
Housing Rehabilitation and American Cities

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This article presents an overview of the topic of housing rehabilitation and American cities. It is intended for further discussion at the U.S. Department of Housing and Urban Development's (HUD's) conference Housing Policy in the New Millennium. This topic is particularly appropriate to the conference and session because (1) rehabilitation of the existing housing stock is a critical activity in urban locations; (2) there are significant barriers to such renovation in cities, and (3) progress is being made to address the many barriers.

The article begins with a description of the overall magnitude of housing rehabilitation (hereinafter "rehab" or "renovation") in the United States and the extent of this activity in cities. Next, it overviews the many barriers to affordable housing rehab. A primary obstacle is financial, that is, a shortfall in the ability of property owners/tenants to pay for renovations. To better understand that gap, the paper presents a reconnaissance analysis of rehab need, cost, and affordability; pilot research shows that there is an especially critical rehab affordability gap in cities. The paper also provides an overview of development and construction barriers to renovation (for example, difficulties in acquiring properties and in satisfying antiquated building codes), which again are often more problematical in urban areas. We note as well the yeoman efforts being made to address the numerous hurdles to rehab. Our discussion concludes with a synopsis of research and policy considerations that could help further affordable urban housing renovation.

Background

Compared with housing in other developed countries, the housing stock in the United States is relatively young. According to the *1997 American Housing Survey* (AHS; released in 1999), the median age of all housing units in America is only 32 years. Nonetheless, there is much aging housing in this country. Although there is popular awareness of the "graying" of America's population, especially its baby boomer cohort, there is less appreciation of the aging of the country's housing. According to the 1997 AHS, approximately one-quarter (27 percent) of the 112.3 million housing units in the United States is a half century or older, an age at which

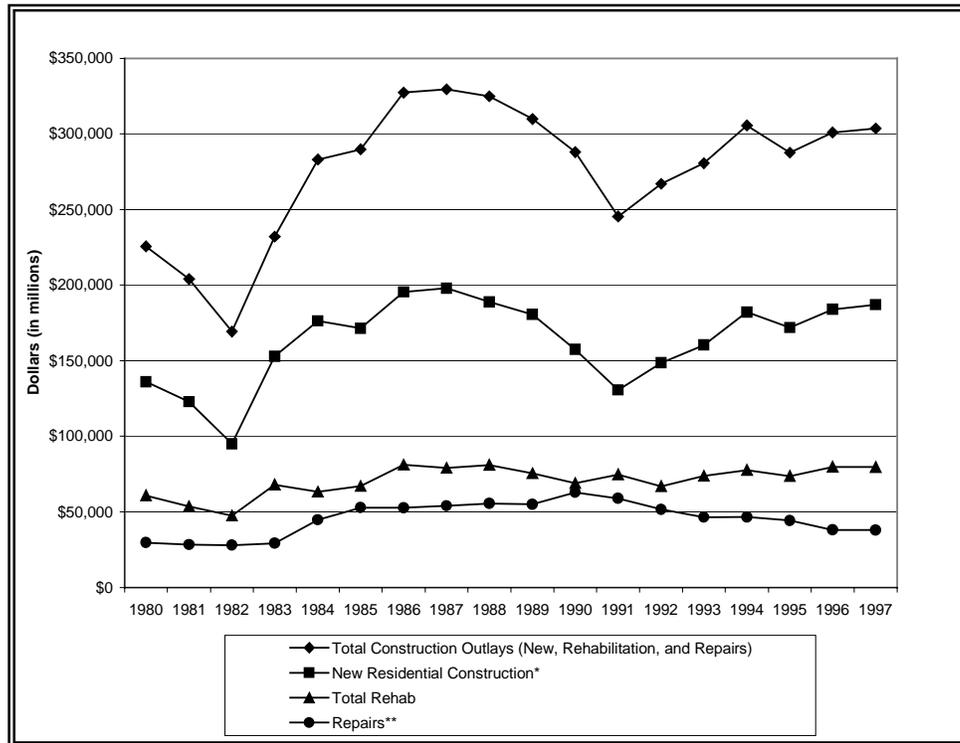
major rehab of expensive systems and building components (such as kitchen and bathrooms) is often needed.

Not surprisingly, America's central cities are home to the Nation's oldest housing stock. According to the 1997 AHS, approximately two-fifths (39 percent) of the 34.1 million central-city housing units are at least half a century old. By comparison, somewhat less than one-fifth (18 percent) of the 51.4 million suburban housing units are 50 years or older, and approximately one-quarter (26 percent) of the 26.9 million housing units outside of metropolitan statistical areas (MSAs) were built more than a half-century ago.

Another way of considering the age of the stock is to identify the median year of construction as reported in the 1997 AHS. For all housing units, the median year of construction was 1967. For housing units in central cities, suburbs, and outside MSAs, the median years of construction were 1958, 1972, and 1968, respectively. In other words, as of 2000, the median housing unit in central cities is "40-something"; everywhere else it is "30-something." Although some housing is lost to demolition or other causes, for the most part a housing unit, unlike a person, does not inevitably "die." What that means is that in roughly a decade or two, much of America's housing stock will be in advanced middle age, and central-city housing will be geriatric.

Given the general aging of the housing stock, it is not surprising that there are considerable outlays for residential rehab, although that investment pales in comparison to the amount spent for new construction. Figure 1 shows the value of residential construction in the United States from 1980 to 1997 in 1997 constant dollars. In 1997, the aggregate value of new construction, rehab (additions, alterations, and major replacements), and repairs was \$304 billion. Of that total, new residential construction amounted to \$187 billion (62 percent); rehab, \$80 billion (26 percent); and repairs, \$37 billion (12 percent). Of note in figure 1 is the cyclical nature of overall construction (such as downturns in the early 1980s and early 1990s), which is mainly driven by the up-and-down cycle of new construction. Rehab is a much steadier investment; for much of the 1980–1997 period, it comprised approximately one-quarter of all residential construction.

Figure 1. Value of U.S. Residential Construction 1980–1997 (1997 Dollars)



Source: U.S. Department of Commerce, Census Bureau

Given the characteristic “graying” of central-city housing, it is not surprising that rehab is an even more significant component of residential construction in most cities. To explore that point more fully, we accessed 1990–1994 construction data for 20 metropolitan areas from the *State of the Nation’s Cities* (SNC) database. Our 20 sample areas are mainly representative of the Nation’s largest and oldest MSAs (such as New York, New York; Chicago, Illinois; Boston, Massachusetts; and Los Angeles, California) but also include a sprinkling of newer, rapidly growing sunbelt locations such as Las Vegas, Nevada.¹ The SNC data indicates just how important renovation is in the central cities’ residential construction. On average, almost two-fifths (38 percent) of the value of central-city residential construction in the 20 MSAs during 1990–1994 consisted of rehab. That compares with one-seventh (15 percent) rehab incidence of total residential investment in the suburbs of the 20 metropolitan locations. Rehab was particularly significant in certain cities; it comprised almost 80 percent of the total value of central-city residential construction in St. Louis and 50 to 60 percent in Baltimore, Cleveland, Detroit, Philadelphia, San Francisco, and Washington, DC. In stark contrast were a handful of outliers, such as Las Vegas,

where only 1 percent of the value of central-city residential construction consisted of renovation.

Incidentally, the metropolitan-level data discussed above can no longer be monitored. We relied on the Census Bureau's C-40 (building permit) Survey, which, until 1995, tracked rehab at the metropolitan level. The current C-40 series no longer monitors rehab² at all (it just reports on new construction), and although rehab is covered by the Census Bureau's C-30 (value of construction put in place) and C-50 (residential improvements) series, the C-30 and C-50 data have numerous limitations. For instance, the C-30 information is not differentiated by metropolitan area or minor civil division, and C-50 information is not available below the national and regional levels.

State- (and other government- or entity-) assembled rehab information provides a useful supplement to federally collected data. The State of New Jersey, for instance, keeps central records of the building permits from all its 567 municipalities. We can determine from that file the incidence of renovation in four categories of New Jersey communities: cities, mature (or inner-ring) suburbs, developing (or outer-ring) suburbs, and rural. There is a preponderance of rehab in New Jersey's cities and mature suburbs. Almost three-quarters (72 percent) of all residential and nonresidential construction in New Jersey cities as of the mid-1990s consisted of renovation. That rehab share is lower for older suburbs but remains a very high 57 percent of all residential and nonresidential investment. By contrast, in rural New Jersey communities, new construction dominates (the rehab share is only 19 percent), and rehab comprises approximately one-third (35 percent) of the value of residential and nonresidential investment in developing suburbs.

Table 1. New Jersey Total Residential and Nonresidential Construction and Rehab Share (1994)

Community Type	Total Construction (\$ in millions)			Percentage Rehab
	New	Rehab	Total	
Cities	159	404	563	72
Mature suburb	320	423	743	57
Developing suburb	2,052	1,108	3,160	35
Rural	4194	45	239	19
All	2,725	1,980	4,705	42

A similar pattern of cities and mature suburbs stressing rehab is observed if residential construction alone is examined.

Table 2. New Jersey Total Residential Construction and Rehab Share (1994)

Community Type	Residential Construction (\$ in millions)			Percentage Rehab
	New	Rehab	Total	
Cities	39	108	147	74
Mature suburb	193	208	401	52
Developing suburb	1,482	385	1,867	21
Rural	162	24	186	13
All	1,876	724	2,560	28

Other State and local data can further our understanding of rehab. For example, in another study we examined listings of properties on Federal, State, and local historic registers (such as National Register of Historic Places) as well as local building permits to determine how much of New Jersey's rehab was occurring in historic (that is, designated on register) properties. As is shown in table 3, almost one-tenth of all renovation in New Jersey's cities and older suburbs was effected on designated historic properties—approximately double the 4 percent incidence found in developing suburbs and rural communities.

Table 3. New Jersey Total Residential and Nonresidential Rehab and Historic Rehab Share (1994)

Community Type	Rehab (\$ in millions)		Historic Rehab Percentage
	All	Historic	
Cities	404	38	9
Mature suburbs	423	38	9
Developing suburbs	1,108	45	4
Rural	45	2	5
TOTAL	1,980	123	6

Historic rehab was found to have a noticeable presence in a number of Texas cities we recently studied (see table 4). That investigation also capitalized on available State and local data, namely local building permits and historic register listings.

Table 4. Historic Rehab in Cities in Texas

City	Historic Rehab as Percentage of All* Rehab (1994–97)
Abilene	14
Dallas	4
Ft. Worth	9
Grapevine	21
Laredo	5
San Antonio	8
San Marcus	6

**Residential and nonresidential*

Although we can utilize State and local information to glean a profile of rehab, there are, all told, severe data concerns with respect to this endeavor. We noted some of these limitations earlier, such as the retrenchment in the coverage of the C–40 series and drawbacks with the C–30 and C–50 series. An even more fundamental limitation is that the available data focuses on rehab’s monetary magnitude (such as the C–30’s value of construction put in place and the C–40’s permit value), not rehab’s housing import. The available renovation information does not inform whether a deteriorated housing unit has been “saved” or a new housing unit “produced” through adaptive reuse or other means (that is, industrial space converted to residential lofts). New construction data records the number of units “started,” but no such comparable data is available when it comes to renovation. As we shall see shortly, data limitations impact other aspects of researching rehab, such as analyzing its need, cost, and affordability.

Barriers to Affordable Housing Rehab

Renovation is often done in the face of daunting barriers. Table 4 outlines the obstacles to affordable housing rehab. The inherent rehab and new construction underlie many difficulties of the former. For instance, renovation typically does not “start from scratch,” and it generally involves much more customization. These characteristics make rehab less predictable than new construction and requires more intensive administration if it is to be effected appropriately.

These traits contribute to many subsequent constraints. Rehab’s customization and greater administrative demands drive up costs. Higher expenses aggravate an overarching financial barrier, namely, that a gap often exists between the costs of reno-

vation and the financial resources available to property owners and/or tenants of buildings requiring rehab.

Financial constraints, in turn, create barriers along the continuum of practical actions required to effect rehab. We show these barriers in table 4, labeled “development,” “construction,” and “occupancy.” “Development” encompasses all the activities before construction can begin, including acquiring properties, estimating costs, and securing insurance and financing. With these actions completed, construction can commence. At this phase the major concerns are assembling qualified tradespersons and abiding by the myriad codes and regulations (such as building, housing, and environmental) governing the “bricks and mortar” work on a property. Following construction, the rehabbed property may be subject to numerous occupancy considerations, such as rent control (that is, to what extent rents on the renovated property can be raised) and property taxes (that is, to what extent taxes on the rehabbed property will be raised).

Table 4. Barriers to Affordable Housing Rehabilitation: Analytic Framework

<p>I. Overall Rehabilitation Characteristics</p> <p>Frame the process and underpin many of the barriers</p> <p>Compared to new construction, rehabilitation often is:</p> <ol style="list-style-type: none"> 1. Nonstandard. 2. Less predictable. 3. Smaller scale/less professionalized. <p>and has</p> <ol style="list-style-type: none"> 4 More stakeholders. 5. Multiple goals. 6. More administration.
<p>II. Financial Constraints</p> <p>Are a key barrier affecting all stages of the rehabilitation process</p> <p>The gap between the costs of rehab and the available financial resources of property owners/tenants impedes rehab investment and aggravates development/construction/occupancy issues.</p>
<p style="text-align: center;">III. Specific Barriers Along the Continuum of Rehabilitation Stages</p> <p>A. Development</p> <ol style="list-style-type: none"> 1. Acquiring Properties—difficulty obtaining sufficient and appropriately located properties. 2. Estimating Costs—difficulty estimating precise rehab expenses. 3. Obtaining Insurance—difficulty obtaining various forms of insurance (e.g., hazard and bonding). 4. Obtaining Financing—difficulty obtaining sufficiently leveraged, affordable financing. 5. Land-Use Restrictions—(disallowing change or intensification of use). 6. Other—(higher soft costs). <p>B. Construction</p> <ol style="list-style-type: none"> 1. Codes/Regulations—building, fire, energy efficiency, seismic, historic, and access regulations are sometimes excessive and problematic in retrofit situations. 2. Environmental Regulations—concerning lead, asbestos, air quality, radon, termite, and pest damage are sometimes problematic in retrofit situations. 3. Trades—difficulty obtaining qualified tradespersons. 4. Other—(technology, security, Davis-Bacon issues). <p>C. Occupancy</p> <ol style="list-style-type: none"> 1. Rent Control—restricts income necessary to meet rehab outlays. 2. Property Tax Increases—following rehab discourages investment. 3. Other—(higher reserves with rehab LIHTC).

The barriers displayed in table 4 are interrelated and often reinforcing. “Excessive” building codes raise costs—which widens the financial gap—and “unclear” building codes make it harder to estimate costs, thus often limiting available contractors. By reducing market competition, a small contractor pool can lead to increased construction costs, which again aggravates the financial gap. The financial gap, in turn, magnifies the import of many of the barriers encountered in effecting affordable rehab. We would care less about delays, excessive codes, rising property taxes, and other issues were the margins in doing affordable housing renovation less critical than they are.

The barriers shown in table 4 have an impact on all affordable housing renovation, not just that in urban locations. In practice, however, many of these barriers are most pronounced when doing rehab in cities. We provide some illustrative examples below.

Financial Constraints in Effecting Affordable Housing Rehab

It is extraordinarily difficult to quantify an exact financial gap when discussing renovation. To do so requires a quantification of the rehab “need” and available housing data from the decennial census and/or AHS, which does not readily lend itself to that purpose. Even if “need” could be quantified (that is, specifying the type, location, and number of housing units requiring different levels of renovation), we would have to estimate the costs of the required rehab—again, a very difficult process. Finally, we have to relate the renovation expense to the available financial resources.

With assistance from The Enterprise Foundation, the Rutgers University Center for Urban Policy Research (CUPR) has conducted a pilot investigation of national rehab need, costs, and affordability. The analysis, based on the AHS and other sources, employs the following steps.

1. From the housing literature, we posit multiple possible rehab interventions, ranging from the least extensive, labeled “repair,” to the most extensive, labeled “gut rehab,” including a midrange strategy labeled “moderate rehab.” Not every housing unit needs repair, moderate rehab, or gut rehab; in that instance, inaction, which we label “no (rehab) intervention,” is warranted.
2. The next step is to estimate which renovation strategy (repair, moderate rehab, gut rehab, or no intervention) is appropriate for each occupied housing unit in the AHS. The most accurate way of accomplishing that is for an expert to examine the exterior and interior conditions of a housing unit and to spec-

ify what needs to be remediated. Because onsite investigation is costly, time-consuming, and subject to error,³ and in any event is not practical in our national investigation, we instead turn to a proxy of that process by referring to the best and most current available data on housing quality, namely that contained in the AHS.

3. The AHS includes many descriptors of housing quality. An example is a housing unit having “severe” or “moderate” physical problems. For example, a “severe” electrical problem is indicated by a particularly incapacitating condition, such as a unit having no electricity or a multitude of electrical-related “failures” (such as three blown fuses in the past 90 days) or electrical-related “deficiencies” (such as exposed wiring). There is no obvious empirical relationship between these various AHS housing descriptors and the need for rehab (or, for that matter, what the renovation will cost). Nonetheless, the AHS data can be tapped to suggest on an order-of-magnitude basis whether a housing unit “requires” rehab, and, if so, to what extent.
4. CUPR assigns one of the four rehab strategies to each occupied housing unit in the AHS according to the AHS’s overall and individual item descriptors of housing condition, as shown below. The sorting strategy was developed jointly by CUPR and The Enterprise Foundation.

Table 5. AHS’s Overall and Individual Item Descriptors of Housing Condition

Rehab Strategy	Indicated by	AHS Housing Unit Condition
“Gut Rehab”		“Severe physical problems” <i>or</i> at least <i>four</i> individual housing unit “failures” or “deficiencies” ^a
“Moderate Rehab”		“Moderate physical problems” <i>or three</i> individual housing unit “failures” or “deficiencies”
“Repair”		“Severe” or “moderate” physical problems <i>not</i> indicated <i>but</i> presence of one to two individual housing unit “failures” or “deficiencies”*
“No (Rehab) Intervention”		<i>None</i> of the above AHS housing unit conditions

^aThere are many such AHS descriptors. With the assistance of The Enterprise Foundation, we selected what were deemed more critical conditions. These include “breakdown in past 3 months” of water supply/sewage disposal, “fuses or breakers blown in past 3 months,” “uncomfortably cold for 24 hours or more last winter,” “water leakage from inside/outside structure during past 12 months,” and selected “deficiencies”—“signs of rats in past 3 months,” “holes in floors,” “open cracks or holes (interior),” “broken plaster or peeling paint (interior),” “no electrical wiring,” “exposed wiring,” and “rooms without electric outlets.” Some of these conditions overlap, whereas others differ from the individual failures and deficiencies that define severe and moderate physical problems in the AHS.

5. As a final step, we determine whether the rehab is affordable. As was the case in flagging the renovation intervention, we can do this in an approximate fashion only. We begin by relating the current (“prerehab”) relationship of monthly housing cost to income for all occupied units in the AHS. Once a housing unit is repaired or has moderate or gut rehab, its monthly cost will increase, and we try to estimate this “postrehab” housing expenditure. The latter is then related to the income available to the occupants of the housing units requiring renovation. We accomplish the costing and affordability analysis in steps 6 through 11 below.
6. The Enterprise Foundation estimates that, on a national basis, the costs of effecting the various levels of rehab are as follows:

Table 6. Costs of Effective Rehab

Rehab Strategy	Cost Per Housing Unit (\$)
Repair	7,500
Moderate rehab	25,000
Gut rehab	75,000

7. We adjust the three renovation intervention costs by Marshall and Swift’s (1999) geographic cost indexes linked to the four AHS regions (Northeast, Midwest, South, and West). Thus a moderate rehab might cost \$30,000 in the Northeast versus \$20,000 in the South.
8. The various renovation expenditures are likely financed over time, paid outright. Financing terms typically vary by the extent of the outlay (that is, longer repayment period for higher costs) and whether or not the improvement is made by a homeowner or an investor (that is, homeowners pay less). In consultation with Enterprise, we develop a variable financing matrix,⁴ from which we assign a principal and interest (PI) cost sufficient to pay for the rehab. This PI is added to the current (prerehab) housing cost indicated for each occupied housing unit in the AHS.
9. Other adjustments are made to the current housing costs. Following renovation, the value of the housing unit is likely to increase, and, as a result, so will property taxes (T). T will typically increase according to the property tax rate found in the AHS for each housing unit. For example, a \$75,000 gut rehab will add \$750 in annual property taxes (or \$62.50 monthly) if the AHS indicated a property tax rate of \$100 per \$1,000 of value. The \$62.50 would be added to the current (prerehab) housing cost.

In contrast, by making a housing unit more efficient, renovation would likely lower costs for utilities (U). We are interested in U because the monthly housing cost indicated in the AHS includes expenditures for electricity, piped gas, and/or fuel oil. We do not know exactly how rehab affects utility outlays, as that will depend on each individual situation (such as the R-rating (energy

efficiency rating) of a home's insulation pre- versus postrehab). Thus we can only estimate the utility expense change ensuing from renovation. We do that by following the field experience of The Enterprise Foundation, whereby greater levels of energy efficiency are realized with more extensive rehab.⁵

10. The calculations in steps 5 through 9 allow a comparison of current (prerehab) housing cost to the postrehab housing expenditure. The latter changes because PI and T expenses increase and U decreases⁶ following renovation. Since PI and T far exceed U, the housing cost will increase for units undergoing improvement. In this fashion, we derive a current (prerehab) versus postrehab housing expenditure for every occupied housing unit in the United States monitored by the AHS.
11. To make the current versus postrehab housing cost comparison more meaningful, we relate these respective expenses to a percentage of the current income of the occupants of the housing units—data reported by the AHS. A “high” percentage will indicate an “unaffordable” or “excessive cost” situation.

We present preliminary results from the above sorting strategy below. Our analysis in this instance was based on the 1995 AHS.

As of 1995, there were 109 million total housing units in the United States. Our estimate of rehab need focuses on occupied housing units that are considered year-round houses or apartments in the AHS. Thus, from the 109 million total we delete 3 million seasonal units, 9 million vacant units, 8 million mobile homes, and numerous other categories (units in boarding houses and nontransient hotels). That leaves 82.2 million year-round houses or apartments.

Of these 82.2 million housing units, we estimate that 3.9 million, or approximately one in 20 (4.7 percent), require gut rehab; 8.2 million housing units, or approximately one in 10 (9.9 percent), need moderate rehab; approximately 25.1 million housing units, or approximately three in 10 (30.6 percent), can make do with repairs; and 45 million housing units, or slightly more than half (54.8 percent), require no rehab (table 7). Somewhat greater renovation need is suggested for renter- as opposed to owner-occupied units, for units occupied by minorities and the poor, for older housing units, and—by a very small margin—for central-city units.

Table 7. Estimated 1995 Rehabilitation Need by Property Profile (% of Occupied Housing Units)

	Repair	Moderate	Gut	Total Rehab Interven- tion	No Interven- tion	total
Tenure						
Renter occupied	30.4	12.3	5.6	48.2	51.8	100.0
Owner occupied	30.6	8.7	4.3	43.5	56.5	100.0
Location						
All metropolitan	30.7	9.5	4.7	44.9	55.1	100.0
Central city	31.1	11.2	5.4	47.7	52.3	100.0
Suburbs	30.4	8.3	4.2	42.9	57.1	100.0
Nonmetropolitan	29.8	11.6	5.0	46.4	53.6	100.0
Region						
Northeast	29.7	8.8	5.6	44.2	55.8	100.0
Midwest	31.8	9.7	5.3	46.8	53.2	100.0
South	29.8	11.7	4.2	45.7	54.3	100.0
West	30.9	8.3	4.1	43.4	56.6	100.0
Income status						
Very low income	28.1	12.3	6.1	46.4	53.6	100.0
Low income	28.8	10.4	4.9	44.1	55.9	100.0
Moderate income	30.2	9.7	4.8	44.6	55.4	100.0
Middle income	30.1	9.6	4.1	43.8	56.2	100.0
High income	32.6	8.6	4.1	45.3	54.7	100.0
Race						
Non-Hispanic white	30.5	8.7	4.1	43.4	56.6	100.0
Non-Hispanic black	30.0	16.1	7.9	54.0	46.0	100.0
Hispanic	31.4	13.2	5.8	50.3	49.7	100.0
Other	30.1	9.6	5.3	44.9	55.1	100.0
Age of unit						
1980–1995	29.0	5.4	2.6	36.9	63.1	100.0
1970–1979	30.6	7.6	3.9	42.0	58.0	100.0
1940–1969	30.4	10.8	5.0	46.2	53.8	100.0
1939 or earlier	32.0	14.8	7.3	54.0	46.0	100.0
All	30.5	9.9	4.7	45.2	54.8	100.0

Source: 1995 AHS

What will the indicated rehab cost be, and is it affordable? We present an illustrative analysis, which differentiates results by metropolitan location. The current (prerehab) median monthly housing costs in central cities and suburbs as reported in the 1995 AHS are \$535 and \$672, respectively. Following rehab, we estimate that the median monthly housing cost would increase to \$654 in central cities and \$767 in suburbs.

These monthly housing expenses beg the question of affordability, and that is considered in table 8, which translates housing costs into percentages of current housing unit occupant income. For the moment, we will assume that payment of 40 percent or more of income for housing is excessive or unaffordable. (We use a 40 percent cutoff rather than the traditional threshold of 30 percent⁷ because the AHS housing cost includes utility expenses, whereas “traditional” housing expense-to-income ratios do not factor utility outlays.)

Without factoring added costs for rehab, currently 6 million of the 26 million central-city housing units, or 23 percent, have excessive costs as just defined. In suburbia, a smaller share of the housing stock—17 percent—(6.6 million of 38.1 million total housing units) at present face affordability problems. Renovation adds costs and makes the affordability situation worse. Were needed repairs, moderate rehab, or gut rehab effected as needed in cities, 8.1 million central-city housing units, or 31 percent of the city housing stock, would confront an affordability problem, whereas 22 percent 8.5 million of 38.1 total suburban units would face excessive costs.

From this reconnaissance analysis, we can conclude the following:

- There are current (prerehab) housing affordability concerns.
- Affordability problems are exacerbated with the added expense of renovation.
- Although housing affordability is an issue in both cities and suburbs, the problem is magnified in cities—both before rehab is factored and, even more dramatically, after renovation need and cost are considered.

Table 8. Monthly Housing Cost (%): Current and Postrehabilitation Intervention (all occupied units by location)

Monthly Housing Cost as Percent of Current Income	All Metropolitan ^a Occupied Housing Units ^b		Central City Occupied Housing Units ^b		Suburbs Occupied Housing Units ^b		Nonmetropolitan Occupied Housing Units ^b	
	Current	Postrehab Intervention	Current	Postrehab Intervention	Current	Postrehab Intervention	Current	Postrehab Intervention
< 5	3,260,056	2,146,729	1,289,426	833,162	1,970,629	1,313,567	1,711,926	1,066,322
5–9 percent	6,808,909	5,559,184	2,461,039	1,900,539	4,347,870	3,658,645	2,670,682	2,161,791
10–14 percent	9,536,260	7,941,641	3,522,663	2,893,351	6,013,597	5,048,291	2,931,946	2,418,846
15–19 percent	9,867,940	8,842,735	3,763,556	3,246,292	6,104,384	5,596,443	2,557,124	2,420,442
20–24 percent	8,467,597	8,198,854	3,288,350	3,003,248	5,179,247	5,195,606	1,764,480	1,868,310
25–29 percent	6,449,325	6,458,465	2,569,469	2,582,529	3,879,856	3,875,936	1,240,014	1,383,950
30–34 percent	4,331,130	4,917,235	1,797,723	1,931,362	2,533,407	2,985,873	874,802	1,021,744
35–39 percent	2,810,476	3,423,028	1,229,468	1,414,018	1,581,008	2,009,010	565,089	739,648
40–49 percent	3,506,754	4,235,741	1,602,973	1,906,679	1,903,782	2,329,062	659,918	908,123
50–59 percent	1,987,328	2,660,146	932,607	1,225,018	1,054,720	1,435,128	337,984	580,841
60–69 percent	1,239,931	1,649,018	590,218	801,599	649,714	847,419	244,220	389,689
70–99 percent	1,874,406	2,767,194	934,529	1,391,710	939,877	1,375,484	324,129	550,612
100 percent or >	2,703,616	4,043,758	1,367,117	2,219,633	1,336,499	1,824,124	459,210	831,206
Zero or negative income	1,249,073	1,249,073	604,667	604,667	644,406	644,406	271,532	271,532
Total	4,092,801	64,092,801	5,953,806	25,953,806	8,138,995	8,138,995	6,613,055	16,613,055
Excessive Cost Units ^c								
Number	2,561,108	16,604,930	6,032,111	8,149,306	6,528,998	8,455,623	1,637,075	3,532,003
Percentage	20	26	23	31	17	22	10	21

^a Includes central-city and suburban portions.

^b Includes occupied housing units that are houses or apartments and for which the current and postrehabilitation monthly housing costs are available.

^c Units for which monthly housing cost is 40% or more of current income.

Source: AHS 1995

These general findings are reasonable, yet the specific figures indicated in tables 7 and 8 must be interpreted very cautiously, as the rehab need estimate is based on a qualitative application of AHS data rather than on empirical research. For instance, although it is reasonable to assume that housing units identified in the AHS as having severe physical problems will tend to need more extensive renovation, we do not know this for certain. (We return to this point later.) Also, we have only grossly estimated renovation costs. Thus our results must be viewed as only the beginning of a process to quantify rehab need, cost, and affordability. There is no question, however, that a great deal of renovation is needed and that it often is not being done because homeowners, tenants, and investors cannot afford its costs.

The remainder of this paper will focus on illustrative examples of development and construction constraints⁸ to rehab, especially as they often occur in urban locations. In parallel, we will consider how financing, development, and construction hurdles are being addressed in many American cities. In both instances, we present real-world examples of problem solving.

Development Constraints to Affordable Housing Rehab

There are numerous development barriers to affordable housing rehab. Illustrative hurdles include the following:

Table 9. Barriers to Affordable Housing Rehab

Barrier	Example Problems
Property acquisition	<ul style="list-style-type: none"> • Acquisitions from owners—owners difficult to locate; complications (such as estate); lienfields. • Property tax foreclosure—time-consuming, and may convey weak title. • Bank foreclosure—time-consuming and sometimes limited to “bulk” sales.
Cost estimation	<ul style="list-style-type: none"> • Uncertainty concerning needed improvements (such as “hidden” termite and water damage, exacerbated by building code uncertainties). • Estimating process difficulties (such as limited access and plans).
Financing	<ul style="list-style-type: none"> • Appraisal issues (such as inappropriate “comps”). • Higher-cost financing terms (such as LTV, income-expense ratio, fees, credit enhancement, and other provisions more stringent for rehab).
Insurance	<ul style="list-style-type: none"> • Premium for hazard-liability insurance during construction. • Difficulty in obtaining surety bonding. • Difficulty in securing coverage after rehab.
Land use	<ul style="list-style-type: none"> • Limitations on change of use, mixed use, and intensification of use can impede rehab.

Although in a broad sense the above barriers affect all rehab, in a practical sense the hurdles are burdensome in doing affordable city housing renovation. Take, for instance, the issue of lienfields—the presence of often expensive property tax, mechanic, and other claims on properties in a neighborhood. We are well aware of how brownfields impede urban redevelopment, yet many urban properties have expensive liens that have to be satisfied before rehab can commence.

To illustrate, the Little Haiti Housing Associates (LHHA), working in the impoverished Little Haiti neighborhood in Miami, Florida, rehabs single-family homes and sells them for approximately \$80,000 each to very low-income Haitian families. It also does multifamily rehab and infill new construction.

LHHA is thwarted by lienfields in Little Haiti. Many properties there have \$7,000 to \$10,000 in claims, as follows:

- \$3,500—For public charges for cleaning up a property (such as if trash had been dumped and the city had sent a cleanup crew), securing it, and for fines and penalties levied on the owner.
- \$3,000–\$4,500—For back taxes; taxes are approximately \$1,500 annually, and properties are often 2 to 3 years delinquent.
- \$0–\$2,000—Mechanic and other liens.
- \$6,500–\$10,000—Total charges against the property.

In other jurisdictions, the problem of “lienfields” is addressed through public intervention, such as cities foreclosing on tax delinquent properties and then offering the parcels to nonprofits. In LHHA’s case, there is a reluctance by government to take such action. The lienfield leaves the deteriorated properties in limbo, beyond the reach of rehab entrepreneurs such as LHHA. (Lienfields on vacant lots also forestall LHHA’s infill new construction.) Unclaimed liens are found throughout the metropolitan areas, yet their presence in bulk so as to constitute a lienfield is more often a city phenomenon.

LHHA has encountered many other development hurdles. Financing is obviously critical for rehab, and LHHA has often been thwarted in securing financing because of underappraisals. (The very low income of its target group is a fundamental constraint.) Illustrative is the appraisal assigned to a 14-unit multifamily rental property at 5513 NE Miami Place in Miami. This property was purchased by LHHA for \$268,000 and, with rehab construction and soft costs, will comprise a total investment of \$490,000. LHHA had to obtain a professional appraisal of the project, and the appraiser assigned a value of \$310,000 *after* the renovation investment. In this instance rehab appraisal hurdles, included:

- Giving no credit for improving conditions in Little Haiti via rehab and other interventions.
- Ignoring renovation in analyzing and adjusting comparables in the sales approach and in determining a capitalization rate for the income approach. Ig-

noring rehab's impact on real estate fundamentals such as vacancy and operating costs (that is, a renovated building would benefit from lower vacancies than its unrenovated peers and would also operate more efficiently, thus enhancing its value under the income approach).

The \$310,000 appraisal on the \$490,000 Miami Place project could have doomed the effort to renovate this property. Ultimately, LHHA worked around the underappraisal, but the solution was not easy.

Although underappraisals are not unique to affordable rehab, or, for that matter, to urban renovation, they are likely more common in the latter situation. Urban rehabbers such as LHHA are often trying to upgrade housing and neighborhood housing values beyond a low prevailing norm—and their efforts may encounter resistance from appraisers uncomfortable with a change in city status quo.

Construction Phase Barriers to Affordable Housing Rehab

As is evident in table 4, there are many construction phase hurdles. For illustrative purposes, we shall consider just two—archaic building codes and sometimes inflexible historic preservation regulations.

Traditionally, most building codes were oriented to new construction and conceptually not designed to accommodate rehab. A common example was the “25–50-percent rule,” which mandated that if the renovation value exceeded 50 percent of the value of the structure being renovated, then the entire property, not just the portion being rehabbed, had to be brought up to the standard for new construction. A parallel provision required that the entire property had to meet the new building standard if there was a change of use (such as from industrial to residential lofts).

These provisions make rehab very difficult. It is not uncommon to exceed the 50 percent threshold in doing renovation, and change of use is inherent with adaptive reuse. With the new building standard triggered, renovation costs can rise substantially and nearly insurmountable practical difficulties are introduced (such as retrofitting a wider corridor or adding a second staircase).

To illustrate, the State of New Jersey until recently adhered to the BOCA code, and BOCA incorporated a strict 25–50-percent rule. That rule thwarted rehabbers such as Isles, a nonprofit located in the State's capital. For example, Isles wished to rehab 108 Passaic Street, a compact inner-city Trenton row house (16 feet wide by 46 feet

deep) in declining condition. Isles's original approach was to do selective repair as needed throughout the building in an attempt to economize and to stay below the 50 percent threshold. Because of its small size, 108 Passaic Street was valued at only \$89,034. Isles, therefore, planned its rehab work to cost \$41,000—below the \$44,517, 50-percent-of-value trigger.

When work commenced on 108 Passaic Street, some unexpected factors increased construction costs above \$44,517. With the 50 percent threshold breached, the local code official ruled that an existing bedroom in the walk-up attic would now have to meet new building code standards—including, for example, the installation of a fire escape. This change was not feasible to Isles, so instead it transformed an area on the first floor of the building for bedroom use. This took time, architectural drawings, and a redo of some work that had been started (for example, work begun in the kitchen was now lost because the kitchen area had to be redesigned to accommodate the third bedroom).

These and other code-related items added approximately \$8,000 to the original rehab estimate (increasing it from \$41,000 to \$49,000) and significantly extended the construction period from an anticipated 4 or 5 months to 7 months. The Isles experience was typical of difficulties encountered by rehabbers in many places with a strict 25–50-percent rule.

Many jurisdictions have gotten away from the pure 25–50-percent rule while retaining its philosophy. Seattle, Washington, requires a new building standard in rehab only if a “substantial alteration” (SA) has been made. The SA, in turn, has numerous triggers. Some, such as when renovation makes a building more hazardous than it is in existing use, are eminently reasonable. Yet an SA can also be evoked “if the project cost is high relative to the value of the building.” The latter rule, in effect, perpetuates a 25–50 percent approach.

The 25-percent rule is not just a city problem; it governs all rehab. Yet it is often more of a problem in cities. First, change of use is more common in urban settings than in the suburbs. Second, the 50 percent rule may be disproportionately triggered in cities because the numerator of that equation (rehab value) may be higher in urban locations because of the need for greater upgrading there, whereas the denominator of the equation (property value as measured by the building's physical

size or market attractiveness) may be lower. (Recall the \$89,000 value of 108 Passaic Street in Trenton. Suburbs outside of Trenton have much higher property values.)

Historic preservation regulation can be another hurdle faced by rehabbers. The theme of preservation is part and parcel of rehab, especially in cities. We noted earlier how a much larger share of urban compared with suburban renovation is effected on properties listed on Federal, State, and/or local registers. Also, historic rehab is eligible for unique tax credits, and many urban renovation projects take full advantage of such historic-oriented aids.

Yet there is a price associated with the historic character of urban rehab. Illustrative are issues faced by the New Haven Neighborhood Housing Services (NHNHS), which rehabilitates houses in that city's historic Dwight neighborhood. NHNHS relies on the Community Development Block Grant (CDBG) program, HOME, and other Federal subsidies; therefore, its activities are regulated by Section 106 of the National Historic Preservation Act. Section 106 mandates that if there is a Federal undertaking (for example, rehab financed by Federal subsidies), review of the undertaking's impact must be made on properties on or eligible for the National Register of Historic Places.

Section 106 review of NHNHS's rehab plans has sometimes been problematic. The case of windows is illustrative. Many of the properties rehabbed by NHNHS contain numerous windows, and these can be a distinguishing property feature. NHNHS will try to repair existing windows when it can, but often the original windows have been removed and/or are beyond repair. The question then is what replacement windows should be used. The Section 106 reviewers sometimes insist that NHNHS replace the original wooden windows with a similar wooden window. NHNHS, however, argued that in such cases, vinyl replacement windows should be allowed because appropriate vinyl windows could be compatible with the structure's historic flavor and were much less costly to install and maintain. The cost differential was dramatic; vinyl versus wooden windows could save \$5,000 to \$10,000 per NHNHS rehab job—a significant economy when trying to house low-income families.

LHHA also encountered Section 106 review issues. Although there are some historic buildings in Little Haiti, the houses LHHA works on are generally not strong candidates for historic designation; in fact, not one has thus far been deemed his-

toric. Nonetheless, each house to be rehabilitated is evaluated as to its historic candidacy. This review is administered by a county agency, which forwards each file to Florida's State Historic Preservation Office (SHPO) for its input. The county agency, however, waits until it has a number of properties to be reviewed before it forwards the files to the SHPO. The result of these entanglements is weeks of delay and many hundreds of dollars of extra costs (e.g., for property-holding expenses while waiting for approval).

Many of the other construction phase barriers noted in figure 1 operate similarly. They affect all affordable housing renovation, but because of the nature of the urban housing stock and urban rehab (for example, the stock is more "historic," will tend to have more asbestos, lead, and brownfields complications, housing units are smaller in size and are lower valued with respect to the 25–50-percent rule, and urban rehab more often involves adaptive reuse), renovation in cities often faces the most formidable construction-phase problems.

Overcoming Barriers to Affordable Rehab

With much hard work and partnerships involving government, nonprofits, and the private sector, the many barriers to affordable rehab are being addressed. As was the case with our enumeration of the hurdles, we can only overview these yeoman efforts. Therefore, we shall present illustrative examples of how the barriers are being met, utilizing as examples we shall do so in the very places we previously noted were encountering problems. Our illustrative examples will also emphasize how HUD has contributed to addressing the barriers.

Overcoming the financial gap is a fundamental prerequisite for affordable rehab, and HUD offers numerous subsidies available for renovation. (See appendix for historical overview of HUD's assistance for rehab.) A prime example is the CDBG program. An early 1990s survey of the local uses of CDBG funds found that cities were spending 30 to 40 percent of their block grants for housing rehab. CDBG is joined by more than a dozen other currently available HUD programs that can support housing renovation as is shown in table 9.

Table 9. Current (Year 2000) HUD Programs That Support Housing Rehab

Program	Description	FY 2000 Funding*
CDBG	Funds a range of activities including planning, infrastructure, affordable housing, economic development, and public service. In FY 1999, 30.2 percent of CDBG expenditures supported affordable housing through rehabilitation, new construction, and home buyer assistance.	\$4,800
Economic Development Loan Fund (Section 108)	The loan guarantee provision of the CDBG program, Section 108 offers a source of long-term financing for economic development, housing rehabilitation, public facilities, and large-scale physical development programs.	\$30
Economic Development Initiative Grants	Improves the economic feasibility of Section 108 loans by providing an added subsidy for such large-scale activities as shopping centers, industrial facilities, and housing development, including rehabilitation.	\$31
Empowerment Zones/Enterprise Communities	Designed to promote large-scale economic development in selected cities through strategic planning and leveraging private investment. Rehabilitation of residential units in distressed areas through EZ/EC grants has produced 11,000 housing units. Homeownership programs have increased the homeownership rates in these areas as well, where rehabilitation also has a role.	\$55
Rural Housing and Economic Development	HUD grants are being used in rural areas, often for rehabilitation. The HUD Colinas Initiative is helping to build and rehabilitate affordable housing in settlements along the U.S./Mexico border.	\$25
Brownfields Redevelopment	Appropriated funds for the redevelopment of brownfield sites have helped to leverage millions in Section 108 loan guarantees and private and public investment and will create thousands of jobs. This money is used for clean-up costs for the sites and rehabilitation of existing structures, including housing units.	\$25
Disaster Recovery	HUD funds and additional CDBG and HOME funds are often needed in the event of a natural disaster. These grants are used to rehabilitate housing and commercial buildings, assist homeowners, restore public facilities, and aid local businesses.	

Program	Description	FY 2000 Funding*
Community Outreach Partnership Centers (COPCs)	Grants given to 18 colleges and universities to develop partnerships with local governments, private companies, and nonprofit organizations in an effort to revitalize their communities. COPC grants are used to expand affordable housing opportunities, for job training programs, to fight housing discrimination and homelessness, research community problems, and assist new businesses.	\$8
Lead Hazard Reduction	Lead is a common cause of poisoning, especially in young children living in older homes or apartments. HUD gives grants to State and local governments, nonprofits, public relations firms, and research organizations in an effort to reduce lead hazard effects. The money is used for its removal, in research, and for public awareness campaigns.	\$80
Section 8 Assistance	The project-based assistance component of the Section 8 program allows owners of multifamily rental units to receive housing assistance payments directly from HUD. This money can be used for maintenance and rehabilitation of the housing units.	
HOPE VI	A source of funds used to demolish, rebuild, and rehabilitate obsolete public housing units and create mixed-income communities.	\$564
HOME	HOME funds are among the largest sources of money for the construction and rehabilitation of affordable housing in the Nation. HOME funds are used for multifamily rental housing, improving substandard housing for current owners, and assisting new home buyers with acquisition, construction, and rehabilitation.	\$1,600
Low-Income Housing Tax Credit (LIHTC)	States are given a Federal tax credit to support the construction and rehabilitation of affordable housing units by private and nonprofit developers.	\$1.25 per capita by State
Native American Housing	HUD has initiated an effort to begin bringing direct Federal funding with autonomy to tribal lands to assist with their unique housing situation. These funds will help ensure that substandard and overcrowded conditions are ameliorated with rehabilitation and new construction of housing units.	\$620
Housing for Elderly and Disabled Persons	HUD helps nonprofit organizations finance the construction and rehabilitation of housing designed to support the needs of the elderly and disabled.	\$911

Program	Description	FY 2000 Funding*
FHA Multifamily Insurance	FHA insurance programs insure lenders in case of loss on first mortgages and make possible the construction, rehabilitation, and preservation of multifamily rental properties. These loans are made available to private developers, nonprofit organizations, and cooperatives that build affordable housing.	

**Dollars are in millions and includes funding for all purposes—rehab and nonrehab.*

Source: Building Communities and New Markets for the New Century. 1998 Consolidated Report. U.S. Department of Housing and Urban Development.

HUD support is often used in combination with subsidies from other sources in order to make housing rehab affordable. This partnering approach was applied by LHHA to make rehabilitated homes affordable to low-income Haitians. LHHA's sale of single-family detached rehabilitated units to low-income households is accomplished by tapping a potpourri of sources, as follows:

1. A 5-percent down payment by the purchaser.
2. A market-rate, no points, modest-sized first mortgage granted by a lender.
3. A large soft second mortgage (that is, with minimal repayment requirements) funded from monies from HUD and/or Miami-Dade County.
4. A modest-sized soft third mortgage from a grant program (Affordable Housing Program (AHP)) from the Federal Home Loan Bank.

Table 10 details the specific HUD and other subsidies tapped by LHHA. Such partnership enables LHHA to sell a rehabilitated home costing approximately \$80,000 per unit to Haitians earning approximately \$20,000 to \$25,000 annually.

Table 10. Subsidies Utilized by LHHHA in Its Rehab Projects

Subsidy	Description	Financial Assistanc
HUD Programs	<p>Various HUD programs are tapped. A primary example is the CDBG program, under which Miami-Dade County receives a block grant from the Federal Government to be used for a variety of purposes benefiting low- and very low-income families, such as LHHHA secondary financing. Other HUD programs have been used for the same purpose. HOME is a block grant program fostering housing production. Miami-Dade County receives an allocation of HOME moneys and distributes these funds for different purposes (e.g., homeownership and rental production by nonprofit as well as profit-oriented entities). The distribution of the HOME funds is competitive. LHHHA receives approximately 40 percent of the HOME moneys it applies for, which are then used for low-cost second mortgages. LHHHA has utilized HOPE III funds from HUD in a similar fashion.</p>	<p>The HOME-based secondary mortgages have 30/36 front- and back-end ratios and are available to those earning less than 80 percent of the areawide median income. The HOME secondary loans utilized by LHHHA are granted for a term of 30 years at a zero percent interest rate. For low-income households (earning 50 to 80 percent of the areawide median), only principal has to be repaid; for very low-income households (earning less than 50 percent of the areawide median), the HOME-based secondary loan is due only upon the sale of the property. Further, that repayment must be made only if the household sells the unit in the first 5 years after its acquisition; if the house is sold subsequent to the 5-year holding period, repayment is forgiven proportionately over the 30-year term of the loan.</p>
Miami-Dade County Surtax	<p>The Miami-Dade County Documentary Surtax imposes a levy of \$0.45 per \$100 of assessed value on deed transfers relating to the sale of land, commercial buildings, and residential properties. The surtax moneys are used to finance the construction, rehabilitation, or purchase of housing for low- and very low-income families. The moneys can be used for wide-ranging housing purposes, such as providing low-cost rehabilitation loans and second mortgages and financing new rental projects. Surtax funds are applied for by numerous housing development entities in</p>	<p>The surtax funds can be used by households earning up to 120 percent of the Miami-Dade County median income. The repayment schedule of these funds differs depending on the income of the beneficiary household; the most liberal terms are offered for those households earning the least under the 120 percent cap. For households earning less than 80 percent of the area median income—the target group served by LHHHA—the surtax-based secondary mortgage has to be repaid over a 30-year period at a 3 percent interest rate. To make these already liberal terms even more affordable, the repayment schedule</p>

Subsidy	Description	Financial Assistance
Federal Home Loan Bank—Affordable Housing Program (AHP)	<p>Miami-Dade County, and there is a scoring system for granting these moneys. The LHHA has applied directly for surtax moneys to be used for second mortgages and has also received allocations of surtax funds from an umbrella community development entity in Miami-Dade County called Greater Miami Neighborhoods (GMN).</p> <p>AHP is a competitive grant available from the Federal Home Loan Bank to foster affordable homeownership. AHP is applied for by member banks. For instance, Citibank in Florida received \$160,000 in AHP moneys and in turn made funds available to LHHA for low-cost secondary financing.</p>	<p>is staggered so that only small amounts must be repaid in the initial years of the mortgage, with rising payments to make up for the shortfall in the latter years. For the first 5 years of the 30-year term, only interest is repaid; for the next 5 to 10 years, interest and some principal payments are made; and in the past 20 years of the mortgage, the loan is fully amortizing. Further staggering of the loan repayments to reduce the financial demands during the early years are also applied, as shall be illustrated shortly.</p> <p>If surtax moneys are used for a second mortgage by LHHA, the front-end ratio is capped at 28 percent, whereas the back-end ratio has a ceiling of 32 percent. These 28/32 ratios are relatively modest, so LHHA will often draw on HUD funds that allow for higher front- and back-end ratios (HOME program; see below).</p> <p>AHP moneys are used by the LHHA as a third mortgage over and above the second mortgages derived from the surtax, HOME, and other sources. The typical AHP third mortgage administered by the LHHA is approximately \$5,000. It is due only upon the sale of property, and is forgiven if the property is held for more than 10 years. For the first 10 years of ownership, the AHP repayment upon sale is forgiven at a rate of 10 percent annually.</p>

Although the availability of HUD and other subsidies is central to LHHA's delivery of housing to financially limited households, LHHA's experience also points to certain ancillary costs of using public assistance. For example, participating jurisdictions involved in administering Federal block programs (e.g., HOME), often prescribe many requirements, such as a strict interpretation of minimum housing standards (MHS). The "strict" MHS interpretation (for example, requiring the replacement of older yet serviceable windows) increases LHHA's renovation costs. Yet although there are issues in using subsidies, especially a layering of aids, HUD and other programs are beginning to address the financial hurdle to rehab.

Development and construction hurdles to affordable housing rehab are being vigorously addressed. Property acquisition by nonprofit rehabbers has been facilitated by FHA disposition strategies. For many years, nonprofits and selected others (such as government agencies) were given the first opportunity to acquire Federal Housing Administration (FHA) foreclosures. If the foreclosed homes were located in hard to redevelop neighborhoods termed "revitalization areas," the nonprofits could acquire the homes at a 30 percent discount from the appraised values assigned by the FHA.

The above system worked well for LHHA. As a nonprofit, it could capitalize on the first-priority access to FHA foreclosures. Additionally, it could take advantage of the 30-percent discount because Little Haiti was classified as a revitalization area.⁹

Good progress is also being made in addressing the many development and construction barriers to affordable renovation. There has been a paradigm shift with respect to the building code as it affects renovation. In 1998, New Jersey dropped the 25-50 percent and change-of-use rules of BOCA and developed an entirely separate building code system for governing all construction on existing buildings. The new rehab code follows a ladder system, progressing from the least to most in terms of the amount of changes to the building and the degree of code requirements. The ladder encompasses (from least to most) repairs, renovations, alterations, reconstruction, change of use, and additions. Repairs evoke the fewest requirements; additions evoke the most.

The revised New Jersey Code was developed from 1995 to 1998, when the new regulations were adopted. At the same time, HUD, on a parallel track, developed rehabilitation standards that would be a model for nationwide adoption. The New

Jersey regulations are technically termed the “Uniform Construction Code, Rehabilitation Subcode” (hereinafter “NJ Subcode”), whereas HUD’s are termed “Nationally Applicable Recommended Rehabilitation Provisions” (hereinafter NARRP).

The NJ Subcode and NARRP offer significant cost and implementation advantages compared with previous approaches. These changes are evaluated by a demonstration research effort entitled “Model reModel.” Funded by HUD and effected by the NAHB Research Center, Model reModel is examining rehab requirements and costs under 1993 BOCA (the previous New Jersey code for regulating rehab) versus the standards and expenses under the NJ Subcode and its conceptually similar NARRP.

In one New Jersey case study property examined in the demonstration program, Model reModel identified significant savings in numerous construction areas allowed by the NJ Subcode/NARRP versus the previously governing 1993 BOCA. Examples included:

- **Egress windows.** Under the BOCA regulation, one casement window in each existing bedroom would have had to be replaced with a larger, double-hung unit. The window openings in the stone walls would have had to be widened. Not necessary under the NJ Subcode/NARRP.
- **Interior structure.** The old rules required removing the old but sound 2” x 6” floor framing on the 12-foot kitchen floor spans, replacing them with 2” x 8”s or 2” x 10”s. Not necessary under the NJ Subcode/NARRP.
- **Ceiling height.** The carriage house garage ceilings were 6 feet 8 inches. Under the 1993 BOCA code, the contractor would have had to excavate down to comply with the requirement that ceilings be 7 feet. Not necessary under the NJ Subcode/NARRP.

All told on this one case study, the 1993 BOCA would have required slightly more than \$26,000 in additional expenses (labor and materials plus overhead and profit) that are avoided under the NJ Subcode and NARRP.

Numerous jurisdictions are considering adopting variations of the NJ Subcode/NARRP. These include Maryland (as part of its smart “growth” initiative), Rhode Island, and Vermont.

Good progress is being made to address the many environmental issues that have bedeviled urban rehabilitation. Illustrative of that effort are new brownfields regulations/programs that limit liability, provide for flexible remediation standards,

offer subsidies for cleaning polluted sites, establish a process for bringing all potentially affected parties “to the table” so as to foster constructive negotiation, and take other actions to foster the redevelopment of once untouchable polluted sites.

Also welcome are efforts to make historic preservation and affordable rehab more compatible. To better enable affordable housing construction to abide by the Secretary of Interior Standards for Rehabilitation (regulating Section 106, historic tax credit, and other reviews), the Advisory Council on Historic Preservation (ACHP) formed a Committee on Affordable Housing and Historic Preservation in the mid-1990s. The task force included members from the National Trust for Historic Preservation, HUD, and other organizations. The task force’s deliberations led to the ACHP’s June 26, 1995, Policy Statement on Affordable Housing and Historic Preservation (hereinafter the Statement). The Statement included 10 principles “to promote a new, flexible approach toward affordable housing and historic preservation.” The 10 principles are:

1. Emphasize consensus building.
2. Elicit local views.
3. Focus on the broader community.
4. Adhere to secretary’s standards when feasible.
5. Include adequate background documentation.
6. Emphasize exterior treatments.
7. Coordinate with other reviews.
8. Avoid archaeological investigation.
9. Develop programmatic approaches.
10. Empower local officials.

To help realize the Statement’s theme of flexibility and cooperation, a number of pilot programs are under way with the assistance of the Partners Program of the National Trust for Historic Preservation. The Dwight neighborhood in New Haven, where the NHNHS operates, is one of the pilot efforts. As part of the Dwight pilot, specially tailored flexible historic preservation guidelines were developed in 1999.

The strategies illustrated in this section just touch upon the many efforts being made in American cities to foster affordable rehab. Next we will note additional activities deserving of research and pilot implementation.

Future Policy and Research Considerations

Better data on rehab would improve our understanding and monitoring of this activity. We know much more about new construction in cities than about urban rehab. That situation can change, however. At a minimum, the C-40 series should be made more informative by, once again, having it cover residential as well as nonresidential rehab—as it did just a few years ago. Consideration should also be given to extending the C-30 and C-50 series coverage to a more microgeographic level, such as to metropolitan areas. (We acknowledge the technical difficulty of doing so). Also, HUD should consider aggregating data on the rehabilitation investment it funds through such programs as CDBG and HOME. Many years ago, the HUD-prepared Annual Housing Report contained related information.

Rehab data must also expand beyond its current simple monetized dimension (that is, value of permits or construction put in place) to a greater housing framework. As a stopgap measure, the rehab investment in a housing unit could be related to the housing unit's value so as to convey in a very gross fashion how much "housing" is being produced. It may make sense to use the 25-50-percent rule in this regard. Although that rule can wreak havoc in building code requirements, there is a grudging acknowledgment by rehab practitioners that more rehab investment equals more housing being produced, and, at some point (that is, the 50-percent level), a new housing unit has, in effect, been created. When rehab amounts to 25-50 percent of the value of the existing property, then a "partial housing unit" can be credited. Applying the 25-50-percent rule in the manner noted above has the additional benefit of ready application, for we are already tracking rehab value and can access property value from property tax records, which are widely available, increasingly in electronic form.

The 25-50-percent approach suggested above could be further refined by disaggregating the components of the rehab investment so as to include only "shelter essential" improvements. Different rehab elements (such as kitchen, bathrooms, windows, insulation, HVAC, plumbing, and electric systems) are of greater import in extending the habitability of a unit than are more discretionary items (expensive fixturing). Although it is acknowledged that there are many gray areas here in differentiating between housing-essential and discretionary rehab elements, disaggregating the elements comprising rehab value would refine the application of the 25-50-percent rule for measuring rehab's contribution to housing.

Ultimately, much more needs to be done in securing broader and more meaningful rehab information. As an adjunct, we should revisit how the AHS measures housing quality and adequacy because that could be the standard for determining when rehab “creates” a housing unit (that is, when housing inadequacy is addressed). Similarly, a process is needed for improving the capacity of the AHS for flagging rehab “need,” “cost,” and “affordability,” especially the former two elements. Our attempt to that end, described earlier, is crude and is not scientifically based; we need much more empirically grounded cross-linkages.

Data gathering is, of course, just a start, and HUD can further rehab implementation by researching and tackling the many barriers to affordable renovation. It is already doing so on many fronts, such as through the NARRP and new brownfields programs. Other strategies that merit consideration for addressing the numerous hurdles to rehab include the following, shown in table 11.¹⁰

Table 1. Strategies To Address Hurdles to Rehab

Barrier	Meliorative Strategies
Property acquisition	<ul style="list-style-type: none"> • Receivership. • Accelerated foreclosure. • Better property identification. • Addressing lienfields.
Cost estimation	<ul style="list-style-type: none"> • Training. • Estimating software.
Insurance	<ul style="list-style-type: none"> • Pooled risk insurance for contractors. • Antiinsurance “redlining” provisions.
Financing	<ul style="list-style-type: none"> • Appraiser-lender education.
Land use	<ul style="list-style-type: none"> • Allow place-based standards (such as reduced parking and open space requirements in urban neighborhoods).
Building codes	<ul style="list-style-type: none"> • Publicize the NARRP and NJ Subcode and provide incentives for their implementation.
Historic preservation	<ul style="list-style-type: none"> • Allow gradations in significance in historic registers. • Improve coordination in Section 106 review. • Allow for preservation flexibility in affordable housing situations.

Ultimately, making housing rehab affordable requires addressing the fundamental resource constraint. There will always be a gap between the need and available sub-

sidies, so it is critical to ensure that programs are not inadvertently working at cross purposes while reaching for the goal of affordable renovation.

An example of this is the low-income housing tax credit (LIHTC). From 1992–1994, the LIHTC aided in the jurisdiction of 61,000 new housing units and 36,000 rehabilitated units, making it is one of the most significant resources for affordable housing rehab. Yet the criteria for securing tax credits may sometimes discourage rehab projects.

Applicants for LIHTC funding compete according to a State-established Qualified Application Plan (QAP). Many State QAP criteria are beneficial to renovation projects, for example, in granting extra points for rehab generally and for historic rehab specifically. At the same time, the following State QAP criteria tend to favor new construction applications.

1. *Points for New Construction.* Fourteen States, including, Georgia, West Virginia, and Wyoming, give points specifically for new construction. This QAP scoring system obviously adds to the heightened competitiveness of new construction.
2. *Points for Lowest Cost Per Unit.* In attempting to maximize the LIHTC, approximately one-half the States (24) give added points to those applications having the lowest cost per unit. Because rehab can be costlier than new construction, this criterion may negatively impact renovation in the LIHTC competition. Adding to its potential negative influence, in many States this variable is one of the threshold criteria, immediately harming rehab applications. If renovated costs are too high, applications will be disqualified immediately from further consideration.
3. *Limitations on Fees and Overhead.* Besides considering total costs per unit, approximately one-half the States (24) set a maximum allowable percentage of costs for fees and overhead. Unfortunately, rehab projects often incur high soft costs because of their smaller scale (overhead is amortized over fewer units) and the need for greater individualization (higher fees and overhead may be charged). Therefore, the limitation on soft costs may have a negative impact on rehabilitation.
4. *Points for Large Units.* Approximately one-half the States (26) award points for projects with a higher share of larger (two- and three-bedroom) units. Providing more family-size units is a laudable housing goal but can be problematic if one is renovating existing buildings with mainly smaller apartments (studio and one-bedroom).
5. *Points for Amenities.* Many States (37) give added points for projects that provide extra amenities for residents, such as high energy efficiency, central air

conditioning, and two bathrooms. Such amenities are often easier and cheaper to accomplish in new construction, perhaps placing rehabilitation at a disadvantage.

Although the LIHTC is a major subsidy for rehab, the above criteria can act as a barrier. HUD may wish to review the State QAP criteria to see what influence they are having on rehab and other housing objectives. Similar vigilance should be extended to other housing subsidies.

Appendix: Historical Overview of HUD Programs Assisting Housing Rehabilitation

The first tentative Federal governmental actions involving housing rehab occurred during the time of the depression of the 1930s. Though mainly concerned with new construction and home purchase, the 1934 Housing Act authorized FHA to insure short-term installment loans made by private lenders to homeowners for repairs and improvements. Together with the Home Owners Loan Corporation, which also made rehab loans, these efforts were created to deal with the need for renovation financing and to provide impetus to home repair businesses. A public housing program was initiated in the 1930s, but for the most part, it focused on eliminating slums and building new low-income units.

The 1949 Housing Act encouraged a more comprehensive approach to housing and community development, but like previous housing legislation, it stressed a combination of demolition and new construction, all under the guise of redevelopment. Rehabilitation projects had to compete with the speed and substantial funding support of slum clearance projects, as well as with the national fervor for the new, modern dwellings springing up in the suburbs.

In 1953 the Advisory Committee on Government Housing Policies and Programs recommended that the 1949 Housing Act be expanded to include the rehab of existing structures. The Committee expressed concern with the economic and social costs of slum clearance and voiced support for a conservation approach. Subsequently, the 1954 Housing Act included rehab and conservation as allowable components of Federal intervention in the housing market to prevent neighborhood decline. The term “urban renewal” was introduced; it referred to both slum clearance and renovation. Additionally, FHA Section 220 mortgage assistance became available for rehab projects in designated urban renewal areas.

A number of local programs were instrumental in encouraging inclusion of rehab support in the 1954 Housing Act (Heinberg, 1983). In the years during and immediately following World War II, the Baltimore Health Department established the Baltimore Plan and devised a comprehensive attack on incipient blight. Racial change and community decline in a Chicago neighborhood led concerned residents to form the Hyde Park-Kenwood Community Conference. The goal of this organization was to keep “an interracial community of high standards” through maintenance and improvement of existing housing (Heinberg, 1983).

Despite the inclusion of rehab in the 1954 Housing Act, the strategy went virtually unrealized in practice. From 1954 through 1960, the Federal Government subsidized only approximately 10,000 rehabilitated housing units nationwide. Even the increased awareness of the diminishing stock of affordable housing could not stem the continued demolition of older units. In addition to societal emphasis at the time on clearing out old buildings and creating new housing, rehab as a housing policy was hindered by economic and administrative difficulties (Hays, 1995). Rehab in older areas was also thwarted by the large-scale demolition carried out in building the interstate highway system.

In the 1960s and 1970s, many housing officials encouraged rehab as a means of stemming the decline of older neighborhoods. They touted rehab as a less socially disruptive, more economical method of redevelopment than earlier large-scale-clearance-style urban renewal; renovation was also advocated as cost-effective and expeditious. HUD supported the shift in housing policy to include renovation. It started to make more urban renewal grants with substantial rehab components. Examples include grant-funded renovation in Philadelphia’s Society Hill and in numerous Boston and Baltimore neighborhoods.

Many new HUD programs supported rehab. In 1961, the 221(d)(3) program made available below-market-interest-rate (bmir) mortgages for rehabbed as well as new multifamily rental housing. In that same year, the 203(k)-220(h) programs insured loans made by private lenders to homeowners who made major improvements. In 1964, Congress authorized Federal Section 312 low-interest rehab loans; in 1965, the Section 115 rehab grant program for low-income households was created. The Housing Act of 1968 established two programs, Section 235 and Section 236, which assisted homeowners and renters, respectively, through the provision of bmir loans.

Some families benefited from the use of Section 235 for the purchase of renovated homes. Section 236 could be used for new and rehabilitated rental housing.

A large-scale effort to rehab apartment buildings for moderate-income families was the goal of HUD's Project Rehab, created in 1969. This initiative assembled existing rehab programs in target neighborhoods and applied "best practice" administration and technology.

The Nixon administration's 1973 moratorium on housing production effectively ended many of the categorical supply-side programs noted above. Change in programmatic approach soon followed. The development of CDBGs in the 1974 Housing Act consolidated many of the earlier categorical programs aimed at rehabbed housing, although the popular Section 312 program remained in operation separately for some time. (A 1977 Housing Act amendment made rehab an independently eligible activity for CDBG funding.) The 1974 Act also created the Section 8 multifamily rental program, which included three subprograms—New Construction, Substantial Rehabilitation, and Existing Housing.

Other programs that included rehab benefits were put in place in the 1970s. National Housing Service helped concentrate reinvestment into small neighborhood areas; Urban Homesteading attracted families willing to rehab dilapidated units by selling them at drastically reduced prices; HUD Urban Development Action Grants were given to redevelop deteriorating areas, through both new construction and renovation (Dommel et al., 1982). The Home Mortgage Disclosure Act (1975) and the Community Reinvestment Act (1977) were created to monitor and to increase the amount of financing available in lower income neighborhoods, money that could be used to rehabilitate or renovate older units.

These many programs of the 1960s and 1970s helped boost federally aided housing rehab. We cannot track CDBG-aided renovation very well (that is, in terms of housing units being aided) but we can monitor subsidized renovation under such major housing production programs as Sections 8 and 236. From the early to late 1960s, the Federal Government was directly subsidizing from 2,500 to 15,000 rehabbed units annually. That rehab tally represented approximately 7 to 15 percent of all Federal housing production, which, at that time, was quite modest—in the 35,000 to 70,000 units annually range. When significant federally subsidized housing programs came into being in the late 1960s in the form of Sections 235, 236, and

sister programs, federally aided total housing production climbed to a high of almost 500,000 units annually (482,970 in 1971). With that overall increase, federally aided rehab also climbed to more than 40,000 units yearly by the early 1970s. Rehab now comprised approximately 10 to 20 percent of all federally assisted housing production.

The subsidy moratorium of the early 1970s dampened production of both new and rehabbed units, but when the new Section 8 program came into force, subsidized housing activity rebounded. From the late 1970s to the early 1980s, the Federal Government subsidized from 200,000 to 250,000 housing units annually. Of that total, approximately 25,000 to 50,000 rehabbed housing units were federally aided each year, representing between one-eighth and one-fifth of all production.

With the advent of the Reagan administration in 1980, assisted-housing activity was sharply curtailed. That led to a dramatic reduction in both new construction and federally assisted rehabbed housing units. There were also numerous programmatic changes, especially with respect to Section 8. The Housing Act of 1983 repealed Section 8 use for new construction and substantial rehabilitation as opposed to existing housing. Section 8 would henceforth take the form of a certificate or voucher provided to an income-eligible tenant who would secure an eligible unit in the marketplace. Certificates and vouchers are both “demand-side” as opposed to “supply-side” subsidies.

The remainder of the 1980s saw other efforts at housing assistance, but these did not change the basic imprint of Federal housing programs. For instance, the Rental Rehabilitation Grant (RRG) and Housing Development Action Grants (HoDAG), both authorized in 1983, never developed into major production programs.

In summary, the 1980s were characterized by a retrenchment in Federal housing subsidy. From 1980 to 1990, the total HUD-subsidized inventory rose nationally by approximately 1.3 million housing units (from 3.1 to 4.4 million housing units), substantially less than the 2.2-million increase in HUD-subsidized units recorded from 1970 to 1980 (from 0.9 million to 3.1 million housing units). Also, the tenor of subsidy had changed. In the early 1960s, only 5 percent of federally subsidized housing production consisted of rehab; by the late 1980s, approximately 80 percent of HUD housing subsidies were for existing or rehabilitated units.

Our brief overview would be incomplete without mention of the LIHTC authorized by the Tax Reform Act of 1986. This Act provided tax credits for investment in existing, rehabilitated, and new low-income, multifamily rental housing. From 1992 through 1994, 166,685 LIHTC housing units were produced nationwide (Abt, 1996). Of that total, 60 percent represented new construction, 38 percent were rehabbed, and the 2 percent remaining were a hybrid (such as projects with both new and existing units) or comprised existing units. In the Northeast, rehab comprised almost 60 percent of housing units subsidized by the LIHTC (Abt, 1996).

CDBG monies also represented a significant Federal support for housing renovation. An early-1990s survey of the local uses of CDBG funds found small, medium, and large cities spend 32 percent, 38 percent, and 38 percent, respectively, of their block grants for housing rehabilitation; urban counties spend slightly more than one-third (34 percent) of their CDBG assistance for housing rehab.

In the 1990s, numerous HUD housing and community development programs were enacted that were supportive of housing rehab. The 1990 National Affordable Housing Act authorized a HOME program that provided Federal matching grants for housing rehab and other purposes. The 1990 legislation was welcomed as the first new Federal housing act following a long hiatus and as a harbinger of Federal block grants for local housing initiatives, including renovation.

During the 1990s, other Federal programs supporting housing rehab were initiated. The HOPE III program (HOPE stands for Housing Opportunities for People Everywhere), though limited in scope to previously subsidized projects, allows non-profit organizations to build or rehab housing for low-income homeownership opportunities (Hayes, 1995; p. 20) Other HUD initiatives in the 1990s, from Empowerment Zones to lead paint abatement, could be used to support housing rehab. Figure 4 summarizes current HUD programs (as of the year 2000) relevant to housing renovation assistance.

Endnotes

¹ The 20 MSAs include Atlanta, GA; Baltimore, MD; Boise, ID; Boston, MA; Buffalo, NY; Chicago, IL; Cleveland, OH; Denver, CO; Detroit, MI; Houston, TX; Las Vegas, NV; Little Rock, AR; Miami, FL; New York, NY; Newark, NJ; Philadelphia, PA; Salt Lake City, UT; San Francisco, CA; St. Louis, MO; and Washington, DC.

²Another change was that the pre-1995 C-40 series tracked nonresidential rehab, which is a most significant central-city construction activity.

³As an example, Census Paper 25 discussed how census enumerators varied significantly in identifying “substandard” housing in the 1960 decennial census.

⁴ We assume the following financing terms:

Rehab Intervention	Financing Terms	
	Homeowners	Renters
Repair	6 years—10%	6 years—11.5%
Moderate	10 years—10%	10 years—11.5%
Gut	25 years —7%	25 years—8.5%
Given the above terms, the added monthly payments per \$1,000 of rehab intervention are as shown below		
Rehab Intervention	Homeowner	Renter
Repair	\$18.53 per \$1,000	\$19.30 per \$1,000
Moderate	\$13.22 per \$1,000	\$14.06 per \$1,000
Gut	\$7.07 per \$1,000	\$8.06 per \$1,000

⁵ Utility costs for electricity, piped gas, and/or fuel oil (all included in the AHS-indicated monthly housing costs) are reduced after rehab as follows:

Rehab Intervention	Reduce Monthly Utility Costs By
Repair	-10%
Moderate	-30%
Gut	-50%

⁶ We do not adjust the insurance (I) cost because of countervailing influences resulting from rehab. By increasing value through rehab, I might increase; yet by correcting hazardous conditions through rehab, I might decrease. In any event, the I cost is much less than the PI, T, and U outlays, so not adjusting I has very little impact on our final results.

⁷Other cutoffs are used in the housing literature, e.g., 50 percent.

⁸ Because of space limitations, we do not consider occupancy constraints.

⁹ Recently, however, the tiers of priority access to the FHA-foreclosed homes in the Miami area have been restructured. Nonprofits no longer have first access. Instead, nonprofits and owner occupants collectively have the first priority, followed by all other bidders. The 30-percent discount to nonprofits is also no longer being offered.

These changes reflect recent attempts to operate FHA in a more businesslike fashion—a laudable goal. Yet the revisions have made it more difficult for nonprofits, such as LHHA, to obtain properties at attractive prices. At the FHA foreclosure sales, LHHA is now competing against many others. It is first competing against potential owner occupants. If they were as they claimed, LHHA would welcome their interest, for the Little Haiti neighborhood would benefit from an increase in owner occupants. Unfortunately, however, many of these would-be owner occupants are, in fact, being duped by unscrupulous Realtors® interested only in making a sale.

Under the new FHA sales protocol, LHHA is also competing against speculators willing to bid high prices on the foreclosed units. The speculators are looking to flip the properties at a still-higher price to Haitian families who are novice buyers. Other bidders competing with LHHA include slum landlords. They are willing to pay a premium at the auction because they plan to illegally subdivide the single-family homes into multiple rental units, each of which will command high rents and profits. In sum, in years past, the FHA auctions were a good source of properties for LHHA, but that is less the case today.

¹⁰ HUD is already taking steps to research/effect many of these strategies.

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