half of the insured stock was 10 years or older in 1984. This older inventory is the focus of this report.

A. FOCUS OF STUDY

This study focused on the older stock because of concerns by individuals in the Administration, Congress, and housing industry that as a result of advancing age, the stock might face rapid increases in capital repair and replacement costs for critical components such as roofs, heating and cooling systems, elevators, etc. It was feared that these increased costs could lead to a wave of mortgage defaults, serious losses to the FHA insurance fund, and possible loss of vital rental housing for low- and moderate-income families.

In response to these concerns, the HUD Office of Policy Development and Research designed and undertook this study to answer the following questions about the older inventory:

- o What are its current condition and projected repair and replacement costs through 1990 and 2000?
- o What proportion of the stock is likely to have difficulty paying these costs from income and replacement reserves?

o What is the nature of properties for which HUD has provided or obtained special assistance to alleviate physical or financial problems?

The study also sought to identify any particular property characteristics that were associated with either high replacement needs or weak financial capacity.

This study is a preliminary analysis of the insured multifamily inventory. Given limitations of data and resources, the study did not address a number of important topics, including: (1) the level and quality of property management, (2) the influence of housing and real estate market conditions on owners' actions, and (3) the impact of recent tax changes on owners and investors. These will be topics of future investigations.

B. METHODOLOGY

The study was conducted in two stages. The first was an extensive analysis of the characteristics of the entire inventory of FHA-insured rental housing using data from HUD's Multifamily Insured and Direct Loan Information System (MIDLIS). MIDLIS data are entered and updated by the local HUD offices responsible for monitoring mortgages; MIDLIS contains a wide range of information spanning the period from initial property development through current loan monitoring, and includes characteristics of buildings, owners, and managers, HUD insurance and subsidy programs used, and status of the mortgage and insurance.

The second stage was an intensive assessment of the physical and financial condition of a representative sample of 477 older insured properties. For each sample property, a professional housing inspector (having architectural/engineering training), under the supervision of HUD Field Offices, was commissioned to assess the current property condition and estimate future capital repair and replacement needs for all major items such as roofs, heating, ventilation and cooling systems, elevators, appliances, etc. Research staff estimated the financial condition of each property based on annual statements of income and expenses submitted by owners (compiled in HUD's Office of Loan Management System "OLMS" computer data base) and from data provided by HUD loan servicers (on reserve for replacements accounts, receipt of unit-based Section 8 or Rent Supplements, receipt of HUD Flexible Subsidy, and changes of ownership "Transfers of Physical Assets").

All data processing and analysis was done by staff of the Office of Policy Development and Research using HUD computer facilities. This included computer entry, cleaning, and manipulating massive amounts of data on the sample of older properties. Research staff made field visits to selected properties in the Mid-Atlantic region and have had limited, but detailed discussions with owners, managers, and HUD field staff. Constrained budgets prevented research staff from visiting properties in other regions.

C. ORGANIZATION OF REPORT

This report contains seven chapters and several appendices. Except for the beginning of Chapter II, the report focuses exclusively on the older insured rental inventory--properties insured before 1975. This includes all multifamily rental properties with insurance still in force and those with HUD-held mortgages (mortgages assigned to HUD by the original lenders). It excludes properties with uninsured mortgages (uninsured state-financed properties receiving HUD subsidies); properties with direct loans (Section 202 properties for elderly); nonresidential properties (hospitals, nursing homes, offices); properties owned by public bodies, cooperatives, or condominiums; properties insured under old programs for military personnel and veterans (for which HUD has little remaining responsibility or information); and the small number of properties for which HUD has become the owner due to mortgage default (HUD-acquired properties). (See Chapter II for more explanation.)

Chapter II provides an overview of the FHA mortgage insurance and subsidy programs for multifamily housing, describes the total inventory (both new and old), and presents in detail the characteristics of the older inventory. It also presents the study's sampling and data collection methodology.

Chapter III reports on the physical repair and replacement needs of older insured (and HUD-held mortgage) properties. It describes the physical inspections used to collect data, presents the projected 5- and 15-year repair and replacement needs of the older inventory, examines the types of building components making up those needs, and measures needs against available standards. The chapter also tests for systematic relationships between properties' needs and their physical or programmatic characteristics.

Chapter IV reports on the financial status of the sample properties. This chapter roughly parallels the chapter on physical needs, providing projections of financial resources for future repairs and replacements. These resources are based on income and expenditure records from 1980 to 1984 and on reserve for replacement balances as of mid-1985. The chapter also tests for systematic relationships between properties' financial resources and their physical and programmatic characteristics.

Chapter V presents the results of comparing estimates of physical needs and financial resources to assess whether individual properties are likely to have resource surpluses or deficits over the next 5 and 15-years. The variation in per unit surpluses or deficits is evaluated against property characteristics in an attempt to identify systematic patterns which could be used in policy or program decisions.

Chapter VI reports on the special programs that have been used by HUD to help problem properties meet physical and financial needs. The chapter presents the characteristics and conditions of properties that have received

assistance through the Section 8 Loan Management Set Aside program, Flexible Subsidy program, or owner contributions in conjunction with a transfer of physical assets (TPA).

Chapter VII summarizes the study's major findings and indicates directions for future HUD research on multifamily housing with FHA-insured mortgages.

The appendices include Appendix A1 on the study sample; A2 on data collection forms and procedures; A3 on physical inspection data; A4 on OLMS data and financial condition indicators; and A5, a brief presentation of properties whose Section 8 contracts or mortgage prepayment restrictions will expire within the next fifteen years.

II. PROFILE OF THE HUD/FHA-INSURED INVENTORY

This chapter describes the insurance and subsidy programs under which the HUD/FHA multifamily inventory has been developed and operated. Several of them were ultimately discontinued because they were found to be costly or inefficient. It presents characteristics of the FHA-insured rental inventory of all ages before narrowing down to the FHA older inventory, the topic of the rest of the report. The chapter concludes by describing the study sample, which is the basis for the assessments in the remainder of this report.

A. OVERVIEW OF HUD MORTGAGE INSURANCE AND ASSISTANCE PROGRAMS

HUD administers several different programs to promote financing and affordability of privately owned multifamily rental housing. Through its mortgage insurance programs, HUD assumes the risk of losses due to borrower default in order to encourage private lenders to provide mortgage loans on privately-owned properties. In conjunction with the "straight insurance" programs, HUD has various subsidy programs that reduce costs or supplement tenants' rental payments to make rental housing more affordable for low- and moderate-income households. Regulations relating to these programs give HUD power to influence management, rental rates, occupancy, debt service, and ownership of multifamily properties.

1. Insurance

FHA mortgage insurance programs have provided improved loan terms, extended insurance to higher risk markets, and in some instances, offered subsidies to make housing more affordable. Insurance for multifamily mortgages is authorized under a number of sections of the National Housing Act. The Section 207 was enacted in 1934 to insure market rate mortgages with long terms and high loan to value ratios. The maximum interest rates permitted on insured mortgages were set by FHA at or slightly below market rates (with private lenders usually charging "points" to make yields equivalent to the market rates). In 1954, Section 220 was enacted to provide mortgage insurance for loans on properties located in Federally approved Urban Renewal areas. In the same year, Section 221(d)(3) was enacted to insure mortgages on rental properties designed for low- and moderate-income, and displaced families. This was followed in 1959 with Section 221(d)(4), another market rate program, and Section 231 mortgage insurance for housing for the elderly. In 1961 Section 22(d)(3) was amended to include interest rate subsidies to reduce rents for lower-income households--the Below Market Interest Rate (BMIR) program. In 1968 Section 236 (which replaced the 221(d)(3) BMIR program) broadened insurance coverage combined with interest subsidy assistance. In 1974, Section 223(f) was passed to facilitate

purchasing and refinancing existing multifamily properties. In the same year, Section 244 authorized the Multifamily Housing Co-insurance program that requires lenders to assume responsibility for a portion of an insurance loss in return for a share of the insurance premiums.

2. Subsidy Assistance

There are three types of subsidies provided by HUD/FHA: a) mortgage interest subsidies, in which HUD pays part of the interest on a mortgage, thereby lowering monthly costs and required rentals, b) rental assistance, in which HUD pays part of the rent for low-income tenants, and c) a supplemental grant or loan with below-market terms. In this report, properties receiving any of these subsidies are called "assisted" properties.

- a. Mortgage interest subsidies under the Section 221(d)(3)BMIR and 236 programs reduce effective interest rates to 3% and 1%, respectively. These are often called "shallow" subsidies because reduced debt service, by itself, usually lowers rents only to levels affordable by households of moderate income. Neither program is available for new loans--the BMIR program was replaced in the late 1960s by 236 which itself was discontinued in the middle 1970s. From 1975 through 1983 HUD also promoted lower interest rates, primarily for housing low-income families, through its Government National Mortgage Association (GNMA) Tandem Program. Through GNMA Tandem, HUD purchased from private lenders, multifamily mortgages carrying below-market interest rates. It resold them at a discount, absorbing the loss as subsidy.
- b. Rental assistance pays the difference between a unit's rent and the amount a tenant can afford to pay. Rental assistance has been provided through three programs. The Rent Supplement Program, enacted in 1965, was used with properties insured under Sections 236, 221(d)(3), and 231 Elderly. Rent Supplement contracts, which usually ran for the full term of the mortgage (40 years maximum), paid the owner the difference between the tenant's rent payment (originally a minimum of 25 percent of income) and the amount required to meet debt service and operating costs. The second program, Rental Assistance Payments (deep subsidy or RAP), was enacted in 1968 for Section 236 properties. It was similar in operation to Rent Supplements and has been used primarily for state-financed properties that receive 236 subsidies (but whose mortgages may not be insured). No new contracts are available for either Rent Supplement or RAP. In 1974 Congress authorized the Section 8 Certificates program that provided subsidies to households rather than properties by paying the difference between a fair market rent and a portion (originally 25 percent) of a tenant's income; tenants could choose any housing which met HUD's quality and rent standards. In 1975, Section 8 was amended to provide subsidies

to properties, this time for new construction or substantial rehabilitation (used largely with Section 221(d)(4) mortgages). In 1976, Section 8 was amended again to establish the Loan Management Set Aside (LMSA) program, which was used to replace most Rent Supplement contracts, to aid HUD-insured properties in financial distress, and to facilitate disposing of properties whose title HUD had acquired because owners had defaulted.

In 1981 the Section 8 New Construction and the Substantial Rehabilitation Programs were discontinued for additional properties and Section 8 tenants' contribution toward rent was increased from 25 to 30 percent. In 1983, Section 8 was further amended to authorize housing vouchers, which was deemed a more efficient subsidy. Vouchers, which are similar to Section 8 certificates, provide tenants with more choices as to where they can live and how much of their income they can devote to paying rent.

- c. A small number of grants or direct loans have been provided under the Flexible Subsidy program to troubled properties insured under Sections 236 and 221(d)(3). This program, enacted in 1978, provided funds for physical improvements, payments of debts, or funding the reserve for replacement.

Over 70 percent of the older HUD/FHA-insured inventory receives some type of assistance.

3. HUD Powers to Maintain Property Viability

HUD has means, other than subsidies, to keep its inventory of insured loans viable. Under the terms of the mortgage insurance and under assistance agreements it has the following powers:

- o to approve Transfers of Physical Assets (i.e., a sale, usually involving resyndication, with the original mortgage in place). HUD has used this power to require owners to make repairs or other investments in their properties as a condition of approval of the sale. The sale of a property allows the new owner to begin a new schedule of depreciation, which until recently, provided major tax benefits.
- o to approve rent increases for certain categories of mortgages, which could, in turn, require increases in HUD rental assistance (i.e., Section 8 Loan Management Set-Aside, Rent Supplement, or Rental Assistance Payments);
- o to approve draws from the reserve for replacement and the monthly contributions to the reserve;

- o to approve modifications of in-force mortgages and workouts of HUD-held mortgages, which change the owner/borrower's payments or terms (such changes sometimes amount to a hidden subsidy); and
- o to approve property managers and continually monitor management practices and the physical and financial condition of all properties.

The evolution of the insurance and assistance programs from the Section 207 market rate program in 1934 to the current complex of insurance and subsidies, extended housing opportunities to close to two million households, including many with lower incomes and others living in areas where decent housing was not available. This evolution, however, also increased HUD's difficulty and risks in managing its portfolio of mortgages.

B. DEFINITION OF INVENTORY

The universe of properties for this study was the inventory of multifamily properties that (1) had mortgages insured prior to 1975 under Sections 207, 220, 221(d)(3) Market Rate or BMIR, 221(d)(4), 223(f), 231 or 236 of the National Housing Act, (2) with either insurance still in force or HUD holding the note (HUD-held mortgages), and (3) were in residential rental use under private ownership. Military and veterans housing (Sections 608 and 803) were excluded both because HUD has little loan management responsibility for them and because financial and physical information was generally unavailable. HUD-acquired properties, those for which HUD has acquired title following default, were excluded because of their temporary status in the inventory prior to resale. Also excluded from this study were non-insured, nonresidential, publically-owned, and single family properties such as:

- o Properties financed under the Section 202 direct loan program for elderly and handicapped.
- o Cooperatives, condominiums, nursing homes and hospitals.
- o State financed properties having Section 236 subsidies but no mortgage insurance.
- o Public Housing and insured properties having a public body as owner.

C. CHARACTERISTICS OF THE TOTAL INSURED INVENTORY

This section presents data on the entire inventory regardless of age for comparison with the pre-1975 inventory defined above. The data on the full inventory were obtained from the Multifamily Insured and Direct Loan Information System (MIDLIS), a HUD data system that includes all insured (and

formerly insured) properties. Table II-1 provides data on the general characteristics of the total inventory (as of December, 1984). Table II-2 breaks down the total inventory by Section of the Act (insurance program), mortgage insurance status (insurance in force or HUD-held mortgage), and assistance status (assisted or not).

The inventory, as defined above, contained 1.7 million insured multifamily rental units in nearly 14.5 thousand properties. This comprised 13 percent of this nation's total multifamily rental housing. Nearly 72 percent of the properties, containing over 1 million units, received financial assistance to make them affordable to lower income households. Properties were evenly split between those insured before or after January 1, 1975.¹ The total original principal amount of the insured mortgages was \$36.6 billion.

The inventory consisted predominantly of garden apartments and rowhouses; only 25 percent were high rise buildings (5 or more floors). On average, a property contained 116 units. Just over half of all properties were in central cities, 29 percent in suburbs, and 20 percent in nonmetropolitan areas. The types of property ownership were: not-for-profit (14%), limited-dividend profit-motivated (34%) and unrestricted profit-motivated (52%).²

Most properties (92 percent of the inventory) had insurance in force. The remaining 8 percent had HUD-held mortgages, meaning that their owners had defaulted on payments, lenders had assigned the mortgages to HUD, and HUD had paid mortgage insurance claims. These HUD-held, or assigned mortgages, entailed approximately \$2.8 billion of original value loans covering 159 thousand housing units.³

1 Nearly all properties were insured as new construction rather than as existing or rehabilitated properties, so the age of a property and its mortgage are usually about the same.

2 Limited dividend owners are profit-motivated owners who are eligible to make annual distributions from positive cashflow, usually for amounts up to 6 percent of original equity.

3 When owners of properties continue to fail to make mortgage payments, HUD may take title to the properties and become the owner until the properties are resold to new private owners. As previously noted, such HUD-acquired properties were excluded from this study.

II-1: CHARACTERISTICS OF THE HUD/FHA-INSURED INVENTORY*
 (Properties of all ages as of 1984)

<u>Property Characteristics</u>	<u>No of Properties</u>	<u>Percent</u>
Age of Mortgage in 1984		
0-9 years	7,173	50
10-14	5,304	37
15-20	1,315	9
20+	647	4
Building Type		
High Rise (5+ floors)	3,668	25
Not High Rise	10,771	75
Location		
Central City	7,336	51
Suburb	4,201	29
Nonmetropolitan	2,902	20
Sponsor Type		
Nonprofit	2,022	14
Limited Dividend	4,863	34
Unrestricted	7,554	52
TOTAL ALL PROPERTIES	14,439	100

* HUD/FHA-insured and HUD-held multifamily rental housing excluding Sections 608 and 803, HUD-acquired properties, uninsured Sections 202 and 236, cooperatives, condominiums, and nursing homes. Figures derived from HUD administrative records (MIDLIS) for December, 1984.

II-2: HUD/FHA-INSURED INVENTORY BY SECTION OF THE ACT, MORTGAGE
STATUS, AND ASSISTANCE STATUS*
(Properties of all ages as of 1984)

<u>Section of the Act</u>	<u>Units</u> (in 1000s)		<u>Properties</u>		<u>Orig Mtg Value</u> (billions \$)	
	No.	%	No.	%	No.	%
207	154	9	960	7	2.4	7
220	61	4	343	2	2.1	6
221(d)(3) Mkt Rate	140	8	1,650	11	2.7	7
221(d)(3) BMIR	121	7	839	6	1.9	5
221(d)(4)	667	40	6,292	44	18.4	50
223(f)	78	5	360	2	1.2	3
231	47	3	381	3	.9	3
236	410	24	3,614	25	7.0	19
<u>Mortgage Status</u>						
Insur in Force	1,519	91	13,274	92	33.8	92
HUD Held	159	9	1,165	8	2.8	8
<u>Assistance Status</u>						
Assisted	1,070	64	10,335	72	24.5	67
Unassisted	608	36	4,104	28	12.1	33
TOTAL	1,678	100	14,439	100	36.6	100

* HUD/FHA-insured and HUD-held multifamily rental housing excluding Sections 608 and 803, HUD-acquired properties, uninsured Sections 202 and 236, cooperatives, condominiums, and nursing homes.

D. CHARACTERISTICS OF THE OLDER INSURED INVENTORY
(MORTGAGES INSURED PRIOR TO 1975)

This section describes the characteristics of properties that received mortgage insurance prior to 1975. This older stock was the focus of this study because of concerns that increasing age could lead to increasing repairs and replacement costs, jeopardizing the financial and physical viability of many properties. Tables II-3 and II-4 describe this older inventory of insured and HUD-held mortgage properties.

The older inventory consisted of 845 thousand units in 7,266 properties, approximately one-half of the total insured inventory. The original mortgage value was \$13.1 billion, 36 percent of that of the total inventory. The average size of property was the same as for the total inventory, 116 units. While we use the term older stock, in fact, as of 1984, 73 percent of these properties were just 10 to 14 years old and only 9 percent were over 20. More older properties were low rise developments (buildings of four or less floors) than in the total inventory (82% versus 75%). The older inventory was located proportionately more in metropolitan areas than was the total inventory.

There were major differences from the total inventory with regard to the type of property owner and various financing characteristics. These reflected differences in the assistance programs that predominated in the pre- and post-1975 periods. The older stock had more nonprofit owners (22 versus 14 percent) more limited dividend owners (51 versus 34 percent), and fewer unrestricted non-profit owners (27 versus 52 percent).

The distribution of properties by Section of the Act was also different from the total inventory, again reflecting the programmatic shifts. The older inventory had proportionately more 236s (44%) and 221(d)(3) Market Rates and BMIRs (25%), but fewer 221(d)(4)s (16%). The older assisted inventory was built using Sections 236, 221(d)(3)BMIR, or 221(d)(3)Market Rate mortgages coupled with Rent Supplements. After 1975, assisted housing was generally built using 221(d)(4) coupled with Section 8 New Construction or Substantial Rehabilitation rental assistance, and often with GNMA Tandem to lower mortgage interest rates.

The mortgage status of the older properties was somewhat worse than that of the total inventory. Fourteen percent of older properties had HUD-held mortgages, compared to only 8 percent of properties of all ages. Ninety percent of all HUD-held mortgages were older properties.

The proportion of older properties that received assistance was the same as that for the total inventory (72%). Older assisted properties housed 570 thousand households. Fifty-five percent of older properties received interest

II-3: CHARACTERISTICS OF THE OLDER HUD/FHA-INSURED INVENTORY*

<u>Property Characteristics</u>	<u>No of Properties</u>	<u>Percent</u>
Age of Mortgage in 1984		
10-14	5,304	73
15-20	1,315	18
20+	647	9
Building Type		
High Rise (5+ floors)	1,283	18
Not High Rise	5,983	82
Location		
Central City	3,870	53
Suburb	2,225	31
Nonmetropolitan	1,171	16
Sponsor Type		
Nonprofit	1,604	22
Limited Dividend	3,715	51
Unrestricted	1,947	27
TOTAL ALL OLDER PROPERTIES	7,266	100

* HUD/FHA-insured and HUD-held multifamily rental housing insured before 1975, excluding Sections 608 and 803, HUD-acquired properties, uninsured Sections 202 and 236, cooperatives, condominiums, and nursing homes. Data on age and sponsor type were derived from HUD administrative records (MIDLIS) on the entire older inventory. Data on building type and location were projected from the PD&R study sample.

II-4: OLDER HUD/FHA-INSURED INVENTORY BY SECTION OF THE ACT, MORTGAGE STATUS, AND ASSISTANCE STATUS*

	Units (thousands)		Properties		Orig Mtg Value (billions \$)	
	No.	%	No.	%	No.	%
<u>Section of the Act</u>						
207	89	11	635	9	1.4	11
220	35	4	198	3	.6	4
221(d)(3) Mkt Rate	94	11	1,172	16	1.2	9
221(d)(3) BMIR	120	14	835	11	1.9	14
221(d)(4)	133	16	1,094	15	2.0	15
223(f)	1	-	4	-	-.-	-
231	23	3	164	2	.3	3
236	350	41	3,164	44	5.7	44
<u>Mortgage Status</u>						
Insur in Force	701	83	6,209	86	10.7	82
HUD Held	144	17	1,057	14	2.4	18
<u>Assistance Status</u>						
Assisted	569	67	5,205	72	8.8	67
Unassisted	276	33	2,061	28	4.3	33
TOTAL	845	100	7266	100	13.1	100

* HUD/FHA-insured and HUD-held multifamily rental housing insured before 1975, excluding Sections 608 and 803, HUD-acquired properties, uninsured Sections 202 and 236, cooperatives, condominiums, and nursing homes. Based on data collected in 1985 on a representative sample of properties.

subsidies, and, coincidentally, 55 percent received rental assistance (Section 8 LMSA or Rent Supplement/RAP). Thirty eight percent of properties received both interest and rental subsidies. Eight percent of properties received Flexible Subsidy. The sources of assistance for the older stock are listed in Table II-5.

E. THE STUDY SAMPLE

To examine the physical and financial condition of older properties, a representative sample of 552 properties was drawn from the inventory of properties that were insured before 1975. Four hundred and forty-one properties were drawn randomly from the assisted inventory and 111 from the unassisted. Assisted properties were oversampled relative to unassisted because of greater general concern about the future viability of non-market rental stock serving lower-income households. Comparison of the sample with the universe in terms of property characteristics (age, size, subsidy programs, building types, etc.) indicates that the sample accurately reflected the inventory. The random sample of 552 dropped to 477 properties after eliminating properties that had left the insured/held inventory (because HUD had taken title and resold them) or for which complete inspection and financial data were not available.⁴ The final sample size was sufficient that aggregate data on physical costs would be statistically reliable within 5-10 percent.⁵ Appendix A1 provides a comparison of the total inventory and sample and gives the number of sampled properties studied by HUD field office location.

For all properties in the sample, basic characteristics were initially obtained from the Department's MIDLIS data base. Subsequently (during July to September, 1985), for each property, field offices verified basic data and provided three other types of data:

1. Physical condition--estimated cost of needed nonroutine repairs and replacements projected to the year 1990 and estimated remaining life and replacement cost of critical capital systems through year 2,000, based on site inspections by professional inspectors.
2. Financial information--primarily from the Department's computerized compilation of annual property income and expense statements for the years 1980 through 1984 (the OLMS system). These data are based on annual reports submitted to Field Offices by independent public

⁴ The properties that were eliminated did not differ significantly from the original 552 properties in major characteristics.

⁵ This means that average or total costs projected to the entire inventory of 7,266 properties should have no more than 5 to 10 percent error due to sampling. For smaller groups, sampling error is higher.

II-5: SOURCES OF ASSISTANCE FOR THE OLDER STOCK*

<u>TYPE OF ASSISTANCE</u>	<u>PERCENT OF PROPERTIES</u>
Interest Subsidy	
Section 236	45
Section 221(d)(3)BMIR	9
Rental Assistance	
Section 8 Loan Management Set-Aside (LMSA)	52
Rent Supplement or Rental Assistance Payments (RAP)**	3
Combined Interest Subsidy and Rental Assistance	37
Flexible Subsidy	8
Transfer of Physical Assets (TPA) With Owner Contributions	15

* HUD/FHA-insured and HUD-held multifamily rental housing insured before 1975, excluding Sections 608 and 803, HUD-acquired properties, uninsured Sections 202 and 236, cooperatives, condominiums, and nursing homes. Based on data collected in 1985 on a representative sample of properties.

** Most remaining RAP contracts are for uninsured state-financed properties, which have been excluded from this study.

accountants. Field offices were instructed to update OLMS for the sample and correct any obvious errors or inconsistencies. They also provided current data on the reserve for replacement.

3. Supplemental assistance and ownership changes: Section 8 Loan Management Set Aside (LMSA), Rent Supplement/RAP, Flexible Subsidy, and Transfer of Physical Assets (resyndication).

The field office responses revealed that many MIDLIS variables were missing, entered incorrectly, or not current. While such inaccuracies were expected, since MIDLIS is rarely used by field offices in their regular work, future analysts must exercise caution in relying on this data base, particularly for those property characteristics that may change over time. Appendix A2 contains the data collection forms and instructions used in this study.

III. PHYSICAL CONDITION OF THE OLDER HUD/FHA STOCK: PROJECTED FUTURE NEEDS FOR MAJOR REPAIRS AND REPLACEMENTS

This chapter presents findings on the physical condition of the older HUD/FHA-insured multifamily rental inventory, as defined in the previous chapter. It is based on the study's representative sample of properties. The chapter describes the inspection methodology, presents projected 5- and 15-year nonroutine repair and replacement needs, and explores possible relationships between these needs and property characteristics.

A. PHYSICAL INSPECTION OF SAMPLE PROPERTIES

To determine the current condition and physical needs of the older inventory, professional housing inspectors were hired, under the supervision of HUD field offices, to inspect the national sample. These inspectors, who have architectural/engineering backgrounds, are available to Field Offices on a consulting basis to provide program-related physical inspections. For each property, inspectors assessed current physical condition, estimated remaining life of various building components, and estimated costs for making needed extraordinary repairs and for replacing items at the end of their useful lives. These inspections were conducted between July and September of 1985.

Inspectors surveyed all sample properties including all buildings, all central utility rooms, common areas, and, on average, 12 percent of the dwelling units. They recorded detailed item-by-item assessments on a report form specifically designed for this study. A reduced scale copy of the inspection form is provided in Table III-1. The first portion of the form required comprehensive evaluation of the cost of making necessary nonroutine repairs and capital replacements within 5-years (by 1990).⁶ This provided the basis for our findings on the current physical condition of the inventory and short term (5-year) needs. The second portion of the form required inspectors to estimate through the year 2000 the average remaining life and replacement costs (in 1985 dollars) of major property components. This provided the basis for our findings on the longer term (15-year) capital replacement needs of the properties.

Significant efforts were made, within the funding limitations of the study, to assure both the reliability and validity of the inspection data. The inspection form was modeled after a HUD form (HUD 9822) with which most inspectors were already familiar, and was field tested for clarity and

⁶ Nonroutine repairs and replacements were defined as needed repairs or replacements, above and beyond normal maintenance cycles. The inspectors were requested to use their professional judgments in making that determination. Copies of the inspection instructions are included in Appendix A2.

III-1: PHYSICAL INSPECTION SURVEY FORM (HUD 30004)

U.S. Department of Housing and Urban Development

Project Report of Physical Condition and Repair Cost Estimate



I. Project Identification

1. FHA Project Number _____ 2. Field Office _____ 3. Section of Housing Act _____ 4. Project Name and Address _____

5. Field Office _____ 6. Number of Buildings _____ 7. Number of Floors _____ 8. Number of Elements _____

9. Construction Type _____ 10. Number of Elements _____

11. Construction Type _____ 12. Number of Elements _____

13. Number of Elements _____ 14. Number of Elements _____

15. Number of Elements _____ 16. Number of Elements _____

17. Number of Elements _____ 18. Number of Elements _____

19. Number of Elements _____ 20. Number of Elements _____

21. Number of Elements _____ 22. Number of Elements _____

23. Number of Elements _____ 24. Number of Elements _____

25. Number of Elements _____ 26. Number of Elements _____

27. Number of Elements _____ 28. Number of Elements _____

29. Number of Elements _____ 30. Number of Elements _____

31. Number of Elements _____ 32. Number of Elements _____

33. Number of Elements _____ 34. Number of Elements _____

35. Number of Elements _____ 36. Number of Elements _____

37. Number of Elements _____ 38. Number of Elements _____

39. Number of Elements _____ 40. Number of Elements _____

41. Number of Elements _____ 42. Number of Elements _____

43. Number of Elements _____ 44. Number of Elements _____

45. Number of Elements _____ 46. Number of Elements _____

47. Number of Elements _____ 48. Number of Elements _____

49. Number of Elements _____ 50. Number of Elements _____

51. Number of Elements _____ 52. Number of Elements _____

53. Number of Elements _____ 54. Number of Elements _____

55. Number of Elements _____ 56. Number of Elements _____

57. Number of Elements _____ 58. Number of Elements _____

59. Number of Elements _____ 60. Number of Elements _____

61. Number of Elements _____ 62. Number of Elements _____

63. Number of Elements _____ 64. Number of Elements _____

65. Number of Elements _____ 66. Number of Elements _____

67. Number of Elements _____ 68. Number of Elements _____

69. Number of Elements _____ 70. Number of Elements _____

71. Number of Elements _____ 72. Number of Elements _____

73. Number of Elements _____ 74. Number of Elements _____

75. Number of Elements _____ 76. Number of Elements _____

77. Number of Elements _____ 78. Number of Elements _____

79. Number of Elements _____ 80. Number of Elements _____

81. Number of Elements _____ 82. Number of Elements _____

83. Number of Elements _____ 84. Number of Elements _____

85. Number of Elements _____ 86. Number of Elements _____

87. Number of Elements _____ 88. Number of Elements _____

89. Number of Elements _____ 90. Number of Elements _____

91. Number of Elements _____ 92. Number of Elements _____

93. Number of Elements _____ 94. Number of Elements _____

95. Number of Elements _____ 96. Number of Elements _____

97. Number of Elements _____ 98. Number of Elements _____

99. Number of Elements _____ 100. Number of Elements _____

II. Condition and Repair Estimates

A. Exterior Items

1. Exterior walls/foundation/slab _____ (a) 1 yr cost _____ (b) 2-5 yr cost _____

2. roofs/flooding/vents/chimneys _____

3. gutters/downspouts/splash blocks _____

4. porches/balconies/fire escapes _____

5. doors/windows/screens _____

6. garages/carpors _____

7. exterior lighting and distribution _____

8. paint/siding condition _____

9. insulation _____

10. painting/drives/parking lots _____

11. paving/walks/steps/guardrails _____

12. fences/walls/gates _____

13. lawns/plantings/protective slopes _____

14. lawn sprinkler systems _____

B. Interior Public Space

15. security and fire alarm systems _____

16. floors/carpeting/tiling _____

17. stairs/walkways/community space _____

18. walls/ceilings/paint/condition _____

19. sprinkler systems _____

20. stairway door closers _____

21. elevators _____

22. hot water heater _____

23. compactors and incinerators _____

24. electrical distribution system _____

25. plumbing distribution/waste systems _____

26. gas distribution system _____

27. central heating plant(s) _____

28. heating distribution system _____

29. A/C cooling tower/air handling unit _____

30. cooling distribution system _____

C. Name Within Individual Dwelling Units

31. walls/ceilings/paint/condition _____

32. smoke detectors/door closers _____

33. floor/carpeting/tiling/stairs _____

34. range/over/refrigerator _____

35. garbage disposer/exhaust fan _____

36. kitchen cabinets/counter tops _____

37. plumbing/mechanical fixtures _____

38. individual heating/cooling systems _____

39. hot water tank _____

40. project-wide dwelling unit totals _____

III. Remaining Life and Replacement Cost

A. Exterior Items	(c) Remaining Life (Years)	(d) Replacement Cost (Current \$)	(e) Remaining Life (Years)	(f) Replacement Cost (Current \$)
57. roofing/flooding				
58. gutters/downspouts				
59. soffits/fascia				
60. doors/windows				
61. pavement/drives/parking/curbs/etc.				
62. pavement/walks/steps/stoops/etc.				
63. plumbing				
64. fixtures/tubs/toilets/sinks				
65. distribution/waste system				
C. Electric				
66. system-service/wiring				
67. fixtures				
D. Gas				
68. distribution system				
E. Heating				
69. boilers/furnaces/central plant				
70. distribution system				
71. individual heating units				
IV. Maintenance				
<input type="checkbox"/> Excellent <input type="checkbox"/> Above average <input type="checkbox"/> Average <input type="checkbox"/> Below Average <input type="checkbox"/> Poor				

86. Project Inspector's Signature and Date _____

87. Comments (Optional) _____

88. Approval and Date _____

understandability.⁷ Field offices were instructed to hire inspectors experienced in multifamily inspections and cost estimation, using funds from the Office of Housing. Central office personnel were available by telephone to provide any needed clarification.

Central office personnel manually reviewed each completed inspection report for missing and/or questionable information and made corrections based upon inspectors' field notes and telephone conversations with field office personnel or inspectors. In several cases, the forms were resubmitted to field offices for correction. Data from completed forms were entered into a computer data base and subjected to tests for internal consistency and extreme values. Most apparent errors have been eliminated from the data.

The inspection data provide aggregate cost estimates that appear reasonable and consistent. Furthermore, when research staff conducted follow-up site visits and discussions with local property managers at ten sample properties, they found the general magnitude and composition of inspectors' estimates to be accurate. Nevertheless, given the approximate nature of any inspection and cost estimation, readers should be cautious in interpreting findings that relate to smaller subsets of the sample.⁸

All figures in this chapter have been expanded from the sample to represent the entire inventory of older (pre-1975) properties. Unless otherwise noted, all costs have been calculated and reported in constant 1985 dollars.

B. PROJECTED 5-YEAR REPAIR AND REPLACEMENT COSTS

This section presents estimates of the nonroutine repair costs and capital replacement costs for the HUD/FHA-insured older inventory, projected over the next 5-years (1986 to 1990). These estimates represent a measure of the current physical condition of the inventory and largely reflect past

⁷ HUD Form 9822, "Report of Physical Condition and Estimate of Repair Costs", is prepared periodically on all HUD-insured properties as part of HUD's housing management responsibilities and is described in Handbook 4350.1, Chapter 6, and Handbook HM7460.1, supp.1, Chapter 8.

⁸ Prior studies have found that even experienced inspectors vary considerably in their estimates of needs and cost for the same property. Furthermore, any cost estimate may diverge from actual costs: Actual repair and replacement costs are often higher than original estimates because of hidden problems that are not revealed until work is underway. The cost estimates generated in this study are sufficiently reliable for assigning properties to categories of need (very high, high, etc.). They are less accurate as cost estimates *per se*, particularly for small groups or individual properties. See Appendix A3 for additional description of data gathering, cleaning, and correcting.

maintenance and management. At the same time, they also represent future short-term needs and can be used in parallel with financial information to estimate potential problems in maintaining the stock.

Nonroutine repairs encompass two general categories: Repairs that would not normally be expected or provided for in periodic maintenance; and accumulated back maintenance and repairs that, through neglect and lack of regular attention, have been elevated into nonroutine. For example, in most properties, repainting interiors is a periodic routine function carried out, perhaps, every three years or upon unit turnover; such costs have been excluded from our estimates. However, for a property in which all units need repainting and/or extensive wall repair, the inspector would have judged this work to be nonroutine and have included associated costs in needs estimates.

1. Standards of Need

There is no commonly accepted benchmark against which to evaluate estimated repair and replacement costs or to make comparative judgments about properties. Therefore, it was necessary to formulate a reasonable standard. We developed normative ranges against which to evaluate findings of this study by examining (1) the findings of a study that was conducted for HUD by Urban Systems Research & Engineering (USR&E) in 1983, and (2) past expenditure patterns of the properties included in the study sample.⁹

The USR&E study is the only recent study that attempted to assess replacement needs of the HUD multifamily inventory. It examined past expenditure patterns of multifamily properties that were judged by HUD field staff to be well-maintained. It did not attempt to be representative of the entire HUD inventory. It differed from the current study in that it addressed a more limited set of capital items and was forced to rely on indirect data rather than on-site inspection of properties (computerized information from HUD's MIDLIS system, HUD standardized reports, and a brief mailed survey completed by HUD field offices). Given its focus on better properties and its narrower list of capital items, the USR&E study probably represents minimum

⁹ Capital Replacement Expenditures in FHA Multifamily Housing Projects. Urban Systems Research & Engineering, Inc., HUD Office of Policy Development and Research, Washington, D.C., 1983. The USR&E study is the only documented study of actual capital replacement expenditures which research staff were able to obtain. We reviewed available literature and made inquiries to the National Apartment Association, National Building Owners-Managers Association, and the Institute of Real Estate Management to obtain benchmarks or studies of actual expenditure patterns on repairs and capital replacements. Neither the literature review nor the inquiries revealed any standards which could be used for comparative purposes.

capital replacement amounts necessary to maintain the physical viability of properties. It does, however, provide a point of comparison for evaluating results of the on-site inspections of the current study.

The USR&E study reported that its select group of well-maintained properties had a mean annual expenditure of \$175 per unit for capital replacements, and a median of \$80. Over 90 percent of the properties spent under \$300 annually per unit. It seems reasonable to suggest that in the present study, which examines the entire inventory, properties with projected needs below \$300 may be considered to be in above average physical condition and have relatively low projected costs.

A standard may also be derived from the past repair and replacement expenditures of the sample properties themselves. We estimated past expenditure levels by taking for the sample the annual average of repair expenditures in 1980-1984.¹⁰ We found that in the recent past, properties had mean annual expenditures of \$489 per unit for repairs and capital replacements, and median expenditures of \$437 (1985 dollars). Approximately 77 percent of the properties had repair and replacement expenses below \$600 while only 5 percent had annual expenditures of \$900 or more. By comparing these past expenditure patterns with the estimated need for the 1986-1990 period, we could make judgments about likely changes in expenditure requirements.

We developed the following yardstick based upon these past expenditure patterns, together with the USR&E data: future needs (as represented by the repair and replacement cost estimates of this study) of under \$300 may be considered low; needs of at least \$300 but under \$600 may be considered standard; needs of at least \$600 but under \$900 may be considered high; and needs of \$900 or more may be considered very high.

2. Findings--Repair and Replacement Needs, 1986-1990

Over the next 5-years (1986 to 1990), the mean annual cost of making needed nonroutine repairs and capital replacements on the inventory is \$417 per unit, and the median is \$343. As indicated in Table III-2, however, these averages mask the great variability of the projected costs within the

¹⁰ We obtained this estimate by adding, in 1985 dollars, expenditures listed in OLMS for repairs, extraordinary repairs, and decorating, to the average of annual reserve draws from 1982 to 1985. This estimate of past expenditures differs from the inspection data collected for this study in that it includes routine maintenance such as periodic painting or changing faucet washers. This difference is partially offset, however, by the fact that the historical data exclude repairs and replacements funded from non-property income such as Flexible Subsidy program or owner contributions.

III-2: PROJECTED REPAIR AND REPLACEMENT COSTS, 1986-1990*
 Percentage Distribution of Properties

Mean Cost = \$417
 Median Cost = \$343

Annual Costs Per Unit (1985 Dollars)	Percent of Properties	
	Percent	Cumulative
\$0	4.3%	4.3%
\$1 TO 99	13.7%	18.0%
\$100 TO 199	12.6%	30.6%
\$200 TO 299	14.8%	45.3%
\$300 TO 399	11.0%	56.3%
\$400 TO 499	12.5%	68.8%
\$500 TO 599	7.8%	76.6%
\$600 TO 699	7.6%	84.2%
\$700 TO 799	5.7%	89.9%
\$800 TO 899	1.7%	91.7%
\$900 TO 999	2.1%	93.7%
\$1,000 TO 1,499	4.3%	98.1%
\$1,500 OR MORE	1.9%	100.0%

* HUD/FHA-insured and HUD-held multifamily rental housing insured before 1975, excluding Sections 608 and 803, HUD-acquired properties, uninsured Sections 202 and 236, cooperatives, condominiums, and nursing homes. Based on data collected in 1985 on a representative sample of properties.

inventory. For example, 4 percent of the properties have no estimated costs for nonroutine repairs and replacements while approximately 2 percent of the properties need \$1,500 or more per unit annually over the next 5-years.

Based on the standards developed in the previous section, Table III-3 reveals that:

- o 45 percent of the older FHA-insured multifamily properties had low needs (under \$300 per unit per year) and were in good current condition. They contained over 433 thousand units--49 percent of all older units. It is unlikely that these properties are in danger of physical deterioration over the next ten years unless their future pattern of maintenance and replacement changes dramatically.
- o 32 percent of the properties (with 262 thousand or 30 percent of all units) had standard needs, with anticipated annual per unit repair and replacement costs between \$300 to \$599. While these properties were in fairly good physical condition, some components needed important nonroutine repairs and/or replacement. Although there is no cause for immediate concern, failure of these properties to make needed repairs or replacements during the 5-year period could affect marketability and habitability.
- o 15 percent of properties (with 109 thousand or 12 percent of all units) had high anticipated repair and capital replacement needs of between \$600 and \$900 per unit per year. This suggests that many of them may have significant physical problems that could affect future viability.
- o 8 percent of properties (with 79 thousand or 9 percent of all units) had very high needs and will have to spend over \$900 per unit annually for repairs and replacements.

In sum, the projected 5-year repair and replacement costs do not reveal any current crisis in the physical condition or viability of the majority of the stock. The vast majority of the properties (77 percent) seemed to be in relatively good repair and have standard or better expected repair and capital replacement needs over the next 5-years. While a minority of the stock (23 percent of properties) will have to spend \$600 or more per unit annually to meet identified needs, approximately 23 percent of all older properties have, on average, spent that much in the past (1980-1984). It is worth noting that this minority of higher-need properties accounts for over half of the older inventory's total repair and replacement needs. Whether individual properties actually will make needed expenditures depends upon a host of factors including the availability of financial resources, the motivation of property owners and managers, the marketability of the units, and government action.

III-3: PROJECTED REPAIR AND REPLACEMENT COSTS, 1986-1990*
 Number of Units and Properties by Need Category

Annual Costs Per Unit (1985 Dollars)	Units (in 1000s)		Properties		Total 5-Year Costs (in 1000s)	
	no.	%	no.	%	costs	%
Low Needs						
\$0 TO \$299	433	49	3,295	45	\$301	17
Standard Needs						
\$300 TO \$599	262	30	2,273	32	556	32
High Needs						
\$600 TO \$899	109	12	1,093	15	392	22
Very High Needs						
\$900 AND ABOVE	79	9	605	8	502	29
TOTAL	883	100	7,266	100	\$1,750	100

* HUD/FHA-insured and HUD-held multifamily rental housing insured before 1975, excluding Sections 608 and 803, HUD-acquired properties, uninsured Sections 202 and 236, cooperatives, condominiums, and nursing homes. Based on data collected in 1985 on a representative sample of properties.

3. Types of Nonroutine Repair and Replacement Needs

A significant portion of the needed repair and replacements expenditures were accounted for by items only tangentially related to structural viability and/or capital systems; many were accumulated repairs which normally would have been handled through maintenance. The types of repairs and replacements needed over the next 5-years (1986-1990) are outlined in Table III-4.

The top 10 items were responsible for 78 percent of all costs. These items are equally split between expenditures for capital replacements (roofs, heating/cooling, doors/windows, pavement, plumbing/electrical, items normally associated with habitability and structural integrity) and expenditures for what would normally be cyclical or routine repairs and replacements (kitchen appliances, floor covering, painting walls and ceilings within units, kitchen cabinets/counters, and painting exteriors). Readers should recall that inspectors were instructed to include cyclical items and repairs in their assessments only when such work had clearly been deferred to the point that it was beyond routine maintenance.

In general, the composition of repair and replacement needs did not differ significantly among properties by level of need. Properties in the very high cost category do appear to have higher needs associated with doors and windows, plumbing and electrical fixtures, exterior walls and foundations, central heating, and elevators. However, given the small number of properties in this subgroup of the sample, these apparent differences may reflect sampling error rather than genuine differences among the inventory.

C. PROJECTED 15-YEAR REPLACEMENT COSTS

One of the original motivations of this study was concern for the long range future of the HUD-insured multifamily inventory and the possibility that capital replacement needs and the demand for funds to meet those needs might increase substantially as properties aged. In order to respond to this concern, part of the on-site survey asked for an assessment of the remaining life of the major property components and the estimated cost of replacing those components. Table III-1, a copy of the survey form, lists the items for which these estimates were made. In this section, we shall address these concerns by comparing the one-to-five year, six-to-ten year, and eleven-to-15-year capital replacement needs of the FHA-insured inventory. It should be noted that the annual replacement costs presented in this section are lower than the repair and replacement costs listed in the previous section. This is because the measures in the previous section went beyond capital replacements to include nonroutine repairs and also included a slightly broader list of components.

III-4: TYPES OF REPAIRS AND REPLACEMENTS, 1986-1990*

Types of Repairs Or Replacements	Percent of Total 5-Yr Costs by Need Category				
	All Properties	Low Need	Standard Need	High Need	Very High
Unit Appliances	15.0%	16.7%	17.3%	15.3%	10.7%
Roofs/Chimneys	11.2	13.1	12.5	9.7	10.1
Unit Floors	11.0	10.1	13.3	11.2	8.3
Unit Heating/Cooling	10.5	6.0	9.0	15.1	10.4
Unit Walls/Ceilings	8.3	6.4	9.0	9.1	7.7
Ext Doors/Windows	5.6	3.9	3.6	5.7	9.2
Kitch Cabnt/Counters	4.8	3.3	4.2	4.5	6.9
Ext Paint/Siding	4.2	4.9	4.8	4.6	2.4
Drives/Parking Lots	3.6	6.0	3.5	3.8	2.1
Plumb/Electr Fixture	3.4	2.8	2.2	3.0	5.7
Gbg Dispos/Exhst Fan	2.4	2.6	2.6	2.5	1.8
Unit Water Heater	2.1	2.5	2.4	2.4	1.3
Exter Walls/Foundatn	2.1	2.5	1.9	1.1	3.0
Central Heating	1.4	1.4	0.6	0.9	2.9
Hot Water Heater	1.4	2.8	1.5	1.4	0.6
Porch/Balcs/Fire Esc	1.4	1.3	1.5	0.5	2.2
Public Space Floors	1.2	1.9	1.4	0.8	1.1
Walks/Steps/Guardrail	1.1	1.9	0.7	1.1	1.1
Plumbing Distribution	1.1	0.3	0.5	1.3	2.2
Public Walls/Ceilings	1.0	1.1	0.8	0.5	1.6
Lawns & Planting	1.0	1.3	1.3	0.8	0.7
Elevators	0.9	0.5	0.8	0.5	1.6
Gutters	0.7	0.8	0.6	0.6	1.0
Insulation	0.5	0.5	0.6	0.4	0.3
Garages/Carports	0.5	0.9	0.6	0.5	0.1
Fences/Walls/Gates	0.5	0.2	0.4	0.6	0.6
Heating Distribution	0.4	0.5	0.1	0.0	0.9
Security/Fire Alarms	0.4	0.3	0.2	0.5	0.5
Smke Dtct/Door Closer	0.4	0.3	0.5	0.4	0.5
Inter Stairs/Halls	0.4	0.3	0.2	0.1	0.9
Central Air Con	0.3	1.5	0.2	0.0	0.1
Ext. Lighting	0.3	0.4	0.2	0.3	0.4
Electrical Distrib	0.3	0.0	0.2	0.5	0.5
Stairwy Door Closer	0.1	0.1	0.1	0.0	0.1
Compctr/Incinerators	0.1	0.1	0.1	0.0	0.3
Gas Distribution	0.1	0.4	0.1	0.0	0.1
Cooling Distribution	0.1	0.3	0.0	0.0	0.1
Sprinkler System	0.1	0.0	0.1	0.0	0.0
Lawn Sprinkler Sys	0.1	0.1	0.4	0.2	0.0
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%

* HUD/FHA-insured and HUD-held multifamily rental housing insured before 1975, excluding Sections 608 and 803, HUD-acquired properties, uninsured Sections 202 and 236, coops, condominiums, and nursing homes. Based on 1985 data on representative sample of properties. Number of properties in high and very high categories is small, so differences between these and other columns are not statistically meaningful.

The annual replacement need over the next fifteen years (1986 to 2000) has a mean cost of \$263 per unit and a median of \$234. See Table III-5. Over 77 percent of properties have annual replacement need of less than \$350 per unit, and only 7 percent have a need over \$450.

It does not appear that the multifamily inventory faces increasing replacement needs over the next 15-years. This is indicated in Table III-6, which presents the annual per unit replacement needs of these properties over the next 15-years with an indication of major categories of cost. There is no pattern of increasing costs over this time period. The annual per unit replacement cost was \$268 during the first 5-years (1986 to 1990); \$313 during each of the second 5-years (1991 to 1995); and \$251 during the last 5-years (1995 to 2000). These differences between periods are not statistically meaningful, given the large variance in the estimates. 11

Readers should bear in mind that these projections of future capital replacement needs are predicated on the assumption that current repairs and replacement will be made in a timely manner. If not, they could increase the burden on related components and result in much higher future need. For example, a leaky roof could cause deterioration to walls and floors.

D. RELATIONS BETWEEN NEEDS AND PROPERTY CHARACTERISTICS

An important question is whether projected physical needs are associated systematically with properties' characteristics. One might expect, for example, that a property's age would be a good indicator of its repair and replacement needs, since physical components wear out with age, or that the FHA mortgage subsidy programs under which it operates would, by affecting occupancy, ownership, and finances, be related to patterns of maintenance, abuse, and replacement. If such patterns exist, they could be used to design an early warning and targeting system for loan servicing. In this section, we test for possible relationships between selected property characteristics and need for nonroutine repairs and replacements.

11 The capital replacement costs for the third time period (1996 to 2000) may be understated to the extent that any item needs replacing twice during the 15-year period: second cycle replacements were not included in this study. We suspect, however this understatement is small, since it would apply only to shorter-lived items (such as hot water heaters) and only to properties that needed such items to be replaced early in the first time period.

III-5: PROJECTED REPLACEMENT COSTS 1986-2000*
 Number of Units and Properties by Cost Category

Mean Cost = \$263
 Median Cost = \$234

Annual Per Unit Costs (1985 \$)	Properties			Units
	No.	Percent	Cumulative Percent	(No. in 1000s)
\$0	0	0.0%	0.0%	0
\$1 TO 49	107	1.5%	1.5%	18
\$50 TO 99	587	8.1%	9.6%	99
\$100 TO 149	959	13.2%	22.8%	95
\$150 TO 199	1173	16.1%	38.9%	131
\$200 TO 249	1127	15.5%	54.4%	142
\$250 TO 299	1093	15.0%	69.5%	119
\$300 TO 349	567	7.8%	77.3%	64
\$350 TO 399	533	7.3%	84.6%	55
\$400 TO 449	346	4.8%	89.3%	54
\$450 TO 499	232	3.2%	92.5%	41
\$500 TO 549	196	2.7%	95.2%	25
\$550 TO 599	163	2.2%	97.5%	17
\$600 TO 699	63	.9%	98.4%	12
\$700 TO 799	82	1.1%	99.5%	6
\$800 TO 1499	38	.5%	100.0%	5
TOTAL	7266	100.00%	-	883

* HUD/FHA-insured and HUD-held multifamily rental housing insured before 1975, excluding Sections 608 and 803, HUD-acquired properties, uninsured Sections 202 and 236, cooperatives, condominiums, and nursing homes. Based on data collected in 1985 on representative sample of properties.

III-6: FIFTEEN-YEAR REPLACEMENT NEEDS BY COMPONENT AND YEAR*

Component	Annual Per Unit Costs		
	Cost Within 1-5 Yrs	Cost Within 6-10 Yrs	Cost Within 11-15 Yrs**
roof, gutters, soffit, fascia	\$48	\$48	\$24
exterior building	\$21	\$28	\$28
walks, steps, parking	\$17	\$32	\$21
plumbing/hot water systems	\$34	\$44	\$59
electrical system	\$12	\$13	\$20
heating/cooling systems	\$56	\$68	\$53
appliances (kitchen)	\$63	\$75	\$34
elevator	\$1	\$1	\$8
miscellaneous	\$15	\$6	\$4
Total***	\$268	\$313	\$251

* HUD/FHA-insured and HUD-held multifamily rental housing insured before 1975, excluding Sections 608 and 803, HUD-acquired properties, uninsured Sections 202 and 236, cooperatives, condominiums, and nursing homes. Based on data collected in 1985 on a representative sample of properties. The figures in this table are lower than those presented for 5-year needs because they include only replacements (not repairs) and are based on a smaller number of capital items.

** The physical inspection excluded from its needs estimates any second cycle replacements (i.e., items needing two replacements between 1986 and 2000). This may cause the 11-15 year costs, above, to be under-estimated for shorter-lived items.

*** Totals may differ from sum of components due to rounding.

Multivariate statistical analyses were used to determine whether observed differences among properties' repair and replacement needs were strongly and systematically related to differences in their other characteristics.¹² These statistical tests indicate whether observed differences among groups of properties in their physical needs are due to underlying differences among the groups or, are merely the chance result of the sample of properties examined.

We tested properties' projected 5 and 15-year repair and replacement costs (dependent variable) against selected physical, programmatic, and historical characteristics (independent variables). These characteristics were those one might expect to be related to differences in physical needs:

Physical Characteristics:

Age--number of years since endorsement of the property's mortgage insurance.

It was expected that older properties might have significantly higher projected costs because of the greater wear on their physical components.

Size--number of units.

It was anticipated that because of differences in economies of scale as well as management efficiencies resulting from size, properties having differing number of units would vary significantly from each other in their projected costs.

Location--central city, suburban, or non-metropolitan.

It was expected that differences among these locations in their economies, populations, and housing markets might result in significant differences in properties' physical condition.

Building Type--low rise (4 or fewer stories) or high rise.

It was expected that there would be significant differences in the repair and replacement costs of the different building types.

¹² Multivariate analysis is a statistical procedure which identifies meaningful differences between projects and the strengths of those differences while controlling for other factors. In addition to using such procedures, we also conducted nonparametric statistical analysis as a more conservative estimate of differences between projects (they require less stringent assumptions about the data) as a check on the parametric statistics. Because statistical tests are strongly influenced by the number of cases used in their calculations, all analytic statistics were calculated on the basis of the data from the sampled projects. Unassisted projects were given additional weight in the calculations to adjust for their purposeful underrepresentation in the sample.

Average Apartment Size--average number of bedrooms per unit, with efficiencies counted as .75 bedrooms.

Projected repair and replacement costs were expected to be greater for properties with larger units both because of size per se (more square footage, two or more bathrooms, etc.) and greater intensity of use (properties with larger units are more likely to be occupied by families and, hence, subject to more intensive wear).

Programmatic and Operating Characteristics:

Type of HUD Mortgage Insurance and Subsidy--(1) market rate mortgage with no subsidy, (2) subsidized mortgage (236 or BMIR) with Section 8 LMSA conversion (LMSA replacing an original Rent Supplement contract), (3) market rate mortgage (usually 221(d)(3) with Section 8 LMSA conversion, (4) any type mortgage with remedial Section 8 LMSA, (5) subsidized mortgage with no rental assistance.¹³

Insurance and subsidy programs could affect the nature of tenants, occupancy level, and rental income, each of which could result in different levels of use and repair.

Amount of Remedial LMSA--percent of units receiving remedial LMSA. Having more units of remedial LMSA should improve a property's finances and ability to undertake repairs. The fact that the LMSA is remedial, however, indicates prior financial or occupancy problems.

Amount of Flexible Subsidy Received--Federal contribution in dollars. As with remedial LMSA, this relation is ambiguous. The subsidy should have permitted physical improvements, but its receipt indicates that a property was previously (and may remain) troubled.

Amount of TPA Contribution--owner contribution to date in dollars. The expected effect of this variable is also ambiguous because of the timing of the TPA (ownership change). For years following a TPA, contributions should result in needed repairs and replacements. However, given that many TPAs occurred shortly before the study's 1985 physical inspection, such expenditures may not yet have been made.

Type of Ownership--nonprofit or profit-motivated/limited dividend. It was expected that owners' profit status would reflect different motivations, management orientation, and skill, each of which might affect physical condition and future needs.

¹³ LMSA conversion is Section 8 units provided to a project to replace Rent Supplement units. Remedial LMSA is Section 8 units provided to assist a financially troubled project. LMSA is discussed in Chapter VI.

Mortgage Status--whether mortgage insurance is in force or mortgage is HUD-held.

Properties that have experienced financial difficulties might be expected to have greater repair and capital replacement needs as a result of delayed maintenance.

Average Occupancy--the average over 1980 to 1984 of actual annual rental income divided by potential income if fully occupied.

It was expected that properties with higher occupancy levels in prior years would have fewer repair and replacement needs as a result of the availability of their higher income for such activities.

History of Repair and Capital Replacement Characteristics:

Average Past Expenditures for Maintenance and Repairs--average annual expenditures from operating income, 1980 to 1984.

Below-average expenditures may reflect neglect and above average repair and replacement needs. They may, however, reflect chronically low need and good condition.

Draws from the Replacement Reserve--total draws per unit, 1982 to mid-1985.

One would expect above-average draws to result in high levels of replacements and major repairs, and thus, be reflected in good condition and low needs.

The most significant finding of the statistical analyses is that none of the property characteristics listed above are of much value in predicting a property's repair and replacement needs. Neither short-term (1986 to 1990) nor long-term (1986 to 2000) needs relate strongly to these characteristics, suggesting that other factors such as original construction quality, patterns of use, or management (that could not be measured for this study) are the most important determinants of repair and replacement needs.

Table III-7 presents the results of multiple regression analyses relating a property's short- and long-term needs, respectively, to its characteristics. Multiple regression is a statistical technique that combines a set of independent variables (the characteristics listed above) in such a way so as to maximize the explanation of variations in the dependent variable, needs. Each column in the table represents a regression equation for the physical needs (dependent) variable listed at the top of the column. A column entry of one or more asterisks indicates a statistically significant relationship between the dependent variable at the top and the property characteristic (independent variable) listed at the left. The numeric entries in each column (beta coefficients) indicate the direction (positive or negative) and

III-7: RELATIONSHIPS BETWEEN REPAIR AND REPLACEMENT NEEDS AND PROPERTY CHARACTERISTICS
 Beta Scores and Significance of 5-Yr Repair Costs and 15-Yr Replacement Costs on Selected Property Characteristics

Independent Variables	Dependent Variables	
	Five Year Repair & Replacement Costs	Fifteen Year Replacement Costs
Age	.08*	--
Location	-.08*	--
Building Type	--	--
Size	-.09**	--
Av Apart Size	.25***	.17***
Ownership Type	--	--
Mortgage Status	-.08*	--
Mortgage & Assist Type	--	-.13***
Amount of Remedial LMSA	.09**	--
Amount of Flex Subsidy	--	--
Amount of TPA Contribution	--	--
Av Occupancy	--	--
Past Repair Expenditure	--	.16***
Total Reserve Draws	--	--
	TOTAL R sq = .08	TOTAL R sq = .07

NOTE:* SIGNIFICANT AT THE 0.10 LEVEL

** SIGNIFICANT AT THE 0.05 LEVEL

*** SIGNIFICANT AT THE 0.01 LEVEL

HUD/FHA-insured and HUD-held multifamily rental housing insured before 1975, excluding Sections 608 and 803, HUD-acquired properties, uninsured Sections 202 and 236, cooperatives, condominiums, and nursing homes. Based on data collected in 1985 on a representative sample of properties. Beta scores indicate the size and direction (+/-) of the relationship between a dependent and an independent variable.

relative strength of relations.¹⁴ (Within a column, or equation, the larger the beta coefficient, ignoring its sign, the stronger the relationship with that variable). The last entry in each column (adjusted R square), indicates the percentage of the total variance in the dependent variable that is explained by the independent variables in the equation. Thus, an R squared near 1.00 would mean the independent variables were very important and explained nearly all variation in the dependent variable. In both of our equations, however, the R squared is small (.08 or less) indicating that the independent variables explained less than 8 percent of the total variation in the dependent variables. Using either short- or long-term needs as dependent variable, needs were only weakly related to property characteristics.

Short-term needs were related positively to average apartment size (properties having many large units had higher needs). They were also related positively, but less strongly, to percent of units assisted through remedial LMSA and to age, and related negatively to property size (number of units), having mortgage insurance in force, and being located in nonmetropolitan areas. Thus, on average, properties are somewhat more likely to be in worse shape if they have many multibedroom apartments, receive LMSA for a high percentage of units (because LMSA properties may have a history of financial problems which often lead to deferred maintenance), are older, and are in metropolitan areas. These relationships, however, are weak, explaining only 8 percent of the variation in needs (adjusted R squared=.08). This means that a high proportion of low need properties may share some or all of these traits, while many bad properties may lack all of them.

Long-term needs were related positively to level of past repair expenses and average apartment size, but negatively to receipt of certain subsidies. This means that on average, properties are somewhat more likely to have higher long-term needs if they have had above average levels of past repair and maintenance expenditures and if they contain larger apartments (more bedrooms), but may have lower needs if they have received mortgage and/or rental subsidies. As with the case of short-term needs, however, these relationships were weak, explaining only 7 percent of the variation in needs, so that no set of characteristics is really of much value in predicting or targeting the neediest properties.

Of particular interest, given the origin of this study, is that physical needs are not related strongly to age: older properties are only slightly over-represented among high need properties, and a high proportion of older properties have no more than average needs. While this finding is counter-intuitive, it is plausible. It indicates that while components may wear with age, once properties are 10 years old or over, age is not a good predictor of condition or needs. This is probably because components differ in expected life, so that at any given age, various items may have already been replaced;

¹⁴ These coefficients have been adjusted to account for differences in the way independent variables are measured.

and because varying conditions of use, abuse, and maintenance can extend or shorten component life. Both factors could blur the effects of age.

In summary, this analysis of 5-year repair and replacement costs and of 15-year capital replacement costs revealed few significant relationships with property characteristics. It does not appear that any of the common characteristics such as age, mortgage status, type of ownership, or location act in a pervasive manner to impact negatively on property viability. It is likely that features unmeasured and not considered in this analysis, such as quality of management or initial construction, or patterns of use and abuse, are much more important determinants of properties' physical condition and needs.

IV. FINANCIAL CONDITION OF THE OLDER HUD/FHA STOCK: CASHFLOW AND RESERVE FOR REPLACEMENTS

The previous chapter presented the projected repair and replacement needs of the older insured multifamily inventory. To pay for these repairs each property depends primarily on its income-based resources--its annual cashflow and funds it has accumulated in its reserve for replacements escrow account. This chapter presents information on these resources based on HUD's property files and on annual statements of income and expenditures, which each insured property is required to submit to the Department. These data are maintained in automated form in HUD's Office of Loan Management System (OLMS). More details on OLMS and our use of it to develop financial indicators are provided in Appendix A4.

A. ANNUAL RESIDUAL CASH (CASHFLOW)

To fund nonroutine repairs and replacements, properties depend primarily on rental revenues and other property income. While rental income is generally dominant, other income may be derived from Federal mortgage interest payments (Section 236 properties), rental assistance payments (Section 8 or Rent Supplement), and miscellaneous sources such as forfeited tenant deposits, or net receipts from laundromats, variety stores, or other incidental commercial activities.

In this study we define a cashflow measure, annual residual cash, to be the maximum portion of income that is available for making nonroutine expenditures for physical systems (that is, for making expenditures above and beyond any already being made on average). Annual residual cash equals total property income less expenditures for administration, normal operations (including maintenance and routine repairs), utilities, taxes, insurance, full mortgage debt service and insurance premium, and interest on other notes. A property owner may either spend residual cash for immediate needs, may set it aside for future needs in the reserve for replacements escrow account, or may use it to pay debt service on a special loan.¹⁵

Annual residual cash is the maximum amount available from income for nonroutine repairs and replacements because it excludes allowances for owners' profits: Profit motivated owners would normally take dividend distributions from surplus cash, when available. In practice, HUD requires owners to

¹⁵ This definition of annual residual cash departs slightly from HUD's standard computation of net cash throwoff in the OLMS system. In OLMS, net cash throwoff is computed by subtracting from income whatever amount the owner happens to pay on debt service (regardless of the required amount) and also subtracts contributions-net-of-draws to the project's reserve-for-replacement fund.

deposit funds regularly in the reserve for replacements account, but would have limited ability to force unwilling owners to forgo or reduce dividend distributions in order to expand the level of repair expenditures.

For comparability with the estimated physical needs estimates, which were expressed in 1985 dollars, we computed annual residual cash in 1985 dollars. This computation was made by taking each property's annual residual cash for 1980 to 1984 (as reported in OLMS), inflating all figures to 1985 dollars using the appropriate CPI index, and averaging.¹⁶

Annual residual cash averaged \$238 per unit per year, with a median of \$171 (Table IV-1). Most properties had residual cash figures clustering around the mean in an almost normal distribution; a much smaller number of properties fell in the tails of the distribution--either well above or well below the mean.

Most properties have residual cash above breakeven. As shown in Table IV-2, 60 percent of properties (4,389 properties containing 527,000 units) had a solidly positive annual residual cash of at least \$120 per unit. Another 26 percent (1916 properties containing 195,500 units) had residual cash in the breakeven range--between \$120 per year surplus and \$120 per year deficit per unit. (A deficit of \$120 dollars per year is equivalent to a needed increase in net monthly rent collections of only \$10 per unit).

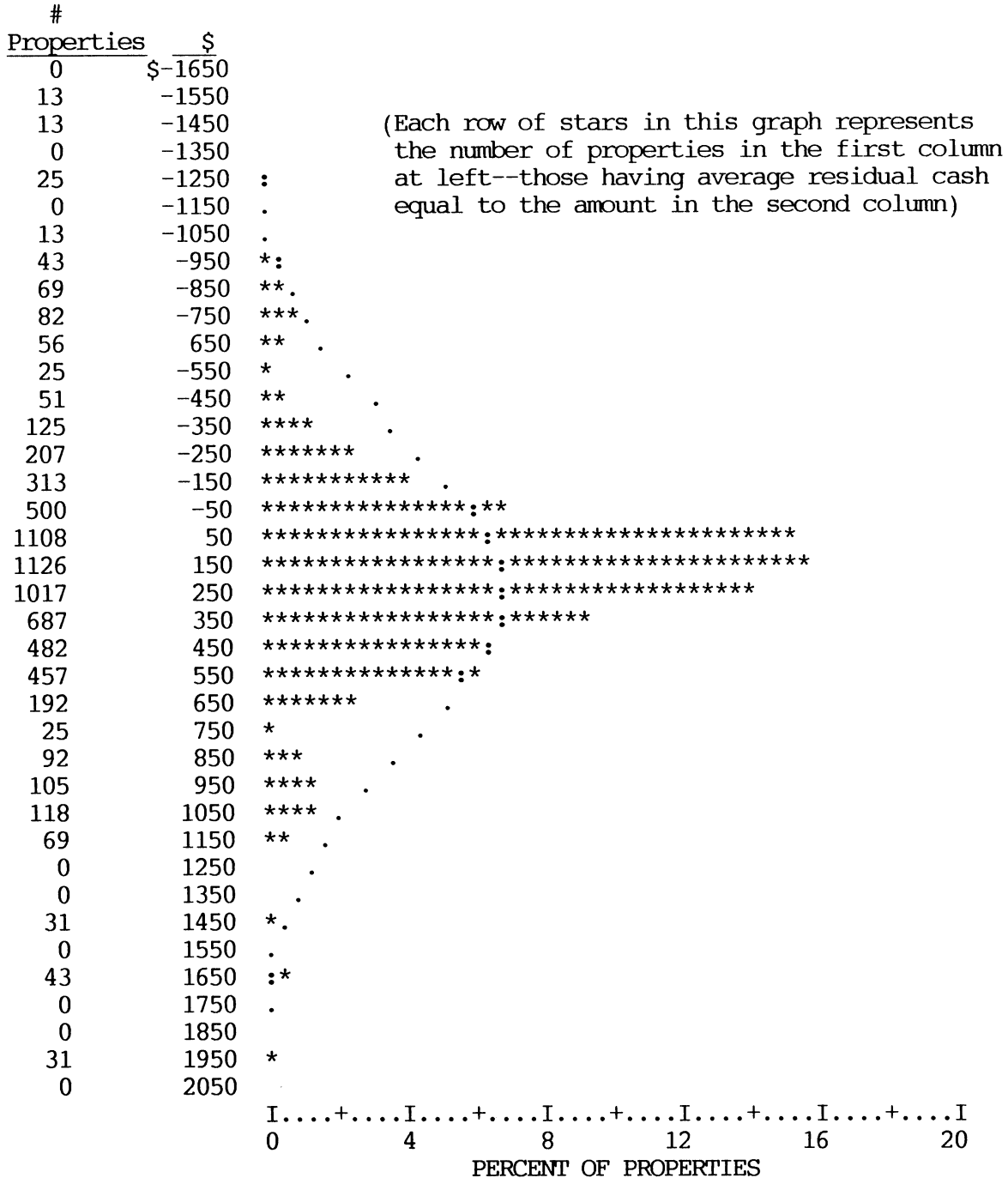
Less than 9 percent of the properties (622 properties containing 99,400 units) had modestly negative residual cash (in the -\$120 to -\$600 range). This is equivalent to needed monthly rent collection increases of up to \$50 per unit to break even; for many properties in this group, it may be feasible through rent increases, improved occupancy, and/or operating economies to overcome deficits. The remaining 5 percent (339 properties containing 61,000 units) had large deficits of annual residual cash exceeding -\$600 per unit. Given that the residual cash figures represent a five-year average and not a transient figure, the financial viability of these properties is questionable without extraordinary measures on the part of the owner.

It is worth noting that a substantial portion of properties (40 percent) are operating at or below breakeven. This indicates the likelihood that many owners and investors must have been seeking positive total returns on their investments from tax benefits and property appreciation and not primarily from annual income.

¹⁶ The average was deemed a better estimate of long-term resources than any single year's value of annual residual cash. We found that there is a stable distribution over all projects from year-to-year in annual residual cash; however, for any given project, there is great year-to-year variability, probably due to the "lumpy" nature of some expenses.

IV-1: DISTRIBUTION OF AVERAGE ANNUAL RESIDUAL CASH OVER ALL PROPERTIES*
(In 1985 Dollars Per Unit Per Year)

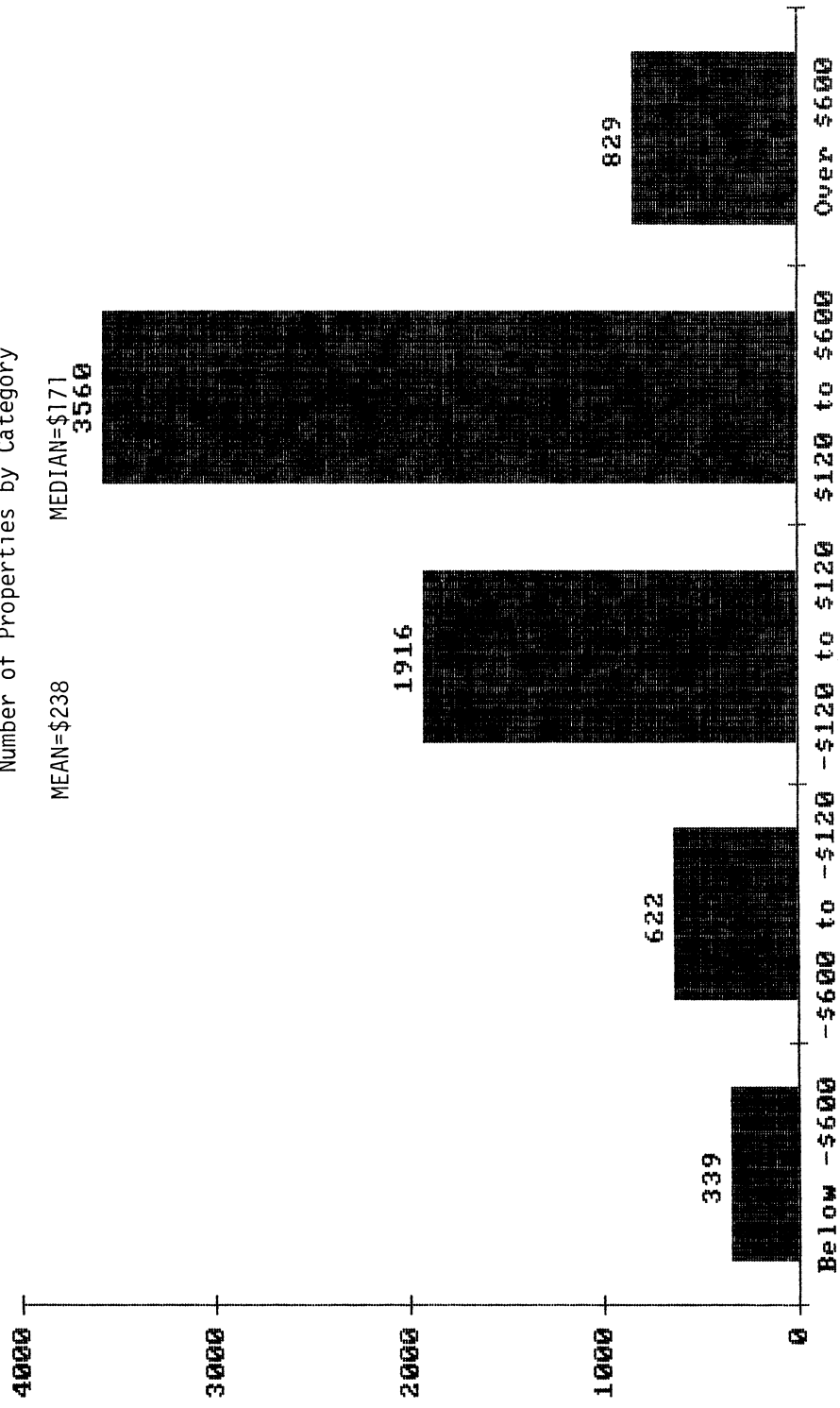
MEAN = \$238 MEDIAN = \$171



* HUD/FHA-insured and HUD-held multifamily rental housing insured before 1975, excluding Sections 608 and 803, HUD-acquired properties, uninsured Sections 202 and 236, cooperatives, condominiums, and nursing homes. Based on 1985 data on a representative sample of properties.

IV-2: AVERAGE ANNUAL RESIDUAL CASH *
 Number of Properties by Category

MEAN=\$238
 MEDIAN=\$171
3560



LEVEL OF ANNUAL RESIDUAL CASH IN 1985 DOLLARS PER UNIT

* HUD/FHA-insured and HUD-held multifamily rental housing insured before 1975, excluding Sections 608 and 803, HUD-acquired properties, uninsured Sections 202 and 236, cooperatives, condominiums, and nursing homes. Based on data collected in 1985 on a representative sample of properties.

B. RESERVE-FOR-REPLACEMENTS ESCROW ACCOUNT

As was noted previously, each property is required by terms of its mortgage agreement to make monthly contributions to a reserve-for-replacements account. This account, commonly called the reserve fund, is intended to provide for major repairs and replacements. The annual contribution amount is set initially at .5 percent of the original replacement cost of the property, and may be increased periodically by mutual consent of the owner and HUD. Owners make their monthly escrow contributions from their residual cash, discussed previously. In addition to monthly contributions, some owners have made one-time payments from their own funds (nonproperty income) in conjunction with a transfer of physical assets or a Flexible Subsidy.¹⁷ An owner can make draws on the replacement reserve only with HUD's approval.

In practice, reserve balances are usually kept small. The mean balance in 1985 was \$467 per unit and the median was \$378. (See Table IV-3).¹⁸ Relative to the annual repair and replacement needs presented in Chapter III, typical reserve funds would barely fund one or two years' needs.

The reserve balance is the result of accumulated monthly contributions less periodic reserve draws. In 1985 the mean annual required contribution was \$126 per unit and the median was \$88. Over the three and a half years from 1982 to 1985, annual draws from reserves had a mean of \$82 and median of \$60; nearly all of these draws were for repairs and replacements.¹⁹

C. REPAIRS OUT OF OPERATING FUNDS

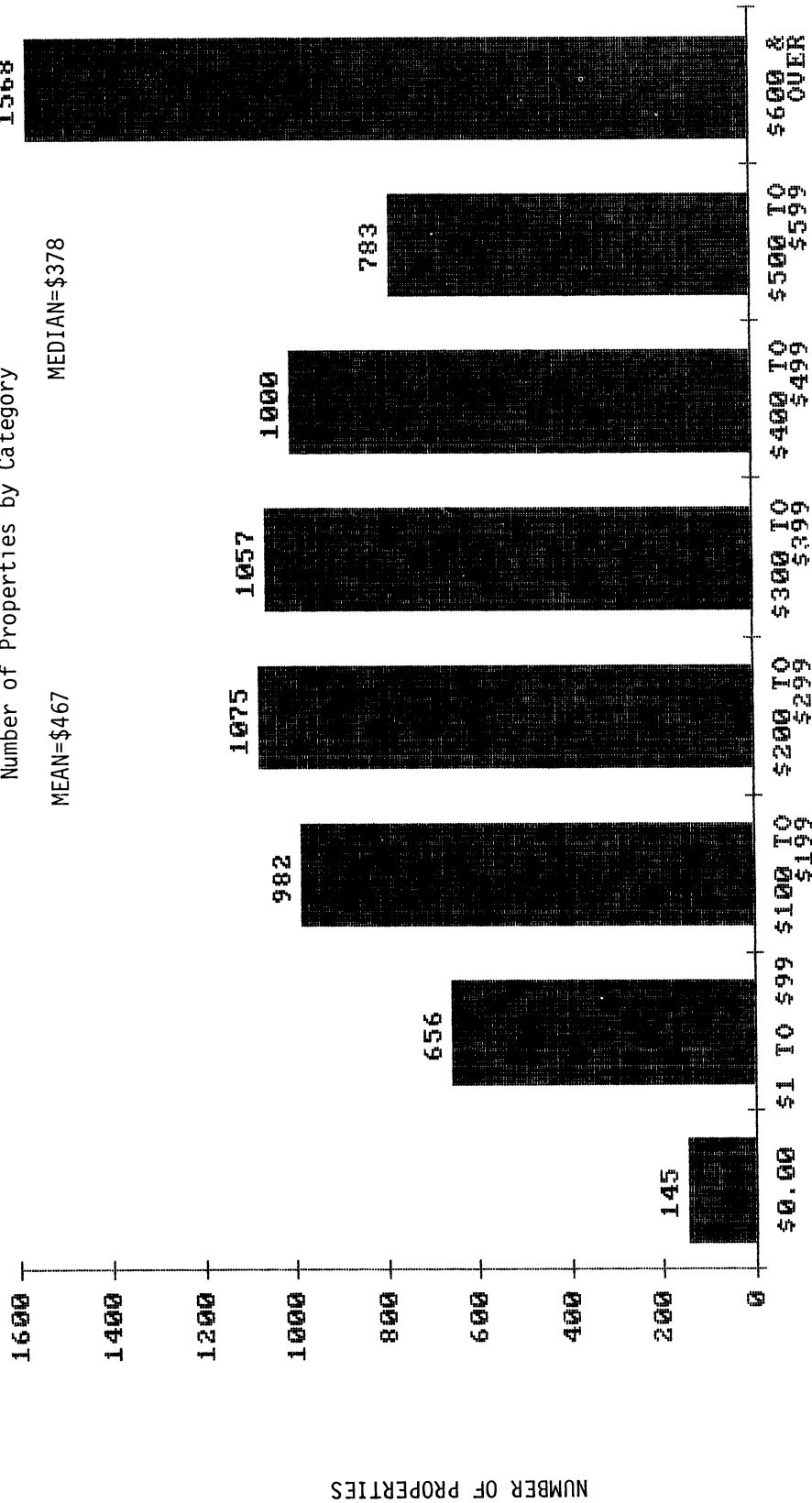
Each property pays for routine repairs and maintenance from operating income. We subtracted these expenditures (mostly for decorating, maintenance, and cyclical work such as painting or regular servicing of boilers or elevators) from total income in computing residual cash because we had also excluded the corresponding routine repairs from the projected repair and replacement need estimates (Chapter III). Many owners, however, do fund a

¹⁷ See Chapter VI for a fuller discussion of these loan management tools.

¹⁸ The amounts of reserve balances, required contributions, and draws since 1982 were provided by field office staff based upon project files.

¹⁹ Although the 1985 contribution rate exceeded the average of recent annual draws, fund balances were not necessarily increasing for two reasons. First, some properties failed to make full required payments to their reserves. Second, the 1985 contribution rate is generally higher than the rates for the previous three and a half years.

IV-3: AVERAGE RESERVE-FOR-REPLACEMENT*
 Number of Properties by Category



LEVEL OF RESERVE-FOR-REPLACEMENT IN 1985 DOLLARS PER UNIT PER YEAR

* HUD/FHA-insured and HUD-held multifamily rental housing insured before 1975, excluding Sections 608 and 803, HUD-acquired properties, uninsured Sections 202 and 236, cooperatives, condominiums, and nursing homes. Based on data collected in 1985 on a representative sample of properties.

portion of their nonroutine repairs and replacements from operating income. For their properties, average residual cash may understate the total amount of cash available for future capital replacements.

The average annual expenditure for routine maintenance and repairs was \$413 per unit and the median was \$367. (See Table IV-4.)²⁰ A small number of properties (fewer than 700 out of 7266) have spent more than twice these amounts per unit annually and may be correcting nonroutine problems by using their operating funds. For such properties, average residual cash may, to some degree, understate the amount of cash resources available to make nonroutine repairs and replacements.

D. RELATIONS BETWEEN FINANCES AND PROPERTY CHARACTERISTICS

One might assume intuitively that a property's financial characteristics would be strongly related to its physical and programmatic characteristics. Physical characteristics help determine marketability, tenant composition, and operating costs, while programmatic characteristics affect rent levels, subsidy income, and tenant composition. To identify and test the strength of such relationships we conducted multivariate analyses relating the financial variables discussed above and the following physical and programmatic characteristics:

Physical Characteristics

Age--number of years since endorsement of the mortgage insurance. One might expect older properties, because of wear, to command lower rents, have lower occupancy, or have higher operating costs, leading to lower residual cash and reserve balances.

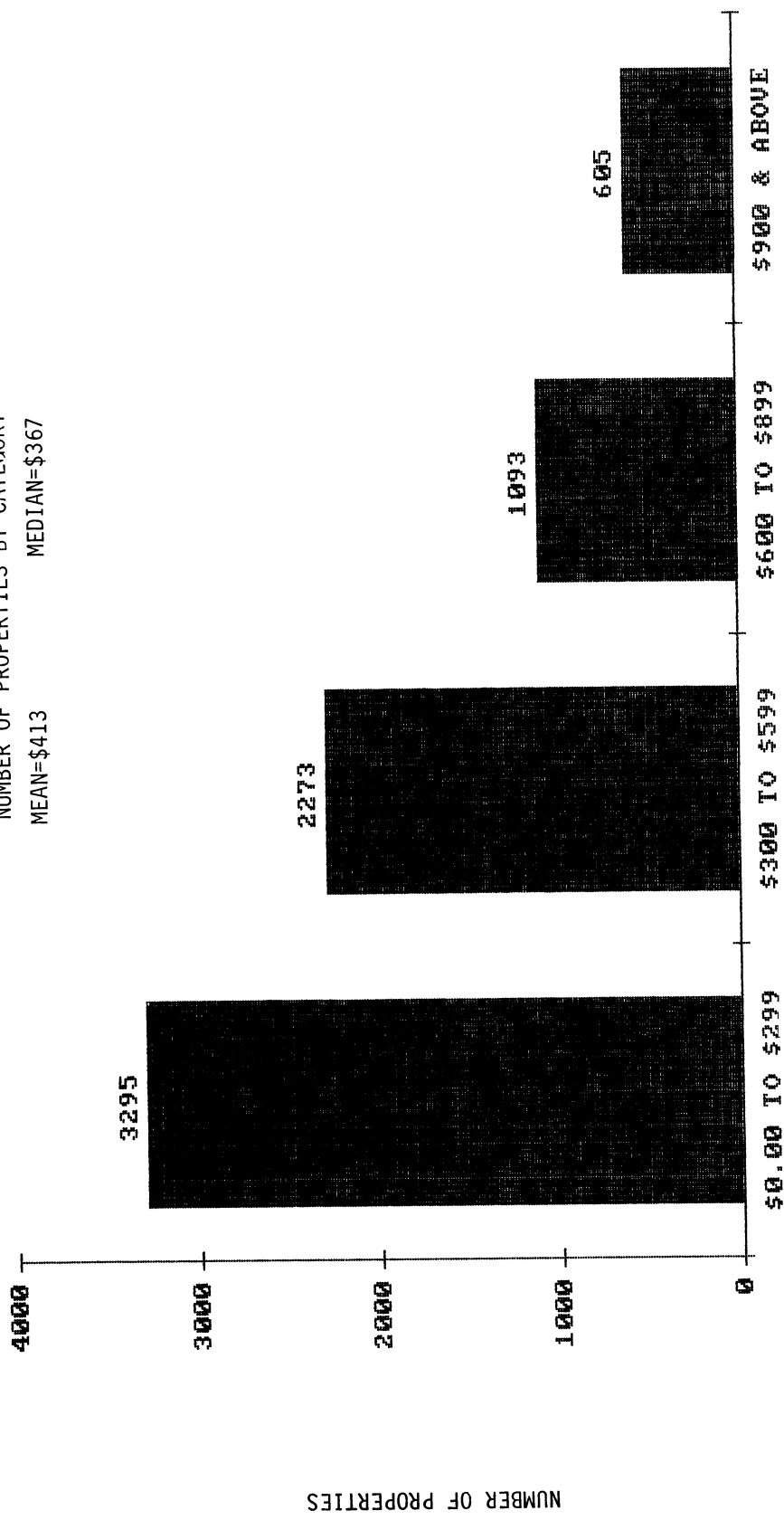
Size--number of units. Size could effect both operating economies and manageability. Small properties may not benefit from economies of scale while very large properties may be difficult to manage.

Location--central city, suburb, or nonmetropolitan area. One might expect central city properties to have lower residual cash due to lower tenant incomes or neighborhood and market problems.

Building Type--low rise (4 or fewer stories) or high rise. One would expect different operating costs in different building configurations, leading to different levels of residual cash.

²⁰ The amount of expenditures for routine repairs and maintenance was computed by averaging the annual figures for 1980 to 1984 reported in OLMS. It is expressed in 1985 dollars.

IV-4: AVERAGE ANNUAL REPAIR EXPENDITURES*
 NUMBER OF PROPERTIES BY CATEGORY
 MEAN=\$413
 MEDIAN=\$367



* HUD/FHA-insured and HUD-held multifamily rental housing insured before 1975, excluding Sections 608 and 803, HUD-acquired properties, uninsured Sections 202 and 236, cooperatives, condominiums, and nursing homes. Based on data collected in 1985 on a representative sample of properties.

Average Apartment Size--average number of bedrooms per unit, with efficiencies counted as .75 bedrooms.

Properties with many larger apartments would more likely be occupied by families with children as opposed to elderly tenants, leading to more intensive use, higher operating and administrative costs, and thus, lower annual residual cash.

Programmatic Characteristics

Type of HUD Mortgage Insurance and Subsidy--(1) market rate mortgage with no subsidy, (2) subsidized mortgage (236 or BMIR) with Section 8 LMSA conversion (LMSA replacing an original Rent Supplement contract), (3) market rate mortgage (usually 221(d)(3) with Section 8 LMSA conversion, (4) any type mortgage with remedial Section 8 LMSA, (5) subsidized mortgage with no rental assistance.²¹ Unassisted properties generally have Federally uncontrolled rents and, therefore, could be expected to have higher annual residual cash than assisted. Assisted properties with LMSA might be expected to have higher occupancy and/or rent levels than other assisted properties because Section 8 provides a deeper subsidy; thus, they might be expected to have higher residual cash and reserve balances. Properties that received LMSA to remedy financial problems may differ from those that received LMSA as a result of conversion of Rent Supplement.

Amount of Remedial LMSA--percent of units receiving remedial LMSA. Having more units of remedial LMSA should enable a property to achieve higher rental income, cashflow, and reserve balances. The fact that the LMSA is remedial, however, indicates a history of financial or occupancy problems, which may still prevail.

Amount of Flexible Subsidy Received--Flexible Subsidy in dollars. Receipt of Flexible Subsidy should lead to improvements in physical condition and management, which could lead to higher residual cash; it may also result in owner contributions to the reserve fund. However, as with remedial LMSA, Flexible Subsidy indicates a history of financial and/or physical problems.

²¹ LMSA conversion is Section 8 units provided to a project to replace Rent Supplement units. Remedial LMSA is Section 8 units provided to assist a financially troubled project. LMSA is more fully discussed in Chapter VI, along with Flexible Subsidy and Transfers of Physical Assets (TPAs).

Amount of TPA Contribution--owner contribution to date in dollars. TPA contributions should improve properties' marketability and operating efficiency, leading to higher residual cash. As with Flexible Subsidy, owner contributions may be deposited into the replacement reserve leading to higher balances.

Ownership Type--nonprofit or profit-motivated including limited dividend.

An owner's profit status relates to financial motivation, concern and eligibility for Federal income tax incentives, and HUD regulations, all of which could affect property residual cash and reserve balances.

Mortgage Status--whether mortgage insurance is in force or HUD-held.

One would expect properties with mortgage problems to have lower residual cash and reserve balances.

The most significant finding of our multivariate statistical analyses was that little of the variation in the dependent financial variables could be explained by properties' physical and programmatic characteristics. Tables IV-5 and IV-6 present the findings for each of five financial variables. Each column in the table represents a regression equation for the financial (dependent) variable listed at the top of the column. A column entry of one or more asterisks indicates that there is a statistically significant relationship between the dependent variable at the top and the property characteristic (independent variable) listed at the left. The numeric entries in each column (beta coefficients) indicate the direction of the relationship (positive or negative) and its relative strength. (Within any column, or equation, the larger the value of the beta coefficient, ignoring its sign, the stronger the relationship with that variable). The last entry in each column (adjusted R squared), indicates the percentage of the total variance in the dependent variable that is explained by the independent variables in the equation. An R squared near 1.00 would mean the independent variables were very important and explained nearly all of the variation in the dependent variable. In each of our equations, however, the R squared is small (between .07 and .22) indicating that the independent variables explained little of the variation in the independent variables.

For each of five financial variables, the regression results are as follows:

IV-5: RELATIONSHIPS BETWEEN FINANCIAL AND PROPERTY CHARACTERISTICS
 Beta Scores and Significance of Average Residual Cash and of
 Average Annual Occupancy on Selected Property Characteristics

Independent Variables	Dependent Variables	
	Av Residual Cash	Av Annual Occupancy
Age	.29***	--
Location	.07*	--
Building Type	--	--
Size	--	--
Av Apart Size	-.07*	--
Ownership Type	--	--
Mortgage Status	.16***	.14***
Mortgage & Assist Type	-.20***	.08*
Amount of Remedial LMSA	--	-.11**
Amount of Flex Subsidy	-.07*	--
Amount of TPA Contribution	-.09**	--
Reserve Balance	.10***	--
Past Repair Expenditure	NA	--
Total Reserve Draws	NA	--
	TOTAL R sq = .22	TOTAL R sq = .03

NOTE: * SIGNIFICANT AT THE 0.10 LEVEL

** SIGNIFICANT AT THE 0.05 LEVEL

*** SIGNIFICANT AT THE 0.01 LEVEL

HUD/FHA-insured and HUD-held multifamily rental housing insured before 1975, excluding Sections 608 and 803, HUD-acquired properties, uninsured Sections 202 and 236, cooperatives, condominiums, and nursing homes. Based on data collected in 1985 on representative sample of properties. Beta scores indicate the size and direction (+/-) of the relationship between a dependent and an independent variable.

IV-6: RELATIONSHIPS BETWEEN FINANCIAL AND PROPERTY CHARACTERISTICS
Beta Scores & Significance of Reserve Balance, Past Repair Expenditures,
& Total Reserve Draws on Selected Property Characteristics

<u>Independent Variables</u>	<u>Dependent Variables</u>		
	<u>Reserve Fund Balance</u>	<u>Past Repair Expenditures</u>	<u>Total Reserve Draws</u>
Age	--	.13***	-.11***
Location	--	--	--
Building Type	.14***	.08*	--
Size	-.18***	--	-.10**
Av Apart Size	--	.22***	--
Ownership Type	--	--	--
Mortgage Status	.14***	-.16***	.20***
Mortgage & Assist Type	--	-.11***	--
Amt Remed LMSA	--	.18***	--
Amt Flex Subsidy	.15***	--	--
Amt TPA Contrib	--	--	.17***
Av Occupancy	--	--	--
Reserve Balance	NA	--	--
Past Repair Expens	--	NA	.25***
Tot Reserve Draws	--	.22***	NA

TOTAL R sq= .07 TOTAL R sq= .15 TOTAL R sq= .12

NOTE: * SIGNIFICANT AT THE 0.10 LEVEL

** SIGNIFICANT AT THE 0.05 LEVEL

*** SIGNIFICANT AT THE 0.01 LEVEL

HUD/FHA-insured and HUD-held multifamily rental housing insured before 1975, excluding Sections 608 and 803, HUD-acquired properties, uninsured Sections 202 and 236, cooperatives, condominiums, and nursing homes. Based on data collected in 1985 on representative sample of properties. Beta scores indicate the size and direction (+/-) of the relationship between a dependent and an independent variable.

1. Average Residual Cash²² This is one key indicator of a property's financial well-being and its ability to pay for extraordinary physical repairs and replacements.

Multiple regression analysis revealed that average residual cash is moderately related to a property's programmatic and general characteristics. Eight variables were related to residual cash and explained 21 percent of its total variation.

The most important of these relationships is with age--older properties have higher residual cash than newer ones (when controlling for other key characteristics such as mortgage and assistance type). This finding is counter to what might be expected. It may be because older properties have lower debt service than newer ones.

Next in importance is mortgage and assistance type (negative relation to receiving assistance) and mortgage insurance status (positive relation to insurance in force). Assisted properties have lower residual cash than unassisted, and among assisted, those that do not receive Section 8 or Rent Supplement have lower residual cash than those that do. Properties with mortgage insurance in force, as expected, have higher residual cash than do HUD-held.

The remaining relationships are weaker. Residual cash is related negatively to receipt of TPA contributions or receipt of Flexible Subsidy. This probably indicates that these remedial tools went to properties that were financially troubled during 1980 to 1984 (base years for which average residual cash was calculated). Residual cash is related positively to reserve fund balance, a logical relationship since the reserve fund is another indicator of financial well-being and is replenished by contributions from residual cash. Regarding location, it is stronger in suburban than in city or nonmetropolitan areas. Residual cash is related negatively to average apartment size.

2. Average Annual Occupancy²³ This variable is the average of the annual occupancy figures, as computed above, for the years 1980 to 1984. Since rent collections are a component of residual cash, average annual occupancy would be positively related to average residual cash.

²² Rental and other property income less all operating expenses and debt service, averaged over 1980 to 1984, and expressed in 1985 dollars per unit.

²³ Annual rent collections as a percentage of potential rent collections if all units were fully occupied and paid full rents.

Average occupancy has little relationship with more general program and property characteristics. Occupancy is related positively to having mortgage insurance in force and to receiving subsidies, and negatively to the percent of units receiving remedial LMSA Section 8. However, these relationships are very weak and together explain less than 3 percent of the variation in average occupancy. Low occupancy may, perhaps, be due to market conditions and locational factors (other than city/suburb/nonmetropolitan area).

3. Reserve Escrow Account Balance²⁴ A small reserve balance indicate low rates of contributions, high reserve draws, or both.

Reserve balance is only weakly related to more general characteristics. It is positively related to having mortgage insurance in force, having received a Flexible Subsidy, and being a highrise building; and negatively to size (number of units). Again, the relationships are very weak and together explain less than 7 percent of the total variation in reserve balance.

4. Average Repair Expenditures Out of Operating Funds²⁵ These expenditures are one of the expense components of average residual cash and, therefore, are related negatively to residual cash. To the degree an owner has chosen to expense (rather than capitalize) some replacement expenditures, such expenditures would be included in this variable.

Average repair expenditures are somewhat related to a property's other characteristics. The multiple regression equation explained about 15 percent of the variation in repair expenditures. The most important relations are with average apartment size, draws from the reserve fund, and percent of units receiving remedial LMSA (all positive), and having mortgage insurance in force (negative). This confirms the hypothesis that larger (probably family occupancy) units need more repairs and that expenditures from the reserve fund generally increase in parallel with expenditures from operating income. It may also indicate that properties with remedial LMSA need or are more able to make repairs and HUD-held properties, conversely, are not as able. Repair expenditures are also related to age (positive), receiving assistance (negative), and being a highrise (positive).

²⁴ Balance in the reserve for replacement fund as of summer, 1985, in 1985 dollars per unit.

²⁵ Average expenditures for repairs, extraordinary repairs, and replacements, expressed in 1985 dollars per unit.

5. Total Reserve Draws²⁶ Properties having higher levels of residual cash can afford to make larger deposits to their reserve funds and, therefore, would be able to make larger draws. An owner has a certain amount of leeway in paying for physical improvements either from the reserve fund (capitalizing and depreciating) or from operating income (expensing). Reserve draws plus repair expenditures out of operating funds together cover nearly all expenditures for repairs and replacements.

Draws from the reserve fund are somewhat related to general characteristics, the most important being average expenditures out of operating funds, having mortgage insurance in force, and having undergone a TPA (all positive relations). Reserve draws are related negatively, and more weakly, to age and size (number of units). These variables together explain under 12 percent of the variation in reserve draws. The regression confirms the general relationship that properties spending more on repairs out of income tend also to spend more from their reserve funds. Together with the previous regression, this seems to show that HUD-held properties tend to make proportionately more of their physical expenditures from operating income and less from the reserve than do properties with mortgage insurance in force.

In summary, a property's physical and programmatic characteristics combined provide, at best, only weak basis for predicting or explaining the strength of its annual residual cash. While residual cash level is significantly related to a number of variables, the relationships are not strong enough to be useful for programmatic or policy decisions. As was surmised in Chapter III regarding physical needs, other factors, probably related to owner motivation, local markets, and property management, play a major role in determining property financial condition.

E. PROPERTIES WITH NEGATIVE AVERAGE RESIDUAL CASH

A property generally cannot remain viable for long if it consistently generates negative cashflow. This section examines briefly the distribution of selected characteristics of properties with negative average residual cash. The reader should recall that average residual cash is the average in 1985 dollars of the property's 1980 to 1984 annual residual cash and, therefore, it measures more than a transient condition, but at the same time, is insensitive to any trend that a particular property may be experiencing.

Examining first the 622 properties (9 percent of the older inventory containing 99,400 units) with a moderately negative level of average annual residual cash (between \$120 and \$600 annual shortfall per unit):

²⁶ Total draws per unit from the reserve account between 1982 and mid-1985, in 1985 dollars.

- o 35 percent (219 properties) were in the HUD-held inventory for which insurance claims have already been paid. These were clearly properties whose financial problems were known to the Department.
- o 12 percent (75 properties) have had low average occupancy (under 85 percent occupancy) and, therefore, could reach breakeven if the vacant units were or could be made marketable or if the market improved.
- o 65 percent (406 properties) were assisted, most (304) of which were receiving LMSA. Rent increases may be more feasible in properties with LMSA since HUD would share the cost burden with assisted tenants.
- o 23 percent (145 properties) underwent relatively recent transfers of physical assets. This is significant because new ownership may bring management and operating improvements. Furthermore, since most of these TPAs occurred late in the 1980-1984 base period, or even in 1985, management and cashflow may already have improved but not yet been reflected in the five-year average residual cash measure.

Since this group of properties faced a relatively moderate average annual cash deficit of between \$120 and \$600, it is possible that their financial weaknesses could be eliminated without extraordinary measures.

The 339 properties (5 percent of properties containing 61,000 units) faced with a high negative residual cash (annual shortfall exceeding \$600 per unit) had the following characteristics:

- o 39 percent (132 properties) are in the HUD-held inventory for which HUD has paid insurance claims.
- o 29 percent (99 properties) had suffered low average occupancy levels (under 85 percent occupancy) and had significant room for improving rent collections through better management, assuming that the vacant units were marketable.
- o 64 percent (216 properties) were assisted, 127 of which were receiving LMSA which could ease the tenant burden caused by rent increases.
- o 65 percent (219 properties) had undergone TPAs and may already be in better financial condition than indicated by their five-year average residual cash. The incidence of TPAs among these properties far exceeds that of the universe (which was only 28 percent).

While this group of properties was facing a serious cashflow deficit, the combination of high rates of recent ownership change coupled with potential for higher occupancy rates indicates that a portion of properties may be able to move their cash position to breakeven through management and operating improvements.

V. ADEQUACY OF FINANCIAL RESOURCES FOR REPLACEMENT NEEDS

The previous two chapters presented, respectively, projected repair and replacement needs of the inventory, and financial resources available to meet these needs. This chapter brings together both sets of information to assess the likely ability of properties to pay for needed replacements using resources from cashflow. After defining which are the appropriate financial resources to be used in the analysis, the chapter presents the results of subtracting, respectively, 5- and 15-year physical needs from these resources. The results are presented as annual per unit gaps or surpluses.

A. APPROPRIATE FINANCIAL RESOURCES

This section will discuss which of the financial resources are most appropriate to pay for needed replacements over the five- and fifteen-year periods.

The reserve for replacements fund is an appropriate resource for making repairs or replacements over either the five or fifteen-year period. As noted in Chapter IV, typical reserve fund balances are small relative to projected physical needs, and, therefore, are not adequate in themselves to pay for all the repairs and replacements needed by most properties. In the analyses to follow, we assume that owners will exhaust their reserve funds, if necessary, to meet repair and replacement needs, over the stipulated time period. In other words, to meet 5-year repair and replacement needs, an owner will expend one fifth of the reserve balance in each year; to meet 15-year replacement needs, the owner will expend one fifteenth of the reserve balance annually over the time period.²⁷

We will assume that, where necessary, the full amount of a property's average residual cash (net cashflow as defined in the previous chapter) will be available to meet a property's physical needs. This is a best case assumption. It means that properties needing all of their residual cash to complete improvements will make no net additions to their reserve funds over the stipulated five- or fifteen-year period for which needs projections have been made. It also means that limited dividend and profit-motivated owners will forego taking part or all of their dividend distributions if these funds

²⁷ As a small addition to replacement reserves, we will assume that if the property has had a recent transfer of physical assets (TPA) or Flexible Subsidy, and the owner has agreed to make, but not yet completed, financial contributions to the property, the amount of such "owed" contributions will be added to the reserve fund and allocated over time as described above. These owed contributions affect relatively few properties.

are needed to make needed physical improvements. While in theory, this latter assumption is warranted and enforceable through the mortgage regulatory agreements, in practice HUD would likely have to compromise.

The average residual cash variable, as computed in the previous chapter, assumes that all properties will pay full mortgage principal, interest, and insurance fees. In fact, HUD grants workouts and mortgage modifications to some properties, allowing them to pay only a portion of the amount due on these items. This leaves more funds available for operations and repairs, but increases these properties' future liabilities.

As noted in Chapter IV on financial resources, some properties make a portion of their nonroutine repairs and replacements from their operating income. This kind of expenditure is likely to overlap with some of the needs items included in the 5-year repair and replacement needs projections, which includes accumulated back maintenance and a broader list of items than do the 15-year replacement needs projections. Therefore, in matching financial resources against 5-year needs, the analyses in this chapter will examine the effect of including, in addition to residual cash, a portion (25 to 50 percent) of the amount properties have been expending out of operating funds for routine repairs.

B. RELATION BETWEEN REPLACEMENT NEEDS AND RESIDUAL CASH

Chapter III demonstrated that projected need for nonroutine repairs and replacements was not strongly related to physical or programmatic characteristics. Here, we examine the relationship between a property's 5- and 15-year needs and its average annual residual cash. Table V-1 shows the multiple regression equations and results for this analysis.

A property's 5-year nonroutine repair and replacement needs were related negatively to average residual cash. The analysis showed that, controlling for other characteristics, a property having one dollar more of residual cash would have \$.17 less in 5-year needs. This indicates that financially stronger properties are, in general, better able to keep up with physical needs, but only moderately better. There was no statistical relationship between 5-year physical needs and either past repair expenditures or recent draws from the reserve fund. As with prior regression analyses, the total relationship between a property's needs and its characteristics was not strong: residual cash and all of the other explanatory variables accounted for only 10 percent of the total variation in 5-year needs.

There was no statistical relationship between a property's 15-year replacement needs and either its average annual residual cash or recent draws from the reserve fund. However, 15-year needs were lower in properties with higher past repair expenditures. Again, the relationship between needs and characteristics was weak, accounting for only 7 percent in total variation in 15-year needs.

V-1: RELATIONSHIPS BETWEEN PHYSICAL NEEDS AND FINANCIAL CONDITION
 Beta Scores and Significance of 5-Yr Repair Costs and 15-Yr
 Replacement Costs on Residual Cash & Selected Property Characteristics

<u>Independent Variables</u>	<u>Dependent Variables</u>	
	<u>Five Yr Repair & Replacement Costs</u>	<u>Fifteen Yr Replacement Costs</u>
Av Residual Cash	-.19***	--
Age	.15***	--
Location	-.07*	--
Building Type	--	--
Size	-.10***	--
Av Apart Size	.24***	.17***
Ownership Type	--	--
Mortgage Status	-.09*	--
Mortgage & Assist Type	--	-.13***
Amt Remed LMSA	.12**	--
Amt Flex Subsidy	--	--
Amt TPA Contrib	--	--
Av Occupancy	--	--
Past Repair Expend	--	.16***
Tot Reserve Draws	--	--

TOTAL R sq = .10

TOTAL R sq = .07

NOTE:* SIGNIFICANT AT THE 0.10 LEVEL
 ** SIGNIFICANT AT THE 0.05 LEVEL
 *** SIGNIFICANT AT THE 0.01 LEVEL

HUD/FHA-insured and HUD-held multifamily rental housing insured before 1975, excluding Sections 608 and 803, HUD-acquired properties, uninsured Sections 202 and 236, cooperatives, condominiums, and nursing homes. Based on data collected in 1985 on representative sample of properties. Beta scores indicate the size and direction (+/-) of the relationship between a dependent and an independent variable.

C. FIVE-YEAR GAP: FINANCIAL RESOURCES LESS PROJECTED NEEDS

For each property, we computed several variables to measure the adequacy of financial resources to meet projected physical needs. Each variable is a dollar amount representing the annualized difference between financial resources and projected needs per dwelling unit. A positive number, therefore, is a resource surplus while a negative number is a resource gap or deficit. Because this study was trying to assess the degree of resource inadequacy, we refer to these variables as measuring resource gaps (negative dollar amounts).

Three 5-year gap estimates were computed to provide a range of findings and to test the sensitivity of the study findings to our assumptions. The following variables differ only in the definition of resources used.

$$\text{Gap5/0} = \text{Average Residual Cash} + (\text{Reserve Balance})/5 \\ - \text{5-year Projected Needs (annualized)}$$

Gap5/0 is the worst-case gap measure. It assumes that none of the routine repair and maintenance expenditures that a property has been making from operating income would overlap with the nonroutine repair and replacement items included in the 5-year need estimate. While this is, perhaps, a reasonable assumption for the 15-year needs estimate, which excludes cumulative back maintenance and includes a more limited set of physical components, it is a weaker assumption for the 5-year needs projections.

$$\text{Gap5/25} = \text{Gap5/0} + \\ .25 \times (\text{Av. Annual Operating Expenditures for Repairs})$$

Gap5/25 is the middle case gap measure, one which is perhaps most realistic for most cases (based upon our discussions with management agents and HUD loan servicers). It adds to the resources in Gap5/0, 25 percent of the amount the property has been spending annually on routine repairs and maintenance. This measure assumes that there is, in fact, overlap between some of the needs items and repair expenditures being made out of operating funds. The larger a property's average repair expenditures from operating funds, the larger the impact of this resource addition; this appears to be realistic since properties making especially large repair expenditures are probably doing more back-maintenance and replacement.

$$\text{Gap5/50} = \text{Gap5/0} + \\ .50 \times (\text{Average Operating Expenditures for Repairs})$$

Gap5/50 is the best case gap measure, one which probably understates the gap for a significant percent of the properties. Like Gap5/25, this measure increases financial resources by a portion of the property's average repair expenditures from operating funds, in this case using 50 percent.

Tables V-2 and V-3 show the means, medians, and distributions of the three 5-year gap variables. Each is distributed, much as average residual cash, in a normal-like distribution clustering around the mean. Each of the gap measures shows that the majority of properties had either a resource surplus or a gap of no more than \$120 per unit per year. As shown in the table, this represents between 57 and 70 percent of all properties (4128 to 5060 properties). Using the intermediate gap measure, Gap5/25, 61 percent of properties (4601 properties with 562 thousand units) fall into this category. A gap of up to \$120 per year is equivalent to a need for increased net monthly rent collections of up to \$10 (or operating efficiencies of this amount)--a relatively insignificant sum. Most of these properties would probably not have difficulty meeting their nonroutine repair and replacement needs.

Another 20 to 27 percent of properties (1470 to 1965 properties) faced a 5-year gap of between \$120 and \$600 per unit per year. Using the intermediate gap measure, 24 percent of properties (1733 properties with 187 thousand units) fall into this category; their total gap is \$62 million per year over 1986 to 1990. One hundred twenty to \$600 per year is equivalent to a need for a monthly increase in cashflow of \$10 to \$50. This deficit amount, although becoming particularly burdensome at the high end, is probably feasible for many properties to overcome through a program of management improvement and/or modest rent increase.

The remaining 10 to 16 percent of properties (736 to 1173 properties) faced a 5-year gap of over \$600 per unit per year. The intermediate gap measure shows 13 percent of properties (932 properties with 134 thousand units) fall into this high gap category. Their combined total gap is \$148 million per year over 1986 to 1990. Over \$600 per year would be a significant burden on most properties and could not easily be dealt with simply by increasing rents or improving operating efficiency.

Looking in more detail at the 932 high gap properties, based on the intermediate gap measure:

- o 52 percent (484 properties) had negative cashflow below -\$120 even without subtracting anything for projected repair and replacement needs.
- o 24 percent (219 properties) had low or modest 5-year needs: 107 needed under \$300 per unit annually in repairs and replacements and

V-2: FIVE-YEAR RESOURCE GAPS UNDER VARIOUS ASSUMPTIONS
OF RESOURCE AVAILABILITY*

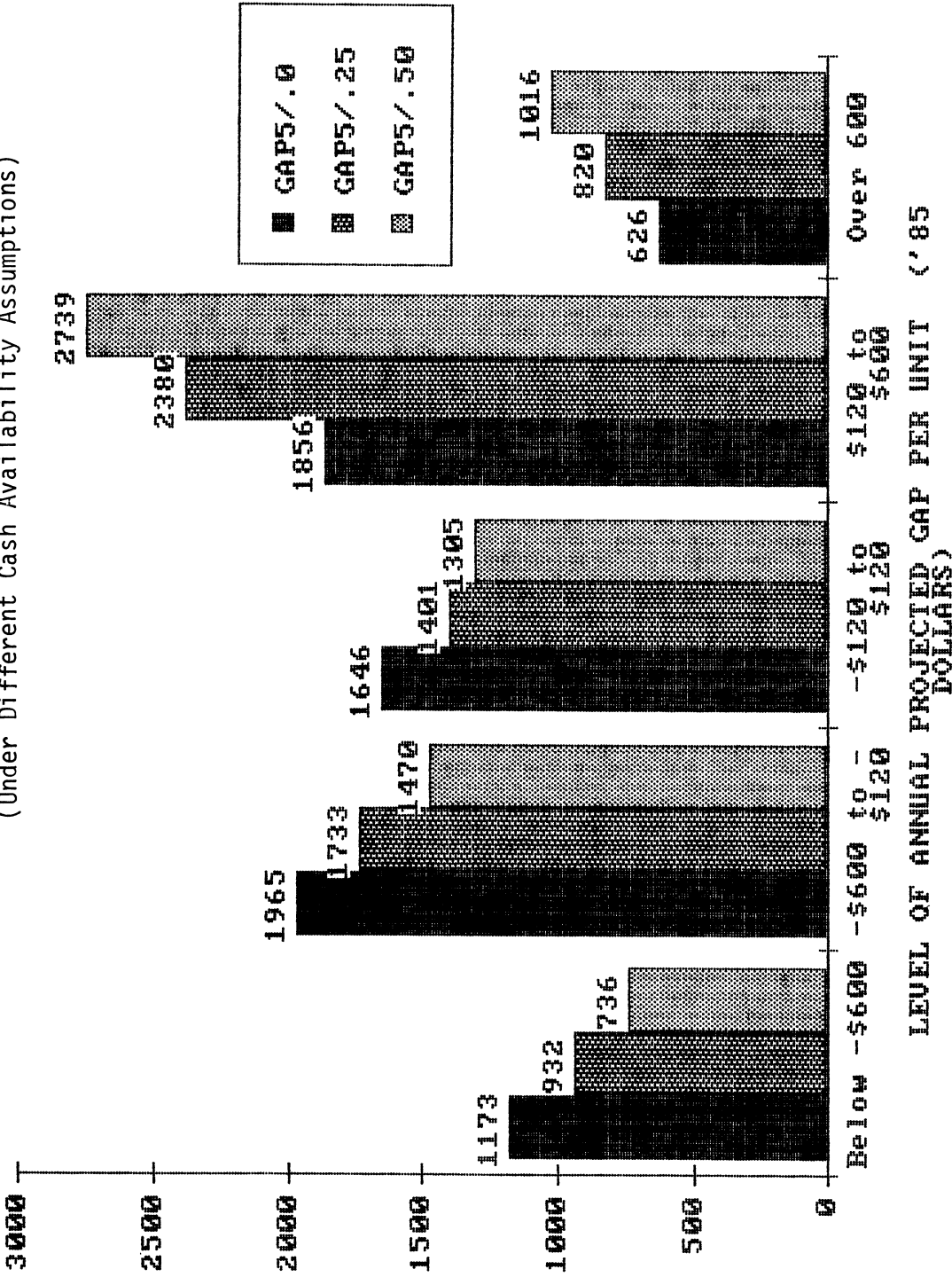
Mean and Median Gaps in 1985**

	<u>Mean</u>	<u>Median</u>	<u>Minimum</u>	<u>Maximum</u>
GAP5/0 (High Gap)	-\$72	-\$38	-\$3569	\$3557
GAP5/25 (Medium Gap)	31	55	-3508	3679
GAP5/50 (Low Gap)	134	135	-3446	3800

* HUD/FHA-insured and HUD-held multifamily rental housing insured before 1975, excluding Sections 608 and 803, HUD-acquired properties, uninsured Sections 202 and 236, cooperatives, condominiums, and nursing homes. Based on data collected in 1985 on representative sample of properties.

** All gaps expressed in 1985 dollars per unit per year and computed by subtracting estimated 5-year repair and replacement costs from estimated resources. Thus, negative numbers are resource deficits while positive numbers are resource surpluses. See text for definition of the three gap ranges.

U-3: FIVE-YEAR RESOURCE GAP*
(Under Different Cash Availability Assumptions)



* HUD/FHA-insured and HUD-held multifamily rental housing insured before 1975, excluding Sections 608 and 803, HUD-acquired properties, uninsured Sections 202 and 236, cooperatives, condominiums, and nursing homes. Based on data collected in 1985 on a representative sample of properties. Negative dollar amounts indicate resource deficits; positive amounts indicate surpluses.

NUMBER OF PROPERTIES

112 needed \$300 to \$599. Thus, many properties faced resource gaps because of their current financial (or prior physical) problems and not because of projected increases in physical needs.

- o 28 percent (257 properties) had HUD-held mortgages. These properties had a history of financial problems.
- o 57 percent (533 properties) had some LMSA and may be in a stronger position to raise rents, if necessary, although at a cost to HUD. Of the remaining properties, 140 had below market mortgages, and 259 had market rate mortgages.
- o 62 percent (352 properties) have had a TPA since 1979 and may be in better financial or physical condition than our data indicate for two reasons. Most important, if, as is likely, the TPA occurred during the base years 1980 to 1984 from which our estimate of cashflow was derived, then our estimate of cashflow may be unreasonably low: the pre-TPA cashflow figures may not be reflective of post-TPA operations, particularly if the TPA resulted in physical improvements that allowed higher occupancy and/or rents; the property may no longer have a large gap at all. Second, if the TPA has been approved, but not yet closed at the time of the inspection, physical and management improvements may be underway, but not yet reflected in our resources and needs data.

As discussed in the chapter on properties' physical needs, most of the 5-year needs are items the inspector noted as requiring work within the first year. This probably indicates a lot of accumulated back maintenance. It is likely, therefore, that although all of this work needs to be done, many owners will continue to defer some portion of it, or spread it out over more than five years, avoiding a financial crisis.

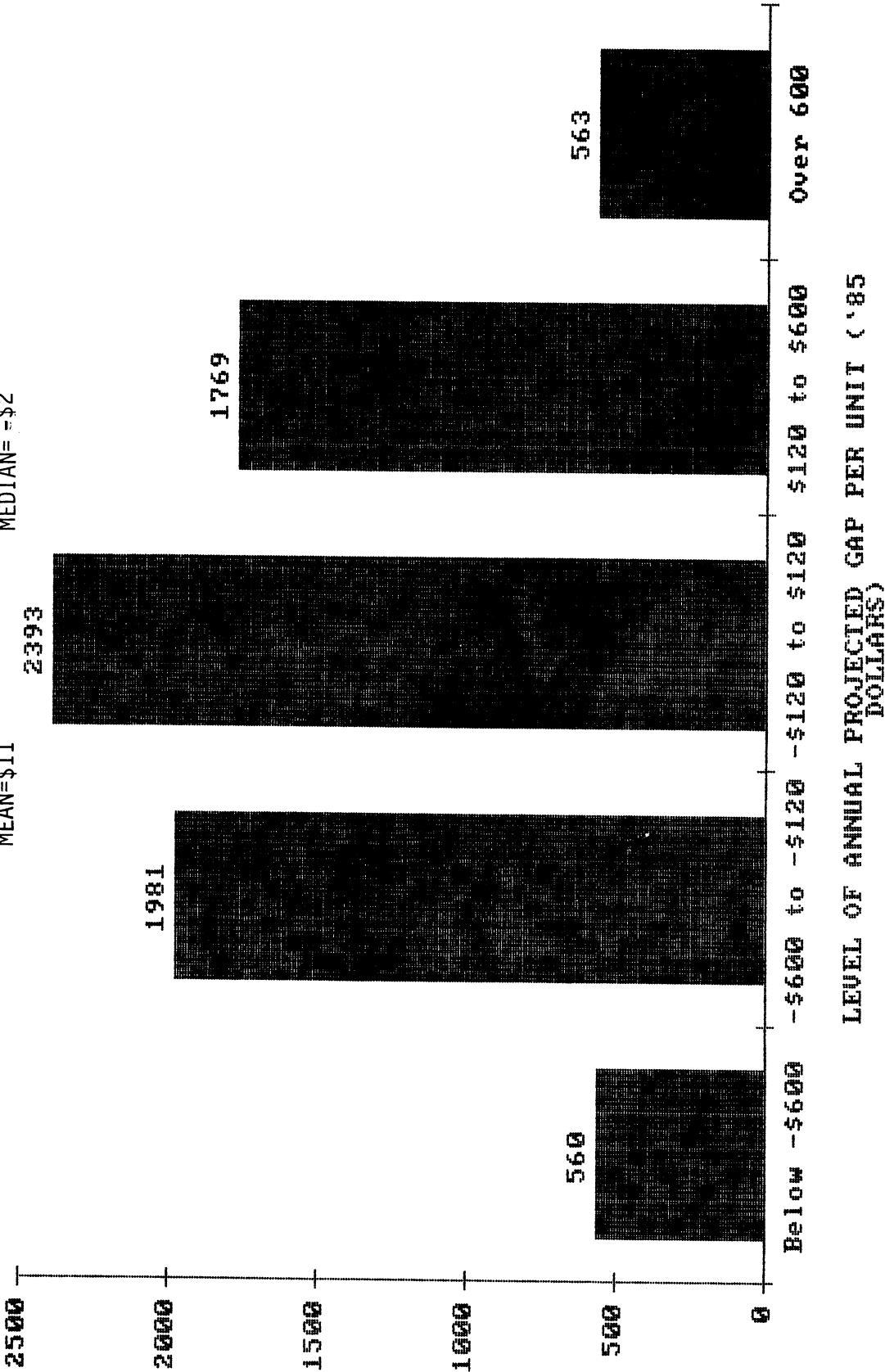
D. FIFTEEN-YEAR GAP: RESOURCES LESS 15-YEAR NEEDS

We computed a 15-year gap variable using the same approach as for the 5-year gap:

$$\text{Gap}_{15} = \text{Average Residual Cash} + (\text{Reserve Balance})/15 \\ - 15\text{-year Projected Needs (annualized)}$$

Table V-4 shows the distribution of this 15-year financial gap. As noted previously, all figures are expressed as average annual per unit dollars, and positive amounts indicate a resource surplus. As would be expected, this gap figure is generally lower than the 5-year gap because the needs figure includes only replacements and focuses on a somewhat smaller set of building components. The mean gap is a surplus of \$10 and the median is a gap of -\$2.

U-4: FIFTEEN-YEAR RESOURCE GAP*
 MEAN=\$11
 MEDIAN=\$2



* HUD/FHA-insured and HUD-held multifamily rental housing insured before 1975, excluding Sections 608 and 803, HUD-acquired properties, uninsured Sections 202 and 236, cooperatives, condominiums, and nursing homes. Based on data collected in 1985 on a representative sample of properties. Negative dollar amounts indicate resource deficits; positive amounts indicate surpluses.

Sixty-five percent of properties (4725 properties containing 565 thousand units) had either a resource surplus or a gap of no more than \$120 per unit per year. This group should be able to handle nonroutine replacements using cashflow based resources including the reserve fund.

Twenty-eight percent of properties (1981 properties containing 234 thousand units) had an annualized 15-year gap of between \$120 and \$600 per unit. Their combined resource shortfall is \$77 million per year between 1986 and 2000 (for all 1981 properties and all units). As was noted in the previous discussion of 5-year gaps, it is reasonable to expect that most properties may be able to handle gaps of this magnitude through a combination of management improvements and rent increases to yield the needed increased residual cash of \$10 to \$50 per unit per month.

Eight percent of properties (560 properties containing 83 thousand units) faced a 15-year gap of more than \$600 per unit per year. Their combined resource shortfall is \$98 million per year between 1986 and 2000 (for all 560 properties and all units). This is a large gap which would not likely be eliminated merely by increasing rents or making small management improvements. Furthermore, because the gap holds for the average of the entire 15-year period, there is no possibility of borrowing from good years to make up for bad: there are no sufficiently good years. It is likely that at least some of these properties may be poorly located, poorly conceived, or otherwise undesirable.

Looking in more detail at the 560 high 15-year gap properties:

- o 89 percent (497 properties containing 79 thousand units) had negative cashflow below \$120 per unit even without subtracting anything for projected 15-year repairs.
- o 30 percent (170 properties) had only modest projected 15-year needs of under \$300 unit per year. Thus, many properties faced resource gaps because of current financial (or previous physical) problems and not because of projected increases in their physical needs.
- o 41 percent (227 properties) had HUD-held mortgages. These properties had a history of financial problems.
- o 52 percent (292 properties) had LMSA and were, therefore, in a stronger position to raise rents, although at a cost to HUD. Of the remaining properties, 101 had below market mortgages and 167 had market rate mortgages.
- o 48 percent (270 properties) had a TPA since 1979, and, for the reasons given above regarding the 5-year gap, may have been in

substantially better financial condition than the data would lead one to believe. The proportion of these properties having had TPAs far exceeds that of the entire inventory.

E. EXPLANATION OF GAP

Given that the primary components of the gap variables are average residual cash and replacement needs, one would not expect a property's gap to show any stronger relationships to its physical or programmatic characteristics than did the income or needs variables. This is indeed the case: a property's characteristics are not good indicators of how likely it is to have a gap between resources and needs. In fact, because needs variables generally showed little relation at all to property characteristics, the relationships evidenced by the gap variables are largely due to the relations of residual cash to characteristics.

We used multiple regression analysis to test for relations between properties' five and 15-year projected surpluses or gaps and their physical and programmatic characteristics. As was found in previous chapters, property characteristics explained little of the variation in the gap. (See Table V-5.)

The size of the projected 5-year surplus was related negatively to average apartment size and receipt of assistance, and related positively to age, having mortgage insurance in force, average occupancy, and location in metropolitan suburbs. These variables, however, explained less than 18 percent of the total variation in the 5-year surplus. The explanations for these relations follow the same reasoning presented in Chapter IV on average residual cash.

Similarly, the 15-year projected surplus was related positively to age, having mortgage insurance in force, and location in metropolitan suburbs; and related negatively to receipt of assistance, average apartment size, and having undergone a TPA. These variables explained only 20 percent of the total variation in the 15-year surplus.

A simple two-way presentation of mean projected physical needs against gap categories is revealing: physical needs are often not the primary element creating the gap. (See Table V-6.) First, regarding 5-year needs, high gap properties, as a group, do have high average needs (mean \$933). However, the standard deviation (\$541) is also very high, indicating that among high gap properties, the level of need ranges widely from low to high. In fact, nearly a quarter of very high gap properties, and 58 percent of moderate gap properties had only low or standard 5-year repair needs. The situation with 15-year needs and gap is similar. While higher gap properties do, on average, have higher 15-year replacement needs, a large portion of these properties have very low 15-year replacement needs.

V-5: RELATIONSHIPS BETWEEN RESOURCE SURPLUS OR GAP AND PROPERTY CHARACTERISTICS

Beta Scores and Significance of 5- and 15-Year Resource Surplus or Gap on Selected Property Characteristics.

<u>Independent Variables</u>	<u>Dependent Variables</u>	
	<u>5-Yr Projected Surplus (Gap)</u>	<u>15-Yr Projected Surplus (Gap)</u>
Age	.20***	.26***
Location	.08**	.07*
Building Type	--	--
Size	--	--
Av Apart Size	-.20***	-.14***
Ownership Type	--	--
Mortgage Status	.18***	.16***
Mortgage & Assist Type	-.14***	-.15***
Amt Remedial LMSA	--	--
Amt Flex Subsidy	--	--
Amt TPA Contrib	--	-.08*
Av Occupancy	.11***	.13***
Past Repair Expend	--	--
Tot Reserve Draws	--	--
	TOTAL R sq= .18	Total R sq= .20

NOTE: * SIGNIFICANT AT THE 0.10 LEVEL

** SIGNIFICANT AT THE 0.05 LEVEL

*** SIGNIFICANT AT THE 0.01 LEVEL

HUD/FHA-insured and HUD-held multifamily rental housing insured before 1975, excluding Sections 608 and 803, HUD-acquired properties, uninsured Sections 202 and 236, cooperatives, condominiums, and nursing homes. Based on data collected in 1985 on representative sample of properties. Beta scores indicate the size and direction (+/-) of the relationship between a dependent and an independent variable.

V-6: MEAN PROJECTED 5- AND 15-YEAR PHYSICAL NEEDS
 BY PROJECTED FINANCIAL GAP CATEGORY*
 (In 1985 \$ per year per unit)

ESTIMATES FOR 1986 TO 1990

<u>Projected 5-Year Financial Gap Category</u>		<u>Projected 5-Year Repair & Replacement Needs</u>	
		<u>MEAN</u>	<u>STD DEV**</u>
High Gap	Below -\$600	\$933	\$541
Moderate Gap	-\$600 to -\$120	552	238
Breakeven	-\$120 to \$120	324	190
Surplus	\$120 to \$600	243	194
High Surplus	Over \$600	208	284

ESTIMATES FOR 1986 TO 2000

<u>Projected 15-Year Financial Gap Category</u>		<u>Projected 15-Year Replacement Needs</u>	
		<u>MEAN</u>	<u>STD DEV</u>
High Gap	Below -\$600	\$420	\$234
Moderate Gap	-\$600 to -\$120	316	156
Breakeven	-\$120 to \$120	213	93
Surplus	\$120 to \$600	218	113
High Surplus	Over \$600	269	160

* HUD/FHA-insured and HUD-held multifamily rental housing insured before 1975, excluding Sections 608 and 803, HUD-acquired properties, uninsured Sections 202 and 236, cooperatives, condominiums, and nursing homes. Based on data collected in 1985 on representative sample of properties.

** Standard deviation is a measure of how widely the needs estimates for individual properties are dispersed from the mean for all properties. A standard deviation equal to a sizable fraction of the mean, as is the case in these tables, indicates that many properties have repair and replacement needs that are either much larger or much smaller than the mean.

In summary, the size of a property's resource surplus or gap cannot be well predicted by its physical and programmatic characteristics. Furthermore, high gaps are often due more to financial problems than to projected physical needs.

VI. SPECIAL ASSISTANCE TOOLS

The HUD/FHA-insured multifamily stock is a major portion of the national rental inventory and includes many moderately priced units. To protect the HUD/FHA insurance fund as well as the stock, HUD has developed several ways to provide extra support for properties having serious physical or financial problems.²⁸ In this chapter we examine three important financial tools in the HUD loan manager's kit: rental assistance under Section 8 Loan Management Set Aside (LMSA) and Rent Supplement, Flexible Subsidy, and Transfer of Physical Assets (TPA). This chapter will examine the extent to which each tool has been used, the types of properties receiving assistance, and whether there are any apparent associations between the use of these tools and properties' financial and physical condition.

This chapter does not assess the difference loan management tools have made in the condition of the inventory. To do so would require having information on properties' "before" and "after" condition as well as that of comparison properties that were not specially assisted. This chapter does examine 1) whether the condition of properties that received a tool differs significantly from that of properties that have not; 2) whether any such differences are statistically significant; and 3) whether any such differences can be explained by other property characteristics rather than by receipt of the tool per se.

As with Chapters III, IV and V, data presented in this chapter are estimates based on the study sample of properties. Because only a fraction of the sample has been assisted by any special tool, the statistical confidence of our findings is limited, particularly for properties that received Flexible Subsidy (only 45 properties). Further details on data collection and sampling are contained in Appendices A1 and A2. All dollar figures are in 1985 dollars unless otherwise noted.

A. SECTION 8 LOAN MANAGEMENT SET ASIDE (LMSA)

The Loan Management Set Aside program was initiated in 1976 as part of the Section 8 rental assistance program. In the Section 8 program, HUD pays the owner the difference between the rent level and 30 percent of the tenant's household income. LMSA has had two uses: providing affordable housing for low-income families and assisting troubled properties.

²⁸ Mortgages insured under the 221(d)(3) and 236 programs restrict rental rates and/or occupancy to serve low- and moderate-income households. These restrictions also prevent owners from prepaying their mortgages (and shifting properties to other uses) for either 20 or 40 years. See Appendix A5 for a brief presentation on the expiration of these mortgage restrictions, or lockins.

The major use of LMSA in providing affordable housing has been in replacing Rent Supplement, an older rental assistance program that is similar operationally to LMSA. Nearly all Rent Supplement contracts have been converted to LMSA. Rent Supplement obligates HUD to continue assistance payments for the life of the mortgage, while LMSA contracts are generally for only 15-years (an initial 5-year term with the two 5-year renewals at the owner's option). (See Appendix A5 for a brief presentation on the future expiration of Section 8 LMSA contracts.) In this chapter we use the generic term "rental assistance" in referring to either program.

The second use of LMSA was to help troubled properties. LMSA may enable owners to increase occupancy or raise rental rates, either of which bolsters properties' finances.

In this study we refer to properties that have received LMSA only to replace Rent Supplement as LMSA conversions, and those that received at least some LMSA to alleviate problems as remedial LMSA.

1. LMSA by Property Characteristics and Year

LMSA is a large program covering about a third of the units and half of the properties in the older inventory (284,000 units in 3,758 properties). Conversions from Rent Supplement account for almost half of the LMSA units. Under 14 thousand units in 250 properties still have Rent Supplement.²⁹

Although nearly any property with mortgage insurance is eligible for LMSA, in practice, most LMSA has gone to properties with Section 221(d)(3) or 236 mortgages: Over half of LMSA units are in Section 236 properties, slightly less than one-third are in 221(d)(3) Market Rate properties (mostly Rent Supplement conversions), and about 7 percent are in 221(d)(3) BMIR properties. Other Sections of the Act have only two percent of the LMSA units. Table VI-1 presents the distribution of LMSA over properties by Section of the Act.

Almost two-thirds of the remedial LMSA units came into the program in its first year of existence (1976) and 86 percent in the first three years. It appears that there had been a backlog of financial need that could not be met through rents payable by the tenants, even if supplemented with HUD mortgage subsidy payments under the 236 and BMIR programs. Conversions from Rent Supplement to LMSA occurred primarily in 1982 and 1983. Table VI-2 presents the distribution of LMSA contracts by type and starting year.

²⁹ In contrast, properties insured after 1974 have very little LMSA since Section 8 New Construction and Substantial Rehabilitation were the primary subsidies used then. HUD and owners agreed to convert Rent Sup to LMSA, trading off the longer Rent Sup contracts for possibly higher LMSA rents.

VI-1: RECEIPT OF LOAN MANAGEMENT SET-ASIDE BY SECTION OF THE ACT*
 Number of Properties by Section of the Act, 1985

	<u>SECTION OF THE ACT</u>				<u>TOTAL</u>
	<u>236</u>	<u>221(d)(3) Market</u>	<u>221(d)(3) BMIR</u>	<u>All Other</u>	
WITH LMSA	2450	1181	279	89	3999
Remedial LMSA	1549	25	241	64	1879
LMSA Conversion or Rent Supplement**	901	1156	38	25	2120
WITHOUT LMSA	787	56	394	2030	3267
TOTAL OLDER INVENTORY	3237	1237	673	2119	7266

* HUD/FHA-insured and HUD-held multifamily rental housing insured before 1975, excluding Sections 608 and 803, HUD-acquired properties, uninsured Sections 202 and 236, cooperatives, condominiums, and nursing homes. Based on data collected in 1985 on representative sample of properties.

** LMSA conversion from Rent Supplement to Section 8 contracts. Approximately 250 properties still have Rent Supplement contracts, in some cases, in addition to Section 8.

VI-2: SECTION 8 LOAN MANAGEMENT SET-ASIDE UNITS
BY TYPE OF CONTRACT AND YEAR BEGUN*
(1985)

(in thousands of units)

Year	Remedial		Conversion		TOTAL	
	<u>No.</u> <u>Units</u>	<u>%</u>	<u>No.</u> <u>Units</u>	<u>%</u>	<u>No.</u> <u>Units</u>	<u>%</u>
1976	92	64	3	2	95	33
1977	16	11	-	-	16	6
1978	15	11	-	-	15	5
1979	5	4	-	-	5	2
1980	1	1	1	1	3	1
1981	4	3	9	6	13	5
1982	5	3	50	36	55	19
1983	2	1	56	40	58	20
1984	3	2	16	11	19	7
1985	-	-	5	4	5	2
TOTALS	144	100	140	100	284	100

* HUD/FHA-insured and HUD-held multifamily rental housing insured before 1975, excluding Sections 608 and 803, HUD-acquired properties, uninsured Sections 202 and 236, cooperatives, condominiums, and nursing homes. Based on data collected in 1985 on representative sample of properties.

In general, an owner can more easily increase rents, although at a cost to HUD, in properties having a large portion of assisted units. Almost two-thirds of the 3,960 properties with rental assistance each had over 75 percent of units covered by LMSA or Rent Supplement. (See Table VI-3.) The great majority of these high-coverage properties were 100 percent assisted. On the other hand, close to 1,000 properties (mostly Section 236s) had less than half of their units covered.

Receipt of rental assistance (including both LMSA and Rent Supplement) was not distributed evenly across all types of properties. Table VI-4 shows the characteristics of properties with rental assistance while Table VI-5 turns the same data around and presents the participation rate in rental assistance by various groups of properties. Properties in nonmetropolitan areas had a noticeably high rate of participation (79 percent), while those in suburban areas were somewhat underrepresented in rental assistance (40 percent participation). Properties with nonprofit sponsors had a very high involvement (82 percent participation), as did those with mortgages insured under 221(d)(3) Market Rate (96 percent participation) and 236 (76 percent participation) programs. There appeared to be little difference in participation rates associated with building type or mortgage status.

2. Physical and Financial Condition

Properties with rental assistance had, on average, higher 5-year repair needs, lower residual cash, worse 5-year gap, and higher reserve balance than did properties without rental assistance. Table VI-6 presents mean values of these measures for properties with and without rental assistance. These two-way comparisons, however, are misleading: While the differences in condition are real, multivariate analysis shows they may be due largely to other property characteristics and not to receipt of rental assistance *per se*. As was discussed in prior chapters, only the relationship between higher repair needs and receipt of rental assistance has any statistical significance, after controlling for the properties' other programmatic and physical characteristics. It is not apparent, however, why properties with rental assistance should have higher repair needs than others. See the results of multivariate analyses that do control for these characteristics in Tables III-7, IV-5, IV-6, and V-5.

B. FLEXIBLE SUBSIDY

The Flexible Subsidy program was enacted in 1978 to restore the physical and financial condition of troubled properties in the assisted inventory and to preserve the low- and moderate-income occupancy of such properties. As of 1984, ninety percent of the properties that had received Flexible Subsidy were in the older inventory. Under the program, eligible properties may receive a grant or a loan with liberal terms to be used for major repairs and replacements, physical modifications (often energy related), professional

VI-3: DISTRIBUTION OF PROPERTIES BY PERCENTAGE OF UNITS COVERED BY
RENTAL ASSISTANCE*
(As of 1985)

<u>% Units With Rental Assistance</u>	<u>Number of Properties</u>	<u>Number as % of all Properties</u>	<u>Number as % of Assisted Properties</u>
0	3,305	45.5	--
1-24	622	8.6	15.7
25-49	355	4.9	9.0
50-74	419	5.8	10.6
75-94	431	5.9	10.9
95-100	2,133	29.4	53.8
TOTAL	7,266	100.0	100.0

* HUD/FHA-insured and HUD-held multifamily rental housing insured before 1975, excluding Sections 608 and 803, HUD-acquired properties, uninsured Sections 202 and 236, cooperatives, condominiums, and nursing homes. Based on data collected in 1985 on representative sample of properties.

NOTE: This table includes both properties covered by Section 8 LMSA and by Rent Supplement.

VI-4: CHARACTERISTICS OF PROPERTIES BY RECEIPT OF RENTAL ASSISTANCE, FLEXIBLE
SUBSIDY, OR TPA CONTRIBUTION*
(As of 1985)

Characteristic	% of Properties with Tool Having Characteristic at Left					
	<u>Rent Assistance</u>	<u>Flexible Subsidy</u>	<u>Trans w.contr**</u>	<u>Phys Assets all TPAs</u>	<u>All Assisted</u>	<u>All Props</u>
Age in 1984						
10-14 years	84	87	77	78	81	76
15-19	15	11	22	20	17	16
20+	1	2	1	2	2	8
Location						
Central City	55	69	54	53	54	53
Suburb	22	18	31	29	25	31
Nonmetro	23	13	15	18	21	16
Sponsor Type (Owner)						
Nonprofit	25	45	-	-	21	17
Limited Div	73	53	84	75	77	57
Profit Motivated	2	2	16	25	2	26
Building Type						
High Rise (5+ flrs)	15	24	7	8	13	18
Other (1-4 floors)	85	76	93	92	87	82
Mortgage Status						
Insur in Force	90	89	77	87	89	88
HUD Held	10	11	23	13	11	12
Section of Act						
236	61	51	51	47	62	45
221(d)(3) Mkt	30	27	15	14	23	17
221(d)(3) BMIR	7	22	19	14	13	9
Other Mkt Rate	2	-	15	25	2	29
Assistance Status						
Assisted***	100	100	86	76	100	72
Not Assisted	0	0	14	24	0	28

* HUD/FHA-insured and HUD-held multifamily rental housing insured before 1975, excluding Sections 608 and 803, HUD-acquired properties, uninsured Sections 202 and 236, cooperatives, condominiums, and nursing homes. Based on data collected in 1985 on representative sample of properties.

** TPAs with owner contributions to the property.

*** Assisted is defined as any property with rental or mortgage assistance or Flexible Subsidy.

VI-5: PARTICIPATION IN SPECIAL LOAN MANAGEMENT PROGRAMS*
 Percent of Properties in Selected Groups That Have Received
 Rental Assistance, Flexible Subsidy, or TPA Contribution
 (As of 1985)

Group By Characteristic	% of Properties in Group at Left That Received Tool Listed Below			
	Rent Assistance	Flexible Subsidy	Transfer w.contr	Phys Assets** all TPAs
Age in 1984				
10-14 years	61	9	15	29
15-19	51	6	21	36
20+	8	2	2	7
Location				
Central City	56	10	15	28
Suburb	40	5	15	27
Nonmetro	79	7	14	32
Sponsor Type (Owner)				
Nonprofit	82	21	-	-
Limited Dividend	71	7	22	37
Profit Motivated	5	1	9	27
Building Type				
High Rise(5+ floors)	48	11	6	31
Other (1-4 floors)	57	7	17	13
Mortgage Status				
Insurance in Force	56	8	13	28
HUD Held	47	8	31	32
Section of Act				
236	76	9	17	30
221(d)(3) Mkt	96	12	13	24
221(d)(3) BMIR	42	19	30	42
Other Mkt Rate	4	-	8	24
Assistance Status***				
Assisted	77	11	18	30
Not Assisted	-	-	8	24
ALL PROPERTIES	55	8	15	28

* HUD/FHA-insured and HUD-held multifamily rental housing insured before 1975, excluding Secs. 608 and 803, HUD-acquired properties, uninsured Secs. 202 and 236, cooperatives, condominiums, and nursing homes. Based on data collected in 1985 on representative sample of properties.

**TPAs with owner contributions to the property.

***Assisted defined as having rental or mortgage assistance or Flex Sub.

VI-6: PHYSICAL AND FINANCIAL CONDITION BY RECEIPT OF LOAN MANAGEMENT TOOLS

Condition: Mean Value in Dollars per Unit per Year

Loan Management Tool	5-Yr Repair Needs	Average Residual Cash	Reserve Fund Balance	5-Yr Resource Surplus(+) or Gap(-)
Rental Assistance				
With	\$441	\$131	\$511	-\$93
Without	386	370	414	183
(significance:)	*	***	**	***
Flexible Subsidy				
With	437	18	637	-135
Without	415	257	453	45
(significance:)	not	***	**	--
TPA				
TPA w.contr	433	-4	422	-159
TPA w/o contr	425	188	460	-53
No TPA	412	298	478	86
(significance:)	not	***	not	**
ALL ASSISTED PROPS	430	121	490	-93
ALL PROPERTIES	417	238	467	31

* .10 significance level (bivariate analysis)

** .05 significance level (bivariate analysis)

*** .01 significance level (bivariate analysis)

See Chapters III, IV, and V for multivariate analyses.

* HUD/FHA-insured and HUD-held multifamily rental housing insured before 1975, excluding Sections 608 and 803, HUD-acquired properties, uninsured Sections 202 and 236, cooperatives, condominiums, and nursing homes. Based on data collected in 1985 on representative sample of properties.

fees, major debts and delinquencies, and funding the reserve for replacement. Eligible properties are principally those insured under Sections 236 or 221(d)(3)BMIR or those having Rent Supplement. For-profit owners must contribute an additional amount equal to 30-to-50 percent of the subsidy.

The data presented in this subsection are, at best, tentative because of the extremely small subsample: only 45 of the properties in our sample had received Flexible Subsidy.

1. Flexible Subsidy by Property Characteristics and Use

Under the program a small number of properties have received fairly large grants (or loans). Between 1979 and 1984, approximately 570 older properties (less than 8 percent of the older inventory) received an average Flexible Subsidy of \$2,600 per unit and average owner contribution of roughly \$400 per unit for an average total of \$3,000 (in 1985 dollars). Subsidy amounts ranged from \$100 to \$6,400 per unit, while the subsidy plus owner contribution total varied from \$100 to \$8,100 per unit. As shown in Table VI-7, on average, approximately 87 percent of the total cash infusion was used directly for repairs and replacements, and another 4 percent went into reserves for replacement. Thus, even excluding any loan amounts that may have been used for physical improvements, on average over 90 percent of the cash infusion has gone to repairs and replacements.

The participation rate in Flexible Subsidy was highest among 221(d)(3) properties (particularly BMIRs), nonprofits, and highrise buildings. Tables VI-4 and VI-5 present, respectively, characteristics of Flexible Subsidy recipients and participation rates in Flexible Subsidy by various groups of properties.

One might have expected that HUD-held properties would have had a higher participation rate in Flexible Subsidy than would the inventory as a whole, because the program is aimed at assisting troubled properties. In our sample, however, there was no difference in mortgage status between properties receiving the subsidy and the entire older inventory. This finding held whether one counted either the percent HUD-held at the time the subsidy began or at the time of the survey (1985).

2. Physical and Financial Condition

The small size of the subsample that received Flexible Subsidy limits our ability to make statistically reliable estimates regarding properties' physical and financial condition relative to that of the universe. We found that properties with Flexible Subsidy had lower average residual cash and higher reserve balances than did other properties. (See Table VI-6.) These same relationships held up under multivariate analyses, where properties' physical and programmatic characteristics were accounted for statistically.

VI-7: AVERAGE FLEXIBLE SUBSIDY AND OWNER CONTRIBUTION, BY USE*
(1979-1984)

	Average Amount (1985 \$ per unit)	Percent
By Source:		
HUD Subsidy	\$2,607	87
Owner Contribution	400	13
By Use:		
Repairs and Replacements	\$2,626	87
Debts	171	6
Reserve for Replacement	133	4
Other	77	3
TOTAL	\$3,007	100

* HUD/FHA-insured and HUD-held multifamily rental housing insured before 1975, excluding Sections 608 and 803, HUD-acquired properties, uninsured Sections 202 and 236, cooperatives, condominiums, and nursing homes. Based on data collected in 1985 on representative sample of properties.

This seems to show that owners of properties receiving Flexible Subsidy may have brought physical deficiencies up to the average for like properties, bolstered their reserve funds, but continued to have somewhat weaker cashflow.

C. TRANSFER OF PHYSICAL ASSETS (TPA)

HUD requires that changes in property ownership (that keep the original HUD/FHA mortgage in place) receive its approval. These ownership changes are called Transfers of Physical Assets (TPAs). Beginning in October 1979, the Department, as a condition of HUD approval of TPAs, substantially increased enforcing its requirement that owners contribute funds, if needed, to bring properties up to a reasonable standard of repair or to eliminate outstanding financial delinquencies. Thus TPAs have had the potential of supplementing properties' finances.

1. TPAs by Property Characteristic and Use

During the period from October 1979 to August 1985, over 2,000 properties (28 percent of the older inventory) received approval for a TPA. In over half of these properties, owners agreed to contribute funds to improve the property. (See Table VI-8.) The amount of these agreed contributions ranged from \$50 to over \$7,000 per unit, with a mean of approximately \$1,300 and a median of \$830.

The predominant uses of owner contributions under TPAs were making repairs and replacements or bolstering the replacement reserves. In the great majority of cases, these were the sole purposes. The other important use was the payment of debts and delinquencies.

As shown in Table VI-5, TPAs were more likely than average to occur among properties aged 15 to 19, those having limited dividend sponsors (post-TPA), and those with mortgages insured under 221(d)(3)EMIR. (Age and Section of the Act are closely related.) TPAs with owner contributions had high participation rates among these same three groups; they also had a high participation rate among properties having HUD-held mortgages. This last finding seems to indicate that HUD succeeded in obtaining owner contributions for properties having histories of financial problems.

2. Physical and Financial Condition

Properties with TPAs had lower average residual cash and worse 5-year resource gaps than did other properties. Those with owner contributions were even worse in these two measures. (See Table VI-6.) After controlling for properties' physical and programmatic characteristics, this relationship still held for average residual cash, but not for financial gap. For reasons stemming from changing tax laws, most TPAs occurred after 1982 but before

VI-8: NUMBER OF TPAs BY YEAR OF APPROVAL

<u>Year of Approval**</u>	<u>All TPAs No.</u>	<u>TPAs with Owner Contributions</u>	
		<u>No.</u>	<u>No. Units in 1000s</u>
1980	94	25	1.7
1981	138	51	7.4
1982	281	125	14.4
1983	535	234	34.2
1984	660	432	54.2
1985 (thru Aug)	<u>333</u>	<u>227</u>	<u>34.3</u>
TOTAL	2041	1094	146.2

* HUD/FHA-insured and HUD-held multifamily rental housing insured before 1975, excluding Sections 608 and 803, HUD-acquired properties, uninsured Sections 202 and 236, cooperatives, condominiums, and nursing homes. Based on data collected in 1985 on representative sample of properties.

** Based on our examination of other data sources, we suspect that the year of TPA approval listed above is only approximate (because of ambiguities in our data collection instructions and the fact that a year may pass between preliminary and final approvals). Readers should, therefore, interpret each year as that year plus or minus one (e.g., 1982 TPA may in fact be 1981 or 1983). We suspect that most of the TPAs listed for 1985 had in fact occurred in 1984, prior to the effective date of major changes in the tax treatment of second notes.

1985.30 Our measure of residual cash averaged annual cashflow over 1980 to 1984. Therefore, this relationship is more a measure of the kinds of properties having TPAs than the effect of TPAs on properties' finances. Thus, the finding that properties undergoing TPAs, particularly with owner contributions, had lower cashflow and histories of default seems to indicate that this tax-based financial assistance was going to appropriately financially-needy properties.

D. PROPERTIES WITH MULTIPLE TOOLS

Because LMSA is so widespread, a large number of properties have had rental assistance in combination with Flexible Subsidy or TPA. Very few properties had all three, or had a combination of Flexible Subsidy and TPA contributions without having rental assistance. These data are presented in Table VI-9. Over 40 percent of the older inventory (almost 3,000 properties) received mortgage assistance in conjunction with at least one other tool.

30 Given the 1984 and 1986 tax acts, it does not presently appear that, in the future, TPAs will still provide HUD with a useful financial assistance tool.

VI-9: NUMBER OF PROPERTIES ASSISTED THROUGH COMBINATIONS OF LOAN MANAGEMENT TOOLS BY MORTGAGE INTEREST SUBSIDY STATUS*

<u>Combination</u>	<u>Mortgage Interest Subsidy Status</u>		<u>Total</u>
	<u>With Interest Subsidy (236 or 221(d)(3)BMIR)</u>	<u>Without Interest Subsidy</u>	
<u>Multiple Tools</u>			
Rent Assis., Flex., TPA Contr.	63	25	88
Rent Assis., Flex.	305	114	419
Rent Assis., TPA Contr.	444	153	597
Flex., TPA Contr.	26	-	26
Subtotal	838	292	1,130
<u>Single Tools</u>			
Rent Assistance Only	1,896	961	2,857
Flexible Subsidy Only	25	13	38
TPA Contribution Only	228	154	382
Subtotal	2,149	1,128	3,277
Total, Any Combination	2,987	1,420	4,407
Total Without Any Tool	923	1,936	2,859
Total Inventory	3,910	3,356	7,266

* HUD/FHA-insured and HUD-held multifamily rental housing insured before 1975, excluding Sections 608 and 803, HUD-acquired properties, uninsured Sections 202 and 236, cooperatives, condominiums, and nursing homes. Based on data collected in 1985 on representative sample of properties.

VII. CONCLUSION

The specific purpose of this study was to assess whether the older HUD/FHA-insured multifamily stock was facing a potential crisis due to aging physical plants. The basic question was whether otherwise financially sound properties were about to be overwhelmed by a burst of replacement and repair needs. This study, which is HUD's preliminary assessment of the FHA multifamily stock, found no evidence of such a crisis:

- o Most properties insured before 1975 were in good repair as of the summer of 1985.
- o Projected future repairs and replacements were not worse among the oldest properties and did not seem to be increasing over time or with age. The annual costs of projected physical needs through 1990 or 2000 were no higher than historical expenditures.
- o A substantial portion of properties' physical needs, including properties with high needs, were due to accumulated deferred maintenance and repairs rather than capital replacements, structural defects, or other critical work.
- o Most properties appeared to have adequate resources from cashflow and reserve funds to meet projected needs; this included many high need properties.
- o The minority of properties having very large projected gaps between future physical needs and financial resources had nearly all suffered financial problems in the past, even without considering their future physical needs. Some of these actually had only modest levels of projected physical needs.

Despite expectations to the contrary, this study found that physical and financial problems were not concentrated among certain types of properties delineated by programmatic and general characteristics such as age, mortgage program, building type, location, or owner's profit status. Instead, physical and financial problems were scattered over the inventory with no strong patterns. It appears, therefore, that HUD, in its efforts to prevent failure of insured properties, cannot use simple shortcuts to find and remedy problems (such as focusing on all center city highrise Section 236s over 15 years old). In targeting its limited loan management resources, HUD must continue to deal on a property-specific basis and address known and developing problems, wherever in the inventory they happen to be.

One interpretation for this lack of patterns in physical problems is that key unmeasured factors--for example, those relating to conditions of building use and abuse, management quality and owner motivation, nature of local markets, and quality of initial construction and design--are much more important than basic programmatic and general characteristics. With regard to the weak relationship between age and replacement needs, this lack of pattern exists because individual building components have broad ranges of expected useful life--particular components may fail at various times between 10 and 40 years. Thus, in a given 15-year old building, half of the kitchen appliances may be new, boiler old but sound, central air conditioning system needing immediate overhaul, and roof sound with perhaps part of it having been recently repaired. The different ranges of expected life of various components, as well as the fact that any particular component may fail early or late in its range, results in relatively level repair and replacement costs rather than periodic surges.

Although this study was not designed to measure the impact of special loan management tools, it did find that properties that had received LMSA Section 8, Flexible Subsidy, or a financial contribution from new owners with a TPA (property sale) were generally in the same condition as properties that had not received the assistance. While this may suggest that problem properties were brought up to average condition, further analysis would be needed in order to accept this explanation over others. The study also found that properties that underwent TPAs with owner contributions had had historically weak finances and, therefore, appear to have been appropriate recipients of tax-expenditure derived assistance.

HUD regards this study as a preliminary analysis of its insured multifamily inventory. Findings that respond to the questions about capital needs, age, and financial problems will probably stand--aging physical plants do not seem to be the key threat to the inventory's viability. However, regarding the inventory's future, this study is preliminary in several key respects:

- o It focused, intentionally, on only one subset of properties--those insured before 1975. The newer insured properties, with higher construction and financing costs, and perhaps greater reliance on diminishing Federal tax benefits, must also be examined.
- o In projecting into the future, the study was forced to rely on historical data on finances and patterns of owner investment and maintenance. Given recent changes in the economic environment affecting real estate--the Tax Acts of 1984 and 1986, lowered rates of inflation and interest rates, and changing demographics--the near future may be dramatically different from the 1980-84 period. We may expect changes in owners' future patterns of investment and maintenance, their financial objectives, and the demand for their housing, may all change dramatically from those of 1980 to 1984.

- o It focused on the capital replacement needs of the aging inventory rather than on the broader factors affecting the multifamily stock.
- o It was not able to incorporate dynamic factors relating to local market forces and owner motivations.

Planned follow-on studies will incorporate many of these broader viewpoints. These studies will further assess the insured multifamily inventory, cost effective methods for assuring the availability of affordable housing for lower-income families, and methods for preventing needless losses to the FHA insurance fund.

QUESTION 1

The following table shows the results of a survey of 100 people regarding their preferred mode of transport to work. The data is presented in a 2x2 contingency table.

Mode of Transport	Male	Female
Public Transport	45	35
Private Car	30	30

Using the chi-square test, determine if there is a significant association between gender and mode of transport.

Mode of Transport	Male	Female	Total
Public Transport	45	35	80
Private Car	30	30	60
Total	75	65	140

The chi-square test statistic is calculated as follows:
$$\chi^2 = \sum \frac{(O - E)^2}{E}$$

where O is the observed frequency and E is the expected frequency.
The expected frequencies are calculated as follows:
Expected frequency for Public Transport Male = $\frac{80 \times 75}{140} = 42.86$
Expected frequency for Public Transport Female = $\frac{80 \times 65}{140} = 37.14$
Expected frequency for Private Car Male = $\frac{60 \times 75}{140} = 32.14$
Expected frequency for Private Car Female = $\frac{60 \times 65}{140} = 27.86$
The chi-square test statistic is:
$$\chi^2 = \frac{(45 - 42.86)^2}{42.86} + \frac{(35 - 37.14)^2}{37.14} + \frac{(30 - 32.14)^2}{32.14} + \frac{(30 - 27.86)^2}{27.86} = 0.107$$

The critical value for a chi-square distribution with 1 degree of freedom at the 5% level of significance is 3.84. Since the test statistic (0.107) is less than the critical value (3.84), we fail to reject the null hypothesis. There is no significant association between gender and mode of transport.

A1: STUDY SAMPLE

A random sample of 552 properties was drawn from the set of older (10 years and over) insured properties. Sampling was done separately for assisted and unassisted properties. For administrative convenience, the sample was drawn only from properties located in the contiguous United States and in Field Offices large enough that their expected share of the sample would be at least four properties. Four hundred forty-one assisted properties were selected from the universe of 5,287 older assisted properties (a sample sufficient to produce national estimates of the cost of capital improvements for older assisted properties that are reliable within 5 percent.) One hundred eleven unassisted properties were selected from the universe of 2,723 older unassisted properties (a sample size sufficient to produce national estimates of the cost of capital improvements for older unassisted properties that are reliable within 10 percent).

Table A1-1 compares key characteristics of the assisted and unassisted portion of the initial sample with those of the universe. In terms of Section of the Act, age, receipt of Section 8, mortgage status, building type, and location, the sample appears to reflect accurately the characteristics of the universe. Table A1-2 lists the number of properties in the sample by Field Office location.

From this initial sample of 552 properties, 75 were eliminated for the following reasons:

- o HUD-acquired properties--16. Under current HUD disposition policies, these properties do not remain in the inventory for long. Furthermore, physical and/or financial data were often not available.
- o Properties with mortgages insured under Sections 608 or 803 (military and veterans)--22. HUD no longer has active loan management responsibility for these mortgages, and data were generally not available.
- o Other properties for which useable data were not available for either physical or financial condition, or both--37.

The properties that were eliminated include some of the oldest properties in the inventory, the military and veterans housing. With respect to all other characteristics, the properties that were eliminated do not differ significantly from the initial sample (except, of course, with respect to being acquired, military, or veterans). The final study sample contains 477 properties.

A1-1: COMPARISON OF THE SAMPLE WITH THE UNIVERSE OF INSURED RENTAL PROPERTIES WITH MORTGAGES 10 YEARS AND OLDER

Characteristics	Assisted		Unassisted		Total	
	% of Universe	% of Sample	of Universe	% of Sample	% of Universe	% of Sample*
MORTGAGE STATUS						
In-Force	85%	84%	85%	89%	85%	86%
Held/Acquired	15	16	15	11	15	14
SECTION OF THE ACT						
608,803 (MIL & VET)	0	0	24	21	9	7
207 (RENTAL)	0	0	23	31	8	11
220 (RENEWAL)	0	0	7	5	3	2
221(d)(3) MKT	20	20	5	5	13	13
221(d)(4) MKT	2	1	35	33	14	14
221(d)(3) BMIR	16	16	0	0	11	11
236 (INT REDUCT)	61	60	0	0	40	40
231 (ELDERLY)	0	3	5	5	2	2
223(f)(PUR/REFIN)	0	0	0	0	0	0
RENT SUPPLEMENT						
LMSA	20	18	0	0	13	12
FLEX	66	64	1	0	44	42
AGE						
10-14 YRS	11	9	0	0	7	6
15-19 Yrs	79	79	48	50	68	69
20 Yrs and Over	19	20	13	11	17	17
	2	1	39	39	15	14
LOCATION						
Metro Center City	53	53	53	54	53	53
Metro Non-Center City	25	27	36	40	28	31
Non-Metro	22	20	11	6	19	16
BUILDING TYPE						
High Rise	19	19	28	30	21	22
Non-High Rise	81	81	72	70	79	78
AVERAGE # UNITS	109 units	110 units	134 units	136 units	117 units	119 units
AVERAGE MORTGAGE AMOUNT (\$000)	\$1,700	\$1,707	\$1,963	\$2,027	\$1,790	\$1,815
TOTAL (%)	66%	80%	34%	20%	100%	100%

*Unassisted properties are weighted to reflect their actual representation in the older universe.

A1-2: FIELD OFFICE LOCATION OF INSURED PROPERTIES PROPERTIES SELECTED FOR STUDY SAMPLE*

Field Office	Assisted	Not Assisted	Total
Atlanta, GA	8	1	9
Baltimore, MD	7	2	9
Birmingham, AL	3	2	5
Boston, MA	14	0	14
Buffalo, NY	5	0	5
Chicago, IL	17	4	21
Cincinnati, OH	9	2	11
Cleveland, OH	13	2	15
Columbia, SC	13	3	16
Columbus, OH	4	2	6
Dallas, TX	15	2	17
Denver, CO	24	2	26
Des Moines, IA	7	1	8
Detroit, MI	10	8	18
Grand Rapid, MI	5	0	5
Greensboro, NC	8	0	8
Hartford, CT	10	1	11
Houston, TX	3	1	4
Indianapolis, IN	10	2	12
Jacksonville, FL	14	1	15
Jackson, MS	6	1	7
Kansas City, KS	10	4	14
Little Rock, AR	7	1	8
Los Angeles, CA	30	5	35
Louisville, KY	8	1	9
Milwaukee, WI	9	2	11
Minn/St. Paul, MN	10	3	13
Nashville, TN	8	3	11
New Orleans, LA	6	2	8
New York, NY	10	17	27
Newark, NJ	7	9	16
Oklahoma, OK	8	1	9
Philadelphia, PA	4	0	4
Phoenix, AZ	5	0	5
Pittsburgh, PA	9	1	10
Portland, OR	16	1	17
Providence, RI	6	1	7
Richmond, VA	7	7	14
Sacramento, CA	10	2	12
San Antonio, TX	9	0	9
San Francisco, CA	22	7	29
Seattle, WA	19	6	25
St. Louis, MO	4	0	4
Washington, DC	12	1	13
TOTAL	441	111	552

* This sample was randomly selected from insured rental properties with mortgages ten or more years old. Assisted properties were sampled at a rate of approximately twice their incidence in the population. The sample was not stratified by Field Office.

A2: DATA COLLECTION PACKAGE

A. FINANCES AND REMEDIAL TOOLS

To obtain up-to-date data on the sample properties, we asked HUD field offices to fill out six forms on each property in their respective jurisdictions. These forms, attachments to a cover letter, were as follows:

Attachment 1: MIDLIS data check. Contained basic identifying information (e.g., HUD/FHA project number, name, address) and property characteristics (Section of the Act, sponsor type, final endorsement data, etc.) drawn from the Department's computerized MIDLIS file. Field offices were asked to verify and, if necessary, correct this information. They were also asked to indicate whether the property had ever had Rent Supplement, Flexible Subsidy, Loan Management Set-Aside or a Transfer of Physical Assets and, if so, to complete the appropriate attachment relating to those programs. The form also provided a place for the person filling it out (usually the loan servicer) to sign, date and give his or her phone number. This proved to be very useful in making call-backs.

Attachment 2: Verification of OLMS Data. This form asked field offices to determine whether the Department's computerized OLMS data (which provided us with income and expense data for the years 1980 to 1984) were accurate and up-to-date for each property, and, if not, to make needed additions and corrections. The form also asked for up-to-date information on the reserve for replacement (current balance, annual contribution, and recent draws). Finally, this form requested HUD's current rating of the management of the property.

Attachment 3: Rent Supplement and RAP. If a property had ever had Rent Supplement or Rental Assistance Payments, this form was to be filled out, giving data on date, amount, and number of units.

Attachment 4: Flexible Subsidy. This form requested extensive data on dates, amounts of subsidy and owner contributions, and uses of funds.

Attachment 5: Section 8 Loan Management Set-Aside Contract. Data on LMSA contracts were requested for properties having this program.

Attachment 6: Transfer of Physical Assets. This form requested data on dates, syndication proceeds, and owner contributions.

Additional Data. In connection with attachments 4 through 6, Field Offices were requested to supply copies of management reviews, physical inspection reports, and management improvement operating plans (MIOs). This information helped researchers verify data or resolve questions.

A complete copy of these data collection forms is provided in the following pages.

B. PHYSICAL CONDITION

To obtain assessments of physical condition, we provided Field Offices with instructions and inspection form HUD-30004. Copies of these follow.



U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
WASHINGTON, D.C. 20410

JUL 17 1985

ASSISTANT SECRETARY
FOR POLICY DEVELOPMENT AND RESEARCH

MEMORANDUM FOR: All Field Office Managers

FROM: June Q. Koch, Ph.D. *JQK*
Janet Hale, Acting General Deputy Assistant Secretary for Housing, HD *JHale*

SUBJECT: Request for Assistance in Assessment of the FHA-Insured
Multifamily Rental Inventory

In cooperation with the Office of Housing, the Office of Policy Development and Research is conducting a comprehensive survey of the financial and physical condition of the multifamily rental housing inventory which is insured by FHA. Your cooperation in this project is essential to its success. The purpose of this memorandum is to obtain your assistance in obtaining information on a sample of properties from your office. The nature of this assistance is explained more fully below.

This study is a Departmental priority established by the Secretary in direct response to Congressional concern about the ability of the inventory to continue to serve as a housing resource for lower- and moderate-income families and to the concern of the Office of Management and Budget that the inventory be maintained in the most cost-effective manner possible. The Office of Housing has proposed a strategy for providing supplemental assistance to some projects. One major purpose of this study is assess the scope of need for such assistance, as well as its most appropriate form. Key policy and program development decisions will hinge on the results of this study.

The research includes three major components: First, we have already analyzed the status of the inventory based on the computerized records in Headquarters. Second, we are requesting from all Field Offices more detailed data on the financial status of a random sample of projects. Third, we are hiring fee inspectors to conduct physical inspections of this sample of projects. It is with respect to the last two items that we require assistance from you and your staff.

We have selected a national random sample of about 500 insured projects. A master list of the sampled projects which are managed by your Office is attached. The package accompanying this memorandum contains separate information packets and questionnaires for each project. Each packet includes detailed instructions for completing the forms. Briefly, the procedure is as follows. The packet contains information that we have obtained from the Department's MIDLIS and OLMS data files for the project. We need your help to confirm and update this information. We are also requesting information about Rent Supplements, Flexible Subsidies, Loan Management Set-Aside Contracts, or Transfers of Physical Assets that pertain to any of the projects. Finally, and most importantly, each packet contains a physical inspection form to be completed by a fee inspector utilizing the funds that have been authorized for this research. The form closely resembles HUD Form 9822, but has been modified to serve the specific needs of this study. Special instructions are attached to it, and we anticipate that an experienced inspector will have little difficulty in completing it.

We are asking you to assign one or more staff the task of completing the questionnaires for each project and of assigning and overseeing the fee inspections. We request further that you designate one person on your staff to oversee the process, review the completed forms, and assure that they are returned to us as soon as possible. This person should confirm the completion of the work by marking the appropriate items for each project on the attached master list. We would appreciate your notifying us of the responsible staff person by completing the attached memorandum and returning it to us as soon as possible. When the material is completed, the entire packet should be returned using the envelopes provided to: Assessment of the Multifamily Inventory, Room 8232, Office of Policy Development and Research, HUD, Washington, DC 20410.

It is essential that this study be completed quickly and accurately. All completed forms must be received at Headquarters by August 19, 1985. Timeliness is required by the schedule of the policy debate that will occur during Departmental deliberations of the next budget with OMB and Congress. Accuracy is required because in the final statistical analyses each sampled project will represent about 30 projects in the national inventory.

We appreciate your assistance and cooperation. We have made every effort to minimize the Field Office staff burden and spread it fairly among Offices. Should you have any questions, please contact Howard Sumka, Director, Community Planning and Neighborhood Studies Division in PDR (FTS 755-7335) or James Tahash, Director, Program Planning Division in Housing (FTS 426-3970).

Attachment

INSTRUCTION SHEET
Insured Multifamily Rental Project Data Request Package

Background

In cooperation with the Office of Housing, the Office of Policy Development and Research is conducting a comprehensive survey of the financial and physical condition of the multifamily rental housing inventory which is insured by FHA. This study is a Departmental priority which has been undertaken to: respond to Congressional concern about the ability of the inventory to continue to serve as a housing resource for lower- and moderate-income families; address the concern of the Office of Management and Budget that the maintenance of the inventory be accomplished in the most cost-effective manner possible; and assess the scope of the need for a supplemental assistance program that the Office of Housing has been developing. The policy and program development discussions will hinge on the results of this study.

The research includes three major components: First, we have already analyzed the status of the entire inventory using MIDLIS data. Second, we are requesting from all Field Offices more detailed data on the financial status of a small random sample of projects, using this package as the vehicle. Third, we are instructing all Field Offices to contract for physical inspections of this sample of projects. The study is limited to projects at least ten years old from certain sections of the Housing Act.

It is essential that this request be completed quickly and accurately. Timeliness is required by the schedule of the policy debate that will occur during Departmental deliberations of the next budget with OMB and Congress. Accuracy is required because each sampled project will represent in the final statistical analyses about 30 projects in the full inventory. Inaccuracies and inconsistencies will be greatly magnified into serious misrepresentations of the insured inventory. All completed forms must be received at the Central Office by August 19, 1985.

Instructions

General

Please review all the instructions before completing the attached forms. We have attempted to minimize the amount of effort required, but it will be necessary for you to review the entire project file. We have asked in various places for copies of documents relevant to each project's experience. Should there be other key documents you feel are essential, please feel free to include them. Do not, however, send us large amounts of documentation. The purpose of this survey is to obtain the basic information about the operating, financial, and physical condition of each project so that an accurate profile of the entire inventory can be developed. Each sampled project, in effect, is a representative type, and no specific action will be taken regarding any individual project. Should the information we develop be useful to you, we will, however, be happy to send you what we have for your own use.

If you have any questions with respect to completing the forms, please call FTS 755-7335, and any of the following people can assist you: Robert Wiebler, Larry Hodes, or Howard Sumka. Thank you in advance for your cooperation.

Attachment 1

This attachment contains basic information about the project as it is recorded in the Department's computerized MIDLIS file. The project number and address are indicated at the top of the sheet. Please check each item and correct those that are in error in the space provided to the right of each item. With the exception of the following, all of the items are self-explanatory:

Section of the Act: SECTION OF THE ACT NAME

Make appropriate corrections if the section noted is incomplete, incorrect, or missing.

Sponsor Type: LIMITED DIVIDEND, NONPROFIT, PROFIT

Occupant Type: FAMILY, OTHER

This is the specific tenant group that a project is designed to serve. All projects that are designed as non-elderly and non-handicapped should be coded as FAMILY; all other projects should be coded OTHER.

Current Mortgage Status: FINAL ENDORSEMENT CURRENT
 IN DEFAULT
 UNDER MOD CURRENT
 UNDER MOD IN DEFAULT

HUD HELD CURRENT
 DELINQUENT NOT IN FORECLOSURE
 DELINQUENT IN FORECLOSURE
 UNDER WORKOUT CURRENT
 UNDER WORKOUT DELINQUENT

HUD OWNED (no detailed breakout needed)

This item is essentially the MIDLIS "current processing status." We expect all project mortgages to be in force (FINAL ENDORSEMENT), held, or owned. For any HUD HELD DELINQUENT property, add whether or not it is in foreclosure --we do not have this information in our files. If any project is no longer in the inventory (the mortgage has been prepaid or a held or owned project disposed of) contact us at 755-7335 before proceeding.

We expect that almost all inconsistencies between the MIDLIS data and your files will be relatively minor and can be taken care of by notations on the form. IN ANY OF THE FOLLOWING THREE CIRCUMSTANCES, HOWEVER, CALL HEADQUARTERS AT 755-7335 BEFORE PROCEEDING:

1. The FHA project number does not correspond to a project in your Field Office portfolio.
2. The FHA project number is valid, but there appears to be a major discrepancy with the characteristics (e.g., Section of the Act, address, and numbers of units are all wrong).
3. The project is no longer in the HUD/FHA inventory for any reason.

At the bottom of Attachment 1, please indicate which, if any, of the supplementary remedial tools has been applied to this project. For each which the project has received, please provide the requested information and supporting documentation as requested on Attachments 3, 4, 5 and/or 6. (See instructions below.) In the case of Transfers of Physical Assets only, we are interested in TPAs approved by HUD since October 1, 1979. EXCLUDE TPAs APPROVED PRIOR TO THIS DATE AND DO NOT COMPLETE ATTACHMENT 6 FOR THEM.

Attachment 2

This attachment presents the current data contained in the computerized OLMS file on the financial status of the project. Please review this information to be sure it is accurate and up-to-date. If the data do not include the most recent year's financial information please update the OLMS record for the project using routine procedures. We will then extract the information from the computer at Headquarters. It may be necessary to telephone the mortgagor to obtain these data. If the file is up-to-date, but contains errors, please correct them using routine procedures. Indicate the action taken by checking the appropriate item on Attachment 2.

In addition, if your project file contains any recent supplemental financial reviews that cannot be entered into OLMS, please include photocopies when you return this questionnaire.

Attachments 3, 4, 5, and 6

These attachments request information for projects which received assistance under one or more of the Department's remedial tools, or which had a Transfer of Physical Assets (TPA) that HUD approved since October 1, 1979. The items are self-explanatory and space is provided to the right of each item to enter the answer. Please note that we request copies of MIOs, recent physical inspections, and management reports in Attachments 4, 5 and 6. In addition, space has been left at the bottom of each attachment to allow you to provide any relevant information that is not explicitly requested. Feel free to attach additional sheets if necessary. For some projects, more than one Attachment will have to be completed (e.g., one which had a Rent Supplement and an LMSA, or an LMSA and Flexible Subsidy, etc.). Note that we are requesting information for each LMSA contract the project has ever had and for every TPA the project has had since October 1, 1979.

Additional Information

For all projects that have not received LMSA or Flexible Subsidies or that have not undergone any TPAs (Attachments 4, 5, and 6 not completed), please send copies of:

- o the most recent monitoring/management review report
- o any physical inspections, MIOs, or modification or workout agreements since January 1980

Physical Inspection

A central aspect of this assessment of the inventory will be the completion of a physical inspection by a qualified fee inspector. Funds have been approved for this purpose. You will receive instructions and a special inspection form in a separate mailing. Once you have received this mailing, and have confirmed by completing Attachment 1 that we have correctly identified each selected project, take the appropriate steps to initiate the fee inspection.

The purpose of the inspection is to estimate current project condition, remaining useful life of major building components, and current cost to replace them. A special form (HUD 30004) has been adapted from the more familiar HUD 9822. The inspector should have little difficulty in following the instructions for the HUD 30004. You are to review the completed form for completeness, readability and accuracy of computations. It is to be returned along with the completed package (Attachments 1-6 and relevant documents). Feel free to retain a copy of the inspection for your project records.

Completion of Package

Please review the information you have supplied one last time to assure its completeness and accuracy and that you have supplied copies of all the relevant requested documents. As you complete each project, return the package to your reviewing official who will forward it to headquarters.

A self-addressed return envelope has been supplied for the return of the material. The material is to be returned to: Assessment of the Multi-family Inventory, Room 8232, Office of Policy Development and Research, HUD, Washington, DC 20410.

MEMORANDUM FOR: Howard J. Sumka, Director, Community Planning
and Neighborhood Studies, TUS

FROM:

SUBJECT: Staff assignment for Assessment of FHA Insured Multifamily
Rental Inventory

The person on my staff who will be overseeing our work in support
of the insured multifamily inventory assessment is:

Name

Title

Phone

DATA COLLECTION PACKAGE
 REGION 6
 AREA OFFICE DALLAS, TX
 FHA CASE NUMBER

Appendices 4h
 ATTACHMENT 1

PLEASE STRIKE THROUGH INCORRECT INFORMATION.
 ENTER CORRECT INFORMATION TO THE RIGHT OF
 THOSE ITEMS.

SECTION OF THE ACT	236(J)(1)	----- ✓ -----
PROJECT NAME	FINE HAVEN APTS	----- ✓ -----
PROJECT ADDRESS	2500 EAST MARSH TX, 7567	----- ✓ -----
SPONSOR TYPE	LTDDIV	----- ✓ -----
OCCUPANT TYPE	OTHER	----- ✓ -----
FINAL ENDORSEMENT DATE	10/3/74	----- 10/29/74 -----
ORIGINAL MORTGAGE AMOUNT	\$ 826100	----- # 825800 -----
CURRENT MORTGAGE STATUS	FINAL ENDRS CURRENT	----- ✓ -----
NUMBER OF UNITS	64	----- ✓ -----

INDICATE BY CIRCLING YES OR NO IF THE PROJECT HAS OR HAS EVER HAD ANY OF THE FOLLOWING REMEDIAL SUBSIDY PROGRAMS OR HAS UNDERGONE A TRANSFER OF PHYSICAL ASSETS.

		IF YES COMPLETE ATTACHMENT NUMBER	
RENT SUPPLEMENT	YES	(NO)	3
FLEXIBLE SUBSIDY	YES	(NO)	4
LOAN MANAGEMENT SET ASIDE	YES	(NO)	5
TRANSFER OF PHYSICAL ASSETS	YES	(NO)	6

----- 8/7/85 -----
 SIGNED DATE

----- 229-8372 -----
 FTS PHONE NUMBER

ATTACHMENT 2: VERIFICATION OF OLMS DATA (Complete for all projects)

FHA Project No. _____

Field Office _____

This attachment presents the current data contained in the computerized OLMS file on the financial status of the project. Please review this information to be sure it is accurate and up-to-date. If the data do not include the most recent year's financial information, please update the OLMS record for the project. It may be necessary to telephone the mortgagor to obtain these data. If the file is up-to-date, but contains errors, please correct them. Use routine procedures to modify OLMS. We will then extract the information from the computer at Headquarters. Indicate the action(s) taken by checking the appropriate items:

- OLMS data were accurate and up-to-date _____
- OLMS data were not current and one or more _____
year's data were entered into the file _____ List years _____
- OLMS data were up-to-date, but inaccuracies were corrected _____
- Other (specify) _____

In addition, if your project file contains any recent supplemental financial reviews which cannot be entered into OLMS, please include photocopies.

Please complete the following items on replacement reserves and project management:

Replacement Reserve

Current account balance \$ _____ Date _____

Annual escrow \$ _____

Status of account: Current _____ Not current _____

Draws, 1982-to-date, and uses:

\$ _____

\$ _____

\$ _____

\$ _____

Comment/explanation: _____

Management of Property (Circle appropriate number)

- 1 Excellent
- 2 Above average
- 3 Average
- 4 Worse than average
- 5 Poor

ATTACHMENT 3: RENT SUPPLEMENT AND RAP CONTRACT

FHA Project No. _____

Field Office _____

Complete only for projects which have or ever had a RENT SUPPLEMENT OR RENTAL ASSISTANCE PAYMENTS (RAP) CONTRACT.

Date Rent Supplement or RAP contract began _____

Date contract ended or will end _____

If Rent Supplement or RAP contract was converted to a Section 8 Loan Management subsidy, enter the date here _____, and complete Attachment 5.

Term of contract _____ years

Contract amount \$ _____

Total number of units ever covered by the contract _____

Total number of units currently covered by Rent Supplement or RAP _____

Additional information relevant to Rent Supplement or RAP contract (use additional sheets if necessary):

ATTACHMENT 4: FLEXIBLE SUBSIDY

FHA Project No. _____

Field Office _____

Complete only for projects which have or ever had FLEXIBLE SUBSIDY

Date Flexible Subsidy began _____

Mortgage Status at time of subsidy:

FINAL ENDORSEMENT:		HUD HELD:	
CURRENT	_____	CURRENT	_____
DEFAULT	_____	DELINQUENT NOT IN FORECLOSURE	_____
UNDER MOD CURRENT	_____	DELINQUENT IN FORECLOSURE	_____
UNDER MOD IN DEFAULT	_____	UNDER WORKOUT CURRENT	_____
		UNDER WORKOUT DELINQUENT	_____

Flexible Subsidy was approved prior to _____ or after _____ election to assign? or was not assigned _____?

Total amount of subsidy approved \$ _____ Total received to date \$ _____

Original Termination date _____. Renewal or extension dates, if any _____.

Grant _____ or deferred loan _____?

Was the owner required to contribute funds to the project? Yes _____ No _____

Indicate primary uses of subsidy funds and owner contributions (if any):

	<u>Subsidy funds</u>	<u>Owner contributions</u>
repairs/replacements	\$ _____	\$ _____
payment of incurred liabilities	\$ _____	\$ _____
funding replacement reserve	\$ _____	\$ _____
other	\$ _____	\$ _____

List major repairs/replacements made with funds (use additional sheets if needed):

<u>ITEM</u>	<u>AMOUNT</u>		<u>DATE COMPLETED</u>
	Subsidy funds	Owner funds	
_____	\$ _____	\$ _____	_____
_____	\$ _____	\$ _____	_____
_____	\$ _____	\$ _____	_____
_____	\$ _____	\$ _____	_____
_____	\$ _____	\$ _____	_____

- Attach a copy of:
- (1) MIO plan relating to Flexible Subsidy
 - (2) physical inspections prior to or at time of approval (Forms 9822 and/or 92470)
 - (3) management/monitoring review reports since subsidy including most recent.

Additional information relevant to Flexible Subsidy: Use additional sheets.

ATTACHMENT 5: SECTION 8 LOAN MANAGEMENT SET-ASIDE CONTRACT

FHA Project No. _____

Field Office _____

Complete only for projects which have or ever had a SECTION 8 LOAN MANAGEMENT SET-ASIDE Contract. (Note: If a project has had more than one LMSA contract, complete a separate form for each.)

Date LMSA contract began _____

Mortgage status at time of LMSA Contract:

FINAL ENDORSEMENT:		HUD HELD:	
CURRENT	_____	CURRENT	_____
IN DEFAULT	_____	DELINQUENT NOT IN FORECLOSURE	_____
UNDER MOD CURRENT	_____	DELINQUENT IN FORECLOSURE	_____
UNDER MOD IN DEFAULT	_____	UNDER WORKOUT CURRENT	_____
		UNDER WORKOUT DELINQUENT	_____

LMSA was approved prior to _____ or after _____ election to assign? Or, was not assigned ___?

Converted from Rent Supplement or Deep Subsidy (RAP)? Yes ___ No ___

Term of contract _____ years

Renewal or extension dates, if any _____

Total dollar amount of contract \$ _____

Number of units covered _____

Total number of units currently covered by this and any other LMSA contract now in force _____ (Do not include active units of rent supplement, RAP, or property disposition Section 8.)

- Attach a copy of:
- (1) MIO plan or management/monitoring reviews indicating need for LMSA
 - (2) physical inspections prior to or at time of subsidy approval (Form 9822 and/or 92470)
 - (3) most recent management/monitoring review reports

Any additional information relevant to the initiation of the LMSA contract, and any terms and conditions of it (use additional sheets if necessary):

ATTACHMENT 6: TRANSFER OF PHYSICAL ASSETS (TPA)

FHA Project No. _____

Field Office _____

Complete only for projects which have had a TPA that was approved by HUD since October 1, 1979. (Note: If a project has had more than one TPA, complete a separate Attachment 6 for each.)

Date of TPA _____

Circle sponsor type PRIOR TO TPA: Profit Limited Dividend Nonprofit
 Circle sponsor type AFTER TPA: Profit Limited Dividend Nonprofit

Mortgage Status at time of TPA:

FINAL ENDORSEMENT:		HUD HELD:	
CURRENT	_____	CURRENT	_____
IN DEFAULT	_____	DELINQUENT NOT IN FORECLOSURE	_____
UNDER MOD CURRENT	_____	DELINQUENT IN FORECLOSURE	_____
UNDER MOD IN DEFAULT	_____	UNDER WORKOUT CURRENT	_____
		UNDER WORKOUT DELINQUENT	_____

Syndication proceeds: Total generated \$ _____
 Agreed contribution to project \$ _____
 Actual contribution to project to date \$ _____

General purpose(s) of cash contribution: _____

List repairs and replacements made as a result of TPA (continue on additional sheet, if needed):

<u>ITEM</u>	<u>AMOUNT</u>	<u>DATE COMPLETED</u>
_____	\$ _____	_____
_____	\$ _____	_____
_____	\$ _____	_____
_____	\$ _____	_____
_____	\$ _____	_____
_____	\$ _____	_____

- Attach a copy of:
- (1) MIO plan or management/monitoring review prior to or at time of TPA
 - (2) physical inspections prior to or at time of TPA approval (Form 9822 and/or 92470)
 - (3) management/monitoring review reports since TPA.

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
WASHINGTON, D.C. 20410OFFICE OF THE ASSISTANT SECRETARY
FOR POLICY DEVELOPMENT AND RESEARCH

MEMORANDUM FOR: Field Office Data Collection Coordinators

FROM: Howard J. Sumka, Director, Community Planning and Neighborhood Studies, TUS

SUBJECT: Physical Inspections for Assessment of the FHA-Insured Multifamily Rental Inventory

Attached are copies of Form 30004 with instructions. As discussed in the data collection package sent to you by Assistant Secretary Koch and Acting General Deputy Assistant Secretary Hale, we need your assistance in inspecting all properties in your Office's portion of the national sample, excluding those we have agreed to drop. All completed inspection forms are due at Headquarters by August 30, 1985.

The Form and instructions will be used by fee inspectors. Please review both so that you understand the process. Select inspectors who are experienced in evaluating existing multifamily properties, cost estimation, and estimating remaining life and replacement costs of capital items. If you prefer using staff inspectors, and believe they are equally as capable as fee inspectors who are available to you, please call us to discuss this option.

For each project, please complete Section I of the Form (items 1 to 16), except item 13, prior to assigning the project to an inspector. The inspector will complete item 13 (# units inspected) after the inspection. In instances where a project contains two or more distinct building types, we require a separate Form for each type as if they were separate projects: in those instances, set up two or more Forms, each containing the appropriate information for that building type in items 7 to 16.

As each inspection is completed, please review the inspector's work to be certain that he has properly completed all items on the Form, attached worksheets, and, for a project with multiple building types, stapled together all Forms relating to that project. Return these items using the return labels provided to:

Multifamily Assessment c/o Hodes, HUD Headquarters Room 8232
Policy Development and Research TUS, POUCH MAIL

We are allocating funds to each Regional Office at an average of \$300 per project. Inspectors will be paid for actual time expended and not at a flat rate. We expect that small projects can be inspected for less than \$300, while large, complex, and remote projects may require more. The specific fund assignments for these inspections will be provided under separate cover by Ross Kumagai of the Funding Control Division.

If you have questions about the sample projects or inspection, call Larry Hodes or or Robert Wiebler at FTS 755-7335. For questions regarding your funding, contact the Office of Housing at your Regional Office.

Attachment

INSTRUCTIONS FOR CONDUCTING PHYSICAL INSPECTIONS
USING FORM HUD 30004

The Department of Housing and Urban Development is conducting a nationwide assessment of the inventory of FHA-insured multifamily rental properties. This assessment, which is based on a representative sample of properties from all HUD Regions, will be used by HUD and Congress in their upcoming policy and program deliberations. The physical inspections that you are conducting will provide key data for this assessment and are critical to our analyses.

Form HUD 30004 has been specially designed to collect physical condition and cost data on the sample properties. Although this information will be available to HUD Loan Management staff, its primary purpose is to generate a national profile of the insured multifamily inventory and not to take action on individual properties. The Form is designed to gather information for each property on:

- o immediate repair needs and costs
- o medium term repair needs and costs
- o capital replacement needs including the projected remaining life and replacement costs of major components.

The condition of capital systems is of particular concern to Congress. Completing this Form will require examining building exteriors and grounds, central mechanical systems and spaces, interior public spaces, and dwelling units.

Research staff at HUD Headquarters will combine inspection findings from the sample of over 500 properties and enter this information on computers for statistical analysis. Therefore, it is essential that all inspectors use uniform procedures to inspect properties and enter data on the Forms. To help assure our correct use of this data, WE ASK THAT INSPECTORS READ THESE INSTRUCTIONS IN FULL PRIOR TO GOING ON SITE; and that following the inspection, they submit with each completed Form, worksheets showing the computations used to translate inspection findings into the estimates entered on the Form.

The following instructions provide directions for conducting the inspection and completing the Form. In many respects the inspections resemble standard HUD inspections and most items on the Form are self-explanatory. We rely on inspectors' technical expertise and judgment for completing these items. These instructions, therefore, focus on items that differ from standard inspections

SECTION I. PROJECT IDENTIFICATION (items 1 to 16)

This section identifies the project and provides general information on its characteristics. With the exception of item 13 (# inspected) it will generally have been completed in advance by HUD staff using information from case files. This information will help you in finding the property, selecting buildings or units for inspection, and estimating the age of certain capital items. It will also help HUD's researchers in conducting analyses.

Complete any items which have been left blank and correct any that you may discover to be in error.

Item 6. More than 1 Bldg Type

If the project contains two or more distinct building types, mark item 6 "Yes" and complete a separate inspection Form 30004 for each type as if they were separate projects. For example, for a project having 100 units in high rise

buildings and 20 units in semi-detached buildings, complete one Form for each. This situation will not arise often, but when it does it is essential that it be treated as indicated because we expect condition and structural characteristics to vary widely among building types. For exterior or other components common to the entire project that cannot be allocated exclusively to either building type (e.g., parking or lawns), the inspector may enter all of the appropriate inspection data on the Form for the dominant building type (e.g., high rise in the above example) and write "See other Form" for those items on the other Forms. Indicate on a worksheet how the inspection was divided and attach it to the multiple Forms. The multiple forms for a project should be additive: that is, if we add together the entry for any item (e.g., roofs) for all Forms, we will have the project total for the item.

Item 13. # units inspected

After you complete this inspection, enter the number of units you have inspected by unit size.

SECTION II. CONDITION AND REPAIR ESTIMATES (items 17 to 56)

In this section record your estimates of immediate (within 1 year) and medium term (2-to-5 year) repair/replacement costs for all items listed. The Section is organized into four major subsections:

- A. Exterior Items
- B. Interior Public Space
- C. Central Mechanical Systems and Space
- D. Items within Individual Dwelling Units.

The items to be inspected are listed under each of these major areas. Detailed instructions for each area are provided below. For each item, assess:

- o Does the item need repair or replacement, above and beyond normal maintenance cycles, within 1 year? If yes, enter in column (a) "1 Yr Cost", your estimate of the cost to repair or replace the item. If not, enter -0-.
- o Does the item need repair or replacement, above and beyond normal maintenance cycles, in the next 2-to-5 years? If yes, enter in the column (b) "2-5yr Cost", your estimate of the total cost to repair or replace the item over this time period. If not, enter -0-.
- o If the project does not include a particular item, enter -NA- in column (a).

IT IS POSSIBLE THAT AN ITEM MAY REQUIRE SEPARATE REPAIRS IN BOTH 1 AND 2-TO-5 YEARS, IN WHICH CASE, ENTRIES ARE NEEDED IN BOTH COLUMNS (a) AND (b).

Use current prices and costs for all items, regardless of the year in which the expenditure is projected to occur. Assume that normal project maintenance will be in effect over all 5 years; all but routine maintenance repairs will be performed by outside contractors and not by project staff; and all repairs will use standard quality materials and workmanship. Treat work in progress as completed unless it is apparent that it will not be completed in a timely manner. Do not estimate in Section II any repair/replacement costs that may be needed beyond 5 years.

For each item for which an entry was made in column (a) or (b), fully, but concisely, describe the repair or replacement needed on a worksheet: Specify the nature, general location, and extent of the problem. Show the cost computations

used to arrive at the entry in the Form column (a) or (b). Number each item to correspond with the item number on the form. YOUR ENTRIES IN (a) AND (b) OF THE FORM SHOULD PROVIDE ESTIMATES THAT REFLECT REPAIR COSTS FOR THE ENTIRE PROJECT.

A. Exterior Items (items 17 to 30)

Inspect the grounds and exterior of all buildings and complete columns (a) and (b) for all items listed.

B. Interior Public Space (items 31 to 36)

This subsection includes all interior space except for items to be covered under subsections C (Central Mechanical Systems and Space) or D (Items within Dwelling Units). For projects for which it would be impractical to inspect 100 percent of the interior space (e.g., all flights of all stairways of a 600 unit 4 storey garden apartment), inspect a large and diverse enough sample to confidently estimate project-wide costs. For all projects, inspect at minimum:

- o all community areas such as laundries, meeting/function rooms, foyers with seating, etc.
- o entry-ways, stairways and halls leading to all sampled units. (Refer to sampling instructions in subsection D.)

Indicate on a worksheet how you compute project-wide cost estimates from your direct observations. Key this worksheet to the appropriate subsection and item numbers on the Form.

C. Central Mechanical Systems and Spaces (items 37 to 46)

Inspect all central mechanical systems and spaces and complete columns (a) and (b) for items 37 to 46. Please note that all items in this subsection have a related item in Section III Remaining Life and Replacement Cost.

D. Items within Individual Dwelling Units (items 47 to 56)

This subsection includes items within dwelling units. For all but the very smallest and largest projects, a minimum sample of 10 percent of all units should be inspected. The table, below, gives minimum sample sizes for various size projects. For any particular project you may need a larger sample to be able confidently to estimate project-wide costs.

It is important that these dwellings be selected randomly to be sure that they do not over or under represent exceptionally good or bad units and that they do accurately encompass the needs of the entire project. Sampled units should include diverse apartment types; occupied and vacant units; all buildings (except where prohibitively time consuming such as in a 100 unit duplex project); all floors; and a variety of unit locations with respect to weather exposure, proximity to elevator cores, below ground, or under roofs, etc.

PROJECT SIZE	INSPECTION SAMPLE SIZE
11 to 99 units	at least 10 units
100 to 200 units	at least 10 percent of project size
Over 200 units	at least 20 units

In item 56 enter the sum of your entries in items 47 to 55.

Indicate on a worksheet how your estimate of project-wide costs was projected from your direct observations. Upon completing this subsection be certain to INDICATE IN ITEM 13 ON THE FORM THE NUMBER OF EACH TYPE UNIT THAT YOU INSPECTED.

SECTION III. REMAINING LIFE AND REPLACEMENT COST (items 57 to 85)

In this section record your estimates of the remaining life and replacement costs for all items listed. These estimates are of particular importance to HUD and Congress. Inspect all relevant systems and components that are located outside of individual dwelling units. Inspect systems and components within dwelling units only for the sampled units.

For each item, estimate the remaining life of the indicated component or system and enter that number in column (c) Remaining Life. This may range from its full life for a newly replaced item to -0- for a failed item. Treat work in progress as completed unless it is apparent that it will not be completed in a timely manner. If an item is composed of a system or set of components of varying remaining lives, focus on the components that are dominant in terms of cost. If an item has been partially replaced (e.g., half of a 16-year old roof was replaced this year with a new 20-year roof) enter the average remaining life of the item and the total cost of replacing the entire item (e.g., enter 12 years--half of 4 plus half of 20--and the cost of an entire new roof). If, in Section II. Condition and Repair Estimates, the item was indicated as needing replacement in 1 or 2-to-5 years, the item should have a corresponding remaining useful life. It is also possible that some items may need separate repairs in 1 year and 2-to-5 years as well as replacement at a future date: Such items should have entries in columns (a) and (b) of Section II as well as in column (c) of this Section.

Enter in column (d) Replacement Cost your estimate of the total replacement cost of the item (including installation by a professional contractor). Use current dollar costs for these entries regardless of the estimated year of replacement. Assume that the replacement item is of comparable quality to the original; however, if current prevailing standards require a higher quality item, base your estimates on that. Include a worksheet entry for each item indicating how replacement costs were estimated.

In items 83 to 85 labeled "Other" enter any other major capital items (such as a central ventilating/exhaust system) that do not clearly fit the specified categories, but represent a significant cost.

YOUR ENTRIES IN COLUMN (d) SHOULD REFLECT TOTAL COSTS FOR THE ENTIRE PROJECT.

SECTION IV. MAINTENANCE

Assess the quality of the property's maintenance and circle the number corresponding to the most appropriate maintenance category.

Completing the Inspection

Enter in the space provided at the end of the Form any comments you feel may be helpful to us. Review the form for completeness, accuracy of computations, and legibility. Be certain that all worksheets are clearly labeled and attached to Form 30004. Be certain that item 13 has been completed and that you have made any needed entries or corrections in Section 1. Sign the completed form and return it to your HUD Field Office contact.

A3: TESTING AND CLEANING INSPECTION DATA

Physical inspections provided the core data for this study. This section describes our efforts to improve the quality of the data for projecting properties' repair and replacement needs for 1986 to 1990 and 1986 to 2000.

Inspections were conducted by experienced multifamily housing inspectors who were either independent fee inspectors hired under contract, or were HUD staff from architectural and engineering units. All had conducted many similar inspections of HUD/FHA-insured properties, but none had ever used our specially-designed form or conducted inspections for purposes totally independent of HUD's normal loan management responsibilities (typically in conjunction with Transfers of Physical Assets, Flexible Subsidy, or dealing with troubled properties). Given the inherent difficulty of inspecting multifamily properties, the judgments required in projecting future needs, and the large number of inspectors involved (approximately 120 in 48 Field Offices), our role of coordinating these inspections and providing quality control was difficult.

A. FIELDING THE INSPECTIONS

The small study budget precluded our providing on-site training of inspectors. Other studies have taken as many as five days to assure that all inspectors would begin with a consistent sense of the study purpose and emphases, definition of terms, and on- and off-site procedures. In this study we had to settle for the best we could do, which was:

- 1) Beginning with a standard HUD inspection form (with which inspectors were experienced) and keeping our final form relatively short (2 pages) and simple.
- 2) Providing Field Office staff, who were overseeing inspectors, with complete information on the study's purposes and the role of inspections.
- 3) Providing inspectors with four pages of instructions that included examples.
- 4) Providing telephone support to inspectors and Field Offices.
- 5) Requiring inspectors to attach copies of their worksheets to completed forms so that research staff could check their assumptions and computations where necessary.

Despite these efforts, problems with misinterpretation and inter-inspector inconsistencies remained. This was to be expected since inspection and cost estimation are largely judgmental, particularly when projecting beyond current conditions to the future; and since variations in viewpoint affect estimates and costs (orientation toward basic habitability and structural integrity versus marketability, operating efficiency, energy conservation, or safety). Research staff, therefore, had to compensate for these problems, as well as basic errors, after the fact. Below, we discuss the most typical inspection problems and our efforts to detect and correct them.

B. MANUAL REVIEW OF INSPECTION REPORTS

After receiving completed inspection reports from field offices, research staff carefully reviewed each report for completeness and problems of logic or inconsistency. They discussed questionable or missing information by telephone with Field Office coordinators and, in most cases, inspectors. In a few instances properties were revisited by inspectors. This review resulted in a substantial improvement in the overall quality of the data. Following is a description of the types of problems found by reviewers.

1. The question of what is routine maintenance. Inspectors were asked to estimate in Section II of the form the cost of needed repair or replacement "above and beyond normal maintenance." Our intent was to exclude all routine and cyclical work (such as painting) unless it was clear that a property had been neglected and had a large accumulation of back maintenance. The definition of what is "normal maintenance" was a problem which individual inspectors resolved differently. Some apparently ignored the issue and simply reported the cost of doing needed work regardless of whether it was routine or not. Some defined normal maintenance as recent or current practice at the property being inspected. Some defined it as what should be, based on their opinions, not actual property-specific practice observed on site.

The items most obviously and frequently affected by this problem are those pertaining to painting. Some of the other affected items are: paving (the seal coat was considered routine, similar to painting, by a few inspectors), lawns and plantings (e.g., reseeding), exterior lighting (replacement of lamps), central heating plant (seals, valves, switches), and several dwelling unit items (fixing ranges, fans, faucets, or small heating elements). With the help of inspectors' worksheets and finding unexpectedly large entries for particular items, reviewers were able to catch many of the obviously routine costs and make corrections after discussion with inspectors.

2. Inspector-recommended new installations or upgradings. Several inspectors recommended installing items not originally or currently part of the property. Our intent was to exclude generally upgrades even if they would have been desirable. Upgrades and additions were usually justified on the basis of improved safety, energy conservation, or reduced maintenance costs. Items most affected were insulation, walks, security systems, sprinkler systems, and door closers.

The rule followed in reviewing the inspection forms is that costs for new installations were to be deleted unless they would be required by local or state government or HUD, or unless they could be efficiently and economically included at the time of the replacement of a larger system, e.g., upgrading roof insulation when the roof was scheduled for replacement, but not as stand-alone work. If the inspector provided adequate notes or worksheets, the reviewer could identify items that potentially violated this rule and make appropriate adjustments after discussion with the inspector.

3. Variations in unit costs. Inspectors were instructed to estimate replacement costs based on current local prices and costs, assuming that all work would be performed by outside contractors using standard quality materials and workmanship. Inspectors used several sources of costs: Means, Marshall-Swift, bids received by property management, figures on comparable recent replacements in Field Office files, and inspectors' own experience.

Generally, the unit costs for familiar stock items, such as ranges, refrigerators and hot water heaters, were in a rather narrow range; and when costs diverged from that range it was usually apparent to the reviewer. Some fairly standard items that one would think would be uniform were found to vary widely in cost from place to place. Seal coating and new asphalt mats on driveways and parking lots are good examples. Errors in these costs were more difficult to catch. Such errors were corrected when detected. Wide cost variations occurred in items such as roofs and boilers, for which there are many types and designs. Reviewers had no way to check these costs, except to watch for very large or small per-apartment costs.

In some cases, inspectors used costs supplied by property managers based on in-house staff work. Such costs were accepted if they were within reason and alternative costs were not readily available.

4. Take-off error. If an inspector miscalculated the square-footage or lineal feet of an item, it was very difficult to spot. Sometime this type of error could be identified by comparing per-apartment figures.

5. Difficulties regarding remaining life and replacement frequency. Inspectors were instructed to estimate remaining life for all items listed on the second page of the inspection form. Many inspectors found the concept of remaining life to be confusing in the context of the inspection form used in this study. In most cases, reviewers were able to explain what was wanted, however, and inspectors were cooperative in correcting their estimates. In many cases, inspectors had simply subtracted the age of the property from the theoretical expected life of an item, which yielded a theoretical but not necessarily realistic remaining life; this was least likely for items that were already nearing their theoretical total useful life (but were still in good condition) or conversely, for items that were near failure well before theoretical total useful life. If reviewers suspected errors, they were often able to discuss with the inspectors the conditions of use, quality of maintenance, and wear and tear at particular properties to obtain a more realistic estimate.

Inspectors varied in their assumptions of expected life, especially for appliances and floor surfaces, but also for roofs, doors, windows, screens, exterior lighting, plumbing and electrical fixtures, and individual heating and cooling systems. They justified these differences based on vandalism, hard wear from children, unusually hot sun or roof, poor quality or inappropriately designed materials or equipment, hard water, or poor maintenance. It was difficult for reviewers to second guess inspectors on these points.

6. Inconsistencies between Sections II and III. Perhaps most common inspector errors stemmed from confusion regarding differences and relationships between the first and second pages of the form. The first page included all nonroutine repairs and replacements required over the next five years; the second page included only replacements, but for the entire next fifteen years. Therefore, any item needing replacement within five years should have appeared on both pages of the form. Where this was not the case, however, it was usually obvious and could be corrected. If the cost shown for an item on page one was greater than the total replacement cost for the same item on page two, research staff would question inspectors to be certain that this was due to major nonroutine repair costs on page one.

7. Replacement cost: errors and missing values. Another frequent error derived from inspectors' misunderstanding what was meant by "Replacement Cost in Current \$) in column (d) of page 2. They were supposed to enter what it would cost at the time of inspection to replace a given item, regardless of when the replacement would ultimately be necessary. Some inspectors confused this item with the page one entries of "1yr and 2-5yr repair and replacement costs", columns (a) and (b). Most of these situations were relatively easy to spot and correct.

Missing replacement-cost values often occurred when the remaining life was far into the future for items with no particular reason to need replacing (such as electrical or gas distribution systems). Research staff instructed inspectors to omit replacement cost estimates if remaining life was beyond 15 to 20 years for plumbing, electrical and gas distribution systems, whose lives may be indefinite. It was felt that if there was no apparent problem with these systems, there was little justification for forcing the inspectors to make what would probably be a very rough guess at replacement costs.

8. Sampling Error. Inspectors were instructed to inspect a random selection of at least 10 dwellings units in properties with less than 100 units, 10 percent of the units in properties with 100 to 200 units, and at least 20 units in properties with over 200 units. On the basis of these inspections and discussion with property managers, inspectors were to estimate property-wide costs for repairs and replacements needed within dwelling units.

Reviewers did not detect any bias in dwelling-unit sampling. If there is bias, it is probably toward better maintained units, because property managers would likely guide inspectors in that direction. The opposite tendency, however, might exist in properties seeking additional subsidy. Inspectors were generally experienced in their role and able to avoid being steered.

For the entire study of approximately 500 properties, dwelling-unit sampling error should be quite low, but for a single property it could be very high.

C. COMPUTER DATA BASE EDITING

After manual review, completed data were computer entered and subjected to a series of tests:

1. Internal Consistency--Many items within the report form are logically inter-related. An edit program tested whether items were logically consistent (e.g., indications of five years or less of remaining life on an item listed on page two of the report should be reflected in anticipated costs for the item in the next five years on page one).

2. Mathematical Computations--Several of inspectors' mathematical calculations were verified and corrections made by an edit program (example, property-wide dwelling unit totals).

3. Data Range--Various data items were tested to determine if they were within a logically acceptable range (example, presence of elevators when building has six or more floors). Cases flagged for out-of range status were manually checked and corrected.

4. Data Reasonableness--Frequency distributions were used to identify extreme values (outliers) and inappropriate alphabetical values. In addition, individual property unit costs for repairs and replacement were compared against central tendency standards (mean or median) of the complete sample in order to determine the reasonableness of the estimate. Per unit cost estimates which diverged unreasonably from the sample standards were flagged for manual verification (example, per unit refrigerator/range costs of \$1,500 compared to sample average of \$800).

5. Standardization Transformations--Inspectors diverged widely in their interpretation of various rating items. Thus, for example, it is clear from a reading of the work sheets that a rating of fifteen years remaining life on an item by one inspector was the same as thirty years rating by another--they both mean long into the future. Based upon an examination of the frequency distribution of the variables making up the data base, standardization corrections were made so as to make the information more comparable between cases.

A4: COMPUTING FINANCIAL VARIABLES USING THE OFFICE OF LOAN MANGEMENT SYSTEM (OLMS) DATA BASE

For this study, the major source of property-level financial data was the Office of Loan Management System (OLMS). OLMS is a computerized compilation of recent annual statements of income and expenses for each property in the insured multifamily inventory. This appendix describes briefly OLMS and our computation of financial indicators. For further information on OLMS, see the OLMS User's Handbook, US GPO: 1981 0-341-214/116.

Under the terms of mortgage regulatory agreements, all mortgagors with HUD/FHA insured mortgages on multifamily properties, are required to submit audited annual financial statements to HUD. This includes mortgagors with mortgages assigned to HUD. (HUD-acquired properties, those for which HUD has acquired title, do not submit financial statements.) HUD regulations specify how mortgagors are to maintain their accounts and submit statements.

HUD loan servicers review financial statements and oversee their entry into OLMS. Table A4-1 is a sample of a summary report based on OLMS on one property. The report lists by major category amounts of income and expenses. OLMS contains far more detailed breakdowns of these categories.

For this study, we obtained a copy for each sample property of the OLMS records corresponding to Table A4-1. We obtained data for all available years between 1980 and 1984, inclusive. Despite the efforts of loan servicers, the data contained some obvious inconsistencies, errors, or omissions. We used computerized tests to seek out these problems and then corrected as many problems as possible (e.g., negative values where only positive values are possible, other out of range values, sums of parts not equal to wholes, values for one year being orders of magnitude off from all other years, etc.) We made corrections based on logic and some telephone calls to loan servicers.

We deleted all case years for which major problems could not be corrected and all properties for which no useable case years remained. Table A4-2 shows, for our sample of 477 properties, the number of years of useable financial data that was available; over 60 percent have five good years and over 80 percent at least four.

A4-2: Number of Years of Useable Financial Data for Study Sample

	<u>Number of Properties</u>	<u>Percent</u>
5 Years	287	60
4 Years	108	23
3 Years	39	8
2 Years	30	6
1 Year	13	3

The most important financial indicator used in this study is average annual residual cash per unit. We computed this cashflow measure for each property as follows:

1. For each year we subtracted from total income, expenses for administration, operations, utilities, and taxes and insurance (all from OLMS). The result is net operating income.

A4-1: SAMPLE OLMS REPORT FOR ONE PROPERTY

R18EAXA
236 DEEP SUBSIDY

INCOME AND EXPENSE ANALYSIS FOR PROJECT

HUD FORM 92558
06/12/86

PROJ NAME -	LAND VALUE -	\$276,600	PROJ TYPE - WU	HUD HELD - N	SECT8 UNITS -	118
PROJ ADDR -	REPLMNT COST -	\$5,297,429	CONST TYPE - M	RS/SECT8 - S	RS UNITS -	0
BALTIMORE, MD 21217	GROUND RENT -	\$0	ELEVATORS - N	P B E - Y	EFFCY UNITS -	0
PROJ CNTY - BALTIMORE CITY	AMNT EQUITY -	\$529,829	# STORIES - 4		1BDRM UNITS -	0
PROJ SUFFIX -	MAX DISTRIB -	\$31,790	HEAT - IG		2BDRM UNITS -	48
CONST COMPL - 12/24/1974	RESVR/REPLMNT -	\$20,103	A/C - IG		3BDRM UNITS -	102
	MORTGAGE AMNT -	\$4,767,600			4BDRM UNITS -	52
	DEBT SERVICE -	\$144,662			TOT BDRM UNITS -	202

	1982 DATA (12 MOS)		1983 DATA (12 MOS)		
	AMNT	UNIT	AMNT	UNIT	
INCOME & OCCUPANCY DATA					
1	APARTMENT RENT	616,495	254.33	684,966	282.58
2	RENT SUPPLEMENT	0	0.00	0	0.00
3	OTHER INCOME	162,660	67.10	152,660	62.98
4	TOTAL ACTUAL INCOME	779,155	321.43	837,626	345.56
5	POTENTIAL RENT @ 100%	648,441	267.51	722,480	298.05
A 6	AVERAGE OCCUPANCY (%)	95.07		94.81	
ADMINISTRATIVE EXPENSES					
7	RENTAL EXPENSES	2,225	0.92	2,195	0.91
8	OFFICE EXPENSES	33,694	13.90	35,041	14.46
9	MANAGEMENT FEES	40,791	16.83	30,511	12.59
	% OF TOTAL INCOME	5.24		3.64	
10	SALARIES, RESIDENT MANAGER	21,270	8.77	17,963	7.41
11	LEGAL	4,067	1.68	1,481	0.61
12	AUDITING	3,100	1.28	3,960	1.63
13	TELEPHONE	5,102	2.10	4,998	2.06
14	MISCELLANEOUS	51,756	21.35	52,707	21.74
15	ADMINISTRATIVE TOTAL	162,005	66.83	148,856	61.41
	% CHANGE			8.12-	
B 16	ADMIN. EXPENSE RATIO (%)	20.79		17.77	
OPERATING EXPENSES					
17	ELEVATOR	0	0.00	0	0.00
18	JANITOR & CLEANING	3,362	1.39	7,924	3.27
19	VEHICLE	256	0.11	900	0.37
20	EXTERMINATING	3,324	1.37	6,978	2.88
21	GARBAGE REMOVAL	16,550	6.83	18,576	7.66
22	SECURITY	10,035	4.14	1,411	0.58
23	GROUPS	1,591	0.66	3,453	1.42
24	ROUTINE REPAIR	117,630	48.53	144,684	59.69
25	EXTRAORDINARY REPAIR	0	0.00	0	0.00
26	DECORATING	15,282	6.30	22,563	9.31
27	SERVICE EXPENSE	0	0.00	0	0.00
28	MISCELLANEOUS	3,744	1.54	3,068	1.27
29	OPERATING & MAINT TOTAL	171,774	70.86	209,557	86.45
	% CHANGE			22.00	
C 30	OPERATING & MAINT RATIO (%)	22.05		25.02	
UTILITIES EXPENSES					
31	HEATING FUEL	0	0.00	0	0.00
32	ELECTRICITY	158,320	65.31	16,112	6.65

A4-1: SAMPLE OLMS REPORT
(continued -2)

	33	WATER	42,651	17.60	36,817	15.19
	34	GAS	0	0.00	169,722	70.02
	35	UTILITY TOTAL	200,971	82.91	222,651	91.85
		% CHANGE			10.79	
D	36	UTILITIES RATIO (%)	25.79		26.58	
TAXES & INSURANCE						
	37	TAXES - REAL ESTATE	71,469	29.48	71,382	29.45
		% CHANGE			0.12-	
	38	TAXES - OTHER	13,762	5.68	21,407	8.83
	39	INSURANCE	20,236	8.35	15,081	6.22
		% CHANGE			25.47-	
	40	TAXES & INSURANCE TOTAL	105,467	43.51	107,870	44.50
E	41	TAXES RATIO (%)	10.94		11.08	
F	42	INSURANCE RATIO (%)	2.60		1.80	
	43	TOTAL OPERATING EXPENSE	640,217	264.12	688,934	284.21
		% CHANGE			7.61	
G	44	OPERATING EXPENSE RATIO (%)	82.17		82.25	
	45	NET OPERATING INCOME	138,938	57.32	148,692	61.34
FINANCIAL EXPENSES						
	46	AMORTIZATION OF MORTGAGE	33,601	13.86	36,031	14.86
	47	INTEREST ON MORTGAGE	96,070	39.63	93,190	38.44
	48	INTEREST ON NOTES PAYABLE	3,810	1.57	4,159	1.72
	49	MORTGAGE INS. PREMIUM	13,449	5.55	23,161	9.55
	50	RESERVE FOR REPLACEMENT	86,632	35.74	24,088	9.94
	51	TOTAL FINANCIAL EXPENSE	233,562	96.35	180,629	74.52
		% CHANGE			22.66-	
H	52	FINANCIAL EXPENSE RATIO (%)	29.98		21.56	
	53	TOTAL CASH REQUIREMENT	873,779	360.47	869,563	358.73
		% CHANGE			0.48-	
I	54	EXPENSE/INCOME RATIO (%)	10.83-		3.67-	
	55	NET CASH THROWOFF	94,624-	39.04-	31,937-	13.18-

PERFORMANCE INDICATORS

FLAG SECTION

- A OCCUPANCY
- B ADMIN EXP RATIO
- C OPNG & MAINT RATIO
- D UTILITIES RATIO
- E TAXES RATIO
- F INSURANCE RATIO
- G OPERATING EXPENSE
- H FINANCIAL EXPENSE
- I EXPENSE/INCOME

PROJECT RATING

ACTION REQUIRED:

REMARKS:

1982 6390 INCLUDES QTRS ALLOW OF \$30348 6590 INCLUDES GLASS
1983 5190 EXCESS RENT

REPAIRS

6390 INCLDS QTRS ALLOW OF \$18328

2. From net operating income, we subtracted required mortgage debt service and insurance premium, and interest on notes payable, if any. This yielded annual residual cash. Required debt service was either taken from OLMS or computed based on the original mortgage amount, interest rate and term, and whether the mortgage interest rate is subsidized. Note that annual residual cash differs from the OLMS indicator "net cash throwoff" in that OLMS subtracts from net operating income actual payments for mortgage debt service (which in any year may be more or less than the required amount), interest on notes payable, and net contributions to the reserve-for-replacement account.
3. We inflated each year's residual cash to 1985 dollars using the following CPI indices:

1980	246.80
1981	272.40
1982	288.63
1983	297.42
1984	310.42
1985	324.60

4. We averaged all available years' annual residual cash and divided by the number of units in the property.

Table IV-1 shows the distribution of average annual residual cash for the study sample.

We believe that average annual residual cash is the best available estimate of property's cashflow position. We found that while for each year 1980 to 1984 the distribution of residual cash over all properties was stable, for any given properties', residual cash fluctuated from year to year. Therefore, it appeared that averaging out these fluctuations would provide the best estimate of properties' longer term cash position.

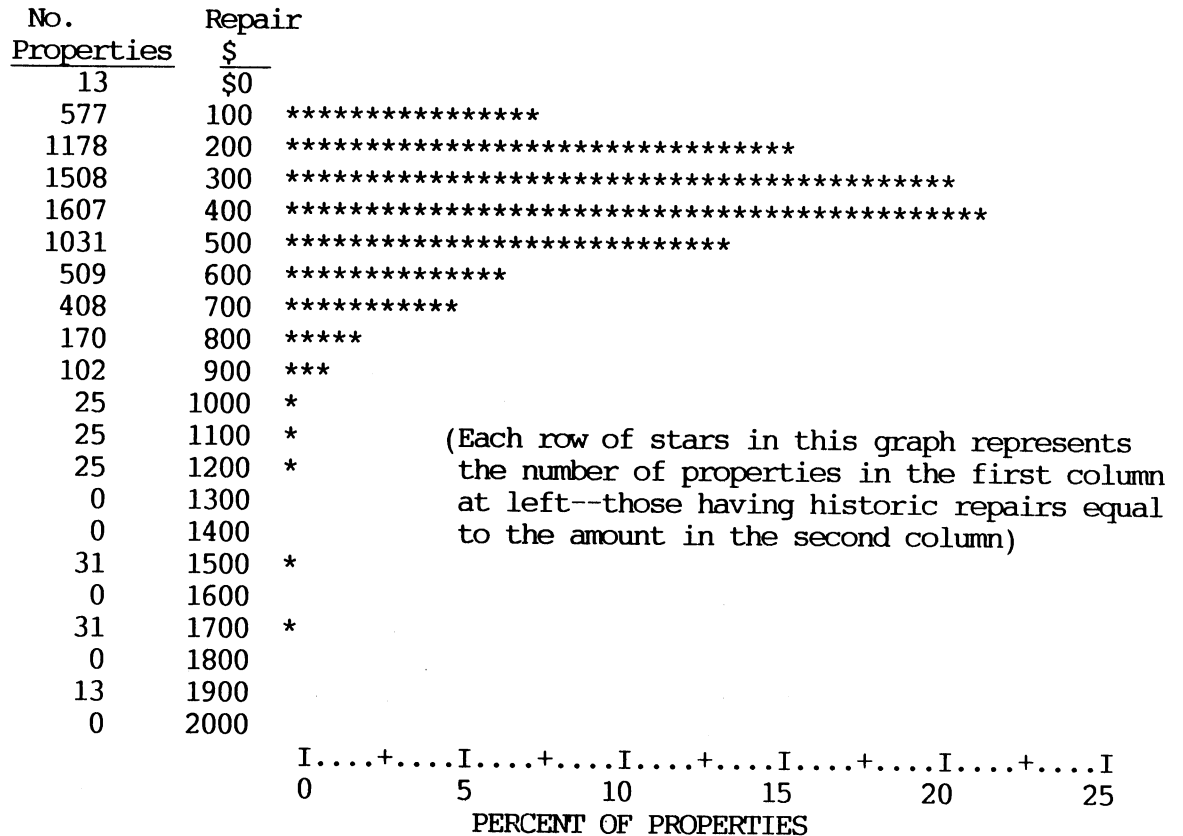
Another important financial indicator used in Chapters III and V of this study is historic repairs paid for (expensed) from operating income. In Chapter III this amount was added to average reserve draws (to estimate historic repair and replacement expenditures) while in Chapter V it was used in computing properties' five year resource gaps. Repairs from operating income was computed for each property by:

1. For each year, summing operating expenses for routine repairs, extraordinary repairs, and decorating.
2. Inflating to 1985 dollars using the CPI figures listed above.
3. Averaging over available years and dividing by the number of units in the property.

Table A4-3 shows the distribution of this variable over all properties. As was noted in the body of this report, this figure provides an estimate, based on historic data, of each property's expenses from income for repairs. While this figure is dominated by expenses for routine repairs, for many properties, some portion is for nonroutine repairs and accumulated back maintenance. The larger the expenditure, the more likely it includes nonroutine expenses.

A4-3: HISTORIC REPAIRS FROM INCOME*
(In 1985 Dollars)

MEAN = \$413 MEDIAN = \$367

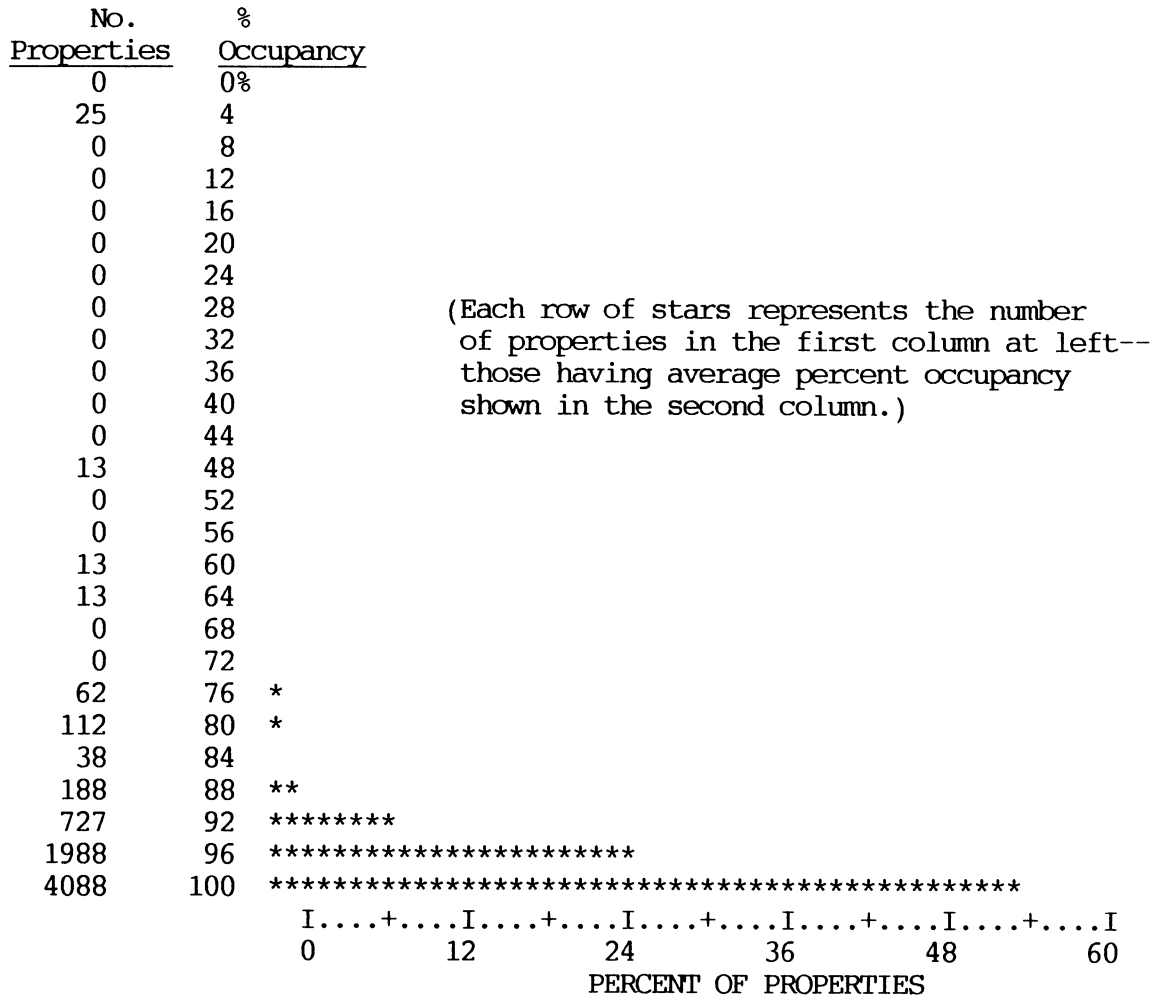


* HUD/FHA-insured and HUD-held multifamily rental housing insured before 1975, excluding Sections 608 and 803, HUD-acquired properties, uninsured Sections 202 and 236, cooperatives, condominiums, and nursing homes. Based on data collected in 1985 on representative sample of properties.

Another indicator derived from OLMS is average annual occupancy. For each year, OLMS includes percent occupancy computed by dividing actual rental income by the maximum potential rent. We averaged this statistic over all available years. Table A4-4 shows the distribution of average annual occupancy over the study sample.

A4-4: AVERAGE ANNUAL OCCUPANCY, 1980 TO 1984*
(In 1985 Dollars)

MEAN = \$96 MEDIAN = \$98



* HUD/FHA-insured and HUD-held multifamily rental housing insured before 1975, excluding Sections 608 and 803, HUD-acquired properties, uninsured Sections 202 and 236, cooperatives, condominiums, and nursing homes. Based on data collected in 1985 on a representative sample of properties.

A5: EXPIRATION OF LMSA CONTRACTS AND MORTGAGE PREPAYMENT RESTRICTIONS

The Administration, Congress, and interest groups have been discussing two key factors that will affect the assisted HUD/FHA-insured multifamily rental stock: (1) expiration of Section 8 rental assistance contracts, and (2) expiration of restrictions on owners' prepaying mortgages that are insured under certain programs. This appendix presents preliminary data on the groups of properties in the older inventory (mortgage insurance endorsement prior to 1975) that could potentially be affected by these changes.

A. EXPIRATION OF LMSA CONTRACTS

Section 8 LMSA obligations, which generally had 15 year terms, will begin to expire in the late 1980s and early 1990s. HUD and Congress are examining the implications of these expirations, and are discussing various options to continue assistance to tenants where needed. Table A5-1 presents estimates of expirations by year.

LMSA obligations for 5,100 units (less than 2 percent of the units covered by LMSA) will expire in 1988 and 1989. These are 5 year remedial LMSA contracts (not conversions from Rent Supplement) that were initiated in 1983 and 1984. Most other LMSA obligations will begin to expire in 1991, 15 years after the beginning of the program.¹ In that year nearly 95,000 units will lose LMSA rental assistance, unless the program is extended. Obligations on 47 percent of the LMSA units will expire between 1991 and 1995, and the remaining 51 percent by the year 2000.

The impact of these expirations on a property will depend on its financial condition, strength and nature of local rental markets, competitive strength of the property within its market, and the nature of any action Congress may take to replace LMSA.

B. EXPIRATION OF PREPAYMENT RESTRICTIONS

Prepayment restrictions on FHA-insured mortgages prevent owners from converting properties from low- and moderate-income occupancy to other uses. In strong market areas, owners of HUD-insured and assisted properties may want to convert their properties to market-rate rentals or condominiums for increased profits. Many properties will reach the end of their prepayment restrictions between 1986 and 1995.

¹ Actually, owners were usually given 5-year contracts with two possible renewals at their option, and in this analysis we have assumed that owners will always renew. Since 1983, however, HUD provided 5-year contracts without guaranteed renewals, except for conversions from Rent Supplement, which had the normal renewal options.

A5-1: HOUSING UNITS BY YEAR OF EXPIRATION OF SECTION 8 LOAN MANAGEMENT
 SET-ASIDE OBLIGATIONS*
 (AS OF 1985)

<u>Year</u>	<u>Number of Units (000s)</u>	<u>Percentage of Total Units With LMSA</u>
1988	2.2	0.8%
1989	2.9	1.0
1990	0.0	0.0
1986-1990	5.1	1.8%
1991	94.7	33.3
1992	16.3	5.7
1993	15.2	5.3
1994	5.4	1.9
1995	2.6	0.9
1991-1995	134.2	47.1
1996	13.0	4.6
1997	55.1	19.4
1998	55.8	19.6
1999	16.2	5.7
2000	5.1	1.8
1996-2000	<u>145.2</u>	<u>51.1</u>
Total	284.5	100.0%

* HUD/FHA-insured and HUD-held multifamily rental housing insured before 1975, excluding Sections 608 and 803, HUD-acquired properties, uninsured Sections 202 and 236, cooperatives, condominiums, and nursing homes. Based on data collected in 1985 on representative sample of properties.

HUD may restrict owners from prepaying certain mortgages for either 20 years or, for certain owners and mortgages, for the full 40-year mortgage term. Specifically, prepayment restrictions operate according to the following rules:

- o For mortgages insured under Sections 236 or 221(d)(3) (including both market rate and below market rate):

- a. If the current owner (mortgagor) or any former owner was a nonprofit organization, the mortgage cannot be prepaid without HUD approval. (Section 250 of the Act, which requires that HUD maintain the low-income character of formerly assisted properties, makes it very difficult for the Secretary to approve prepayment.)

- b. If the property currently has Rent Supplement, the mortgage cannot be prepaid without HUD approval.

- c. If neither of the above conditions apply, the owner can prepay at the beginning of the 21st year of the mortgage without obtaining HUD approval.

- o If a property has ever had Flexible Subsidy, the property must be used for low- and moderate-income housing for the life of the original mortgage, even if the mortgage is prepaid. Therefore it is unlikely that the mortgage will be prepaid.

- o Under all other sections of the Act, the owner generally can prepay at any time.

A large number of properties will be eligible for prepayment between 1991 and 1995 when the great bulk of Section 236 mortgages reach their 20th birthdays. Table A5-2, shows the potential for prepayment of older mortgages. By 1995, up to nearly 60 percent of the assisted properties in the older inventory (containing nearly 332,000 units) could prepay. The extent to which this will occur depends on several factors, such as the market value of properties, the tax code, the continued availability of HUD rental assistance, and the goals of the owner.

Properties receiving Section 8 LMSA will not, in general, prepay mortgages prior to the next contract renewal date. This is because owners would be obligated to maintain low-income occupancy for this period for all units that were receiving Section 8. We conducted an additional analysis, assuming properties receiving LMSA would not prepay prior to the next LMSA contract renewal date or dates. This had virtually no effect on the results for Sections 236 and 221(d)(3). It did, however, add to the prepayment list approximately 105 properties that were insured under other sections of the Act but were receiving LMSA. These properties contained 14,900 units and would be able to prepay during the 1986-1990 period. We should emphasize that, strictly speaking, receipt of Section 8 does not affect prepayment restrictions.

A5-2: NUMBER OF PROPERTIES AND UNITS BY EARLIEST POSSIBLE YEAR OF PREPAYMENT OF MORTGAGE*

	<u>Number of Properties</u>	<u>Number** of Units</u>	<u>% of All Units In All Older 236 & 221(d)(3) Properties</u>	<u>% of All Older Assisted Properties</u>
Prior to 1986	63	4,697	0.8%	1.2%
1986 - 1990	746	80,147	14.0	14.3
1991 - 1995	<u>2,278</u>	<u>246,861</u>	<u>43.1</u>	<u>43.8</u>
Total	3,087	331,705	57.9%	59.3%

* This table is based on analysis of sampled properties insured under Sections 236, 221(d)(3)Market and 221(d)(3)BMIR prior to 1975. Includes assumption that properties having received Flexible Subsidy will not prepay. If a property can prepay, eligibility begins in the 21st year after final endorsement. The newest properties in the study were insured in 1974. Therefore, 1974 plus 21 equals 1995, the last year in which the prepayment opportunity would begin, for properties in this study.

** Total units (assisted and unassisted) in properties eligible for prepayment.

HUD-1091-PDR
May 1987

