U.S. Department of Housing and Urban Development
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Barriers to the Rehabilitation of Affordable Housing

Volume I
Finding and Analysis

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Barriers to the Rehabilitation of Affordable Housing
Volume I of II

Findings and Analysis

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Foreword

The rehabilitation of the country's aging housing stock is a major resource for meeting the Nation's affordable housing needs. Large numbers of communities recognize this and use HUD, as well as other public and private resources, to address their affordable housing needs. These communities do this because of the demonstrated economic and social benefits of rehabilitation.

Despite the demonstrated benefits of rehabilitation, there is potential for even greater use of the existing stock, not only to address affordable housing needs, but also to promote broader community revitalization goals. However, heretofore there has been a lack of in-depth research on the factors that act as barriers to rehabilitation of affordable housing. Gaining a sound understanding of the issue is difficult because barriers vary from project to project and from community to community.

To address these concerns, HUD entered into a cooperative agreement with the National Trust for Historic Preservation to examine the major barriers to urban rehabilitation. The result of this collaboration is this study, *Barriers to the Rehabilitation of Affordable Housing,* which is intended to fill this information gap and, in doing so, empower decision-makers and housing professionals to begin work to eliminate these barriers.

The project's research team reviewed relevant literature, conducted case studies, and convened study groups of highly-qualified real estate developers, nonprofit leaders, architects and other professionals who face barriers to affordable housing rehabilitation in their "real world" experiences. Volume I provide the context of the study as well as a synthesis of findings and technical analysis. Volume II presents the case studies in detail.

The rehabilitation needs of our cities will continue to grow. The comparative advantages of housing made available through the rehabilitation of existing buildings will enhance the character of our housing stock in the years to come. Through this report and other activities, HUD will continue to encourage rehabilitation as a way to renew our cities and as a way to increase homeownership opportunities for all Americans.

Lawrence L. Thompson
General Deputy Assistant Secretary for
Policy Development and Research

CONTENTS

EXECUTIVE SUMMARY

The rehabilitation of affordable housing (hereinafter rehab or renovation) faces many barriers. It is concerned inherently with existing, typically older buildings, making the rehab process less predictable and in many ways more challenging than new construction.

Rehab faces a major economic barrier, namely the gap that often exists between the costs of renovation and the financial resources available for those buildings requiring improvement. Of the $623 billion in rehab needed nationwide—a conservative estimate—$227 billion, or about one-third, is unaffordable without some measure of subsidy or other means of support (e.g., using "sweat equity" or staggering the improvements over time).

Accomplishing rehab also is a challenge. The development process can entail difficulties in acquiring properties, estimating costs, dealing with restrictive land-use requirements (e.g., limitations on mixed use and adaptive reuse), and other issues. The construction phase involves assembling qualified tradespeople and abiding by myriad codes regulating asbestos, construction, fire safety, energy efficiency, historic preservation, lead paint, radon, and so on. Although development and construction requirements are essential for the public's welfare and in many respects foster rehab efforts (e.g., historic designation often encourages upgrading), they can be challenging. For example, trying to retrofit off-street parking in a building undergoing rehab (sometimes mandated by land-use regulations) or ensuring that a building meets all new-construction standards (sometimes mandated by the building code) are significant difficulties.

The rehab barriers are of a diverse nature and encompass economic constraints, professional inadequacies, regulatory and programmatic problems, and miscellaneous other issues. Furthermore, the specific incidence of the barriers varies by jurisdiction and project type. For instance, the building code can be a major problem in one city where archaic provisions prevail, but only a minor issue in a community that enjoys more flexible codes and code administrators.

The barriers to rehab are far from insurmountable. The roughly $150 billion of renovation done annually in the United States attests to this. The public and private sectors are working together on many fronts to resolve lingering issues. More rehab-friendly building code regulations have been adopted in New Jersey, Maryland, and other states. Banks have become more receptive to financing renovation. There are promising collaborations between the public sector and industry that are improving the collection of data on rehab so that it can be better understood. Nonetheless, many challenges remain.

The U.S. Department of Housing and Urban Development (HUD) contributes to rehab through subsidies, regulations, technical assistance, and in other ways. Its Community Development Block Grant (CDBG) and HOME programs alone assist in the renovation of about 200,000 units annually. HUD's sponsorship of the National Applicable Recommended Rehabilitation Provisions (NARRP) has helped foster regulatory reform concerning renovation's construction standards. Potential HUD assistance in the future includes encouraging local adoption of the NARRP, reducing the "costs" of HUD subsidies from ancillary requirements (e.g., discouraging local jurisdictions from effectively raising minimum standards when subsidized renovation is undertaken), and monitoring how the new lead-based paint regulations, which will be fully implemented in April 2001, affect affordable rehab.

INTRODUCTION AND MAJOR FINDINGS

STUDY PERSPECTIVE: THE CRITICAL ROLE OF HOUSING REHAB

- About $100 billion to $200 billion[1] in housing rehabilitation (hereinafter rehab or renovation) is carried out each year in the United States. Rehab activity thus approaches or even exceeds investment in new housing construction and constitutes about 2 percent of the nation's economic activity.[2]

- Rehab is essential for sustaining the useful life of America's housing stock—which, like its population, is aging. In 2000, the median housing unit in the United States was "thirty-something," and in central cities, it was "forty-something." In a decade or two, much of America's housing stock will be in advanced middle age, and central-city housing will be geriatric. Rehab is a matter of life or death to these aging housing units.

- While rehab takes place throughout metropolitan areas, it is especially prevalent in central cities. From 1990 through 1994 (curtailments in census data do not allow more current reporting), rehab constituted almost 80 percent of the total dollar amount of central-city residential construction in St. Louis and 50 percent to 60 percent in Baltimore, Cleveland, Detroit, Philadelphia, San Francisco, and Washington, D.C. Rehab is thus critical for central cities. If these places and other older centers are to be invigorated—as is contemplated under smart growth—then a vital rehab industry is essential.

- The overwhelming share of rehab in the United States is done without government intervention or support. The public sector, however, does play a role through regulations, and in some cases, with subsidies.

- Several major programs of the U.S. Department of Housing and Urban Development (HUD) have a large rehab component. About one-quarter of HUD's Community Development Block Grant (CDBG) funds and nearly half of its HOME program monies are used for renovation. CDBG helps fund the rehab of 175,000 to 200,000 housing units annually, and HOME about 30,000 units yearly. Since its inception, HOME has provided financial support for the rehab of more than 250,000 housing units (253,984 units as of February 28, 2001).

- Given the above, it is important for the private and public sectors involved in housing to better understand rehab. Unfortunately, rehab—especially in comparison to new construction—has received relatively little attention in housing research and the housing literature.

- This study examines barriers to the rehabilitation of affordable housing. It is envisioned as the first of a two-part investigation. In the next phase, we will examine how the hurdles to renovation can be overcome.

[1]The wide range is due to variations in how rehab is defined (e.g., whether it includes or excludes repairs and whether conversions from nonresidential use, such as loft conversions, are included).
[2]These data are from the Joint Center for Housing Studies and the National Association of Home Builders (2000).

STUDY OBJECTIVE, DEFINITIONS, AND METHODOLOGY

Our charge is to examine the barriers to the rehabilitation of affordable housing. The elements of the study objective are defined as follows:

- *Barriers* are obstacles that are either unique to rehab or generally more problematic in rehab than with new construction. A barrier in this instance can be the result of many factors, ranging from public regulations (e.g., restrictive building codes) to market and other forces (e.g., inability to afford the rehab and inadequate tradespersons).

- *Affordable housing* is defined as housing that is targeted to the middle- and lower-income markets (approximately 80 percent to 120 percent of area median income).

- *Rehabilitation* is defined as repairs, improvements, replacements, alterations, and additions to existing properties. While the study considers all levels of renovation—minor, moderate, and substantial—the focus is on the moderate and substantial categories. Adaptive reuse, from nonresidential to residential, is considered briefly as well.

The barriers to affordable housing rehab cited in this study are ascertained from multiple sources.

- *Literature.* The study reviews pertinent literature on housing rehab, including previous studies examining renovation barriers.

- *Case studies.* Since the literature on rehab barriers is limited, 11 case studies in cities across the United States were carried out for this report.

- *Study resource group.* The current investigation provides insight into the "real world" barriers to renovation through communication[3] with a range of individuals and organizations knowledgeable about affordable rehab. This "housing resource group" of nationwide contacts includes for-profit developers, nonprofits, knowledgeable industry groups, architects, and other professionals.

- *Technical analyses.* We perform a number of technical investigations on such topics as estimating the need for and affordability of housing rehab in the United States.

- *Research team experience.* The Enterprise Foundation has decades of experience in the development and construction of rehabbed housing, and other members of the research team have done a great deal of work pertinent to the current investigation.

Because there are so many constraints to rehabilitation, we present an analytic framework of the hurdles as a means of organizing the information.

[3]The resource group members are identified in the acknowledgements. The resource group was contacted by telephone and at two national meetings (in Washington, D.C., and Los Angeles, CA) conducted as part of this study.

ANALYTIC FRAMEWORK OF BARRIERS TO THE REHABILITATION OF AFFORDABLE HOUSING

Renovation is often carried out in the face of daunting barriers. Summary exhibit 1 outlines the obstacles to affordable-housing rehab.

- The characteristics inherent to rehab make it different from new construction and underlie many of rehab's difficulties. For instance, renovation typically does not "start from scratch," and it generally must take into consideration unique features. These characteristics make rehab less predictable than new construction and mean that it requires more intensive management in order to be properly executed.

- The traits of rehab contribute to many subsequent constraints. For example, rehab's customization requirements and greater administrative demands drive up costs. Higher expenses aggravate an overarching economic barrier, namely, the gap that often exists between the costs of renovation and the financial resources available to property owners and/or tenants of buildings requiring rehab.

- Economic constraints, in turn, aggravate barriers related to the various stages of renovation. We show these barriers, labeled development, construction, and occupancy, in summary exhibit 1.

    — Development encompasses all the activities performed before construction can begin, including acquiring properties, estimating costs, and securing insurance and financing.

    — In the construction phase, the major concerns are assembling qualified tradespeople and abiding by the myriad codes and regulations (e.g., building, housing, and environmental) governing the "bricks and mortar" work on a property.

    — Following construction, the rehabbed property is subject to numerous occupancy considerations, such as rent control (i.e., to what extent rents on the renovated property can be raised) and property taxes (i.e., to what extent taxes on the rehabbed building will be increased).

This study examines the economic, development, construction, and occupancy barriers in detail. The findings are summarized below.

STUDY FINDINGS

Economic Constraints: The Need for and Affordability of Rehab

Rehab Need

- Of the 82.2 million occupied, permanent (non-mobile home), year-round houses or apartments in the United States reported on in the 1995 *American Housing Survey* (AHS), the study estimates that

    — 3.9 million, or about one in 20 (4.7 percent), require substantial rehab;

— 8.2 million housing units, or about one in 10 (9.9 percent), need moderate rehab;

— approximately 25.1 million housing units, or about three in 10 (30.6 percent), can make do with minor rehab; and

— 45 million housing units, or slightly more than half (54.8 percent), require no rehab (summary figure 1).[4]

- Rehab need is related to various housing-unit and household characteristics. Compared with the overall nationwide figures cited above, somewhat greater renovation need (summary figure 1) is suggested

  —for rental as opposed to owner-occupied units;

  —for units occupied by minorities and the poor; and

  —for older housing units, and—by a very small margin—for central-city units.

- The total national rehab investment needed for occupied, permanent housing in the United States as of 1995 was $623 billion. Both this dollar amount and the percentage of housing units described previously as needing rehab are conservative estimates[5]—that is, they likely underestimate the full measure of necessary renovation.

Rehab Affordability—The Economic Constraint

- We estimate the ability to afford housing and measure affordability by employing the housing expense to income ratio (HEIR). An HEIR of 40 percent or more is deemed unaffordable or excessively burdensome. We estimate excessive housing costs versus affordable housing costs under two conditions: (1) current, or before any minor, moderate, or substantial rehab is effected, and (2) post-rehabilitation. The former figures are those reported in the AHS; the latter figures were calculated by the study team.

  — Currently, without factoring added expenses for renovation, 15 million housing units, or 18.4 percent of the 80.8 million total housing-units studied here, have an excessive cost burden, as defined above.

  — The number of households experiencing an excessive burden rises to 20.1 million, or 25 percent of the total, when the costs for rehab are factored in (summary figure 2).

  — Thus, there is an affordability gap even before considering rehab need, and that affordability problem worsens if the estimated rehab occurs. Rehab affordability is an even greater problem for certain types of households and housing units, such as minorities and rental units, respectively (summary figure 2).

[4]In fact, every housing unit needs some measure of repairs each year. Our determination of rehab need, based on AHS data, is a crude gauge that probably better captures the need for improvements, replacements, and alterations as opposed to ongoing repairs and maintenance. We also do not include any of the rehab need for unoccupied housing, mobile homes, vacation homes, and other units. Thus, our estimates of rehab need in this section are very conservative and understate the true need for renovation.

[5]See note 4.

- Of the estimated $623 billion in rehab needed nationwide

  — $396 billion, or about two-thirds, is deemed affordable (i.e., with rehab, the HEIR is less than 40 percent); and

  — $227 billion, or about one-third, is unaffordable (i.e., post-rehab, the HEIR is 40 percent or more). The greatest financial burden is faced by renters versus owners; central-city residents and the poor; minorities; and those living in the oldest housing units (summary figure 3).

- The calculations on rehab affordability did not factor in subsidies,[6] such as CDBG, HOME, low-income housing tax credits (LIHTC), and historic rehab tax credits (HRTC), that can help bridge the affordability gap. Yet these subsidies are typically in short supply relative to demand. Also, if more than one subsidy is utilized, additional challenges may be posed (e.g., subsidy requirements may contradict one another).

Development, Construction, and Occupancy Barriers to Rehab

- The barriers to affordable-housing rehab identified in this study are synopsized in summary exhibit 2.

- The barriers are interrelated and often reinforcing. For example, "excessive" building codes raise costs—and higher costs widen the economic gap. "Unclear" building codes make it harder to estimate costs, often limiting the contractor pool. Reduced market competition and a small contractor pool can lead to increased construction costs—again aggravating the economic gap. The economic gap, in turn, magnifies the impact of many of the barriers encountered in effecting affordable rehab. Delays, excessive codes, rising property taxes, and other issues would be less daunting if the margins in doing affordable-housing renovation were not as critical as they are.

- Most of the hurdles are at the development and construction stages, not the occupancy stage. The two occupancy issues studied here, rent control and rising property taxes, are relatively minor constraints. Rent control barely exists in the United States, outside of a few cities, and the property tax problem is negated by frequent abatement programs.

- The barriers are diverse and encompassing.

  — Economic constraints include the inability to afford the rehab, to pay for a professional to estimate costs, to properly abate environmental hazards, and to restore historic elements.

  — Professional inadequacies involve such matters as the ability of real estate agents to locate properties suitable for rehab, insurance agents to secure affordable coverage, contractors and architects to estimate costs, and appraisers to identify suitable "comparables" to the subject property.

[6]In addition to the utilization of layered subsidies, rehab affordability can be enhanced through such means as sweat equity and by doing renovations over an extended period.

— Regulatory and programmatic problems range from prolonged property tax foreclosure impeding property acquisition to the building code's "25–50 percent rule," which demands that new-construction building standards be met when undertaking rehab.

— Miscellaneous constraints. In general, the smaller, less-capitalized, less-experienced contractors do rehab work, whereas the larger, better-capitalized, and more-experienced contractors do new construction. Consider these facts in light of the reality that many rehab jobs are much more complex than new construction projects. A rehab project is more difficult to manage due to its complexity, smaller size (which makes construction less efficient), and the fact that the contractor needs to know old ("archaic") construction techniques and building codes as well as current techniques and codes. A recurring problem is that the better rehabbers "graduate" to become new-home builders. This "brain drain" is a major problem for the rehab industry.

- The barriers to rehab are often most problematic in those cases with the greatest potential social, economic, and planning benefits. Rehab is particularly challenging in mixed-use, adaptive reuse, and historic situations. The building code alone can stop these types of efforts in their tracks. Conversion of upper-story space from commercial to housing may be thwarted by the building code's demand that reuse and rehab satisfy new-construction standards—a near impossibility. The building code can also complicate mixed-use planning, as we found in Seattle where code requirements for renovating mixed-use apartments in buildings often means that commercial uses, such as first-floor restaurants, be retrofitted to new-building standards, which would involve expensive and extensive work on smoke dampers, air changes, and the like.

- While the barriers shown in summary exhibits 1 and 2 reflect practitioner experiences, their specific incidence and degree of difficulty vary by jurisdiction, project type, and so on. As just noted, rehab is often more difficult in adaptive and mixed-use situations. Many other influencing conditions can add to the challenge.

  — *Variability in local codes and their administration.* While the building code can be a major impediment in some cities—those with archaic codes and inspectors demanding compliance "by the book"—it may be of little concern in communities with more flexible codes and code administrators.

  — *Subsidy utilization.* Davis-Bacon, while irrelevant to unsubsidized rehab, can pose a challenge to federally aided affordable rehab. In general, the more subsidies are drawn upon, the greater the potential barriers to affordable renovation projects. However, subsidies are often essential.

  — *Environmental conditions.* Rehabbers of contemporary buildings do not confront issues of lead paint and asbestos abatement, yet regulations governing these materials can bedevil the renovation of older properties.

  — *Experience.* Estimating cost is often very challenging to the novice renovator; it may be of little issue to a more experienced counterpart.

  — *Issues of ownership acquisition.* Property acquisition is irrelevant for the owner wanting to upgrade his or her property, but can be challenging for outsiders wishing

to buy and renovate (i.e., those doing "acquisition rehab"). Acquisition is also more challenging for those seeking to focus their renovation efforts in selected blocks or neighborhoods (i.e., those doing "targeted rehab").

— *Urban issues*. Identifying and obtaining clear property title as well as problems securing insurance and financing may be more challenging in urban locations than in suburban locations.

— *Rehab scale.* Moderate-scale rehab is more challenging in many respects than smaller- and larger-scale renovation.[7]

— *Rehab level.* A moderate amount of rehab—more than minor but less than substantial renovation—often poses relatively more difficulty.[8]

— *Other variables.* The presence of a basement can increase radon risk. Even topography can influence the issues confronted in doing rehab. For example, the access mandate is harder to satisfy in cities with sloped streets.

- Given the variability in the barriers to rehab, there is no uniform ranking of the severity of the hurdles. What is a minor or nonexistent issue in one situation may be a moderate to significant problem in another context. Nonetheless, we rate on a rough ordinal scale of "minor," "moderate," and "significant" those barriers that the study suggests are more or less troubling. Most of the barriers are minor, including estimating costs, obtaining insurance, dealing with minimum housing standards, radon, energy, regulations, and rent control and property tax issues. The most significant problems include the economics of affordable rehab projects, regulations, and the related ability to secure financing. Lead-paint abatement is a moderate to significant problem. The remaining issues identified in summary exhibits 1 and 2 are of minor to moderate concern—again subject to tremendous variability.

- The barriers must be considered in the broader context of their main purpose. Historic preservation is illustrative of this reality. While renovation may sometimes be impeded by certain preservation provisions (e.g., protracted local historic commission review), historic preservation contributes to housing rehab by encouraging investment in older housing and neighborhoods and through various preservation-targeted subsidies, such as property tax abatement. Also, although affordable-housing advocates would prefer more accommodating standards for the historic rehab tax credits (HRTC), the HRTC's goal is fundamentally preservation, not housing.

  Perspective is also needed in viewing lead-paint abatement and asbestos abatement, access, building code, and other regulatory mandates that affect rehab. These provisions are essential for serving the public's health, safety, and welfare. At the same time, these mandates can

[7]Renovating a few properties is generally quite manageable, and at the opposite end of the spectrum, the large-scale rehab outfit is typically professionally staffed and well capitalized, and benefits from scale economies. Moderate-scale rehab, falling between the two polar cases just described, is often more problematic. The activities and scheduling are more demanding than with small-scale jobs, yet the resources and competence of the larger operation are not at hand, nor are the economies of scale.

[8]Minor rehab is more straightforward, its costs are easier to predict, and the expenses are more affordable. Moderate rehab shares the economic challenge of substantial rehab (Duncan 1991) yet in many respects is harder to do: more decisions have to be made on what to retain and what to replace (with substantial rehab, the entire housing unit is often gutted); costs are harder to predict than with minor or substantial rehab; and with moderate rehab, some regulations may be more of an issue or harder to predict. For instance, the building code's "25–50 percent rule" is typically not triggered with minor rehab, is usually triggered with substantial rehab (and thus the impact of the rule may be anticipated), and may or may not be applicable with moderate rehab.

pose challenges to rehab. The issue is one of balance. One objective of this study is to foster further dialogue on this subject.

- The challenges of rehab must be acknowledged. Rehab is sometimes viewed as "easier" than new construction. That view is inappropriate. Realism should prevail and proper support be accorded to renovators. Realism about the task and appropriate support are especially critical in tackling difficult assignments, for example, when a nonprofit is ratcheting up activity from small-scale to moderate-scale rehab.

- While the barriers to rehab are challenging, they are far from insurmountable. Rehab in the United States is being done on a large scale, about $150 billion worth annually. As one member of the housing resource group commented, "There are always issues to resolve and we deal with them." Further, the barriers are more serious for affordable rehab. Finally, the hurdles to renovation are being addressed on many fronts. Building codes are being reformed; receivership laws (for securing neglected properties) are being adopted; lenders are more comfortable granting rehab loans; and regulators increasingly are working with the housing industry to foster flexibility in enforcement. Maryland, New Jersey, Vermont, and several other states are actively working to further statewide rehab, historic preservation, and related activities. This study points to the need for further investigation into ameliorative strategies.

- HUD, already an important contributor to affordable renovation, can take various actions to foster affordable-housing rehab. Potential activities are listed in summary exhibit 3.

GUIDE TO THIS REPORT

The remainder of volume 1 of this report consists of two sections. The first, Context and Synthesis of Findings, provides background to the study (chapter 1) and synthesizes the barriers to rehab as revealed in the study's technical analyses and the case studies (chapter 2). The technical analyses contained in the second section of volume 1 consider three matters: national rehab need and affordability (chapter 3), LIHTC (chapter 4), and the building code (chapter 5).

The detailed case studies are contained in volume 2. Each case study (chapters 6 to 11) is organized using the following common framework:

1. *Executive Summary*. This opening section provides a synopsis of each case study's major findings.

2. *Background*. This section sets the context and includes such considerations as the history of the organizations (e.g., Isles or Little Haiti Housing Association) or legislation (e.g., Massachusetts's Article 34 or New Jersey's new rehab code) studied and an overview of the local or state setting.

3. *Rehab Description*. Where applicable, information is provided on the scale and nature of the rehab activity.

4. *Barriers to Housing Rehab*. This section presents the barriers as illuminated in the case studies. The hurdles are presented in keeping with the analytic framework of summary exhibit 1: The economic barriers are presented first, followed by the hurdles to effecting renovation at the development, construction, and occupancy stages.

SUMMARY EXHIBIT 1
Barriers to the Rehabilitation of Affordable Housing: Analytic Framework

I. Overall Rehab Characteristics Frame the Process and Underpin Many of the Barriers

Compared with new construction, rehabilitation is often

- nonstandard
- less predictable
- smaller scaled
- challenged in other ways

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II. Economic Constraints Are Key Barriers Affecting All Stages of the Rehab Process

The gap between the costs of rehab and the available financial resources of property owners/tenants impedes rehab investment and aggravates development, construction, and occupancy issues.

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III. Specific Barriers along the Continuum of Rehab Implementation Stages

A. Development	B. Construction	C. Occupancy
1. *Acquiring Properties*—difficulty obtaining sufficient and appropriately located and priced properties	1. *Codes/Regulations*—building, housing, fire, lead, asbestos, energy, historic, and access regulations are sometimes problematic in retrofit situations	*1.* *Rent Control*—restricts income necessary to meet rehab outlays
2. *Estimating Costs*—difficulty estimating precise rehab expenses	2. *Trades*—difficulty obtaining qualified tradespersons	*2.* *Property Tax Increases*—increases following rehab can discourage investment
3. *Obtaining Insurance*—difficulty obtaining various forms of insurance (e.g., hazard and bonding)	3. *Other*—e.g., technology, security issues	
4. *Obtaining Financing*—difficulty obtaining sufficiently leveraged, affordable financing		
5. *Land-Use Restrictions*—e.g., disallowing change or intensification of use		

SUMMARY EXHIBIT 2
Summary of the Barriers to Rehab at the Development, Construction, and Occupancy Stages

Barriers by Rehab Stage	Barrier Profile	Barrier Incidence (Where Problems Are Most Challenging)	Ameliorative Strategies
Development Stage Barriers			
Property acquisition	• Acquisition from owners—owners difficult to locate; complications (e.g., estate); expense; "lienfields" • Property tax foreclosure—time-consuming, weak title • Bank foreclosure—time-consuming and sometimes limited to "bulk" sales • Other—limitations with eminent domain, owner donation, and other acquisition strategies	Acquisition rehab (properties are acquired and then renovated) and targeted-area rehab (rehab is done in targeted locations)	• Receivership • Accelerated foreclosure • Better property identification • Addressing lienfields
Cost estimation	*Uncertainty Concerning Needed Improvements* • Hidden problems (e.g., termite and water damage) exacerbated by building code issues • Time uncertainties (inflation and damage) *Estimating-Process Difficulties* • Limited access and building plans • Time and budget limitations constrain a comprehensive estimate	Moderate rehab, special situations (e.g., historic or adaptive reuse), novice rehabber	• Better training • Estimating software • Resources to accomplish careful estimates • Better inspection methods and technologies
Insurance	*During Rehabilitation* • Premium for hazard-liability insurance in rehabilitation projects • Difficulty in obtaining surety bonding *After Rehabilitation* • Difficulty in securing coverage	Special situations and novice/small rehabber	• Pooled-risk insurance for contractors • Anti-redlining provisions
Financing	*Appraisal Issues* • Difficulty in identifying "comps" and making adjustments • Discrepancy between rehab cost and supportable property values *Higher-Cost Financing Terms* • Loan to value ratio, income-expense ratio, fees, credit enhancement, and other provisions are more stringent for rehabilitation *Other* • Public funding constrained by limited supply of, and competition for, public assistance; the "costs" of subsidies from ancillary requirements; the timing of subsidies (e.g., deadline conflicts), and other issues (e.g., LIHTC selection criteria may be problematic to rehab)	"Pioneer and lower-income rehab," "special situations" (e.g., historic and adaptive reuse), novice rehabber	• Shared-risk financing pools • Appraiser-lender education • Streamlined, more rehab-supportive subsidies
Land-use restrictions	*Limitations on* • Intensification of use • Change of use • Mixed use *Requirements for* • Off-street parking, open space, etc.	Adaptive reuse, mixed-use, and historic situations	• Allow land-use flexibilities • Allow place-based standards (e.g., reduced parking and open- space requirements in urban neighborhoods)

Continued on next page

SUMMARY EXHIBIT 2 (continued)
Summary of the Barriers to Rehab at the Development, Construction, and Occupancy Stages

Barriers by Rehab Stage	Barrier Profile	Barrier Incidence (Where Problems Are Most Challenging)	Ameliorative Strategies
Construction Stage Barriers			
Building code	*Questionable Standards* • Scale ("25%–50% rule") • Excessive minimum standards *Administrative Problems* • Inflexible administration • Conflicts between agencies (e.g., building code vs. fire code)	Novice rehabber, moderate rehab, subsidized rehab, and "special situations"	• HUD-recommended rehab code provisions[a] • New Jersey reformed code[a] • Alter "triggers"[b] • Better training • Coordinate code administration (e.g., between building and fire officials)
Minimum housing standards (MHS)	*Questionable Application* • Heightened MHS enforcement when rehab is effected reduces the ability to capitalize on remaining economic life for roofs, windows, and other components	Moderate, subsidized rehab	Effect regular and nuanced MHS enforcement and homeowner replacement reserve
Historic preservation	*Preservation controls and programs, e.g., Section 106, tax credits, and local landmarking, contribute to housing rehab by* • encouraging rehab investment • fostering a rehab industry • providing incentives *Preservation can sometimes be a barrier to rehab due to* • inflexible 106 review • inflexible tax credit review • stringent local regulations	Historic properties, novice rehabber, small rehab projects, and selected instances of inflexible enforcement	Greater flexibility and working to realize the federal "Policy Statement on Affordable Housing and Preservation"
Lead-based paint	*Regulatory Issues* Many regulations because of severe health hazard associated with lead: • HUD (where HUD assistance is involved) • OSHA—for worker safety • EPA; local health and building codes *Liability Issues* • Citations and lawsuits • Property owner disclosure • Liability insurance *Cost Issues* • Testing, abatement, and disposal costs can be expensive	Most residential units built before 1960. Generally, the older the home, the greater the amount of lead-based paint. HUD estimates that 60 million occupied homes have some lead-based paint.	• Cost-effective abatement solutions • Subsidy sources for lower-income rental property

[a]Both the HUD provisions (National Applicable Recommended Rehabilitation Provisions, or NARRP, and the separate New Jersey building subcode for rehab established a hierarchy of construction requirements linked to need.
[b]Modify or eliminate 25%–50% rule that mandates more stringent construction standards based on the dollar investment in renovation.

Continued on next page

SUMMARY EXHIBIT 2 (continued)
Summary of the Barriers to Rehab at the Development, Construction, and Occupancy Stages

Barriers by Rehab Stage	Barrier Profile	Barrier Incidence (Where Problems Are Most Challenging)	Ameliorative Strategies
Construction Stage Barriers (continued)			
Asbestos regulations	*Regulatory Issues* Regulations to address health hazards: • EPA • OSHA *Cost Issues* • Can be expensive, though typically not as daunting as the costs of dealing with lead-based paint	Apartment buildings with friable asbestos constructed before 1970, especially apartments; adaptive reuse of larger commercial or institutional buildings is also problematic	• Regulatory streamlining • Subsidies for lower-income development
Radon	*Regulatory and Cost Issues* • Recommendation for testing (EPA and Surgeon General) • Minor cost for abatement if necessary	Construction materials, building techniques, local geology, and other factors (presence of a basement) affect radon levels	• No new strategies needed
Energy	*Regulatory Issues* Numerous regulations to reduce energy consumption: • HUD/PATH[c] • Model Energy Code *Cost Issues* • While energy efficiency reduces housing costs over time, retrofitting for energy efficiency can be expensive	Moderate to substantial rehab with HUD subsidies	• Encourage energy-efficient mortgage (EEM) • Enhance energy-certification process for rehabilitated properties
Accessibility	*Regulatory Issues* To satisfy a vital national mandate, there are various regulations: • Architectural Barriers Act • Rehab Act of 1973 • Fair Housing Act • Americans with Disabilities Act • State access provisions *Cost Issues* • Retrofitting access can be expensive (regulations recognize this)	Public accommodations, publicly financed rehab, historic properties, and other situations (e.g., projects with small-sized units and cities with highly sloped streets)	• Because of the difficulty of retrofitting access when an existing building is being renovated, flexibility in satisfying the accessibility mandate is encouraged (e.g., allow alternative minimum standards in historic properties)
Davis-Bacon wage requirements	*Regulatory and Cost Issues* • Prevailing wage requirements for projects with federal funding boosts labor costs	Federally funded (CDBG and HOME) multiunit projects over certain thresholds: eight or more units for CDBG, 12 or more for HOME	• Legislative actions to revise or repeal the requirements
Occupancy Stage Rehab Barriers			
Rent control	Presence of stringent as opposed to moderate controls. (The latter allow sufficient rent increases to economically support rehab.)	Jurisdictions (very few) with stringent rent control	• Reconsider controls or adopt moderate regulations
Property tax	Rehab increases the property tax obligation on the buildings that are renovated	Problems are most severe in high property tax jurisdictions and where property tax abatement for rehab is unavailable	• Provide rehab property tax abatement • Reduce property tax burden

[c]Partnership for Advanced Technology in Housing (PATH) is a private/public effort to develop, demonstrate, and gain market acceptance of innovative technologies.

SUMMARY EXHIBIT 3
Fostering Affordable-Housing Rehab—Potential HUD Actions

1. Encourage and evaluate pilot efforts to acquire properties for rehab through such innovative means as fast-take property foreclosure, receivership, and a torrens title system.

2. Apply FHA property disposition policies to further renovation. For example, consider reinstituting discounts to nonprofit housing rehab organizations when they bid at FHA sales.

3. Encourage local adoption of the National Applicable Recommended Rehabilitation Provisions (NARRP), developed under HUD auspices to improve the building code climate for renovation.

4. Encourage communities to examine the impact of land-use requirements on rehab feasibility and to identify ways these standards can be made more rehab-supportive. For example, reduce off-street parking requirements for rehab projects located in areas served by transit and encourage zoning that permits adaptive reuse.

5. Evaluate how HUD standards affect rehab. For example, the one-space-per-unit parking requirement for HUD-financed Section 202 projects may be too high, particularly in urban areas. As with local mandates, the HUD parking requirements are especially critical in a rehab context because it is difficult to retrofit off-street spaces for an existing building. Underwriting standards can be reviewed. Section 221(d)(4) underwriting currently limits the amount of allowable nonresidential space to 10 percent of the project. This can be a problem for a mixed-use rehab project because ground-floor tenants for commercial space improve project economic feasibility—and also further smart-growth objectives.

6. Encourage states to review their selection criteria for the low-income housing tax credit projects. Our research (chapter 4) indicates that six selection criteria contained in state LIHTC Qualified Application Plans (QAPs) may discourage rehab applications and that five QAP criteria can encourage renovation projects. States should review their QAPs to identify influences and incorporate rehab-supportive criteria.

7. Reduce the "costs" of HUD subsidies derived from ancillary requirements. With congressional action, the Davis-Bacon requirements can be modified, or at least its administration improved. For instance, the eight-housing-unit trigger for Davis-Bacon in CDBG might be raised to the HOME program's 12-unit threshold. To encourage more mixed use, HUD might also limit when commercial wage rates are triggered in mixed-use projects. In a similar vein, participating jurisdictions (PJs) involved in CDBG and other HUD-supported programs should be discouraged from effectively increasing improvement standards when a housing unit is improved with government support (e.g., PJs sometimes strictly enforce minimum housing standards [MHS]).

8. Monitor how the new lead-based-paint regulations, which will be fully implemented in April 2001, affect affordable rehab.

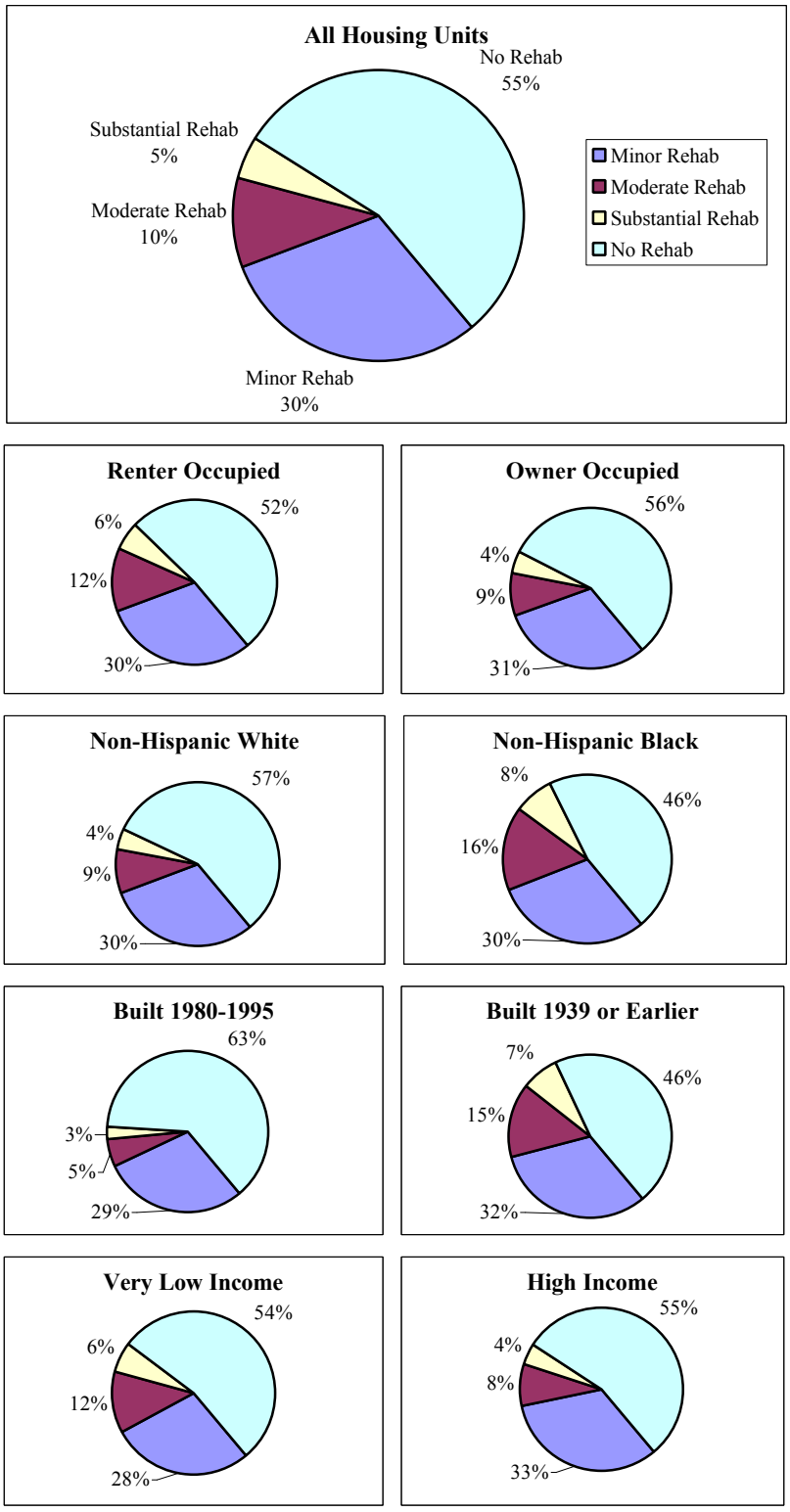
9. Publicize and promote implementation of the Advisory Council on Housing Preservation's (ACHP) June 1998 policy statement on "Affordable Housing and Historic Preservation" (HUD participated in the formulation of, and was a signatory to, this statement).

10. HUD should continue to work with sister federal agencies, such as the National Park Service, the Environmental Protection Agency, and OSHA, on such mutually important matters, as affordable housing, historic preservation, and protection from lead, asbestos, and other health hazards in a rehab context.

11. Improve existing HUD supports for rehab. The 203(k) mortgage, which is granted by private lenders and insured by the FHA, is illustrative. This program dates to 1961, yet has experienced uneven and for the most part modest usage. That is unfortunate, because by offering purchase-rehab financing as well as refinancing for renovation, the 203(k) loan offers much potential. While it has encountered some problems of abuse, with tightened oversight, greater publicity, and revisions (perhaps the ban on use by investors might be lifted on a pilot basis), the 203(k) program can be invigorated as an important support for rehab financing.

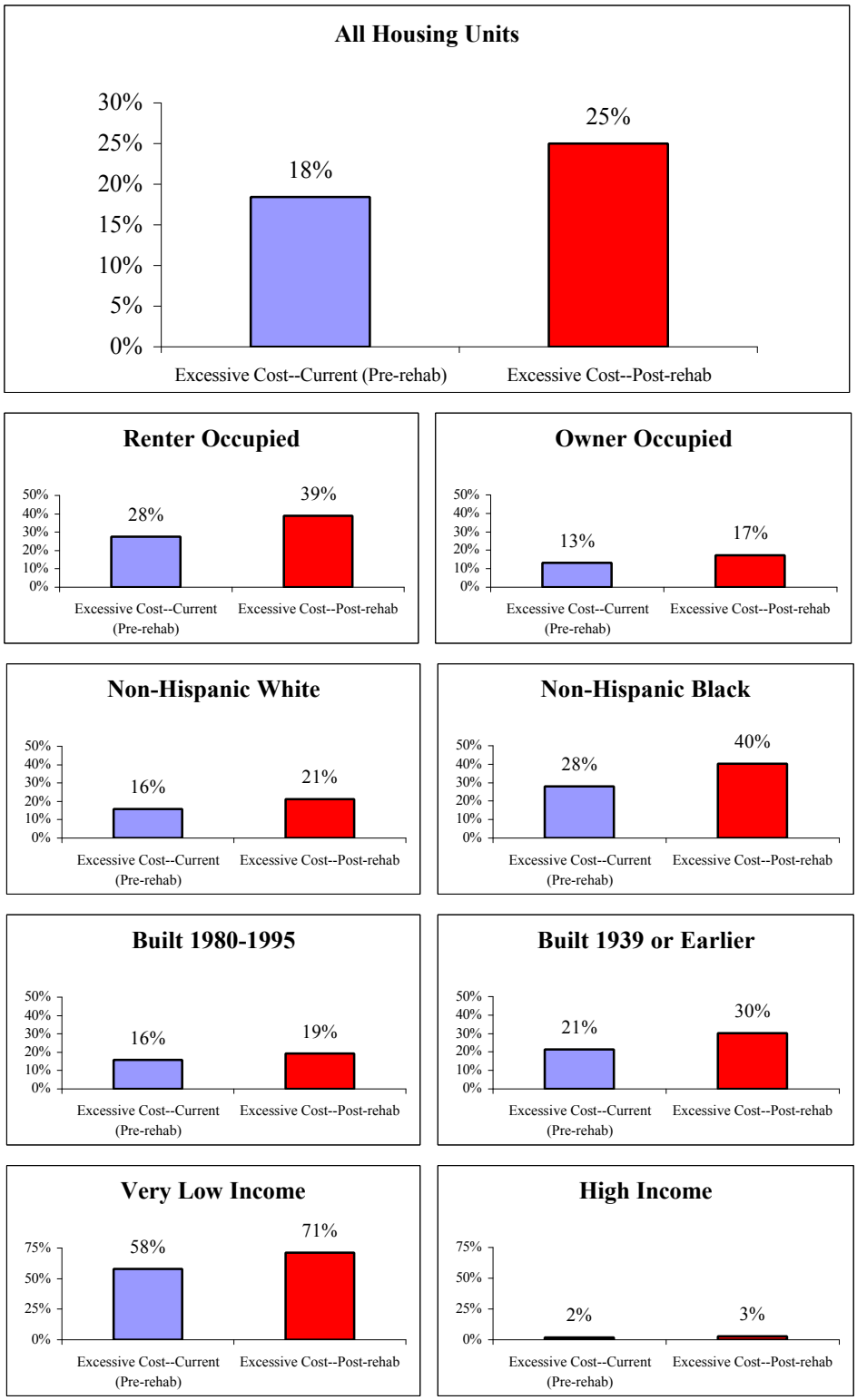
12. HUD should continue its efforts to improve data on rehab. It can begin by annually identifying how much rehab (dollar amount and units) its major subsidy programs are supporting. Those data are already readily available from the HOME subsidy, and, with some additional work, data can be developed for CDBG as well. With the addition of rehab data from 203(k), Title I, HOPE's renovation component, and a few other programs, it would be possible to annually compile HUD's rehab contribution from its major subsidies. Additionally, HUD can continue its collaboration with the U.S. Bureau of the Census, the remodeling industry, and others to improve the geographical, financial, and housing dimensions of rehab information.

SUMMARY FIGURE 1
Estimate of National Rehab Need:
Share of All Occupied, Permanent (Non-Mobile Home) Year-Round U.S. Housing Units Needing Rehab (1995)



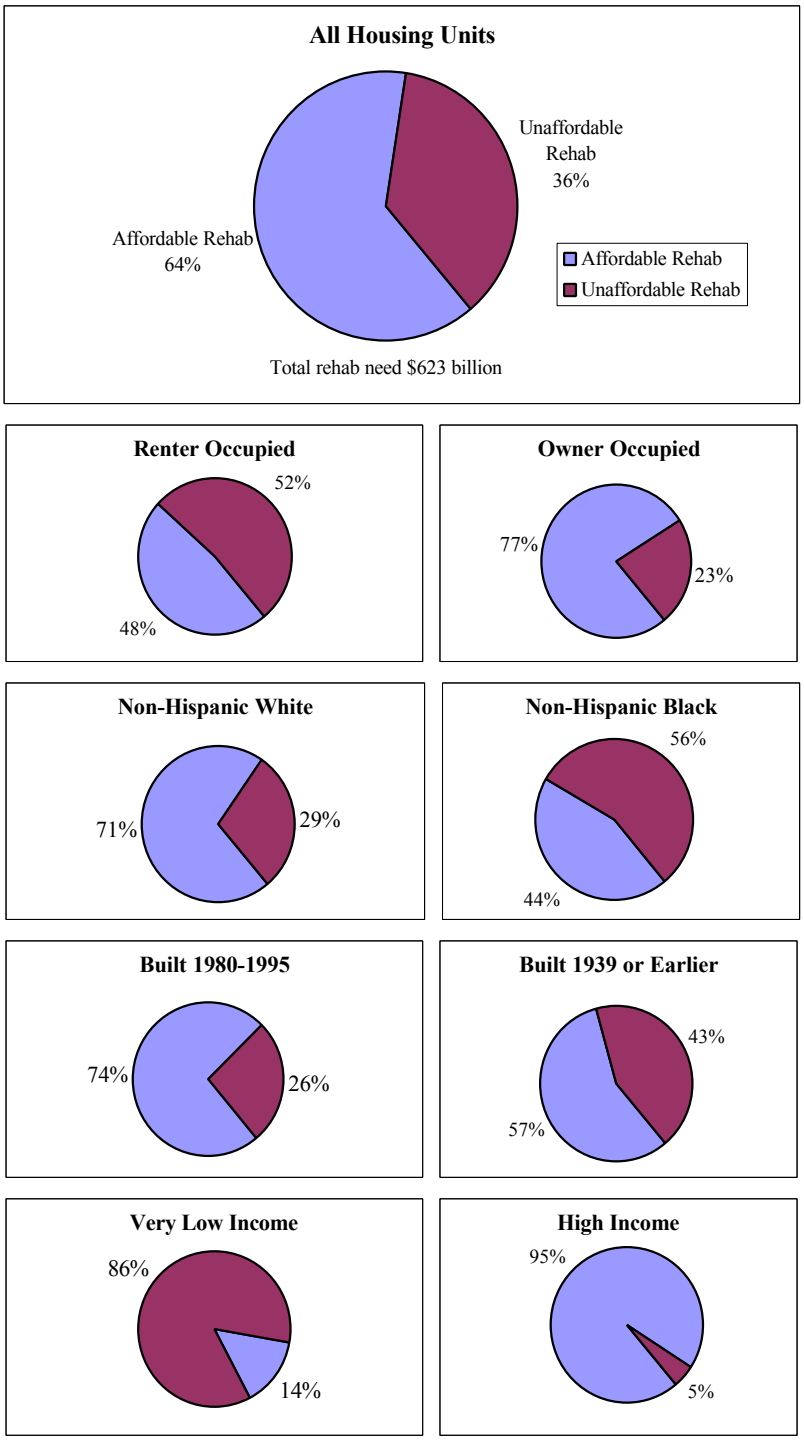
Source : 1995 American Housing Survey and calculations done by the Center for Urban Policy Research, Rutgers University.
Note : Figures presented are a *very conservative* estimate of rehab need.

SUMMARY FIGURE 2
Percentage of Excessive Cost Housing Units in the United States
Current (Pre-rehab) and Post-rehab (1995)



Source : 1995 American Housing Survey and calculations done by the Center for Urban Policy Research, Rutgers University.
Note: Excessive cost = housing expense to income ratio (HEIR) of 40 percent or more.

SUMMARY FIGURE 3
Estimate of Rehab Investment Needed Nationwide by Affordability (1995)



Source : 1995 American Housing Survey and calculations done by the Center for Urban Policy Research, Rutgers University .
Note: Affordable = with rehab, the housing expense to income ratio (HEIR) for the occupant is less than 40 percent.
Unaffordable = with rehab, the HEIR is 40 percent or more.

CONTEXT AND SYNTHESIS OF FINDINGS

CHAPTER 1
STUDY CONTEXT

INTRODUCTION

This chapter sets the context and background to the investigation of the barriers to affordable-housing rehab. It defines housing rehab, describes the current scale of rehab activity, reviews the history of affordable-housing rehab and summarizes prior literature on the subject. The literature review includes studies that have examined barriers to renovation. The chapter also includes a section on contemporary data sources that track housing rehab construction.

REHAB DEFINED

Many definitions have been offered for housing rehab. Warren (1965, 893) defined housing rehab as "the renewal and modernization of existing buildings," and Hendy (1970, 64) defined the term as "improving building habitability." The Secretary of the Interior defines rehab as "the process of returning a property to a state of utility through repair or alteration which makes possible an efficient contemporary use while preserving those portions and features of the property which are significant to its historic, architectural, and cultural values" (U.S. Department of the Interior 2000). According to *The New Illustrated Book of Development Definitions*, rehab is "the upgrading of a building previously in a dilapidated or substandard condition for human habitation or use" (Moskowitz and Lindbloom 1993, 222). [1]

There are three levels of rehab. They are often colloquially referred to as "minor rehab," "moderate rehab," and "substantial rehab." Minor rehab refers to repairs (activities short of replacements that maintain the home) and improvements (activities that enhance the residential structure) of a minor nature, such as replacing or refinishing cabinets, fixtures, and finishes. Moderate rehab involves more extensive improvements, such as new wiring and heating and cooling systems, as well as new cabinets, fixtures, and finishes. Substantial rehab entails removal of all interior walls and mechanical equipment and installation of a new space plan. The level of rehab often determines whether the project requires a contractor or can be conducted as a "do-it-yourself" improvement job. Moderate and substantial rehab often involve a contractor or other professional while minor rehab typically does not.

This study broadly defines rehab to include repairs, improvements, major replacements, alterations, and additions to existing properties. While we consider all levels of rehab—minor, moderate, and substantial—we focus on the last two categories.

[1]Rehab differs from redevelopment in that redevelopment is an encompassing revitalization plan for a particular area that often includes demolition and new construction, and that is used in areas where rehab alone is considered inadequate to stem decay (Warren 1965). Rehab and conservation are closely linked terms, where conservation includes rehabilitation in a coordinated neighborhood attempt at renovation and preservation.

AGING OF THE HOUSING STOCK
SCALE AND INCIDENCE OF THE REHAB INVESTMENT

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) (U.S. Department of Commerce 1999), the median age of all American housing units is only 32 years old. Nonetheless, there is a significant amount of 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, about a quarter (27 percent) of the 112.3 million housing units in the United States are a half century or older, an age at which major rehab of expensive systems and building components (e.g., kitchen and bathrooms) is often needed.

America's central cities are home to the nation's oldest housing stock. According to the 1997 AHS, about 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 about one-quarter (26 percent) of the 26.9 million housing units outside of metropolitan statistical areas (MSAs) were built more than one-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 "forty-something"; everywhere else it is "thirty-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" (only about one-quarter of one percent of the housing stock is lost annually). 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. Exhibit 1.1 shows the value and distribution of residential construction in the United States from 1980 to 1997 in 1997 constant dollars. Exhibit 1.2 shows the breakout in percentage terms. In 1997, for example, the aggregate value of new construction, rehab (shown in this instance to include the census-defined terms of additions and alterations and major replacements), and repairs was approximately $304 billion. Of that total, new residential construction amounted to $187 billion (62 percent), rehab (excluding repairs) amounted to $80 billion (26 percent), and repairs amounted to $38 billion (13 percent). Of note in figure 1.1 is the cyclical nature of overall construction (e.g., downturns in the early 1980s and early 1990s), mainly driven by the up-and-down cycle of new construction. Rehab is a much steadier investment; for much of the 1980 to 1997 period, rehab, even excluding the repair component, made up about a quarter of all residential construction.

EXHIBIT 1.1
Value of Residential Construction by Type, 1980–1997 (in Millions of 1997 Dollars)

Year	CONSTRUCTION TYPE						
	Total Construction Outlays (New, Rehabilitation, and Repairs)	New Residential Construction	Rehabilitation			Repairs	Total Rehab and Repairs
			Additions/ Alterations	Major Replacements	Total Rehab		
1980	$225,670	$135,955	$41,663	$19,168	$60,831	$29,656	$ 90,486
1981	$204,028	$122,888	$36,135	$17,551	$53,685	$28,361	$ 82,046
1982	$169,216	$ 95,043	$31,303	$16,185	$47,489	$28,029	$ 75,517
1983	$232,063	$152,904	$50,350	$17,601	$67,951	$29,286	$ 97,236
1984	$283,001	$176,274	$43,086	$20,236	$63,322	$44,746	$108,068
1985	$289,852	$171,463	$43,029	$24,126	$67,156	$52,874	$120,029
1986	$327,290	$195,377	$56,633	$24,490	$81,123	$52,765	$133,888
1987	$329,509	$197,966	$56,565	$22,462	$79,026	$54,090	$133,177
1988	$324,906	$188,905	$57,958	$23,085	$81,043	$55,578	$136,621
1989	$309,923	$180,585	$51,827	$23,740	$75,567	$54,940	$130,507
1990	$288,007	$157,502	$46,209	$22,705	$68,914	$62,983	$131,897
1991	$245,380	$130,583	$55,354	$19,400	$74,754	$59,015	$133,769
1992	$266,913	$148,515	$46,124	$20,856	$66,981	$51,682	$118,663
1993	$280,661	$160,358	$50,699	$23,151	$73,851	$46,414	$120,265
1994	$305,636	$182,152	$53,045	$24,678	$77,723	$46,515	$124,238
1995	$287,633	$171,902	$47,466	$26,276	$73,742	$44,195	$117,937
1996	$300,984	$183,967	$54,642	$25,117	$79,759	$38,065	$117,824
1997	$303,640	$187,075	$55,300	$24,400	$79,700	$38,030	$117,730

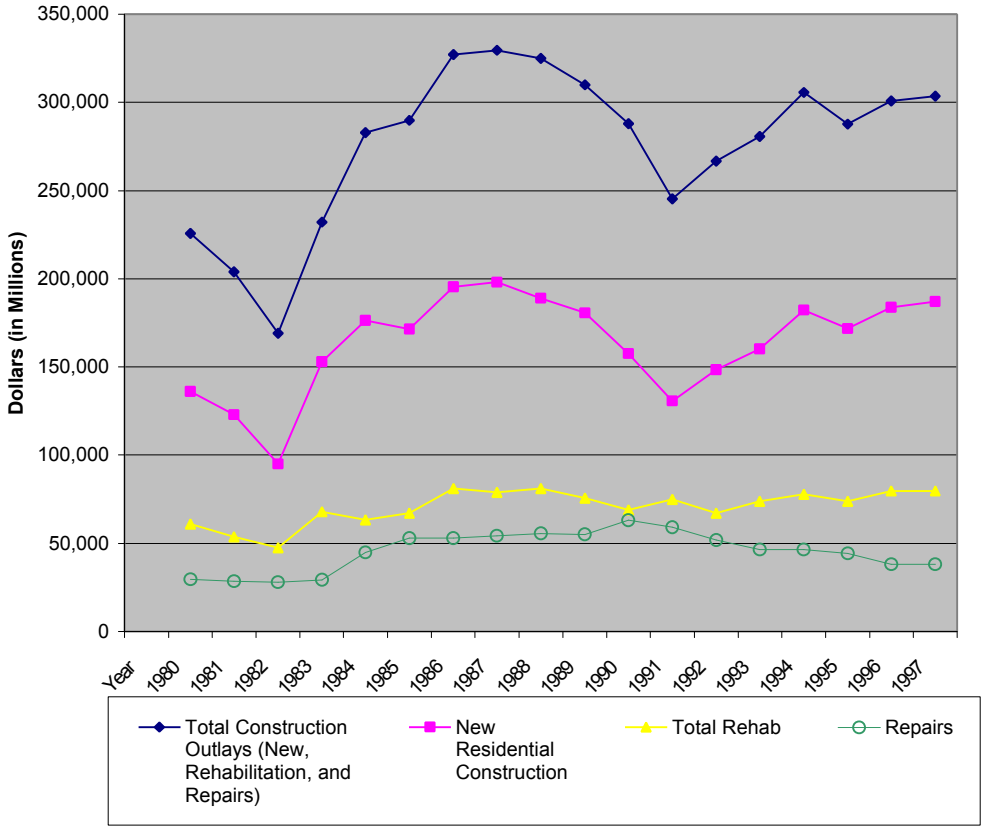
Source: See Exhibit 1.9.
Notes: While this study generally includes repairs in the overall category of rehabilitation, in this table, we break out repairs.
In all tables and in the text, figures may not add to totals due to rounding.

EXHIBIT 1.2
Percentage of Residential Construction by Type, 1980–1997

Year	CONSTRUCTION TYPE						
	Total Construction Outlays (New, Rehabilitation, and Repairs)	New Residential Construction	Rehabilitation			Repairs	Total Rehab and Repairs
			Additions/ Alterations	Major Replacements	Total Rehab		
1980	100%	60%	18%	8%	27%	13%	40%
1981	100%	60%	18%	9%	26%	14%	40%
1982	100%	56%	18%	10%	28%	17%	45%
1983	100%	66%	22%	8%	29%	13%	42%
1984	100%	62%	15%	7%	22%	16%	38%
1985	100%	59%	15%	8%	23%	18%	41%
1986	100%	60%	17%	7%	25%	16%	41%
1987	100%	60%	17%	7%	24%	16%	40%
1988	100%	58%	18%	7%	25%	17%	42%
1989	100%	58%	17%	8%	24%	18%	42%
1990	100%	55%	16%	8%	24%	22%	46%
1991	100%	53%	23%	8%	30%	24%	55%
1992	100%	56%	17%	8%	25%	19%	44%
1993	100%	57%	18%	8%	26%	17%	43%
1994	100%	60%	17%	8%	25%	15%	41%
1995	100%	60%	17%	9%	26%	15%	41%
1996	100%	61%	18%	8%	26%	13%	39%
1997	100%	62%	18%	8%	26%	13%	39%

Source: See Exhibit 1.9.
Note: While this study generally includes repairs in the overall category of rehabilitation, in this table, we break out repairs.

FIGURE 1.1
Construction Outlays (1997 Dollars)



Source: See Exhibit 1.9.

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 construction data for the period 1990 to 1994 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 (e.g., New York, New York; Chicago, Illinois; and Boston, Massachusetts) but also include a sprinkling of newer, rapidly growing sunbelt locations such as Las Vegas, Nevada.[2] The SNC data indicates the importance of renovation in central-city residential construction. On average, almost two-fifths (38 percent) of the value of central-city residential construction in the 20 MSAs during the period 1990 to 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 made up almost 80 percent of the total value of central-city residential construction in St. Louis and 50 percent to 60 percent in Baltimore, Cleveland, Detroit, Philadelphia, San Francisco, and Washington, D.C. In stark contrast were a handful of

[2]The 20 MSAs are 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, D.C.

cities such as Las Vegas, where only 1 percent of the value of central-city residential construction from 1990 to 1994 consisted of renovation.

Incidentally, the metropolitan-level data presented 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 rehab[3] at all (it reports on new construction only). Although rehab is covered by the Census Bureau's C-30 (value of construction put in place) and C-50 (residential improvements) series, those data have numerous limitations. For instance, the C-30 information is not differentiated by metropolitan area or by minor civil division, and the C-50 information is not available below the national and regional levels (see the technical note at the conclusion of this chapter for further details).[4]

The data limitations are acknowledged. A year 2000 "Remodeling Industry Information Summit" concluded that a "key issue raised was the serious deficiency in hard data necessary to develop a comprehensive picture of the total industry, . . . information on the geographical dimensions of remodeling, as well as poor data on the financing of remodeling projects" (Joint Center for Housing Studies and the National Association of Home Builders 2000, i). The paucity of data belies the significance of remodeling activity, which the 2000 conference estimated had climbed to $150 billion a year. That amount is almost 2 percent of the total output of the United States economy, approaches the national spending on the construction of new homes, and exceeds the scale of such better-known industries as legal services and arts and entertainment (Joint Center for Housing Studies and the National Association of Home Builders 2000, 2).

HUD, the building industry, and others recognize that better national-level data on the volume and incidence of rehab are important. To that end, they convened the summit described above and are contemplating other actions to improve the availability of information on repairs and improvements to the existing housing stock.

Rehab information gathered by state and local governments and other agencies provides a useful supplement to federally collected data. The state of New Jersey, for example, keeps central records of the building permits from its 566 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 communities (exhibit 1.3). 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 (Listokin and Lahr 1997). 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. Rehab makes up about a third (35 percent) of the value of residential and nonresidential investment in developing suburbs.

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

[4]Another limitation is that the C-50 data comes from a housing unit or household survey and thus would not capture conversions from nonresidential use, such as loft-building conversions.

EXHIBIT 1.3
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 suburbs	$ 320	$ 423	$ 743	57%
Developing suburbs	$2,052	$1,108	$3,160	35%
Rural	$ 194	$ 45	$ 239	19%
All	$2,725	$1,980	$4,705	42%

If residential construction alone is examined, a similar pattern of emphases on rehab is observed in cities and mature suburbs.

EXHIBIT 1.4
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 suburbs	$ 193	$208	$ 401	52%
Developing suburbs	$1,482	$385	$1,867	21%
Rural	$ 162	$ 24	$ 186	13%
All	$1,876	$725	$2,601	28%

Other state and local data can further our understanding of rehab. We have examined listings of properties on federal, state, and local historic registers (e.g., National Register of Historic Places) as well as local building permits to determine how much of New Jersey's rehab was occurring on historic (i.e., designated on register) properties (Listokin and Lahr 1997). As shown in exhibit 1.5, almost 10 percent of all renovation in New Jersey's cities and older suburbs was effected on designated historic properties, about double the 4 percent incidence found in developing suburbs and in rural communities.

EXHIBIT 1.5
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%
All	$1,980	$123	6%

In a recent study (Listokin and Lahr 1999), historic rehab was found to have a noticeable presence in a number of Texas cities (see exhibit 1.6). That investigation also capitalized on available state and local data, namely local building permits and historic register listings.

EXHIBIT 1.6
Historic Rehab as a Percentage of All Rehab (1994–1997)—Selected Texas Cities

Texas City	Historic Rehab as a Percentage of All Rehab[a] (1994–1997)
Abilene	14%
Dallas	4%
Ft. Worth	9%
Grapevine	21%
Laredo	5%
San Antonio	8%
San Marcus	6%

[a]Residential and nonresidential.

The New Jersey and Texas data reveal how important rehab is, especially in cities and older suburbs. Data for the two states also show that rehab is effected on historic buildings in a significant percentage of cases.

Although we can use state and local information to glean a profile of rehab, there are severe data concerns with respect to this endeavor.[5] 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. A more fundamental limitation is that the available data focuses on rehab's monetary magnitude (e.g., the C-30's value of construction put in place and the C-40's permit value), not on rehab's housing import. The available renovation information does not specify whether a deteriorated housing unit has been saved or an additional housing unit produced through adaptive reuse or

[5]HUD and the Census Bureau are exploring ways to improve the availability of rehab data. For instance, as a follow-up to HUD-Census Bureau deliberations at the "Remodeling Industry Information Summit," the Census Bureau is contacting local permit-issuing jurisdictions to determine the local requirements for rehab permits and the data that would be available from local rehab permits.

other means (i.e., industrial space converted to residential lofts). The Census Bureau's new-construction data records the number of units started, but no such comparable data is available for renovation. These data shortfalls are especially unfortunate given the importance of rehab and the long involvement of government in this sector.

BRIEF HISTORY OF HOUSING REHAB POLICY AND PROGRAMS IN THE UNITED STATES

The first tentative governmental actions involving housing rehab assistance occurred during the time of the depression of the 1930s. Though mainly concerned with new construction and home purchase, the 1934 Housing Act authorized the Federal Housing Administration (FHA) to insure short-term installment loans made by private lenders to homeowners for repairs and improvements. Together with the Home Owners Loan Corporation (HOLC), 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 received little support from the government. From 1954 through 1960, the federal government subsidized only about 10,000 rehabilitated housing units nationwide (see exhibit 1.7). 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.

EXHIBIT 1.7
Federally Subsidized Housing and Rehabilitation Production (Direct Assistance): United States l954 to 1983

Year	Federally Subsidized Housing Production (Number of Units)		
	Total Subsidized Housing Production	Subsidized Rehabilitation Production	Rehabilitation as % of Total Federally Subsidized Housing Production
1954–1961	N.A.	10,000 cumulative	N.A.
1962	38,900	2,500	6.4%
1963	47,600	2,600	5.5%
1964	55,100	3,400	6.2%
1965	63,700	5,900	9.3%
1966	70,900	11,600	16.4%
1967	91,400	16,100	17.6%
1968	165,500	36,100	21.8%
1969	202,700	37,690	18.6%
1970	328,010	34,100	10.4%
1971	482,970	42,060	8.7%
1972	429,790	41,760	9.7%
1973	331,830	42,120	12.7%
1974	171,660	30,160	17.6%
1975	128,840	17,410	13.5%
1976	137,240	19,060	13.9%
1977	217,440	26,330	12.1%
1978	274,330	36,240	13.2%
1979	277,398	40,412	14.6%
1980	265,541	57,411	21.6%
1981	211,390	33,421	15.8%
1982	240,305	30,005	12.5%
1983	69,612	11,452	16.5%

Sources: Data for 1954 to 1961 are from John Heinberg, Public Policy toward Residential Rehabilitation: An Economic Analysis. Ph.D. dissertation, University of Wisconsin, 1967; Data for 1962 to 1968 are from U.S. Department of Housing and Urban Development, Housing in the Seventies (Washington, D.C.: U.S. Government Printing Office, 1974); Data for 1969 to 1979 are from U.S. Department of Housing and Urban Development, Report on the National Housing Goal (Washington, D.C.: U.S. Government Printing Office, 1980); Data for 1980 to 1983 are from figures supplied by the U.S. Department of Housing and Urban Development.
*Note:*Numbers are approximate. CDBG-aided rehabilitation is not included. Data for 1954 to 1968 shown by calendar years. Data for 1969 to 1983 shown by fiscal years.
N.A. = information not available.

In the 1960s and 1970s, many housing officials encouraged rehab as a means of stemming the decline of older neighborhoods (McFarland 1966, U.S. National Commission on Urban Problems 1969). 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. The federal government supported the shift in housing policy to include renovation. It started to make more urban renewal grants with

substantial rehab components. Examples include urban-renewal-funded renovation in Philadelphia's Society Hill and in numerous Boston and Baltimore neighborhoods.

Many new federal programs supported rehab. In 1961, the 221(d)(3) program made available below-market-interest-rate (bmir) mortgages for rehabilitated 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 below-market-interest-rate 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 (HUD 1974, 1976a).

HUD's Project Rehab, created in 1969, initiated a large-scale effort to rehab apartment buildings for moderate-income families (Arthur D. Little Inc. 1971). Project Rehab 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 the Community Development Block Grants (CDBG) in the 1974 Housing Act consolidated many of the earlier categorical programs aimed at rehabilitated 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 coordinate reinvestment into small neighborhood areas; Urban Homesteading attracted families willing to rehabilitate dilapidated units by selling them at drastically reduced prices; Urban Development Action Grants were given to redevelop deteriorating areas, through both new construction and renovation (Dommel et al. 1983). 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.

The many programs of the 1960s and 1970s helped boost federally aided housing rehab. We cannot track CDBG-aided renovation very well (i.e., in terms of housing units aided), but we can monitor subsidized renovation under such major housing production programs as Sections 8 and 236. Data regarding federally subsidized rehabilitation is shown in exhibit 1.7. From 1962 to 1967, the federal government was directly subsidizing from 2,500 to 16,000 rehabilitated units annually. That rehab tally represented roughly 6 percent to 18 percent of all federal housing production, which at that time was quite modest—about 40,000 to 90,000 units annually (exhibit 1.7). After 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 made up roughly 10 percent to 18 percent of all federally assisted housing production.

The subsidy moratorium of the early 1970s dampened production of both new and rehabilitated 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 more than 200,000 housing units annually. Of that total, roughly 25,000 to 60,000 rehabbed housing units were federally aided each year, representing between one-eighth and one-fifth of all production (exhibit 1.7).

With the advent of the 1980s, assisted-housing activity was sharply curtailed. That led to a dramatic reduction in both new construction and federally assisted rehabbed housing units (exhibit 1.7). 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 typically 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 voucher is similar to a certificate, except that it offers greater flexibility in the rent that may be charged and in the percentage of the tenant's income that can be spent on housing.)

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 about 1.3 million housing units (from 3.1 million 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).[6] 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, about 80 percent of HUD housing subsidies were for existing or rehabilitated units (Listokin 1991).

Our brief overview would be incomplete without mention of the low-income housing tax credits (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 Associates 1996). Of that total, 60 percent represented new construction, 38 percent were rehabbed, and the remaining 2 percent were a hybrid (e.g., projects with both new and existing units) or comprised existing units. In the Northeast, rehab accounted for almost 60 percent of the housing units subsidized by the LIHTC (Abt 1996).

[6]HUD statistics provided by the Division of Program Monitoring and Research, Office of Policy Development and Research.

CDBG monies also represented a significant federal support for housing renovation. An early-1990s survey of the local uses of CDBG funds found that 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 (HUD 1992). Section 108, the loan-guarantee provision of the CDBG program, can also be used for housing rehab as well as for other purposes.

In the 1990s, numerous federal 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 HOPE III program (Housing Opportunities for People Everywhere), though limited in scope to previously subsidized projects, allows nonprofit organizations to build or rehab housing for low-income homeownership opportunities (Hays 1995, 20). HOPE VI can be used for the major rehab of deteriorated public housing units as well as for the demolition of obsolete housing units and their replacement through new construction. (Most HOPE VI funds have been used for demolition and new construction.) Other HUD initiatives implemented in the 1990s, from empowerment zones to lead-paint abatement, can be used to support housing rehab. Exhibit 1.8 summarizes HUD programs (as of the year 2000) relevant to housing renovation assistance.

We do not know the exact current tally of rehab aided by HUD because programmatic and subsidy data are not kept in that fashion. Yet, from the information that can be inferred, it is clear that HUD provides significant assistance for housing rehab.

Since 1995, the Community Development Block Grant (CDBG) has amounted to about $4.5 billion annually. From HUD data, we estimate that about 25 percent to 30 percent of this amount, or about $1.2 billion annually, is being spent on housing rehab. Approximately 175,000 to 200,000 units annually are being renovated with CDBG assistance.

As of the late 1990s, the HOME program has approached $1.5 billion in funding. Since its inception, almost half (47.2 percent) of HOME's activity has been in housing rehab. Other activities include new construction (35.5 percent of HOME's activity), acquisition (14.5 percent), and tenant-based rental assistance (2.8 percent). On an annual basis, HOME supports the rehab of 30,000 housing units; since the program was initiated, it has aided the rehab of 253,984 housing units (as of February 2001).

The FHA 203(k) program, a HUD-supported program that insures loans made by FHA-approved lenders, allows the borrower to combine the acquisition and rehab costs in the first mortgage. Eligible homes include one- to four-family dwellings that are at least one year old and that need a minimum of $5,000 in repairs. Initiated in 1961, the 203(k) program closed only about 5,000 loans in its first 30 years; however, activity has increased in recent years. There were 3,400 203(k) loans in 1995 and approximately 14,000 loans by the late 1990s. Although the 203(k) mortgage is unsubsidized, approximately 20 percent of recent 203(k) borrowers had incomes under 80 percent of the area median and almost 30 percent were between 80 percent and 120 percent of the median. In sum, HUD is providing significant support for housing rehab through CDBG, HOME, 203(k), and other programs (HOPE, Title I, and so on).

EXHIBIT 1.8
Contemporary (Year 2000) HUD Programs That Can Support Housing Rehab

Program	Description	FY 2000 Funding[a]
Community Development Block Grants (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 cleanup 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.	
Community Outreach Partnership Centers (COPC)	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, to research community problems, and to 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 the effects of lead hazards. The money is used for lead removal, for 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 to 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 bring direct federal funding with autonomy to tribal lands to assist with their unique housing situation. The 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 the disabled.	$911
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. The loans are made available to private developers, nonprofit organizations, and cooperatives that build affordable housing.	

Source: *Building Communities and New Markets for the New Century*. 1998 Consolidated Report. U.S. Department of Housing and Urban Development.
[a]Dollars are in millions. Includes total program funding, not the specific rehab investment.

Nonfederal efforts supporting rehab also deserve mention. One result of the federal government's reduction of housing subsidies was a greater role for states and others (e.g., local governments and nonprofits) in rehab projects. For example, from FY 1986 through FY 1993, the Maryland Department of Housing and Community Development expended about $320 million for housing and related programs. Of that total, about $110 million, or more than one-third, was for rehab (Rogers 1992).

Societal thinking also changed, with greater support for renovation as an alternative to the wholesale demolition of the older housing stock. With this change came regulatory change. Nowhere was regulatory change more dramatic than in matters concerning historic preservation. In the 1950s and 1960s, many individual landmarks (e.g., New York City's Pennsylvania Station) and historic neighborhoods were lost to urban renewal, highway construction, and other forces. Partially in reaction to the widespread loss of historic places and a growing societal sensitivity to the environment, a preservation-fostering system developed by the mid-1960s. At the federal level, the National Historic Preservation Act (NHPA) of 1966 created a National Register of Historic Places and a review process (Section 106 of the NHPA), to evaluate federal undertakings that threatened National Register resources. (The National Register is housed in the National Park Service.) The NHPA also established the Advisory Council for Historic Preservation, charged with, among other responsibilities, coordinating Section 106. Complementing the NHPA was other federal preservation legislation, including Section 4(f) of the 1996 Transportation Act, which prohibited federal transportation projects from "using" historic resources unless there was "no feasible or prudent alternative," and the 1969 National Environmental Policy Act (NEPA), which required impact assessments of major federal actions affecting the environment, including historic resources.

Parallel actions commenced at the state and local levels in this period. State Historic Preservation Offices (SHPOs) were established with federal funds from the NHPA. The SHPOs helped identify properties to be placed on the national as well as the state registers. Many states further enacted "mini-106" and "mini-NEPA" procedures to evaluate state and local government actions threatening properties on the state or local registers. Some states (e.g., Florida and Minnesota) enacted "mini-4(f)" protections. For example, demolition of a historic building in downtown Hibbing, Minnesota, was stopped on the basis that there was a "feasible and prudent alternative" to its destruction—namely, preservation (Beaumont 1996a, 57).

The establishment of local preservation commissions (LPCs) was of great significance. The LPCs would conduct surveys to identify historic resources and then act to designate these resources as landmarks (Cassity 1996). Once designated, the landmarks could not be demolished nor their facades altered in a fashion not historically appropriate without the approval of the LPC; at the least, these actions would be delayed or commented on by the LPC (Cox 1997; Duerksen et al. 1983; Listokin 1985). LPCs are active throughout the United States; such local action is, however, more the exception than the rule.

Also noteworthy were new tax and other policies that fostered preservation. Until the 1970s, federal tax law discouraged preservation. That began to change under the 1976 Tax Act, and significant historic preservation tax credits were added by the 1981 Economic Recovery Tax Act (ERTA). While the 1986 Tax Reform Act (TRA) reduced the ERTA tax credit benefits, they are

still used. From FY 1978 through FY 1997, 239,862 housing units were rehabbed using various federal historic preservation tax incentives. Of that total, 40,050 units, or 17 percent, were affordable to low- and moderate-income families.

In keeping with these federal actions, numerous state and local governments authorized income and property tax incentives for historic preservation (Beaumont 1996a, 89). Preservation also benefited from the federal Intermodal Service Transportation Efficiency Act (ISTEA) of 1991, as numerous historic rehab projects secured multimillion-dollar ISTEA grants (Costello 1996; Dawson 1996). The Transportation Equity Act of the Twenty-First Century, also known as "TEA-21," is the successor to ISTEA and has similarly aided rehab investment.

Thus, unlike in the past, many federal, state, and local governmental actions and regulations are fostering housing rehab today. Yet, while governmental action is noteworthy, the vast majority of the $150 billion in housing rehab taking place in the United States as of the late 1990s had little connection to governmental aid of any kind. Housing rehab is being driven by the aging of the existing housing stock (and a greater appreciation of the value of that stock); growing societal affluence, which supports the installation of enhanced housing amenities; and related nongovernmental influences. Still, government does have an impact, and the public sector today is much more supportive of housing rehab.

HOUSING REHAB LITERATURE

As rehab becomes more prevalent, so too does the literature on the subject (Listokin 1973a, 1973b; Listokin 1983; Stephen 1989; McNulty and Kliment 1976; National Housing Center Library 1976; National Institute of Building Sciences 1987). We overview the literature below, emphasizing those studies that have examined the barriers to renovation (Rogg 1978a, 1978b) and have considered ways to reduce cost and other hurdles (Santucci, Thomas, Cassidy, and Werwath 1987; Simpson and Simpson 1977). Because of space limitations, we only touch upon major themes of the literature and some noteworthy studies. We also highlight some of the many technical and governmental studies on this topic (U.S. Congress 1978; U.S. Department of Housing and Urban Development 1976b, 1983a, 1983b, 1984, 1987, 1993, 1996, and 1997; U.S. Department of the Interior 1981).

The earliest housing rehab studies date from the 1930s and 1940s. Most were concerned with the narrow issue of economic feasibility. For example, a 1938 report by the Citizens and Housing Council of New York compared the costs of renovating old law tenements with the income to be gained after renovation and concluded that the venture would be profitable (Citizens Housing Council of New York 1938). The 1940 Waverly study commissioned by the Federal Home Loan Bank Board was an exception in its scope and insight. Waverly, a neighborhood in Baltimore, was experiencing incipient decline. In its recognition of varying neighborhood types and the need to tailor appropriate housing strategies to them, and in its advocacy of a broad-based neighborhood conservation program encompassing physical, social, and economic elements, the Waverly study was decades ahead of its time.

In time, the rehab literature began to broaden and to become more sophisticated. One manifestation of this was the growing scope of economic investigation, expanding beyond

building- or neighborhood-level projections to citywide and national-level analyses. The Douglas and Kaiser Commissions, for example, estimated the need for and the expense of significantly expanded federal rehabilitation subsidies (U.S. National Commission on Urban Problems 1969, U.S. President's Committee on Urban Housing 1969). The effects of federal and local tax policy on rehab decisions were also examined (Delvac, Escherich, and Hartman 1996; Hodge and Slitor 1968; Oldham and Jandl 1982; Touche Ross & Co. 1974). The economic cost-benefit of rehab versus new construction was analyzed in a more sophisticated fashion (Schaaf 1960, 1969), as were economic and fiscal consequences (Avault and Van Buren 1985; Bagby 1973; Beaumont 1996a).

The literature also matured in breadth, expanding beyond economic concerns. Social issues ranging from displacement to rehab program administration were considered by numerous authors (Abrams 1965; Cohen 1980; Feinhandler 1971; Keyes 1969, 1970; Smith 1996). Construction matters from mundane building code requirements to the potential of "space-age" technology also became topics of discussion (Institute of Public Administration 1968; Whittlesey 1969). Rehab administration, rehab training, cross-national rehab policies, and other issues were considered (Benitez 1971; California 1979; Carlson 1978; Center for Community Development 1979, 1982; Community and Economic Development 1977; Ehrman 1978; Home Tech 1978; Institute of Public Administration 1968; Levatino-Donoghue 1979; Levin 1969; McKenzie 1972; Massachusetts Bay 1972; Ruckle 1991; Santucci, Cassidy, and Werwath 1991).

Barriers to Rehab Cited in the Literature

The literature pertaining to construction is where most of the discussion of barriers to rehab is found. We present a comprehensive bibliography and annotation of studies on barriers to rehab at the end of this volume. We briefly note some relevant studies here.

In the 1960s and 1970s, numerous studies identified the barriers to effecting housing rehab, especially renovation affordable to income-constrained households. *Residential Rehabilitation: Private Profits and Public Purposes* (Nash 1959) described the difficulties of obtaining financing. This barrier was echoed in investigations by Niebanck and Pope (1968), Kristof (1967), Sternlieb (1969, 1971), Rothberg (1976), and others. For example, Rothberg described how lenders sometimes "irrationally" refused to finance repair loans on older properties. Slayton (1955), Whittlesey (1969), Sternlieb (1969), and Weinstein (1972) spoke of problems of property acquisition. The practical difficulties of securing repairmen were described by Warren (1965), the U.S. President's Committee on Urban Housing (1969), and Whittlesey (1969), among others.

Much of the literature on housing rehab barriers has focused on the constraints posed by public regulations, most notably the building code, which traditionally focused on new construction. A report by the National Commission on Urban Problems (1968) titled *Building the American City* criticized new-construction-based building code standards as being unsuitable for housing renovation. In 1977 and 1978, Metz concluded that building codes were a hindrance to renovation. Two years later, the U.S. Department of Commerce (1979) compiled *Selected Papers Dealing with Regulatory Concerns of Building Rehabilitation*, including Baird Smith's paper, Information Structure of Building Codes and Standards for the Needs of Existing Buildings (see also Berry 1979; Bunnell 1978; Gross 1979; Gross, Pielert, and Cooke 1979; HUD 1979a,

1979b, 1979c; Meyer 1990; NAHRO 1971; National Conference of States 1980; Paxton 1988). These themes were repeated in the National Bureau of Standards (1979) report titled *Impact of Building Regulations on Rehabilitation—Status and Technical Needs*, which focused on the ways in which building codes hampered renovation. The *Report of the President's Commission on Housing* (McKenna 1982) pointed to the additional costs imposed by strict building codes in the renovation of older units and the dampening effect of the codes on innovation. Other reports focused on the same issues: Building Technology, Inc. 1981a, 1981b, 1981c, 1982, 1987; Building Codes 1969; Ferrera 1988; Ferro 1993; Field and Rivkin 1975; Georgia Trust 1985; Green 1988; Holmes 1977; Kaplan 1988, 1992; Kapsch 1979; and Shoshkes 1991. In response to the identified building code problems, HUD released model *Rehabilitation Guidelines* in the early 1980s (National Institute of Building Sciences 1981a, 1981b, 1981c, 1981d, 1981e, 1981f, 1981g, 1981h, 1981i).[7]

As noted earlier, some of the impetus for housing rehab stems from historic preservation themes, and many studies have pointed out the difficulty of satisfying new-construction-based building codes in effecting historic renovation. In 1988, a report to the West Virginia Task Force for Historic Preservation Legislation (Harper, Hydier, and Hopkins 1988) recommended greater flexibility in building code requirements, since the requirements often make rehabilitation more expensive than demolition and new construction. That same year, *Preservation Forum* included an article by Melvyn Green (1988) titled "Building Codes and Historic Preservation: An Overview." In 1989, National Trust for Historic Preservation published a report by Margaret Coleman titled *Building Codes and Historic Preservation*, which identified the following code-related impediments to preservation: strict egress requirements, lack of fire rating for existing materials, overly strict code officials, extensive approval time, officials unaware of historic preservation code provisions, and stringent accessibility requirements. An edited collection of papers by David Listokin and Barbara Listokin, titled *Preservation and Affordable Housing: Accomplishments, Constraints, and Opportunities,* was published in 1993. It included an article by Peter Werwath (1993), "The Price of Regulation," which described building code difficulties.

In the early 1990s, the Advisory Commission on Regulatory Barriers to Affordable Housing (1990a, 1990b) conducted a series of hearings and released several reports addressing the issue. Some of the barriers to rehab discussed in the hearings included the use of prescriptive rather than performance-based building codes; building inspectors who were overly strict in enforcing the building code because they were fearful of liability; and building code restrictions and Americans with Disabilities Act mandates that increased construction costs. *Not in My Backyard: Removing Barriers to Affordable Housing,* a report by the Advisory Commission on Regulatory Barriers (1991a), examined regulatory restrictions on urban rehabilitation and infill, including delays in building acquisitions and overly strict historic preservation regulations, and the problems posed by the "not-in-my-backyard" attitude.

Recently HUD has sponsored numerous studies designed to foster rehab, and these often aim to address the barriers to renovation. For example, the use of new technologies and materials to lower costs in renovation was researched in a study titled *Innovative Rehabilitation Technologies: A State of the Art Overview* (NAHB 1995). The *Status of Building Regulations for*

[7]This was part of a broader effort at regulatory reform (see National Association of Home Builders 1987; Weitz 1982).

Housing Rehabilitation (NAHB Research Center 1995) focused on regulatory issues pertaining to housing renovation. In 1997, HUD released the Nationally Applicable Recommended Rehabilitation Provisions (NARRP) (NAHB Research Center and Building Technology, Inc. 1997) as a framework for the reuse of existing buildings and their adaptation to new uses. The NARRP was designed to address the traditional building code impediment to rehab.

In sum, during the last three to four decades, many studies have noted barriers to housing rehab. Much of the literature on this topic has focused on the problems presented by new construction-based building codes. Other regulatory barriers have been noted as well, including overly strict and inflexible environmental and access provisions. Reports have cited other issues, ranging from difficulties in securing financing to problems in property acquisition.

This study builds from the extant literature. The existing body of work, however, has not comprehensively examined, organized, and detailed barriers to rehab. That is the mandate of the current investigation.

TECHNICAL NOTE—BUILDING REHAB DATA SOURCES

The U.S. Census tracks the value of rehabilitation taking place as well as the value of other types of construction investment nationwide. This is done through several reports: the Value of Construction Put in Place (C-30), the Building Permits Survey (C-40), and the Expenditures for Improvements and Repairs (C-50).

C-30 reports the value of new residential and nonresidential construction (not just the work that is permitted), as well as the value of residential rehab—specifically including additions, alterations, and major replacements. The information is obtained through a mail survey and is rich in detail, containing data about public, private, commercial, and industrial development. Further detail about items in the C-30 is shown in exhibit 1.9.

New residential construction is also tracked through the value of building permits issued. This report, the Building Permits Survey (C-40), was modified in 1994. Before 1994, the C-40 contained data on both residential and nonresidential rehab, the latter encompassing permitted additions and alterations. Currently, there is no tracking of any renovation in the C-40; this series covers only new construction.

Rehab alone is reported in the Expenditures for Improvements and Repairs series (C-50). This report provides the most complete information on rehab activity of any census report. In addition to the residential additions and alterations and major replacements reported in the C-30, the C-50 tracks spending for residential maintenance and repairs. The C-50 data relies mainly on the Consumer Expenditure Survey (Peng 1992). Based on comparisons of data in the C-50 and the American Housing Survey, it is believed that the C-50 information severely underestimates the true level of rehab activity (Joint Center for Housing Studies and the NAHB 2000, 6). For example, the 1995 American Housing Survey (AHS) reported that homeowners spent $114 billion for improvements and repairs; the C-50 for that year reported that owners spent less than $79 billion (Joint Center for Housing Studies of Harvard University 1999, 4–5).

The various reports also differ in their levels of geographic specification (see exhibit 1.9).

EXHIBIT 1.9
Data Sources on New Construction and Rehab

	C-30, Value of Construction Put in Place[a]	C-50, Residential Improvements[b]	C-40, Building Permits Survey (Pre-1995) [c]	C-40, Building Permits Survey (Current)
COVERAGE				
New construction				
Residential	yes		yes	yes
Nonresidential	yes		yes	
Residential rehab				
Maintenance and repairs		yes		
Additions and alterations	yes	yes	yes	
Major replacements	yes	yes		
Nonresidential rehab				
Maintenance and repairs				
Additions and alterations			yes	
Major replacements				
Geographic coverage				
National	yes	yes	yes	yes
Regional		yes	yes	yes
State	limited		yes	yes
Metropolitan		limited	yes	yes
Minor civil division			yes	yes

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

[a]C-30—Measures the value of construction put in place. Includes new buildings and structures; additions, alterations, and renovations; mechanical and electrical installations; site preparation and outside construction of fixed structures; materials; cost of labor; contractor's profit; project owner's overhead and office costs; cost of architectural and engineering work; interest and taxes paid during construction; and miscellaneous costs chargeable to the project on the owner's books.

[b]C-50—Tracks expenditures for improvements and maintenance and repairs to residential properties. Improvements include additions, alterations, and major replacements that are made on the property by the owners. Maintenance and repair expenditures include expenses connected with items permanently attached to some part of the house. Expenditures in this report cover labor, materials, and the cost of tools and equipment needed to do the work. The value of labor for do-it-yourself jobs is not included.

[c]C-40—The U.S. Census Bureau tracks new residential construction in its Building Permits Survey, C-40. Information is gathered in a mail survey completed by local building permit officials. It includes valuation for permitted new private residential construction intended for occupancy. Hotels, mobile homes, nursing homes, and college dorms are excluded. Surveys of permitted rehab, including alterations and improvements, were discontinued after 1994, as were surveys of permitted nonresidential construction.

CHAPTER 2
SYNTHESIS OF FINDINGS

INTRODUCTION

Renovation is often done in the face of daunting barriers, as is shown in summary exhibit 1. The inherent characteristics of rehab underlie many of its difficulties. For instance, renovation projects typically do not "start from scratch," and therefore rehab is usually less predictable than new construction. Customization drives up costs. Higher expenses aggravate an overarching economic barrier, namely, the gap that often exists between the costs of renovation and the financial resources available to property owners and/or tenants of buildings needing improvement. Economic constraints further aggravate barriers along the continuum of activities required to effect rehab, including the development, construction, and occupancy of the housing unit.

The hurdles to affordable-housing rehab often involve technical issues related to economics, building regulations, and public subsidies. We examine these three topics in detail in chapters 3 (Need for and Affordability of Rehab), 4 (Low-Income Housing Tax Credits), and 5 (Building Codes). Eleven case studies, summarized in exhibit 2.1 and reported in detail in chapters 6 through 11, were conducted to gain a better understanding of real-world projects. These six chapters discuss rehabilitation efforts and issues in Massachusetts, New Haven (Connecticut), Trenton (New Jersey), Miami (Florida), Chicago (Illinois), and Seattle (Washington). The case studies are of groups such as Asdal, a private remodeling company; nonprofits, such as Isles, the Little Haiti Housing Association (LHHA), and the New Haven Neighborhood Housing Services (NHNHS); and other for- and nonprofit entities.

EXHIBIT 2.1
Case Studies and Barriers Considered

Case Study Location	Topic/Organization	Barriers Considered
State of Massachusetts	Article 34	Progress and limitations of a statewide rehab-sensitive building code; issues concerning historic preservation, seismic, and accessibility provisions.
New Haven, CT	NHNHS	Secretary of Interior Standards; pilot program for flexible standards
Trenton, NJ	Isles	Barriers confronting a nonprofit entity, including building code issues ("old" New Jersey building code)
Trenton, NJ	Capital City Redevelopment Area	Rehab issues ("old" code) involving reuse of upper-story space
Chester, NJ	Asdal, Inc.	Rehab issues confronting a remodeler and benefits of New Jersey's "new" rehab-sensitive building code
South Brunswick, NJ	Conversion of rural farmhouse to cultural center	Rehab issues involving reuse; highlights sensitive administration of New Jersey's "old" code
Miami, FL	Little Haiti Housing Association (LHHA)	Many issues confronting a nonprofit rehabilitating houses in Little Haiti
Chicago, IL	Varied	Issues confronting adaptive reuse and mixed-use rehabilitation
Memphis, TN	Varied	Survey of range of issues confronting adaptive reuse and mixed-use rehabilitation
Seattle, WA	Varied	Barriers to rehabilitation in a "hot" real estate market, including analysis of the impact of growth management
Los Angeles, CA	Varied	Issues confronting rehabilitation of masonry buildings; benefits and limitations of moderate rehabilitation

ECONOMIC CONSTRAINTS IN EFFECTING AFFORDABLE-HOUSING REHAB

A pilot technical investigation of national rehab need, costs, and affordability was conducted for this study. The analysis, detailed in chapter 3, employs a number of steps.

1. First, from the housing literature, we posit a range of rehab interventions, including minor rehab, moderate rehab, and substantial rehab, as well as no (rehab) intervention (i.e., housing units that do not require rehab or repair).

2. The next step is to estimate which renovation strategy (minor rehab, moderate rehab, substantial rehab, or no intervention) is appropriate for each occupied housing unit in the American Housing Survey (AHS). We accomplish that by referring to AHS data on housing quality.

3. Finally, we determine whether the rehab is affordable. We do that by estimating what the rehab would cost and calculating how the expense would affect monthly housing costs. These calculations allow a comparison of current (pre-rehab) housing cost and the post-rehab housing expenditure. To make the comparison more meaningful, we relate the respective expenses to a percentage of the current income of the occupants of the housing units, calculating what is technically referred to as the housing expense to income ratio (HEIR). A "high" HEIR is assumed to indicate an *unaffordable* or *excessive cost* situation, whereas a lower HEIR signals that the housing expense is affordable.

We present the most significant results below. The more detailed findings are in chapter 3; we refer to some of that chapter's exhibits in the following discussion.

As of 1995, there were 109 million housing units in the United States. Our estimate of rehab need concerns occupied housing units designated as year-round houses or apartments in the AHS. (We focus on these units because we can access better and more meaningful data on their condition and tenure.) Thus, from the 109 million total, we delete 3 million seasonal units, 9 million vacant units, 8 million mobile homes, and units from numerous other categories (e.g., those in boardinghouses and nontransient hotels). That leaves 82.2 million year-round houses or apartments.

Of those 82.2 million housing units, we estimate that 3.9 million, or about one in 20 (4.7 percent), require substantial rehab; 8.2 million housing units, or about one in 10 (9.9 percent), need moderate rehab; approximately 25.1 million housing units, or about three in 10 (30.5 percent), can make do with minor rehab; and 45 million housing units, or slightly more than half (54.8 percent), require no rehab[1] (see exhibits 3.5 and 2.2).

[1]In fact, every housing unit needs some repairs each year. Our determination of rehab need, based on AHS data, is a crude gauge that likely better captures the need for improvements, replacements, and alterations as opposed to ongoing repairs and maintenance. We also are not including any of the rehab need of unoccupied housing, mobile homes, vacation homes, and other units. Thus, our estimates of rehab need in this section are very conservative and understate the true need for renovation.

We also consider rehab need as it relates to various housing-unit and household characteristics. Compared with the overall nationwide figures cited above, 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 small margin—for central-city units (exhibit 2.2). For example, although we estimate that 45.2 percent of all occupied housing units require some type of rehab, that percentage increases to 54 percent for units occupied by non-Hispanic black residents and 50.3 percent for units occupied by Hispanic residents (exhibit 2.2). An estimated 54 percent of the housing units built in 1939 or earlier require some type of rehab—about 10 percent more than the figure cited for all housing. Furthermore, although 7.3 percent of the pre-1939 units are considered to be in need of substantial rehab, just 2.6 percent of the housing units built recently (i.e., 1980 through 1995) show similar need. The percentage of black household–occupied units requiring substantial rehab is nearly twice that of white-occupied units (7.9 percent compared with 4.1 percent). The level of renovation needed is also differentiated by household income; 18.4 percent of the housing units occupied by very low income households require substantial or moderate rehab, whereas only 12.7 percent of the housing units occupied by high-income counterparts do (see exhibit 2.2).

We also estimate the dollar value of needed rehab investment and further differentiate that need by housing and household characteristics (see exhibit 2.3). Nationwide, an estimated $623 billion of renovation (minor rehab, moderate rehab, or substantial rehab) is demanded by the 82.2 million housing units examined here. Of that total need, proportionately greater rehab investment is indicated in the following categories:

- renter-occupied ($288 billion) as opposed to owner-occupied ($336 billion) housing units
- units in metropolitan areas ($505 billion) versus units in nonmetropolitan areas ($118 billion)
- older units (e.g., only $84 billion of the $623 billion total rehab need is for housing units built between 1980 and 1995)

We also estimate the ability to afford the housing expense. As noted earlier, we measure affordability by employing the housing expense to income ratio (HEIR). For the purposes of this study, a 40 percent HEIR signals the breaking point of households' ability to pay for their shelter expense. An HEIR of less than 40 percent is deemed affordable; an HEIR of 40 percent or more is deemed unaffordable or excessive. We estimate housing costs as excessive (or burdensome) as opposed to affordable under two scenarios: (1) current, or before any minor, moderate, or substantial rehab is effected; and (2) post-rehabilitation. The former figures are those reported in the AHS; the latter figures are calculated by the study team as described earlier.

The findings are shown in exhibits 2.3 and 2.4. Currently, without factoring in added expenses for renovation, 15 million housing units, or 18.4 percent of the 80.8 million housing-unit total, have an excessive cost burden (see exhibit 2.4). The number of households experiencing excessive burdens rises to 20.1 million, or 25 percent of the total, when the added costs for rehab are factored in. Thus, there is an affordability gap even before considering rehab need. The affordability problem worsens if the estimated rehab is effected.

EXHIBIT 2.2
Estimated United States Rehabilitation Need by Property Profile, 1995
(% of Occupied Housing Units)

	Rehabilitation Intervention (% of Occupied Housing Units)					
Property Profile	**Minor**	**Moderate**	**Substantial**	**Total Rehab Intervention**	**No Intervention**	**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 and principal author's calculations.
Note: Subtotals may not add to indicated totals because of rounding.

EXHIBIT 2.3
Estimated Dollar Investment Needed for Rehab in the United States by Property Profile and Ability to Afford the Rehab, 1995

Property Profile	Estimated Need for Rehab Investment				
	Total Rehab ($ billions)	Affordable Rehab ($ billions)	Affordable Rehab (% of total)	Unaffordable Rehab ($ billions)	Unaffordable Rehab (% of total)
Tenure					
Renter occupied	287.6	137.2	47.7	150.3	52.3
Owner occupied	335.5	258.9	77.2	76.7	22.8
Location					
All metropolitan	505.0	314.1	62.2	190.9	37.8
Central city	228.2	122.3	53.6	105.9	46.4
Suburbs	276.8	191.8	69.3	85.0	30.7
Nonmetropolitan	118.1	82.0	69.5	36.1	30.5
Region					
Northeast	161.9	92.8	57.3	69.1	42.7
Midwest	155.4	108.1	69.5	47.4	30.5
South	172.0	116.7	67.8	55.4	32.2
West	133.8	78.6	58.8	55.2	41.2
Income status					
Very low income	161.8	23.3	14.4	138.5	85.6
Low income	95.8	46.8	48.8	49.0	51.2
Moderate income	64.2	45.1	70.3	19.1	29.7
Middle income	47.4	39.3	82.9	8.1	17.1
High income	253.9	241.7	95.2	12.2	4.8
Race					
Non-Hispanic white	440.5	312.3	70.9	128.1	29.1
Non-Hispanic black	94.1	41.7	44.3	52.4	55.7
Hispanic	63.7	29.8	46.7	33.9	53.3
Other	24.9	12.3	49.6	12.5	50.4
Age of unit					
1980-1995	84.4	62.4	74.0	21.9	26.0
1970-1979	114.5	76.3	66.7	38.1	33.3
1940-1969	239.8	152.4	63.6	87.4	36.4
1939 or earlier	184.5	105.0	56.9	79.5	43.1
All	623.1	396.1	63.6	227.0	36.4

Source: 1995 AHS and principal author's calculations.
Note: Subtotals may not add to indicated totals because of rounding.

EXHIBIT 2.4
Percentage of "Excessive Cost" Housing Units in the United States, Current (Pre-Rehab) and Post-Rehab, 1995

Housing Unit/ Household Profile	Excessive Cost[a] Housing Units			
	Current		Post-Rehab	
	Housing Units (in Millions)	Percentage of Housing Units	Housing Units (in Millions)	Percentage of Housing Units
All	14.9	18.4	20.1	25.0
Housing Tenure				
Own	6.8	13.3	8.9	17.2
Rent	8.0	27.5	11.2	38.8
Location				
Central city	6.0	23.2	8.1	31.4
Suburbs	6.5	17.1	8.5	22.2
Nonmetropolitan	2.3	13.8	3.5	21.3
Race				
Non-Hispanic white	9.8	15.7	13.2	21.1
Non-Hispanic black	2.5	28.0	3.6	40.1
Hispanic	1.8	28.4	2.5	38.2
Other	0.8	26.6	0.9	32.0
Income				
Very low income	10.5	58.1	12.8	71.1
Low income	2.5	20.1	4.1	32.4
Moderate income	0.9	10.1	1.6	18.0
Middle income	0.4	5.5	0.6	9.9
High income	0.6	1.7	1.0	2.8
Age of Housing Unit				
1980–1995	2.6	15.8	3.2	19.4
1970–1979	3.1	18.4	4.2	24.4
1940–1969	5.5	18.2	7.6	25.2
1939 or earlier	3.7	21.4	5.2	30.2

Source: 1995 AHS and principal author's calculations.
[a]Defined according to the housing expense to income ratio (HEIR). A HEIR of 40 percent or more is deemed an "excessive cost."

Rehab affordability is an even greater problem for certain types of housing units and households. A disproportionately high share of renters are cost burdened. That is true both pre- and post-rehab. Currently, 27.5 percent of renters (compared with 13.3 percent of homeowners) pay 40 percent of more of their income for housing. Were minor rehab, moderate rehab, or substantial rehab effected as needed, the percentage of excessively burdened renters would rise to 38.8 percent, or almost four in 10; in comparison, 17.2 percent of homeowners (approximately one in six) are cost burdened post-rehab.

A housing unit's location is a factor influencing its affordability. Pre-rehab, occupants of 23.2 percent of central-city housing units pay 40 percent or more of their income for housing. That compares to occupants of 13.8 and 17.1 percent of nonmetropolitan and suburban housing units, respectively, who pay 40 percent or more of their income for housing. Post-rehab, the incidence of excessively burdened households living in central-city housing units rises to more than three in 10 (31.4 percent), compared with slightly more than two in 10 of the households in suburban (22.2 percent) and nonmetropolitan (21.3 percent) housing units. Thus, as with renters, many central-city residents are already facing a financial strain in paying for housing; that situation would worsen if needed rehab were effected.

Minorities and the poor, as well as those living in the oldest housing units, face especially challenging affordability situations. That is true both pre- and post-rehab. Detailed figures regarding affordability are shown in exhibit 2.4. Even without factoring in renovation demands and costs, approximately three in 10 non-Hispanic black households (28.0 percent) and Hispanic households (28.4 percent) pay 40 percent or more of their income for housing. That compares to about one in six (15.7 percent) for non-Hispanic white households. The situation is made worse with the added expense of renovation. Post-rehab, approximately four in 10 minority households (40.1 percent of non-Hispanic black and 38.2 percent of Hispanic households) would be cost burdened, compared with approximately two in 10 non-Hispanic white households (21.1 percent).

To convey a further dimension of the affordability challenge, we estimate how much of the estimated dollar value of national rehab need is affordable (i.e., with rehab, the HEIR is less than 40 percent) and how much is unaffordable or excessive (i.e., post-rehab, the HEIR is 40 percent or more). Of the $623 billion in estimated national rehab need, $396 billion, or about two-thirds, is deemed affordable and $227 billion, or about one-third, is unaffordable. Of the $227 billion in unaffordable rehab, the greatest challenge is faced by

- renters versus owners ($150 billion for renters in unaffordable rehab versus $77 billion for owners);

- central-city residents ($106 billion of the $227 billion unaffordable rehab); and

- disproportionately, the poor, minorities, and those living in the oldest housing units.

In sum, even without factoring in the cost of renovation, many households currently face an affordability problem. Those most at risk in this regard are renters, central-city residents, minorities, the poor, and residents of older housing. Many of these characteristics are

interrelated. For instance, a higher share of minorities are renters and poor. The ability of these at-risk groups to afford housing would be further challenged if rehab were to be effected as needed. At-risk populations tend to live in housing with the greatest need for renovation, yet they are least able to pay for it.

We began with economic constraints, as they pose a fundamental hurdle. If renter, minority, central-city, and other "challenged" households had access to more financial resources, the added expenses posed by the rehab barriers at the development, construction, and occupancy stages would be less of an issue. However, these resources are not at hand, so the hurdles faced at the various rehab phases are even more problematic.

BARRIERS TO AFFORDABLE-HOUSING REHAB AT THE DEVELOPMENT, CONSTRUCTION, AND OCCUPANCY STAGES

In the sections below, we describe the specific barriers confronted in developing, constructing, and occupying rehabbed housing. The synthesis is based on the literature, case studies, telephone interviews, and experience of the research team. To facilitate the discussion, the following information is presented for each barrier under the different stages:

1. *Barrier profile*. Pertinent information is given regarding the background and nature of the hurdle. For example, in describing how the building code complicates rehab, we note that problems often arise from "questionable standards," such as the codes' "25–50 percent" and change-of-use provisions, and from administrative problems, such as inspector inflexibility. This section often includes examples of the specific rehab constraint drawn from the case studies, telephone interviews, and/or the research team's experience.

2. *Barrier analysis.* Next, we analyze the hurdle. This discussion includes consideration of the incidence of the barriers—namely, under what conditions the hurdle typically is most problematical (e.g., substantial rehab versus minor rehab, subsidized versus unsubsidized renovation, and/or special situations such as adaptive reuse); the nature of the barrier (e.g., government regulation, professional-practices market, or other forces); and our judgment of the severity of the barrier—whether, it is a "minor," "moderate," or "significant" problem (where "minor" connotes the least and "significant" the most problematic). The analysis section also includes a brief review, where relevant, of actual or potential ameliorative efforts to address the barrier. For example, HUD's Nationally Applicable Recommended Rehabilitation Provisions and New Jersey's new rehab code address many building code constraints to renovation. We hope to expand the discussion of ameliorative action in a follow-up study to the current investigation.

DEVELOPMENT STAGE REHAB BARRIER—ACQUIRING PROPERTIES

ACQUIRING PROPERTIES: BARRIER PROFILE

Background

Acquiring properties to be rehabilitated historically has hampered many acquisition-rehab efforts, especially the large-scale projects (Weinstein 1970). In hearings before the National Commission on Urban Problems in 1968, building-developer James Rouse asserted that rehab could be effective only on a massive scale and that such large-scale renovation was impeded because it was nearly impossible to acquire sufficient properties (National Commission 1968, 31). Rouse noted that although local authorities were empowered to acquire properties for rehab through condemnation, in practice few if any such agencies went beyond condemning and demolishing properties and then selling the cleared tracts to sponsors of new construction.

The problems encountered by large-scale projects tend to overshadow the fact that even comparatively small rehab efforts have had difficulty obtaining properties. For instance, the South End (Boston) Community Development (SECD) rehab effort of the 1960s, which initially renovated only 50 apartments, faced problems in acquiring inexpensive properties with clear title (Whittlesey 1969).

Properties for acquisition rehab can be obtained on the private market as well as from government. Private sources include individual owners and/or banks. Acquisition from government sources entails such strategies as purchasing tax liens on property tax–delinquent parcels and foreclosing on those liens; buying properties that have been foreclosed for mortgage nonpayment by the Federal Housing Administration (FHA) or other agencies; and acquiring properties through public condemnation. Each of the above approaches offers certain benefits, yet all suffer from practical drawbacks as well.

Problems with Acquiring Properties from Owners

The most straightforward way of doing an acquisition rehab is to contact the owner of the desired property and negotiate a sale. That is much easier said than done, however. There are many problems that beset this process.

1. *Identifying and finding the owner.* Property-ownership records are often inaccurate, outdated, and/or vague. These conditions make it hard to identify and contact owners. Estate complications are another frequent impediment in tracking the owners and negotiating a sale.

2. *Owners refuse to sell or to offer their properties at reasonable prices*.[2] Just because an owner is contacted does not mean a sale can be consummated. Owners may not be inclined to sell, or might ask unrealistic prices given their property's location, condition, or other factors, such as the existence of expensive tax, mechanic, and other liens that effectively add to the

[2]One of the resource group members commented that the existing federal tax code discourages owners from selling their income-producing properties at "bargain sale" prices. These properties have often been fully depreciated, so a sale at a bargain price would trigger a tax liability.

purchase price. Competition from speculators and others who prey on marginal properties further complicates matters and drives up acquisition prices for legitimate rehab entities. Such questionable parties can pay "above market" because of their illegal or unethical business practices.

The case studies provide many examples of the above difficulties in acquiring properties from owners. LHHA finds this approach particularly problematical. It is often difficult for LHHA to identify a property's legal owners. LHHA finds that the ownership information on property tax records frequently is erroneous (e.g., it indicates a deceased person) or outdated (e.g., the property owner is correctly listed but that person has moved from the address given), or in other ways is not usable. For instance, property may be in the name of a shell corporation filed at an attorney's office. LHHA has attempted to track down owners through such means as going to the Florida motor vehicle bureau to ascertain their current address, but this is a time-consuming process that often comes to naught.

Even when the owner is contacted, that person may not be willing to sell, or if amenable to a sale, may demand an unrealistic price. LHHA recounts that owners often demand the assessed value of the property, or even a premium to the assessed value, despite the fact that their properties may need many thousands of dollars in rehab and have other charges that must be met. A prototypical case of costs for a neglected property includes the following:

$3,500 for public charges for cleaning up a property (e.g., if trash had been dumped there and the city sent a cleanup crew) and securing it, and for fines and penalties levied on the owner

$3,000–$4,500 for back taxes, assuming taxes are about $1,500 annually and properties are two to three years delinquent

$0–$1,000 for mechanic and other liens

$6,500–$9,000 total charges against the property

Owners selling Little Haiti properties often conveniently "ignore" the charges noted above, despite the fact that they represent an obligation that LHHA, or any other buyer, would have to meet. Similarly, they do not discount prices in light of the rehab needed. Owners hold firm to their asking prices, thinking that if LHHA is contacting them, it is a sellers' market. Reinforcing that view is the presence of a speculators' market in the Little Haiti neighborhood, whereby investors are willing to pay a premium for the single-family homes because they in turn flip them to gullible buyers or illegally convert the homes to multiple rental units. Thus, LHHA is frequently outbid.

LHHA's experience is common to many of the other nonprofit entities studied. In Trenton, Isles finds that small, multifamily properties needing rehab will often be at least two years delinquent on property tax payments; as taxes are about $5,000 annually, the back taxes owed are $10,000. This property may also have had a prior two-year period of tax delinquency where the taxes had been paid by an investor; the investor now holds a $10,000 tax certificate with an 18 percent interest rate. Unpaid water and other utility charges, as well as mechanic and related liens, will

often represent an additional amount owed of at least $3,000 to $5,000. The cumulative arrearage of the property is thus about $25,000. That amount alone exceeds what Isles can pay for the building. (Isles typically pays $5,000 or less.) In other words, even if Isles were to receive the property at no cost, the back charges are so excessive that the nonprofit cannot economically acquire and rehabilitate the housing. Isles describes the situation as "lienfields." Because of the problems inherent in buying properties from owners, Isles rarely uses this strategy. It observes that in numerous situations "we have had to build a project around owners who refused to sell" (Kasabach 1999).

Liens and other problems hamper property acquisition by the New Haven Neighborhood Housing Services (NHNHS) as well. NHNHS told of one property it was negotiating for with a private owner who owed $10,000 in back taxes and $20,000 in delinquent water/sewer bills. Even if the owner donated the property (which was not going to happen), NHNHS would have been obligated to pay $30,000 to clear the tax and utility liens—an amount above its budget for acquisition ($10,000 to $20,000 per unit).

It is not just nonprofits, such as LHHA and NHNHS, that are frustrated in trying to acquire property from owners. A private remodeler, Asdal, reports that owners are hard to find (e.g., when title is held in the name of a holding company), estate problems are common, and clearing title is a hurdle because of judgments, liens, and other encumbrances. States Asdal, "Title is always an issue, and title insurance companies charge proportionately more on existing buildings relative to new construction."

Assemblage is another hurdle that Asdal faces. For zoning and subdivision reasons, the infill rehab done by Asdal may entail acquisition of adjacent or nearby properties, difficult to do in the absence of public condemnation power. For instance, adaptively renovating an old school into apartments may entail adding parking spaces to the existing number at the school, and provision of these added spaces can be thwarted if adjacent property owners refuse to sell.

Problems in Acquiring Properties from Banks

Suitable rehab properties may very well have delinquent mortgages. Renovators should be able to purchase these nonperforming loans, foreclose on the delinquent mortgagors, and thus acquire the properties. Banks do such foreclosures, and these bank-acquired properties could be made available for acquisition rehab.

Many impediments frustrate attempts at property acquisition from banks, however.

1. Banks may hesitate to foreclose because that will confirm a bad investment. They also do not want to be saddled with the challenges and potential liability of owning problem real estate.

2. Purchasing delinquent mortgages is not always well suited to the acquisition-rehab process. Lenders will often seek to sell their "bad loans" to others who will deal with them. While these sales are open to entities doing rehab, there are frequent practical stumbling blocks. For instance, banks may only be interested in a wholesale approach—that is, selling "bad loans"

in bulk—and for financial and other reasons, such acquisition is not suitable for many rehab organizations.

The case studies are illustrative. New Haven, where NHNHS operates, had a surge in the speculative real estate market in the early 1980s, followed by a crash at the end of that decade. With this change in fortune, many speculator purchasers ceased making mortgage payments. That situation seemed to provide an opportunity for NHNHS to acquire either foreclosed parcels or "bad loans" from banks. While the nonprofit acquired some properties in this fashion, it found bank property acquisition to be problematical. First, lenders sometimes were hesitant to foreclose on nonperforming loans because they feared the liability of owning marginal urban properties in New Haven. Second, rather than foreclosing, lenders often preferred to sell their nonperforming portfolio to investors. That type of sale, however, was often done in bulk, and the purchasers typically were speculators who bought a package of loans. The bulk sale hurt NHNHS in two ways. As a small nonprofit, NHNHS was not prepared to buy in bulk, nor was it willing to outbid the speculators. Also, the speculators who made the wholesale purchase were often irresponsible landlords, so their disinvestment led to further property deterioration in the Dwight neighborhood where NHNHS operated.

Problems in Acquiring Properties from Donations

Owners of private property can donate unwanted holdings to entities doing rehab. Such largesse is not often forthcoming. Also, donations may make the receiving rehab organization susceptible to brownfields liability and costs, as we illustrate below.

Isles has acquired some buildings through outright donations. For instance, Bell Atlantic gave Isles an industrial property that will be adaptively converted to 50 apartments. The building had a market value of about $250,000, so the utility's generosity saved Isles that amount. In addition, Bell Atlantic transferred the building in an environmentally clean state, thus saving Isles many thousands of dollars in cleanup costs.

Few private owners, however, share Bell Atlantic's charitable spirit; generally they want to be compensated for their properties, and they surely will not incur expenses for environmental remediation. Further, even were an owner to donate a property to Isles, that still leaves the "lienfields" noted earlier—the outstanding property taxes, tax certificates, and utility and other charges, which are often quite costly.

One way of reducing the lienfields arrearage is for rehab entities to secure properties from public parties, such as through tax foreclosure. Yet these and similar strategies can be problematic.

Problems in Acquiring Properties through Property Tax Foreclosure

Properties needing rehab are often behind in their tax payments. In fact, property tax delinquency has been suggested as an "early indicator" of problem properties (Sternlieb and Burchell 1972). A rehabilitation sponsor could purchase tax liens, which are sold periodically by a municipality in cases of delinquent property taxes, and subsequently foreclose on these liens. Or the

municipality could foreclose on these liens and then offer to sell (or donate) the foreclosed properties to rehab sponsors. These approaches, however, often fall short:

1. Tax foreclosure is time-consuming, often taking years to finalize (Boston 1976). That is too long to wait for most rehab organizations. In the meantime, the property will often deteriorate, increasing renovation costs.

2. Tax foreclosure is an uncertain process. Besides taking a long time, purchasing a tax lien does not guarantee that the property will be acquired. A tax sale of a delinquent property is usually held after taxes are anywhere from less than a year to more than five years in arrears. The purchaser becomes the inchoate (imperfect) title holder of the land. As such, the purchaser's title is subject to defeasance should the taxpayer redeem the property by paying the taxes and penalties owed. The period of redemption varies from one to three years. If redemption is not made, only then will the title rest indefeasibly with the purchaser.

3. Tax foreclosure can be expensive. If the rehab entity has to pay the back taxes, property acquisition through this route can be quite expensive. The tax liability can be wiped out, however, if the city forecloses on back taxes and then conveys the property to the rehab entity at no or nominal cost.

4. Cities may hesitate to foreclose on back taxes because they do not want to be saddled with marginal real estate. New York City's experience in this regard is illustrative. After accelerating its property tax foreclosure process in the 1970s from *in personam* (action against the property owner) to *in rem* (actions against the property), New York was burdened with thousands of abandoned or badly deteriorated properties. Maintenance of that portfolio was so expensive that for many years New York City allocated all its CDBG monies for that purpose.

Furthermore, even if municipalities did more to foreclose on back taxes, they would not necessarily be willing or able to transfer these parcels to rehab entities, especially at a nominal cost. For example, there might be legal restrictions against such transfer.

5. Other drawbacks to tax foreclosure include the fact that tax-delinquent properties may not be in neighborhoods where rehab entities are active. The parcels may not be the right property type (e.g., they are single-family where a rehab organization does only multifamily renovations). There may be other drawbacks, such as not delivering a marketable title.

The case studies illustrate the myriad problems of tax foreclosure—as well as this strategy's potential for acquisition rehab. Trenton, New Jersey, regularly moves to foreclose on back taxes, and the city makes these properties available to Isles and other nonprofits (as well as private parties interested in redevelopment) at no or nominal cost. Isles has acquired most of its properties in this fashion. Besides making properties available to the recipients at no or low cost, foreclosure offers other advantages as an acquisition strategy. In New Jersey, it conveys strong, insurable title. In addition, the foreclosure wipes out many outstanding charges; in the example cited earlier, of the $25,000 in "lienfields" ($10,000 in back taxes, $10,000 in tax certificates, and $5,000 in utility and mechanic liens), the tax foreclosure would wipe out the back taxes and utility-mechanic liens, or $15,000 of arrearage.

In Trenton, however, the foreclosure does not eliminate the obligation of the tax sale certificate, one drawback of this approach. In fact, Trenton does not proceed on the tax foreclosure of a property that has an outstanding tax certificate. This means that the lienfield problem lingers in the presence of a tax certificate. Ironically, as Trenton's fortunes have improved—in part due to the rehab activities of Isles and other nonprofits—there is enhanced investor interest in tax sale certificates, and as more of these certificates are sold, tax foreclosure becomes a less effective way of delivering properties for renovation.

Another negative of the foreclosure acquisition process is the length of time involved. While *in rem* foreclosure is much faster than *in personam*, and Trenton utilizes the former approach, the process still takes years from initial delinquency to the time a property is available for rehab. A few years is an eternity in an urban setting such as Trenton, and in that time, the property can deteriorate so badly that it is beyond reclaiming.

Isles also observes that city-owned properties are not adequately stabilized. Once a parcel is foreclosed, Trenton may simply lock the exterior doors rather than boarding all doors and windows. Full stabilization is much better at thwarting vandals, squatters, drug users, and others who can cause much harm in a short period of time. The tax-foreclosed properties frequently are ravished before they can be transferred to Isles or another nonprofit.

LHHA operates in a somewhat different environment. Unlike Trenton, Miami-Dade County is reluctant to foreclose on tax-delinquent properties because the county fears it will become the property caretaker of last resort. Although private entities such as LHHA could try to acquire properties themselves through tax foreclosure, this approach is not very fruitful in the Miami context. First, the process would take years, and in the interim, the tax-delinquent parcels likely would be severely neglected, thereby making rehab difficult and expensive. Second, and more fundamental, is the frail title that results from the proceeding. The Miami-Dade County tax title is not recognized by title insurance companies, so it is effectively valueless.

Problems in Obtaining Properties from FHA

In many urban, poor, and otherwise "redlined" areas, mortgages are obtainable only with FHA insurance. While FHA has increased access to mortgages, it has also suffered the effects of new, riskier markets—namely, higher delinquencies and foreclosure. FHA foreclosures, however, also may offer an opportunity for acquisition rehab, a potential often realized in practice.

NHNHS has acquired FHA foreclosures and has capitalized on certain advantages they had at such sales. First, nonprofits had priority in bidding on the FHA foreclosures (along with other entities, such as local law enforcement personnel who would reside in the property). Second, nonprofits were given a 30 percent discount off the posted price of the FHA-foreclosed properties.

Others have had a less positive experience. One of the resource group members reports that "Out of hundreds of FHA foreclosures in Chicago, [it] acquired only three to four foreclosures that suit [its] needs." The following barriers were encountered by this and other groups:

1. *FHA foreclosures may be unsuitable for property acquisition because of their location or type.* For example, Isles finds that the properties offered at the FHA auctions are typically scattered—"a property here and a property there" (Kasabach 1999); Isles prefers to cluster its rehab in the Old Trenton neighborhood in order to achieve a critical mass.

Also, FHA foreclosures at any given time may include more of one property type than another (single- versus multifamily), and what is being offered for sale may not be the type of property a rehab organization is looking for.

2. *Prices for FHA-foreclosed properties may exceed acquisition budgets.* Many groups doing affordable rehab can budget only a modest or even token amount for acquisition (e.g., $5,000 or less for Isles and $5,000 to $10,000 for NHNHS). Those amounts may be far below market value, and the FHA understandably wants to reclaim as much of its investment as possible when it sells its foreclosures. This gap prevents many nonprofits from bidding successfully on FHA-acquired properties.

NHNHS's experience is illustrative. In the past, NHNHS acquired homes from FHA, but it rarely uses that strategy today because of high appraisal values. NHNHS claims that the appraised values are so steep because of market distortions, specifically the high prices that speculators will pay because they are only interested in "flipping" the property or exploiting it as a rental. For example, NHNHS recently went to bid on property at Sherman Avenue, prepared to make an offer of $20,000. A speculator bid $50,000 and then attempted to "flip" it for $90,000 to an unsophisticated buyer.

In the past, NHNHS and other nonprofit organizations were able to secure properties from FHA despite competition from speculators and others because FHA gave such organizations discounts and priority in the bidding. That bidding protocol has changed.

3. *Changing FHA procedures has impacted acquisition rehab*. Our discussions with the case study and resource group entities revealed that over time FHA has changed bidding procedures on its foreclosures. These changes reflect attempts to operate FHA in a more businesslike fashion—a laudable goal. Yet they also have implications for acquisition rehab.

LHHA is illustrative. Until recently, bidders at FHA sales in the Miami area were classified in three priority tiers. Nonprofits and selected others (e.g., government agencies) were given the first opportunity to acquire the foreclosures. If the foreclosed homes were located in difficult-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 remaining two priority categories were, first, bidders claiming they would use the properties as owner-occupants, and second, all other bidders. Neither the owner-occupants nor the other bidders were entitled to the 30 percent revitalization-area discount.

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

Recently, however, the three tiers of priority access to the FHA-foreclosed homes have been restructured into a two-tier system. 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 no longer being offered.

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 in competition with many others. First, it is competing against potential owner-occupants. If they were what they claimed, LHHA would welcome their interest, as the Little Haiti neighborhood would benefit from an increased presence of owner-occupants. Unfortunately, however, many of these would-be owner-occupants are being duped by unscrupulous realtors only interested 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 because as a nonprofit, it had priority access to the units being offered. That no longer the case today.

The bidding procedure was somewhat different in other geographic areas. In New Haven, NHNHS retained a 30 percent discount and priority bidding access. (NHNHS still encountered problems in capitalizing on FHA foreclosures, as described earlier.) In Chicago, a different FHA bidding approach was used, and that too was in flux. The FHA bidding procedure there was said to change every six months. (The different approaches in Miami, New Haven, and Chicago likely reflect different systems put in place by the various FHA regional offices.)

Problems in Acquiring Properties through Condemnation (Eminent Domain)

Condemnation (eminent domain) is considered an inherent power of the state. It is defined as the taking of property for public use without the owner's consent simply by making just compensation.

There are numerous benefits to acquisition rehab of properties obtained through condemnation. A critical mass can be obtained, the properties can be targeted as to type and area, and eminent domain overrules an owner's refusal to sell.

At the same time, there are many downsides to this approach. As it employs use of police power, governments understandably use condemnation sparingly; they may not be inclined to condemn for the purposes of rehab. There are also legal constraints as to who may apply the condemnation and specifically when condemnation may be applied. States may limit condemnation to certain sizes or classes of cities (i.e., cities of 10,000 population or more in Missouri and first-class townships in Pennsylvania). Furthermore, in all jurisdictions, condemnation can be used only to

acquire property for public use. There is some (but far from total) agreement that condemning for acquisition-rehab purposes satisfies the public-use test.[3]

Cost is yet another impediment to using condemnation to acquire properties for rehab. Full market value must be paid, and in addition there may be considerable legal, appraisal, and other expenses. Legal peculiarities can also affect the cost of this approach, as was illustrated in the Isles case study.

New Jersey law allows municipalities such as Trenton to condemn properties for rehab purposes in "blighted" areas suitable for redevelopment. The Old Trenton neighborhood where Isles operates satisfies the blight criteria. Consequently, in theory, at least, the legal machinery is in place for Trenton to acquire and assemble properties in the areas where Isles is working. In reality, public condemnation is not a viable property-acquisition strategy for Isles. Under the New Jersey blight statute, the public acquirer must pay the market value *as of the time the blight designation was made* (e.g., 1986 in Old Trenton). This provision increases property-acquisition costs in the case of Isles.

To illustrate, Isles was interested in a six-unit apartment building on East Hanover Street. This abandoned, run-down property had a 1999 market value of roughly $25,000, or $4,000 per unit—comfortably within Isles's property-acquisition range. In 1986, however, East Hanover was a fully occupied property with a market value of $180,000, or $30,000 per unit. The $30,000 amount is not the market value today, and is six times Isles's property-acquisition cost ceiling. Consequently, condemnation of East Hanover under blight is not a practical solution for Isles; this situation is common in the neighborhoods where Isles operates.

Other Problems in Obtaining Properties

Our discussion has touched on many but not all of the problems of acquiring properties for rehab. The Chicago case study revealed hurdles already mentioned as well as some additional barriers.

First, there are few properties located in desirable neighborhoods (those with good public transportation services, shopping districts, etc.) that can be acquired at a price that makes the rehab of affordable housing economically feasible, even with significant government incentives. Second, in the case of adaptive reuse, the buildings most suitable for conversion to residential use are typically industrial loft buildings. These frequently are not located in areas where there are significant services. In addition, many loft buildings close to the downtown or in other desirable locations have already been converted to meet the demands of the higher-end housing market. Finally, the most significant impediment is the extended period of time between entering into a purchase contract and closing—this is a result of the lengthy amount of time it takes to obtain financing from the low-income housing tax credits, the Illinois Trust Fund subsidy, and city programs.

[3]Using eminent domain for rehabilitation historically was considered a "considerable extension of the public purpose concept" (Slayton 1955, 453). Over time, however, there has been a broadening in the scope of activities considered a "public use," so today there is more of a basis for using this strategy for acquisition rehab.

ACQUIRING PROPERTIES: BARRIER ANALYSIS

Nature of the Barrier

Acquiring properties is a complex barrier that includes elements of the following:

1. *Market economics.* The supply and demand of properties in a given location influence the prices demanded by owners. Market forces also affect the magnitude and type of properties available from property tax or mortgage foreclosure.

2. *Professional practice.* Realtors are not always competent at locating properties suitable for rehab. Government officials also differ in their capacity and willingness to carry out property tax foreclosures and other matters affecting acquisition.

3. *Public law/regulation/policy.* Statutes/regulations/policies affect the property tax and mortgage redemption periods and other foreclosure particulars, condemnation procedures, title-recording systems, FHA disposition strategies, and many other elements that bear on property acquisition.

Incidence of the Barrier

Property acquisition is likely to pose more of a barrier in such situations as

1. *Effecting acquisition rehab.* Acquisition is not a problem for property owners seeking to renovate. The problem is when acquisition rehab is undertaken.

2. *Targeted-area rehab*.[4] There are critical mass and other advantages in concentrating rehab in a particular area. That is why Isles, LHHA, and NHNHS focus on the Old Trenton, Little Haiti, and Dwight neighborhoods, respectively. Yet concentrating on one location can exacerbate acquisition problems, because tax liens, FHA foreclosures, and other resources will typically produce scattered properties.

3. *Other influences*. Local peculiarities can affect acquisition issues (e.g., property tax foreclosure conveys "strong title" in Trenton, New Haven, and Chicago, but not in Miami).

[4]One member of the resource group commented, "Acquiring properties in a targeted redevelopment area is always a real challenge. I believe Missouri has legislation that if the city government and the real estate developer agree on a redevelopment area and the developer has acquired some of the properties, the developer is then given the rights of eminent domain to acquire remaining properties. This may be a model for other states [with respect to targeted-area rehab]."

Severity of the Barrier

In making this assessment, it is important to acknowledge that there are acquisition problems with new construction as well.[5] For instance, acquiring a tract of land that is suitably zoned for new multifamily development is often thwarted by NIMBY sentiments.

In certain respects, however, property acquisition for rehab may be more problematic. In general, more rehab than new construction is of an infill nature, and infill acquisition tends to be harder. As one resource group member commented, "Rehab focuses in a neighborhood or even one block, while new construction can be anywhere there is a greenfield."

Acquisition costs often differ between rehab and new construction. With new development, land can be tied up at a relatively low cost with an option; with rehab, a much more expensive building has to be acquired and often held for a considerable period of time while all subsidies, environmental clearances, and other matters are satisfied.

It is not easy to assess the difficulty of property acquisition in rehab because conditions can vary considerably. This barrier is nonexistent for an owner electing to renovate, but it can be a major challenge for those doing targeted-area acquisition rehab, which can become an impossibility if a property cannot be acquired.

Based on the above considerations, we rate acquisition as a moderately difficult problem.

Potential Ameliorative Actions to Address the Barrier

Following are examples of possible solutions to the acquisition barrier.

1. Allow property-tax and mortgage foreclosures to be expedited through such means as reducing redemption periods (Burchell and Listokin 1981).

2. Authorize receivers. Nonprofits could be appointed receivers on problem properties. They can stabilize such buildings and then effect rehab financed with "receivers certificates" (Brun 1975; Listokin 1974; Listokin 1985; and McClaughry 1978).

3. Expand condemnation powers to allow the use of eminent domain for acquisition rehab.

4. Review FHA disposition strategies. HUD should consider how bidding priorities and discounts bear on acquisition rehab.

5. Research "lienfields." Brownfields have received much attention. Research should also consider the extent and profile of "lienfields" and how this problem can be resolved.

[5]These acquisition barriers are not unique to rehab. Acquiring sites for new construction in urban areas is difficult. In both cases (rehab and new construction) acquisition is problematic because owners cannot be found, they may want more money than their property is worth (or than can be supported by a pro forma), banks are not cooperative, donations are not available, and property tax foreclosure is difficult.

6. Improve title records. Better title recording would make it easier to identify and locate property owners (Institute for Liberty and Community 1978).

DEVELOPMENT STAGE REHAB BARRIER—ESTIMATING COSTS

ESTIMATING COSTS: BARRIER PROFILE

Background and Nature of the Problem

Erroneous cost estimates historically have characterized many rehab projects. One 1969 study of a nonprofit rehabilitation group found that renovation-cost estimates almost invariably were lower than actual costs, sometimes by a factor of 100 percent (Kenower 1969, 44–77). Also in the 1960s, the South End Community Development (SECD) Corporation, active in Boston, significantly underestimated the construction costs for properties that it rehabilitated (Whittlesey 1969; see also National Bureau of Standards 1980).

Many of our case study and resource groups did much better. One Boston architect cited a $2.1 million rehab job where the estimate was off by less than $1,000. Another resource group member explained that "Estimating is not that difficult . . . we know our job." A third noted that its rehab-cost estimates tended to be quite accurate, since it had extensive experience with similar properties (postwar garden apartments) on which it did similar work (roofs, kitchens, and bathrooms were routinely replaced).

Even those with good estimation skills acknowledged, however, that predicting rehab costs was more challenging than pricing new construction. The latter was viewed as a much more straightforward exercise that could be accomplished simply by following industry guides (e.g., *Means* catalogue), whereas rehab had many more uncertainties. The uncertainties and other cost-estimation challenges included unforeseen conditions (e.g., water or termite damage or the presence of asbestos, uncovered only after a wall or roof was opened); erroneous judgment calls (e.g., windows thought to need just repairs ultimately needing to be replaced); inherent unknowns (e.g., estimating costs on an abandoned property where heating, plumbing, and electrical systems have been turned off); difficult working conditions (e.g., estimating costs in a miniscule crawl space or where hostile tenants are present); and other factors (e.g., cost overruns due to estate or title problems or delays in securing subsidies). It is for all these reasons that rehab project costs are often estimated with a much higher contingency factor (10 percent or more) than new construction.

The case studies provide further insight into both the challenge of accurately estimating renovation expenses and the skill of experienced rehab developers in making such an estimation. As an experienced professional remodeler, Asdal is proficient at estimating rehab costs, yet it still acknowledges the challenge of doing so. Asdal cites as an example a property where the floors were believed to be in acceptable condition; however, once the rehab project was started, it became evident that the floor joists had to be replaced. Similarly, unanticipated termite damage is commonly encountered.

The New Haven Neighborhood Housing Services (NHNHS) found estimating costs consistently a problem, despite its experienced contractors and crew. NHNHS encountered unforeseen problems in 95 percent of the homes worked on. While these problems are not insurmountable, they add to the difficulties of the rehab. By contrast, NHNHS does not find cost estimation to be as problematic in its new construction jobs.

LHHA provides a good example of an entity meeting the challenge of estimating renovation expenses. LHHA is remarkably proficient in accurately estimating rehab expenses. On most jobs, the organization comes within 5 percent of its construction estimate. LHHA attributes its success in this regard to the lengthy construction track record of its staff, as well as the similarity of many of the properties it rehabilitates. For the most part, these consist of modest single-family detached homes of similar size, age, and layout. As such, the lessons learned from working on one property can be transferred to another. The fact that LHHA has the same staff involved in both cost estimation and construction further facilitates this institutional transfer and memory.

Despite these favorable conditions, LHHA encounters uncertainties in estimating rehab expenditures. Frequently, when LHHA evaluates a property, the major systems (e.g., heat and plumbing) have been turned off and therefore cannot be tested. There are other unknowns. In one rehab job, when LHHA opened a wall, termite damage was observed; the building inspector then "red-tagged" the job and costly remediation not included in the original construction estimate was required.

Isles is similarly proficient at estimating rehab costs; their prowess is due to many of the same factors cited by LHHA. Isles has experienced construction people on its staff—personnel who have worked for many years on its renovation jobs. In addition, there is an inherent simplicity in much of the housing stock (e.g., Trenton row houses) worked on by the organization.

Despite these factors, Isles admits to challenges in estimating costs. To that end, it builds in generous contingencies. The contingencies are needed. Construction-cost estimates are often 10 percent to 15 percent less than the expenses ultimately incurred, and sporadic larger errors are encountered.

Isles attributes the challenge of estimating costs to a variety of influences, including the following:

1. *Nature of rehabilitation*. As each property is different, so are the requirements of each rehabilitation, and these requirements, according to Isles, may not be known until the job starts. A preconstruction estimate based on a visual inspection of a wall, for example, may anticipate only minor repairs; yet once the wall is opened, costly termite, water, and other damage may be revealed. Or, estimated costs are based on city-approved plans, but city building inspectors, working in the "field," do not adhere to these plans and require expensive modifications (see later discussion on building codes).

2. *Timing and other factors*. Because of subsidy-funding deadlines and other considerations, rehab-expenditure estimates are often done early on. Isles has encountered gaps of up to two years from its initial cost estimate until it actually begins work. Costs go up over time, and

while an inflation factor can be incorporated into the original estimate, it is hard to project precisely how much costs will rise.

When estimates are made early on, there is often an incomplete basis on which to forecast the work.[6] Plans drawn to scale are rarely available, and the estimate may have to be done from a "walkthrough of the premises rather than from precise architectural and engineering calculations" (Diaz 1999). Time also takes a toll on the condition of the property. A cost estimate made early on will not remain valid after a building has been vandalized.

In a similar vein, the groups we spoke to in the Seattle case study explained that rehabilitation-cost estimating was challenging because of

1. *Rehab-inherent uncertainties*. For instance, could a wall be patched or would it have to be "opened up," and if the latter, would new-building energy-efficiency requirements have to be met? "Gray areas" of the building code add to the uncertainty.

2. *Timing of and compensation for the cost estimate.* Architects and other professionals asked to do the estimating typically are given a very short time to complete the job. Time may be of the essence because sellers are anxious and want a quick decision. Sellers often want to sell the property "as is," and if they allow an inspection and rehab-cost estimate, they demand that it be done expeditiously. The fee to the architect or other individual for estimating the job is usually a relatively small amount, typically in the $5,000 to $10,000 range. This compensation does not pay for a thorough, item-by-item cost estimate. The estimate is therefore done in large part by relating the job at hand to comparable work done in the past. It is good to build on professional experience, and for the most part that can provide a sense of cost, yet every building is different, so estimating based on "comps" is perilous.

3. *Difficulties of cost estimating*. Even were more time and resources available for cost estimation, it would still be difficult. If properties are occupied, tenants may deny or limit entry by those doing the cost estimating. Estimating is made more difficult because floor and other architectural plans typically are absent, hazardous materials are frequently present, and so on (Murphy 1999).

The difficulties of doing rehabilitation, in part due to the issues of estimating, are acknowledged in suggested professional fees. In the state of Washington, the suggested fees for architects are 2 percent *higher* for rehabilitation than for new-construction assignments.

ESTIMATING COSTS: BARRIER ANALYSIS

Nature of the Barrier

Estimating rehab cost is a matter of professional practice and competence, yet other matters have an impact on this hurdle (Chapman 1980). For instance, government has some influence. Were building codes clearer and the impact they would have on rehab easier to predict, cost estimation

[6]This is a problem in any construction project. Costs estimated prior to completion of drawings are less accurate than those based on complete drawings.

would be less problematic. Public subsidies also bear on the equation, as subsidies often contribute to delays in effecting rehab; such delays compound the cost-estimation difficulty.

Incidence and Severity of the Barrier

Cost estimation is likely to be more of an issue in the following situations.

1. *Moderate rehab.* Substantial rehab is easier to estimate accurately than is more moderate renovation. In the latter case, there are more judgment calls concerning items that could be retained as is, those that need to be repaired, and finally, systems that must be replaced. With substantial rehab, almost everything is replaced; thus, that type of job is more akin to new construction.

2. *Novice rehab/varying rehab.* Estimation skill is enhanced by experience, so novices are particularly prone to error. Also, cost-estimation precision is enhanced by working on the same type of properties in a focused area and doing similar work. Rehab entities that work in many neighborhoods and on different properties and that vary their rehab intervention (e.g., repair versus substantial) will tend to be more prone to error in estimation.

3. *Historic/other challenging rehab.* Because of the uniqueness of its finishes, layout, and other features, historic renovation typically will be harder to estimate as accurately as more-run-of-the-mill jobs. The same is true for other challenging rehab projects, such as those involving mixed use, change of use, and adaptive reuse. Further adding to the cost-estimation difficulty on historic and other challenging projects are building code uncertainties (e.g., anticipating the building code's "intent" in a century-old historic property).

Cost estimation can be particularly troublesome for novices; for those with more experience and for "average" as opposed to "challenging" jobs, cost estimation is a minor hurdle.

Potential Ameliorative Actions to Address the Barrier

1. Use an experienced cost estimator. Rehab-cost estimation is not something to learn on the job. Those with less experience should consult the more knowledgeable.

2. Allow sufficient resources to do the job. As was indicated in the Seattle case study, cost-estimation efforts are often shortchanged in terms of available time and monetary resources. These are false economies; realistic resources should be made available in order to do the job right.

3. Apply improved technology to the task. Asdal asserts that improved cost-estimation software would benefit the rehab industry. This software should be integrated with financial calculations, allowing for example, variation in the rehabilitation expense to be linked to such analyses as rate of return.

4. Use better inspection methods. A study of the home inspection business would probably reveal a wealth of information about ways to detect defects in mechanical and other systems.

In our experience, rehab inspectors often do not do a thorough job of inspecting and testing structural and mechanical systems. Inspection protocols and testing technologies may vary by such factors as rehab level and the local climate. For example, at what level of rehab and in what climate is it worth it to do a blower door test or an infrared scan of a house to determine where it needs more insulation or weatherstripping? What is the best way to evaluate or test a hot air furnace or water heater? One answer would be to see what year a system was made and order a replacement if older than a certain number of years. There is literature being used to train home inspectors, but it has not reached as many rehab inspectors as it should have. Better practices and training in this area would go a long way toward dispelling the myth that "rehab is totally unpredictable." Our view is that very few defects would remain hidden if inspectors used systematic ways of finding them.

DEVELOPMENT STAGE REHAB BARRIER—INSURANCE

INSURANCE: BARRIER PROFILE

Background

Contractors and developers involved in rehab projects carry various types of insurance, including general liability, directors and officers fidelity, workmen's compensation, and hazard coverage. Of these insurance types, the most expensive typically are general liability and hazard insurance.

Those doing the construction sometimes obtain additional "insurance" of a different type—surety bonding. There are three types of surety bonds: bid, payment, and performance (Stark 1970, 408). A bid bond, which is required before a general contractor can bid on a particular project, assures the developer that the contractor is able to fulfill all the contract terms. A performance bond assures the developer that the proposed contractor and his surety will indemnify the owner to the extent fixed in the bond for any reasonable costs incurred in completing the project that exceed the agreed-upon price. A payment bond assures the developer that prompt payment will be made to those who supply labor and material to the general contractor or his immediate subcontractors.

Insurance coverage is simply good business practice. A further, not-so-gentle prompt are mandates from various rehab funders. Many private lenders will extend financing to rehab developers and contractors only if hazard, liability, surety, and other insurance coverages are in place. Similar demands are also made by many governmental entities tendering rehab subsidies.

How Insurance Affects Rehab

Obtaining the insurance described above reportedly was problematic some years ago. For example, in the late 1960s, rehab developers working on vacant properties in Boston's South End neighborhood had to pay extremely high insurance premiums (Whittlesey 1969). Surety bonding also was a hurdle. The following case is illustrative.

In the late 1960s, the Housing Development Corporation in Washington attempted to employ a minority contractor in order to rehabilitate a 285-unit development, for which it had obtained an

FHA 221(d)(3) mortgage (Debro 1970, 399–400). After a nationwide search, it found only one black contractor who could be bonded for this $2.2 million Clifton Terrace rehabilitation project. The contractor was able to obtain a surety bond only after the Boise Cascade Company had signed an indemnification agreement with the surety companies involved, releasing them from any loss that might be incurred under the bond.

The insurance situation with respect to rehab is much more positive today. The case studies and interviews revealed that liability, hazard, and related coverages are readily available. Some acknowledged, however, that rehab insurance was costly, or as was described in the Memphis case study, was "available only at a premium."

The LHHA case study also determined that rehab insurance coverage was somewhat more expensive. General liability coverage costs LHHA $2,500 annually for up to four units of rehab undertaken at any one time; liability insurance on additional houses being renovated costs another $350 per unit. LHHA's insurance agent estimates that, were LHHA working on new construction rather than rehabilitation, the liability policy would cost roughly half as much—that is, $1,500 with a $200 charge for each unit over the four-unit coverage. The agent attributes the higher expenditure to insurance underwriters viewing rehab as "having a greater risk factor exposure" relative to new construction.

Hazard coverage for renovation work costs LHHA about $650 per housing unit. Hazard coverage for new construction in the Little Haiti neighborhood where this nonprofit operates would cost LHHA $250 to $300 per unit, or about one-half that of the rehab premium. This differential is again attributed to higher risk factors, including the following:

1. *Greater value exposure.* Since rehab starts with an existing unit, the entire value must be covered from the onset. With new construction, value is added in increments, so less value is outstanding at any one time and the insurance cost is lower.

2. *Rehab conditions.* Insurance underwriters view renovation as inherently more risky because "whether or not it is justified, the rehabilitation situation is perceived as an open invitation for vandals, squatters, and others who can damage a vacant unit. If the unit is occupied and rehab is being done around tenants, that triggers still other risks. New construction has a cleaner exposure" (Gruntler 1999).

The resource group conversations sometimes revealed a higher hazard-liability insurance charge for rehab projects. One developer working on urban wood-frame renovations felt that his insurance costs were "totally out of scale to the risk." That view was shared by another developer who concentrated on historic rehabilitation. He felt there was an unsupported insurance surcharge on such renovations, especially those of "heavy-timbered but not sprinklered historic properties."

Some surety issues were noted as well. It was reported that smaller contractors often encounter problems in securing such coverage. One of the Neighborhood Housing Service groups interviewed stated that it had to step in to help its smaller contractors secure a $100,000 payment for performance bond, which was required when working on federally funded rehab.

The cost of surety bonding was also cited as a challenge. On one $2.7 million North Miami Beach rehab project, LHHA's surety bond cost approached $50,000. The bond was needed because the Harvard House development was subsidized. That requirement, among other reasons, has led LHHA to shun public subsidy during the development stage of rehab. It has found that surety bonding may be waived on unsubsidized projects.

INSURANCE: BARRIER ANALYSIS

Nature, Incidence, and Severity of the Barrier and Potential Ameliorative Actions

Insurance as an issue in the rehab industry is a market phenomenon. In theory, the scope and cost of coverage is governed solely by actuarial experience. Thus, the $50,000 surety bond for Harvard House supposedly reflects the risk exposure of that construction, as does the surcharge for "heavy timbered" historic properties. Whether insurance coverage and premiums for the rehab industry are in fact guided solely by objective actuarial statistics remains a question.

We can report from our case study and resource group conversations that insurance generally is a minor hurdle to renovation. This is especially true when it is measured against the more problematic experience it once preserved. Hazard, liability, and other insurance coverage are readily available on rehab projects, albeit at some premium, and the situation is similar with respect to surety bonding.

Insurance is likely to be more of an issue with inexperienced, smaller-scale entities doing rehab. They have less of a track record, and this will adversely affect their ability to pass muster with respect to surety. They tend to be undercapitalized, so they will have more difficulty paying insurance premiums; in addition, various insurance options will be closed to them (e.g., some of the larger rehab developers we contacted found that self-insurance was the most economical coverage). Finally, the novice rehab entity may not yet have developed a relationship with a savvy insurance agent who can shop and secure coverage for them.

The type of property being rehabbed may also have a bearing on the difficulty and cost of obtaining insurance. Historic properties, for instance, often are more challenging in this regard.

There are various potential ameliorative actions. States, which regulate the insurance industry, can provide enhanced oversight of insurance companies in terms of their rehab insurance coverage. Those doing rehab should also consider pooling. For instance, a Neighborhood Housing Services group could obtain a pooled umbrella insurance policy for its many rehab contractors. Other more-efficient means of coverage can be sought, such as self-insurance for larger rehab entities.

DEVELOPMENT STAGE REHAB BARRIER—FINANCING

FINANCING: BARRIER PROFILE

Background

The crux of the barrier in obtaining financing for rehab is the economic gap[7] previously detailed. Many owners and occupants of properties needing rehab simply do not have the resources to pay for the renovation, and that affordability gap exacerbates the task of securing financing.

The affordability gap is addressed in different ways. Market-oriented companies, such as the enterprise depicted in the Asdal case study, limit their renovations to work that can be supported by the market's ability to pay. Thus, Asdal does almost no rehab for the target group considered in this study—those earning a maximum of 120 percent of the areawide median income, because with such affordable housing, the numbers don't crunch.

The case study nonprofits dealt with the affordability challenge by securing subsidies, often a layering of public assistance. For example, Isles delivers rehabilitated housing currently costing about $130,000 per unit to very low income families earning a maximum of about $32,000 by tapping a variety of federal housing aids, including HOME, HOPE3, the low-income housing tax credit (LIHTC), and the historic tax credit (HTC). It has also obtained Affordable Housing Program (AHP) funds from the Federal Home Loan Bank and the state.

In discussing the background to financing, it is also important to note that over time it has become somewhat easier to secure renovation funding. More jurisdictions today have creative financing sources for affordable housing, including rehab. Private rehab funding has also become more obtainable because of the Community Reinvestment Act, banks' growing experience with rehab deals, and other contemporary forces. The Seattle case study found that whereas in years past some lenders were uncomfortable financing rehab, such loans are now routinely extended.

While the situation has improved over time, and both private financing and subsidies are now available for affordable rehab, there are difficulties with each.

Problems in Securing Private Financing

The case studies and resource group interviews revealed the following barriers.

1. Fewer lenders are interested in doing rehab financing. Compared with new construction, fewer lenders are on record as willing to finance rehab projects. This was attributed to such factors as

    a. REHAB'S GREATER UNCERTAINTY. Lenders may shun rehab jobs because, compared with new construction, the rehab is viewed as riskier in such areas as cost estimation, contractor competence, and duration of the construction and lease-up periods. A particularly troubling uncertainty concerns environmental unknowns. Also, rehab lending is often viewed as riskier

[7]There are other issues as well, such as discriminatory barriers by lenders (Mayer 1979).

than new-construction financing because the rehabbing may not be finished.[8] This results in collateral being worth a lot less.

b. FEAR OF ENVIRONMENTAL LIABILITY. Lenders may worry about their liability exposure if they finance rehab work that encounters brownfields. Even rehab jobs that don't initially involve environmental problems may encounter them in the course of the renovation work (e.g., uncovering a wall reveals asbestos, or a buried fuel tank is discovered).

c. OTHER ISSUES. Lenders may be less inclined to finance rehab because these deals can be relatively small compared with the dollar amounts involved with new construction. There is also a longer learning curve for lenders to familiarize themselves with the intricacies of rehab projects.

These and other lender apprehensions regarding rehab financing were revealed in the LHHA case study. In interviews with the Rutgers researchers, some of the LHHA's lenders spoke of their misgivings. Affordable-housing rehab was viewed by the lenders as being "more difficult" and its goals "harder to realize" compared with affordable new construction. Lenders spoke of the problem of rehab sometimes costing more than the market value of the properties being renovated, an issue we consider shortly. Some lenders also acknowledged that they were not aggressively involved in programs to foster rehab financing, such as Title I and Section 203(k). They attributed this to myriad misgivings, including "the time it would take to learn about the programs" and concern whether "sufficient volume and quality returns could be realized."

A developer interviewed in the Chicago case study recounted various reasons there were fewer lenders available to do rehab financing in that city. To start, the complexities of LIHTC projects and the layers of financing typically necessary to undertake an affordable renovation project limit the number of financial institutions interested in participating. While this may lessen competition somewhat, those banks that are financing rehab are experienced and understand the complexities of the projects. Another factor limiting the number of financial institutions in Chicago willing to participate in affordable-rehab financing was that some institutions did not meet the program requirements for the Federal Home Loan System's Community Investment Program (CIP)—a subsidy used in affordable renovation. This developer acknowledged, however, that the wide array of programs, including other loans or grants available through the state of Illinois, private banks, and so on made securing financing for rehab quite possible.

2. Rehab financing is available only at a premium. Because of the factors noted above, even when lenders extend rehab financing, they may demand a premium above that of their new-construction loans. Our discussions indicated the premium could consist of more stringent loan terms and/or "more guarantees than with new construction" or "more paperwork" on matters ranging from market studies to architectural drawings. The Asdal case study noted that lenders apply "stricter filters" when dealing with rehabilitation than when dealing with new construction. The filters include

[8]New construction also may "not be finished," but that is viewed as less common than an incomplete rehab job.

a. HIGHER FEES AND INTEREST RATES. The terms for a rehab construction loan may include additional points or a higher rate over prime than the terms for new-construction lending.

b. LOWER EXTENSION OF FINANCING. According to Asdal, lower loan-to-value-ratio financing is available for rehab compared with new construction. Relatedly, more conservative ratios are applied with renovation. For example, whereas on a new-construction rental project lenders will typically credit 80 percent of the income and require a 1.2 ratio of cash flow to expenses, on rehab only 70 percent of the income is acknowledged and lenders demand a 1.3 ratio of cash flow to expenses.

Asdal attributes the harsher financing terms applicable to rehab to multiple factors: lenders are constrained by conservative appraisals (a topic discussed shortly); lenders perceive rehabilitation as inherently riskier; and the smaller size of the rehab loans (relative to new construction) gives the borrower less leeway in negotiating for the best rates. Asdal further emphasizes that financing is often more critical with rehab than with new construction because the former involves more up-front outlays (e.g., for property acquisition) and hence has higher carrying costs.

The Seattle case study similarly revealed that because of the uncertainties and challenges of rehab, Seattle lenders demand a "tighter" pro forma. These include a higher project contingency factor with renovation; a contingency of 8 percent to 10 percent is demanded by lenders on rehab jobs, a factor roughly two to three percentage points higher than with new construction. Seattle lenders expect "soft" costs to be about 5 percent more on rehabilitation work relative to new construction. (Hard construction costs are about $60 to $75 per square foot for rehab compared with $50 to $55 per square foot for new construction.) Seattle lenders also demand greater development-construction expertise on a rehab job team relative to their expectation for a new-construction project because the former has more uncertainties.[9]

In addition to the informants interviewed during the Asdal and Seattle studies, other informants reported that a financing premium is often demanded with rehab. One respondent noted, "Lenders are nervous with rehab and often demand more developer equity or additional public financing so as to reduce their exposure." This respondent also stated that appraisal issues contributed to lender conservatism.

Appraisal Issues Contribute to the Financing Challenge

Mortgage financing is typically offered at a percentage of real estate value. Single-family financing is offered at the higher range of the loan-to-value (LTV) ratio, usually 80 percent LTV or greater; multifamily financing is proffered at lower LTVs, typically at a 60 percent to 70 percent ratio. Since financing is secured at a share of value, the appropriate determination of the value of properties being rehabilitated is a prerequisite for obtaining adequate-sized mortgage loans for renovation.

[9]Sometimes Seattle lenders will be more flexible with rehab projects with respect to the acceptable financial pro forma. Because of its more distinct amenities and hence unique market attraction, a rehabilitated residential property in Seattle can expect to have a 1 percent to 3 percent lower vacancy rate than its new-construction counterpart.

Professional valuations are done by appraisers who assign values to a given property ("subject property") by considering the cost to produce it ("cost approach"); what buyers have paid for comparable properties, typically referred to in an abbreviated fashion as "comps" ("sales comparison approach"); and what the property is worth as an investment ("income approach").

Any valuation is challenging; the appraisal in a rehabilitation context is even more so (Sherwood 1975). To start, each dollar of rehab work does not necessarily raise a property's value in the eyes of potential buyers by the same amount. Thus, there is a frequent divergence in rehab between costs and value. Certain types of improvements capture more or less in terms of value of their costs. Bathroom and kitchen improvements in general are better investments (i.e., a higher percentage of their cost is returned in a higher premium paid by buyers) than, say, installing an in-ground pool. The National Association of the Remodeling Industry (NARI), the National Association of Home Builders (NAHB), and other groups periodically release for popular consumption the return on investment of various improvements. The point is that it is never equal, and that must be taken into account by appraisers valuing renovations and renovated properties.

The appraisal challenge can be even greater. The appraisal of infill urban rehab, such as that carried out by many of our nonprofit case study subjects, constitutes one of the most demanding assignments of all. Take, for instance, the concept of "neighborhood." As reflected in the adage "location, location, location," where a property is located has a significant influence on its value. For many years, neighborhoods such as Little Haiti and Dwight (where LHHA and New Haven Neighborhood Housing Services [NHNHS], respectively, work) were viewed with a jaundiced eye by appraisers, and this perspective made rehabilitation there harder because valuations were discounted accordingly. Recognizing the destructive influence of such a practice, the Government Sponsored Entities (GSEs)—Fannie Mae and Freddie Mac—have recommended that appraisers limit their neighborhood analysis to the immediate environs of the subjects; the GSEs have advised appraisers to take into account improvements being made in the neighborhoods. In theory, then, appraisers considering a Little Haiti or a Dwight property to be rehabilitated on a block of other renovated units should not view the subject negatively because of the presence of abandoned and run-down buildings in the area, but instead should focus on the immediate environ of the subject (positive) and should acknowledge the rehabilitation and other investment in the area by LHHA and sister organizations (a further positive). While that is the theory, in practice old prejudices against urban neighborhoods such as Little Haiti and Dwight often linger.

Related to this is the divergence between cost and value. In Little Haiti, single-family homes tend to sell for $60,000, but rehabilitated units cost more—about $80,000. In Dwight, a rehabilitated property may cost $150,000 to $200,000 in a neighborhood of $125,000 homes. One can understand why appraisers would lean to a $60,000/$125,000 valuation for homes in Little Haiti and Dwight, respectively, even renovated ones, because that's where neighborhood values cluster. At the same time, appraisers should recognize that a renovated unit is more desirable than its unrehabilitated peers, and as such may very well constitute a distinct, supportable submarket. The rehabilitated unit is the "apple" against the neighborhood's "oranges," which often have fewer amenities. This "apples to oranges" distinction is often not

made, however, and the rehabilitation outlay is labeled an "overimprovement" rather than an investment that proactively raises the neighborhood price threshold.

A similar difficulty exists with the identification and adjustment of comparable properties. In new construction it is easier to identify "comps," because the new units sold tend to be more generically standard (e.g., a 1,200-square-foot, two-bedroom, two-bath town house), or may even be identical (e.g., if sales occurred in the same subdivision). With older units, dissimilarities increase, and when one is dealing with an older unit that has been rehabilitated, the issue of comps is even more complicated. Appraisers recognize the variability of real estate in the analysis of comps by factoring "adjustments." Inherently, however, it is easier to make adjustments with newer units, which tend to adhere to an underlying standard yet differ in amenities, condition, and so on, compared with older units; it is especially problematical to make adjustments between an unrehabilitated older unit and older renovated housing.

Many of these issues are illustrated in the appraisal assigned to a 14-unit multifamily rental property at NE Miami Place in Miami. This property was purchased by LHHA for $268,000, and with rehabilitation and soft costs, will represent 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 rehabilitation investment*. The $310,000 valuation was only slightly more than 60 percent of LHHA's planned investment. Under normal circumstances, this much lower valuation would doom the project, because financing at yet a lower share of the appraised value would cover such a small amount of the cost (e.g., at a 70 percent LTV, a mortgage of only $220,000 would be obtainable). While LHHA is proceeding with the job by deferring its soft costs and making other adjustments, the low appraisal is a hardship.

The details of the $310,000 valuation are found in exhibit 9.4 in the LHHA case study (chapter 9) and reflect many of the rehabilitation appraisal hurdles noted earlier. These include

- giving no credit for improving conditions in Little Haiti through rehabilitation and other interventions;

- ignoring rehabilitation in analyzing and adjusting comparables in the sales approach and in determining a capitalization rate for the income approach; and

- ignoring rehabilitation's impact on such real estate fundamentals as vacancy and operating costs (i.e., 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).

As is detailed in the LHHA case study's exhibit 9.4, the appraisal compounded errors. For instance, the operating expense ratio post-rehabilitation *increased* rather than *decreased*. That exhibit also shows that a more appropriate appraisal would value this 14-unit multifamily building at around $430,000, much closer to LHHA's project costs—but this is an after-the-fact academic exercise. LHHA had to work with a $310,000 value. This drastic difference between the actual project expense and the appraisal illustrates the hurdle faced by those attempting to do urban, infill rehabilitation.

Other case studies revealed appraisal issues as well. NHNHS tries to avoid problems by cultivating relationships with appraisers who have a good sense of the marketplace in Dwight and similar urban neighborhoods. These appraisers are usually careful in picking appropriate "comps" to the properties being rehabilitated by NHNHS; however, some appraisal difficulties have been encountered. Not all appraisers doing work on its projects are so careful; NHNHS has worked with some who lump together all property sales in Dwight, not differentiating between renovated properties—which NHNHS believes should be valued at the high end of the market—and sales of unrenovated parcels.

Isles is not currently facing financing problems based on inappropriate appraisals, but foresees potential problems in this area. To illustrate, a prototypical rehabilitated row house costing Isles about $130,000 is sold to the homeowner for $50,000, with the balance of funding coming from state grants and other sources. When an appraisal is done on this property, the valuation assigned to the row house is typically $50,000 to $60,000. Despite the fact that the rehabilitation cost $130,000, the $50,000 to $60,000 value is based on neighborhood "comparables." The $50,000 to $60,000 appraisal is not currently a hurdle to the financing, because the Isles-aided homeowner is seeking a mortgage of only $50,000. In the future, however, the dynamic may change. If subsidies on the row house are reduced, then purchasers may need a $60,000, $70,000, or $80,000 mortgage. If appraisals remain in the $50,000 to $60,000 range, these larger loans may very well not be forthcoming.

The resource group interviews also identified numerous instances of appraisals limiting rehab. One respondent noted that "Rehab often goes in neighborhoods which haven't seen investment in years, and it is hard to find comps there for the rehabs we do." Another bemoaned that "In mixed-use rehab projects, appraisers have difficulty in imagining the values that can be untapped." A third observed that "Appraisers are particularly challenging in rehabs involving brownfields situations."

Problems in Securing Public Funding and Subsidies

Some of the problems associated with private-source financing also affect the search for public funding. For instance, underappraisal of the value of a rehab project will limit public as well as private mortgageability. Public funding and subsidy of rehab also has issues unto itself, and we summarize those issues here.

Limited Supply of and Competition for Public Assistance

Affordable rehab is often characterized by the use of public assistance and the combination of various supports. The Chicago case study revealed that affordable renovation in that city relied on various federal subsidies, such as CDBG, HOME, and Section 202; federal tax credits, such as the LIHTC[10] and the HRTC; as well as a variety of city and state supports (see exhibit 2.5).

[10]Chicago is the only city in the country to have an allocation of the LIHTC; it receives about 25 percent of the Illinois state LIHTC allocation.

EXHIBIT 2.5
Major Subsidy Programs Available for Rehab Chicago, Illinois

Chicago Abandoned Property Program (CAPP): This program provides a means for acquiring dangerous and abandoned buildings for transfer to parties interested in rehab or in demolition and reuse of the land.

Chicago Low-Income Housing Trust Fund (Affordable Rents for Chicago [ARC] Program): This program is designed to provide financial assistance to developers of housing for residents with incomes at or less than 30 percent of median income. The Affordable Rents for Chicago program offers assistance in the form of rent subsidies or acquisition and rehab loans.

Chicago Low-Income Housing Trust Fund (Rental Subsidy Program): This program is dedicated to providing financial assistance to meet the housing needs of the city's poorest residents, whose income is at or below 30 percent of median income. At least 50 percent of the program funds are designated for households earning less than 15 percent of median income. The program is designed for buildings currently in operation that are well managed and in good condition; those buildings undergoing rehab work sufficient to bring the project into good condition; and new construction.

Community Development Block Grant (CDBG) Float Loan Program: This program makes loan funds available to developers as construction financing for the rehab of affordable housing. The loans are offered at a deeply subsidized rate to reduce the total costs of rehab projects. Costs eligible for funding are construction, demolition, rehab, land and/or building acquisition and related soft costs.

Multi-Family Rehab and New-Construction Loan Program: This low-interest loan program is available to not-for-profit and for-profit developers to acquire and rehabilitate properties of five or more units for renters with incomes of less than 50 percent of median income.

Multi-Family Tax Exempt and Taxable Housing-Revenue Bond Program: This program provides bond financing for developers who build or rehabilitate large housing developments for low- and moderate-income tenants.

Predevelopment Loan Program: Limited predevelopment loans are available to tenant organizations and not-for-profit groups interested in purchasing and/or rehabilitating a multi-family building. Predevelopment loans at 0 percent may be used to assist with the costs of planning, architectural and engineering studies, market studies, legal fees, purchase transactions, and technical assistance required to successfully purchase and/or rehabilitate a property.

Vintage Homes for Chicago Program: The Vintage Homes for Chicago Program is designed to encourage rehab and homeownership opportunities for lower-income families. The program provides for rehab of single-family one- and two-unit buildings, which will be sold to owner-occupants after rehab. The subsidy is available only to the extent that the development costs, acquisition, and rehab exceed the after-rehab appraised value of the properties.

Although the use of subsidies is characteristic of many affordable-housing rehab projects, public assistance is limited and there is competition to secure it. For instance, the NHNHS (Connecticut) sells rehabilitated housing priced at approximately $170,000 per unit to low- and moderate-income households earning approximately $30,000 to $35,000 annually. NHNHS uses subsidies from various sources:

1. *State of Connecticut*. For example, Connecticut offers state housing tax credits for LMI housing.

2. *Federal Government*. The NHNHS and its clientele have been aided by such federal programs as HOME and CDBG and, in the past, by UDAG and other funds.

3. *City of New Haven.* The city has assisted NHNHS by offering it monies from local and federal flow-through sources (e.g., UDAG).

4. *Lenders*. With the assistance of the Federal Home Loan Banks of Boston and San Francisco and local and regional lenders, LMI owner-occupants served by NHNHS can obtain financing for the purchase of NHNHS homes at below-market interest rates.

The competition for housing subsidies is intense. Take, for example, the Connecticut state housing tax credit that NHNHS uses to write down about $25,000 to $30,000 per unit. In the entire state of Connecticut, only $1 million annually is available for such credits. Nonprofits competitively apply for allocations from this modest statewide pool, and few succeed. To date, NHNHS has been successful in this area, securing about $300,000 yearly from the $1 million total, but there are limitations. First, the $300,000 allocation limits the write-down to about 10 houses per year. Second, NHNHS has kept its dollar request for tax credits constant, despite rising rehab costs. It has done so out of fear that if it asked for more than $300,000—already a large share of the $1 million statewide total—its application could very well be rejected outright. (Requests for funds are either accepted or denied in totality.) Third, NHNHS acknowledges that while it has been successful in the past in garnering state housing tax credits, it surely has no lock on these funds. Were NHNHS cut off from state tax credits, and the many other subsidies enabling LMI homeownership, the organization's renovation efforts would be in jeopardy. Many other nonprofits involved in rehab face similar challenges.

The "Costs" of Subsidies from Ancillary Requirements

LHHA's experience reveals certain ancillary costs of using public assistance. In fact, LHHA purposely tries to avoid using subsidies for the purchase–construction stage of its operations, as opposed to the "takeout" phase (e.g., the soft second and third mortgages used by the LHHA home purchasers of the properties rehabbed by LHHA) because of the former's cost requirements. The cost requirements at the purchase–construction stage include the following:

1. *Labor wage requirements*. Were LHHA to use HOME or other federal monies for construction, for example, it would have to pay Davis-Bacon's prevailing wages—a much higher wage scale (about $20 to $25 per hour) than it currently tenders (about $15 per hour). (We discuss Davis-Bacon in more detail in a subsequent section.)

2. *Surety requirements.* Surety bonding is required for public subsidy of construction. Such bonding may be waived if private financing is used. LHHA has purposely used private (i.e., nonsubsidized) financing for its single-family rehabilitation projects to avoid the surety bonding requirement of public subsidies. For the more costly multifamily rehabilitations, it must turn to public subsidies, and on these jobs, however, it has been forced to pay high premiums for performance insurance (e.g., $45,000 for one project, Harvard House).

3. *Other requirements.* As an example, if HOME monies from Miami-Dade County are used for subsidizing rehabilitation construction, the county requires that the full gamut of federally prescribed relocation benefits be accrued to any tenants, whether legal or illegal (e.g., squatters). This is particularly germane to rehabilitation because it tends to involve relocation issues much more frequently than does new construction. Participating jurisdictions (PJs) involved in administering federal block programs, such as HOME, often prescribe many other requirements, such as those involving minimum housing standards (MHS). (We discuss relocation and MHS issues in greater detail in subsequent sections.)

Timing of the Subsidies

Even if subsidies were fully available to meet need and did not impose some of the costs described above, there still would be issues of timing. LHHA's former executive director, David Harder, described that organization's experience with timing difficulties:

> The seller [of a deteriorated property] wanted a quick sale; he wanted to close by November 30 and was asking $285,000. We were able to push the closing off a month and negotiated a $268,000 price. . . . [However,] the public money for acquisition–rehabilitation works very slowly. For federal, county, or city funds, whether from HOME, CDBG, or the surtax, we would be locked into the funding cycle: apply in July, may hear back by November, final approval in March, and monies forthcoming in June. That is an eleven-month cycle to get the public funding when LHHA has to close in two months and then must do the rehabilitation.

The Chicago case study also revealed numerous subsidy timing (and property holding) difficulties. Ken Rice, vice president of LR Development, described the following situation:

> The timing of the Illinois LIHTC application process is a problem for for-profit and not-for-profit developers because of the length of time that the developer must have control of a property before having financing. For example, Illinois Trust Fund applications are generally due on November 1 and LIHTC applications are due on or around January 31. To make an application for the Trust Fund, the developer must have the property under control (contract, option, or purchase). Notification of tax credit allocations are made in April and state funds to allow for closing on the property are usually available in June or July. This requires having control of the property for a period of approximately 10 months prior to getting funding; if the funding application is not successful in the first application period, the control time can increase to 18 months or more.

This can be difficult, particularly for not-for-profit organizations that have little pre-development funding available. Most developers cannot afford to front load-acquisition costs because the cost of carrying can significantly increase the overall project costs.

Subsidy Selection Criteria May Be Problematical to Rehab Projects: Low-Income Housing Tax Credit Example

As demand for subsidies exceeds supply, funders establish scoring criteria. The criteria encompass various legitimate concerns, including need (e.g., targeting aid to the most impacted neighborhoods), economy (e.g., imposing housing unit cost ceilings), and leverage (e.g., favoring projects with higher ratios of private financing). Some subsidy selection criteria that appear on the surface to have merit may be problematic in a rehabilitation context. We found this to be the case in research we conducted on the low-income housing tax credit (LIHTC).

Created by the Tax Reform Act of 1986, the LIHTC provides an incentive for investors to direct funds into the provision of rental housing for low-income households. As the largest federal program currently financing affordable housing (it can provide up to $2.1 billion annually in housing equity), the LIHTC warrants careful evaluation as to its effects on rehab.

Each state receives an annual tax credit allocation from the IRS equal to $1.25 per state resident. The process of securing tax credits is competitive, and awards are made according to project criteria specified in a Qualified Allocation Plan (QAP) prepared by each state. Federal expectations for a QAP include requirements for low-income occupancy, procedures for monitoring LIHTC compliance, and general selection criteria categories (e.g., project location and project characteristics). The state QAPs include the federal mandates and specific criteria that reflect each state's affordable-housing priorities. The synthesis of the federal–state framework results in scoring or other selection criteria under which LIHTC project applications are evaluated. This competition is popularly referred to as a "beauty contest."

We conducted a national study on how state QAP scoring criteria encourage or discourage LIHTC rehabilitation projects as opposed to their new-construction counterparts. Our national review finds 11 state QAP criteria that may either encourage or hinder rehab projects in the LIHTC "beauty contests." Only four of the 11 criteria either directly or indirectly favor rehabilitation. The remaining seven criteria will tend to favor new construction, perhaps making rehabilitation LIHTC applications somewhat less competitive.

Exhibit 4.2 details the presence of QAP scoring criteria in the 50 states that potentially benefit or hinder rehabilitation. We summarize the results below.

The four scoring criteria that benefit rehab include the following:

1. *Points for rehabilitation.* Approximately two-thirds of the states (34) give points for rehabilitation. This criterion directly assists rehabilitation projects in competing with their new-construction counterparts. Many states, however, given an equal number of or more points to new construction, thus putting rehabilitation at a disadvantage.

2. *Points for historic rehabilitation.* Eight states give points to historic rehabilitation, in addition to the points granted for rehabilitation in general. The historic criterion is directly supportive of the rehabilitation of existing historic buildings.

3. *Points for small-scale projects*. Nearly half the states (23) award points for smaller-scale projects. Rehabilitation experts have told the research team that rehab jobs generally comprise fewer units compared with new construction. Points for smaller-scale projects may, therefore, indirectly favor LIHTC renovation proposals. Also, bonus points for small-scale projects may somewhat offset the rehab-hindering influence of limitations on fees and overhead (these will be discussed shortly).

4. *Points for location in challenging areas.* Found in almost 80 percent of the states (39), this provision includes point awards for LIHTC projects located in such challenging locations as areas targeted for community revitalization, "qualified census tracts" (QCT), and/or "difficult-to-develop areas" (DDA). While these locations do not *exclusively* host rehab as opposed to new construction, it is likely that they are the setting of much rehab work.

The following six scoring criteria for new construction may create a disadvantage for LIHTC rehab applications:

1. *Points for new construction*. Fourteen states give points specifically for new construction.

2. *Points for lowest cost per unit.* In attempting to maximize the LIHTC, about half the states (24) give added points to applications with the lowest cost per unit. Because rehab can be costlier than new construction, this criterion may negatively impact rehab in the LIHTC competition. In many states, this variable is one of the threshold criteria, and so it immediately harms renovation applications. If rehab costs are too high, applications will be immediately disqualified from further consideration.

3. *Limitations on fees and overhead costs.* Besides considering total costs per unit, about 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 rehab.

4. *Points for large units.* About half the states (26) award points for projects with a higher share of larger (e.g., two- and three-bedroom) units. Providing more family-size units is a laudable housing goal, but it can also be problematic if one is rehabilitating existing buildings with mainly smaller apartments (e.g., studio and one-bedroom units).

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 less expensive to offer in new construction, perhaps placing rehab at a disadvantage.

6. *Points for "ready to go."* Somewhat less than half the states (22) give points for this criterion. Few LIHTC projects can be easily "ready to go." New construction is often subject to challenges related to NIMBYism and faces other obstacles. It may be even harder for rehabilitation to be "ready to go." For example, raw land in new construction can often be secured with an option. For an existing building, where purchase–rehabilitation is contemplated, an option may not be available (the owner may demand an outright sale); or, if an option can be had, it is of limited duration and/or is relatively expensive. Building code and other regulations may make the rehab effort more complicated in comparison to start-from-scratch new construction. These and other issues make closure on renovation projects more difficult. As a result, "ready to go" points can negatively affect rehab projects in the LIHTC "beauty contest."

In summary, more QAP scoring criteria (six versus four) lean toward new construction rather than toward rehabilitation. There are other ways in which the QAP can add to the difficulty of renovation projects in securing tax credits. For example, some states have separate urban and rural set-asides. Rehab projects are frequently competing in the urban pool, and competition is often stiffer there. In New Jersey, for example, where approximately one in four LIHTC applicants statewide secures a tax credit in the "urban pool" the attrition rate is higher: only about one in six urban-area applicants is successful. Yet, it is in the urban pool that New Jersey's renovation applications are concentrated. Thus, in addition to the individual QAP criteria noted earlier, the set-asides may, in this case, work against LIHTC rehab applicants. (An illustration from the case studies is presented in exhibit 2.6.)

Barriers to Obtaining Federal Housing Administration (FHA) Insurance

The Federal Housing Administration (FHA) insures lenders in case of loss on first mortgages for multifamily housing, thus making possible the construction, rehabilitation, and preservation of multifamily rental properties. The loans are made available to private developers, nonprofit organizations, and cooperatives that build affordable housing. In many states, FHA insurance is used for bond-financed projects.

Conversations with developers in Denver, Colorado, and Spokane, Washington, highlight frustration with FHA's requirements for lender underwriting, which limit the allowable floor space in multifamily projects for nonresidential use. Section 221(d)(4) loans, in particular, limit the amount of allowable nonresidential space to 10 percent of the project. This can be a problem for many affordable-housing projects, because ground-floor tenants for commercial space are often necessary to make the project work. Even when lending and insurance criteria are met, developers complain that FHA is reluctant to insure mixed-use projects because they are "outside the box" in terms of conventional residential projects and are perceived to be "too risky."

The challenges of obtaining FHA insurance were not widely cited in the case studies. Most project developers sought private insurance instead of FHA insurance. It is possible that demand for FHA insurance would be greater if it were perceived to be more accessible, particularly for mixed-use projects.

EXHIBIT 2.6
Case Study Example of a Nonprofit Encountering QAP Issues in Submitting Rehab Projects for LIHTC Funding

Isles, a Trenton, New Jersey nonprofit, found that the following state Qualified Application Plan (QAP) criteria negatively affected its rehab application for LIHTC funding.

Bedrooms

LIHTC projects have a QAP requirement with respect to bedrooms (e.g., on low-rise buildings, 30 percent of the project's units must have three bedrooms, while on high-rise buildings, the minimum share of three-bedroom units is 15 percent). It is easier to meet these bedroom requirements in new construction projects; in rehab projects, where existing apartment layouts, corridor widths, and many other existing dimensions constrain the ability to provide units with more bedrooms.

Amenities

LIHTC projects compete according to their amenities and the QAP awards points if projects contain such features as a larger unit size (e.g., 650 square feet for a one-bedroom unit, 800 square feet for a two-bedroom unit) or parking, or if they have participated in a state-run energy efficiency program. Each amenity gains the project one point, up to a maximum of two points. LIHTC proposals are at a severe competitive disadvantage if they do not secure these two points, yet with rehab projects, it is often harder to provide the amenities.

Land-Use Approval

The QAP awards one point for those LIHTC-submitted projects that have already received preliminary and final site-plan approval (PFSPA). Under New Jersey land-use law, however, PFSPA is routinely required for new construction but not for the rehabilitation of an existing building. Thus, awarding a point for PFSPA is sensible only for new construction.

Cost Limits

Many of the subsidy programs used by Isles have cost ceilings above which monies are not awarded. For the LIHTC, the current QAP cost ceilings are $112,000, $120,000, and $129,000 for one-, two-, and three-bedroom apartments, respectively. These amounts are the maximum "cost basis" figures from which the tax credit is calculated. State subsidies have a similar "reasonable cost limit penalty": a dollar of subsidy is subtracted for each dollar exceeding the "reasonable cost limit." Because the cost of Isles's rehabilitation projects often approach or exceed the federal and state ceilings, the programmatic cost limits are an issue.

A cost limit seems to be sensible for it furthers the objective of programmatic economy. Isles argues, however, that as its costs are higher for rehabilitation than for new construction, a singular cost limit for both rehabilitated and newly constructed units works to the disadvantage of the rehab projects. Isles's rehabilitation projects tend to be more expensive because of the following:

Scale. Rehabilitation, targeted to individual houses on a per-need basis, will tend to be a smaller-scale, costlier construction job. In contrast, Isles's new construction has been done on a larger scale and has therefore garnered better prices for labor, materials, appliances, and other outlays.

Nature of the Work. Isles argues that the commonalities of new construction, as opposed to the variability of rehabilitating distinctive existing units, make new-construction projects inherently less expensive than rehab projects.

Historic Preservation. Rehabilitation also costs Isles more because of the amenity of the existing stock that Isles preserves. Isles's preservation of such historic features as gingerbread and wooden windows and doors helps retain the character of the older neighborhoods, yet preservation can add thousands of dollars in costs per unit. The subsidy cost ceilings do not differentiate between new construction and rehabilitation incorporating historic preservation, and as the latter is more costly, the undifferentiated cost ceiling is an issue for Isles.

Community Infrastructure. Included in Isles's costs are the expenses it incurs for such community improvements as redoing streets and sidewalks and providing tot lots, neighborhood gardens, job training, and the like. These neighborhood upgrades are necessary yet costly in an inner-city setting; they are *not* factored in the subsidy housing-cost-ceiling per unit. Related is the fact that although contractors demand a premium for working in the city, this geographic cost differential is unacknowledged in the cost limits.

Source: See chapter 8 for details.

Barriers Imposed by the Use of Other Public-Financing Mechanisms

Subsidies such as CDBG and HOME funds are important to the development of below-market-rate housing, but the application cycles and time frame can be inconvenient for the development cycle and cause delays, thereby adding to costs.

The parking requirements imposed on HUD-financed projects by Section 202 and other HUD loan programs were viewed by several developers as excessive. The requirements also prove prohibitively expensive to the development of affordable housing. Several respondents mentioned that a one space-per-unit parking requirement for HUD-financed housing for the elderly, particularly in urban areas, was unnecessary and, because it limited the footprint of the building, reduced the economic feasibility of the project. This problem is not limited to publicly financed projects; several study participants mentioned that private lenders imposed excessive parking requirements as well.

Excessive parking requirements for HUD-financed projects were widely cited as a significant—and unnecessary—development cost barrier. Several developers were stymied by lenders' requirements for one parking space per unit for projects housing the elderly and for other affordable-housing projects. This is viewed to be an excessive requirement, given the tenant mix, and often infeasible in dense urban neighborhoods where open land is scarce and the creation of underground parking is not possible from both structural and cost standpoints. A correction of this requirement by both public and private lenders would have a significant impact on the cost of projects. (See also the general discussion on parking in the land-use section.)

FINANCING: BARRIER ANALYSIS

Nature of the Barrier

Financing is a complex barrier to affordable-housing rehab and includes elements of the following:

1. *Market economics.* Given the constrained ability of many owners and tenants to pay for rehab, the mortgage underwriting of rehab loans will often be an economic challenge.

2. *Professional practice.* Appraisers may not always select the appropriate comps or make the necessary adjustments in valuing a rehab project. Underwriters may similarly fall short.

3. *Public regulations*. Issues that accompany public subsidies involve ancillary requirements (e.g., Davis-Bacon), timing incongruities, bias against rehab in competing for assistance (e.g., in the LIHTC's QAP), and other limitations (e.g., FHA insurance may be difficult to secure on mixed-use projects).

Incidence and Severity of the Barrier

Financing is likely to pose more of a barrier to rehab in such situations as the following:

1. *The more-affordable rehab jobs*. The further down the economic ladder a rehab job is trying to reach (e.g., 80 percent versus 120 percent of median income), the greater the financing difficulty).

2. *"Pioneer rehab."* The initial rehab jobs planned for an otherwise depressed area are more of a reach for appraisers, underwriters, and others involved in financing. For such "pioneer rehab" projects, there are fewer comps, the market receptivity is untested, and there are other perceived or actual problems.

3. *Challenging rehab situations*. Financing will tend to be more of a hurdle in challenging situations, such as projects involving mixed use, change of use, adaptive reuse, and historic preservation. While there are benefits associated with such developments (e.g., historic, adaptive-reuse space will be more distinctive), there are disadvantages as well (e.g., historic rehab will tend to be more expensive).

A rehab project will be stopped in its tracks without financing. Therefore, financing can be a significant problem.

Potential Ameliorative Actions to Address the Barrier

1. Educate lending professionals. Training of appraisers, underwriters, and other lending professionals in the nuances of rehab projects (e.g., how to find and adjust for comparables) would improve the lending climate.

2. Give rehab a level playing field in competing for subsidies. Potential biases against rehab in the subsidy application process (e.g., in the LIHTC QAP) should be monitored and removed to give renovation projects an even chance in competing for the limited pool of available funding.

3. Limit liability. Lenders would be more amenable to fund rehab if liability from brownfields and other potentially litigious situations were limited. Government has started to take action in this regard.

4. Offer subsidies. Chicago's Vintage Homes Program, for example, subsidizes the difference between rehab costs and the rehab appraised value (see exhibit 2.5).

DEVELOPMENT STAGE REHAB BARRIER—LAND USE

LAND USE: BARRIER PROFILE

Background and the Impact of Land Use on Rehab

Zoning and subdivision codes regulate such land-use considerations as type and density of use, required open space and off-street parking, and many other matters. Sponsors of new construction often confront restrictive zoning and subdivision codes that limit development and drive up costs. In interviews conducted for this study, numerous individuals expressed the opinion that rehab enjoys an *advantage* with respect to land use because, unlike new construction, it is not subject to the zoning and subdivision restrictions described above. Rather, rehab was "grandfathered" under earlier, more tolerant controls (e.g., higher density and lesser subdivision demands).

Another positive factor cited in the interviews was a perceived willingness by public authorities to bend the land-use rules in order to accommodate desired rehab. For example, a municipal zoning board might allow a sprawling historic house in a residential zone to be adapted for offices as a means to preserve the landmark and maintain the neighborhood's character. In contrast, upholding neighborhood character and protecting the integrity of existing zoning might very well be cited by the same zoning board to deny a developer's application to demolish the historic house and replace it with a new office building.

Public bodies are not always willing to be flexible with land-use regulations as they affect rehab projects. In those instances, land-use controls can impede renovation. It can be particularly difficult for rehab projects to satisfy the full measure of contemporary land-use mandates, for some of these, such as off-street parking and open space, are particularly hard to retrofit in an existing building.

The case studies illustrate the role of land use in rehab. Isles, a Trenton nonprofit, had a surplus telephone building donated to it and wished to convert the building to housing. In converting the building to 50 apartments, Isles had to obtain variances for parking (the building had eight spaces, and the 50 apartments required 30 spaces) and open space (the site had 20,000 fewer square feet of open space than was required for a residential project of its scale). The variances were granted and contributed to the adaptive reuse of a surplus industrial property.

A more challenging land-use situation was revealed in the Chicago case study. Lakefront SRO is a Chicago nonprofit that focuses on the development of supportive housing in existing buildings that were originally designed as residential (i.e., single-room occupancy or SRO) hotels. Lakefront SRO found that Chicago zoning requirements, most notably those that concern parking, pose a challenge. Although the zoning ordinance has a fairly insubstantial off-street parking requirement for SRO uses (one parking space per 10 units), the parking requirement can increase to one space per if family housing is included in the SRO property unit. Little consideration is given in the zoning ordinance to the important fact that the SRO buildings are typically located in areas well served by public transportation, nor does the ordinance consider the constrained income levels of the individual tenants. It is difficult for many to own and

maintain an automobile; therefore, even nominal parking requirements are somewhat excessive, particularly when the cost of purchasing "extra" land for parking is considered.

The Memphis case study also found that the need to provide parking is a serious challenge for many projects. While many of the developments in Memphis's South Main corridor and South Bluffs district are able to accommodate surface parking, this generally is not the case downtown. It is widely accepted that parking must be provided on-site or in close proximity (one block or less) to the properties being rehabilitated. Most lenders will look at this issue and most owners/developers agree that it is required because of both land-use regulations and market forces. Providing parking beneath buildings or erecting parking garages may be the only alternative in some cases, but these options are prohibitively expensive. The parking issue affected several current and proposed developments in Memphis.

Challenging land-use requirements were also revealed in the Seattle case study. Seattle's parking and open-space requirements—especially the former—were viewed by many as adding to the difficulty of doing rehab in the city.

The employment and population boom in Seattle has exacerbated an already difficult parking situation. There are simply not enough on-street spaces for Seattle's residents and workers. Consequently, the city requires that 1.3 on-site parking spaces be provided per housing unit. That parking requirement applies to all properties—both new construction and renovation—but is typically easier to satisfy in new construction projects. It is obviously difficult to provide parking where it did not exist before. One developer contacted by CUPR told of the machinations of excavating and building an underground garage (Nodland 1999). This parking retrofit required shoring foundations (made more complicated by seismic requirements), rerouting heating, ventilation, and air-conditioning (HVAC) systems, and other major work that added about $15,000 to $20,000 in cost per housing unit.

Seattle allows some exceptions to the parking mandate. Properties in the downtown are exempt, as are historic properties throughout the city. That still leaves many existing properties subject to the city parking statute. Even without a public parking requirement, the market for middle-income and more costly housing demands a parking amenity. A Seattle developer said, "Parking drives everything. I often look at a building's potential for rehabilitation by examining the parking situation." The developer asserted that "the parking requirement is a terrible detriment to existing housing" (Nodland 1999).

Residential developments in Seattle must include 20 percent open space. As with the parking mandate, that requirement applies to both new construction and rehabilitation projects. In new construction, open space can be provided in a more straightforward fashion through the design of the building's footprint. It is much more challenging to retrofit one-fifth open space into an existing property, and creative solutions have to be sought. One Seattle developer proposed that the open-space requirement be met in a property he was rehabilitating by building a large rooftop deck—but no retrofit is easy. Constructing a rooftop deck affected the live loads throughout the structure, and this in turn required that footings be shored up against columns and that other structural work be done. The cost of that work amounted to approximately $250,000.

The developer building the rooftop deck further noted that his proposal required approval in the Master Use Permit (MUP) for the rehabilitation project. The requirement for open space is that one-fifth of the property be "open." The rooftop deck had to be agreed upon as an open-space amenity in the MUP process, but any such discussion or variance delays the MUP deliberations. In the rooftop example, it took six months to complete the MUP negotiations, and fees for planners, attorneys, and other professionals amounted to $45,000.

Even when there are no parking, open-space, or other variance issues, it is expensive to secure a MUP. It is not unusual to spend many thousands of dollars for attorney fees and other costs to obtain the permit. This high fixed cost discourages smaller projects, since the MUP processing outlay has to be amortized over fewer units. As many rehabilitation jobs tend to be smaller in size, the MUP processing cost serves as a greater barrier to rehab than to the typically larger new-construction job.

It is important to place land-use issues in perspective. Much rehab is taking place in Seattle and the city is flexible in interpreting land-use requirements in order to encourage rehab (e.g., exempting downtown and historic properties). Still, as the above examples reveal, land use sometimes poses a challenge to the rehab developer in Seattle.

LAND USE: BARRIER ANALYSIS

Nature, Incidence, and Severity of the Barrier and Potential Ameliorative Actions

Land-use controls are public regulations. They are likely to pose more of a barrier to renovation when a developer requests a variance from the nominally governing regulations with regard to intensification of use (e.g., higher density and floor-area coverage), change of use, mixed use, and myriad subdivision and zoning standards (e.g., parking and open space).

Land use is a minor hurdle because rehab may simply continue the existing land use. If requests are made to deviate from the existing standard, such variances are often routinely granted.

Ameloriative actions include the following:

1. Adopt more flexible controls. Jurisdictions can adopt model zoning and subdivision regulations that have less-stringent standards and other flexibilities incorporated. For example, *The Subdivision and Site Plan Handbook* (Listokin and Walker 1989) proposed reductions in parking, requirements for many types of development. It proposed additional reductions in the requirements for developments located near transit. This approach would make it easier for urban rehab projects (e.g., the Chicago SRO conversions) to meet their parking requirement.

2. Allow variances. Even the most flexible controls will require some tinkering in a given rehab situation, and zoning and other boards should be open to such requests.

CONSTRUCTION STAGE REHAB BARRIER—BUILDING CODES

BUILDING CODES: BARRIER PROFILE

Background: The Historical and Current Building Code Framework

A building code prescribes the standards for construction, including permissible types of construction; quality of building materials; minimum floor and roof loads; permissible electrical and mechanical equipment; and health and safety requirements pertaining to water pressure, fire ratings, and other considerations (Schultz and Kasen, 1984, 43). Depending on statute or custom, a local government adopts a building code or has one prescribed by the state. States and municipalities often adhere to model codes, which include the National Building Code (NBC), published by the Building Officials and Code Administrators, International (BOCA); the Uniform Building Code (UBC), published by the International Conference of Building Officials (ICBO); and the Standard Building Code (SBC), published by the Southern Building Code Congress International (SBCCI). New England, Middle Atlantic, and East North Central jurisdictions (states and localities) generally follow the NBC; western and West North Central jurisdictions follow the UBC; and southern jurisdictions follow the SBC.

Although building codes regulate both new construction and rehabilitation, they are largely oriented to new construction, and that emphasis creates problems for renovation. The building code, in practice, sometimes mandates a new-construction standard for rehab, but retrofitting an existing building to the new-building standard is technically problematical and expensive.

Two building code provisions in particular, the "25–50 percent rule" and the "change-of-occupancy rule," have often proved most problematical for rehab. There are variations of the "25–50 percent rule." All versions seem to indicate that a complete code-complying building (e.g., existing portions, renovated areas, new additions) must be the net result if the total cost of the proposed work (over some stated period of time) exceeds 50 percent of the estimated cost to replace the existing building. If the total cost of the proposed work is between 25 percent and 50 percent of the estimated cost to replace the existing building, then less-stringent requirements are demanded, with a further lowering of requirements if the cost falls below 25 percent.

Building codes also address a change of use or occupancy in existing buildings because such a change may introduce new or greater hazards. A building code may require that the entire building comply with the new-construction requirements for the new occupancy. For instance, if industrial space is adapted for housing, then the new-construction standard for housing would have to be satisfied.

Until about two decades ago, the model building codes typically required a strict adherence to the "25–50 percent rule" and the "change-of-occupancy rule" as described above. That created severe compliance problems. A rehab job valued at more than half of the value of the building being worked on, a not uncommon occurrence, would trigger the mandate that the entire building, not just that portion or the components being worked on, would have to satisfy standards for new construction. A similar new-building mandate was prescribed with every change of occupancy, even if the new occupancy was less hazardous than the prior one.

These problems caught the attention of HUD and the building code community in the 1970s. HUD sponsored a series of documents, titled *Rehabilitation Guidelines,* that recommended changes with respect to the "25–50 percent rule" and the "change-of-occupancy rule." The model codes responded to those recommendations (see chapter 5 for a summary).

Over time, the model codes also included significant documents specially oriented to rehab. For example, in 1985, the ICBO published the *Uniform Code for Building Conservation* to encourage rehab. In 1987, Article 32 was added to the NBC as an alternative to compliance with new construction when there is work involving repairs, alterations, additions, or changes of use. The chronology of these and related documents is noted in chapter 5.

Chapter 5 also includes a summary of how the national model codes currently regulate rehab. In brief, all three model codes address work in existing buildings in their respective Chapters 34.[11] Although each code addresses existing buildings using the same basic terminology ("repair," "alteration," "additions," and "change of occupancy"), the model codes differ somewhat. All three require alterations to comply with the building code. However, while the NBC and the UBC specify that this be done without requiring the rest of the building to comply, the SBC allows the building official to determine the extent to which the rest of the building shall be made to comply. The differences between the three codes are more extensive in the case of change of occupancy. The UBC requires compliance with the building code, with an exception based on risk analysis. The SBC requires compliance with the intent of the building code. The NBC requires compliance with the intent of the code and provides a detailed rating system that establishes compliance alternatives that meet the code's intent.

In addition, two of the three model-code organizations publish separate model codes that address existing buildings: the SBCCI *Standard Existing Buildings Code* (SEBC) and the ICBO *Uniform Code for Building Conservation* (UCBC). These two codes also differ from each other.

Finally some states have adopted approaches to rehab that are unique unto themselves. For example, in 1972, Massachusetts developed its own flexible rehab regulatory system. Article 34, as it was ultimately titled, eliminated the "25–50 percent rule" and the "change-of-occupancy rule" and encouraged the use of compliance alternatives.

How the Building Code Affects Rehab

Compared with the period twenty years ago, when the *Rehabilitation Guidelines* were promulgated, building codes today are technically much more supportive of rehab. Our experience, resource group discussions, and case studies reveal many instances where, in practice, the building codes—compatible with affordable-housing rehab. We cite some examples below.

Building Code Often Accommodates Rehab

WISCONSIN. Discussions with the resource group revealed that historic rehab is supported by "sympathetic code officials" who allowed renovations to proceed if it met the intent, albeit not

[11]This section is excerpted from NAHB Research Center 1997, p. viii.

the letter, of the code. For example, they accept stair risers and railings that fall slightly below code level.

MASSACHUSETTS. The Massachusetts case study finds that Article 34 often works well. Following are some of the comments made by experts interviewed by the authors in the course of that analysis. "Article 34 provides an effective framework for looking at each project and an avenue to work out solutions." "Article 34 generally works well, especially compared to the '25–50 percent rule' that was absolutely wrong." "Article 34 provides latitude in making decisions."

The Massachusetts case study also found that Article 635, the provision in the Massachusetts building code dealing with historic properties, abetted historic rehab. Article 635 allows exceptions (variations from the nominally prescribed code requirements) for just those features that contribute to a historic property's distinctiveness. These include such items as roofing, windows, entrances/porches, wood siding, decorative elements, and interior features.

NEW JERSEY. The South Brunswick Wetherhill–Mount case study shows that flexible local code administration allowed for expedited and cost-efficient renovation. This case involved the reuse of a historic residential farmhouse as a municipal cultural center. It is when there is such a dramatic change in use that building code issues are potentially the most problematic for rehabilitation. In theory, the New Jersey building code in effect at the time would have required the renovated farmhouse to meet the new-building standard for a municipal cultural center—and that standard would have made the rehabilitation nearly impossible and extremely costly. What could have been a major problem—the retrofitting of a 150-year-old farmhouse to a modern structure—was avoided in this instance by a sensitive and flexible approach by the municipality's code official. This official allowed many variances—that is, exceptions to the nominally prescribed standards—while protecting public safety. For example, instead of requiring that the stairs have an enclosure with a one-hour fire rating, the code official provided for fire protection by limiting occupancy and having fire-resistant Sheetrock™ installed. Rather than requiring a costly floor-loading upgrade to meet the code standard, second-floor occupancy was simply restricted. (This further gave a "comfort factor" to the code official not requiring that the stairway be enclosed.)

Although the building code often is supportive of rehabilitation, as evidenced in the examples above, it sometimes poses problems. The problems can be broadly characterized as technical or administrative, albeit there is much overlap between the two. Technical problems are related to the building code standards. Administrative problems are related to the way in which the code is implemented.

Technical Code Problems

The major "technical" problem is the lingering presence of such historical barriers as the "25–50 percent rule" and the "change-of-occupancy rule."[12] While the model codes have nominally deleted these requirements or have built in flexibility to temper rigidity in the application of the regulations (e.g., allowing the "intent" of the code or compliance alternatives), these changes have not always translated into practice. Our research showed prevailing problems in many jurisdictions.

NEW JERSEY. Although the state generally follows the BOCA National Building Code (NBC), New Jersey did not adopt the NBC's Chapter 34. The state, until recently (1998), retained the "25–50 percent rule" and the "change-of-occupancy rule," which created many difficulties.

One Isles case study project, at West Hanover Street in Trenton, is illustrative. The original approach was to do selective repair as needed in an attempt to economize and stay below the 50 percent threshold. The repair was estimated to cost $37,000, or less than one-half the property's $83,000 replacement cost.

Once construction started, Isles discovered additional floor and plumbing damage. This brought the job over the 50 percent threshold and now Isles had to bring West Hanover Street to a new-building code standard (e.g., providing a two-hour fire rating). The end result was that the project had cost overruns for labor, materials, and administration amounting to almost $16,000, and it took an additional two months to complete the job.

New Jersey's pre-1998 building code was also found wanting in the Capital City case study. In brief, the Capital City redevelopment project involved nineteenth-century historic structures connected in rows (they were landlocked in the rear). Their original use was for office and mercantile; their current use was mercantile on the first floor with the upper floors vacant. The rehabilitation plan was to convert the upper vacant floors to residential use.

Under the then-prevailing (pre-1998) New Jersey building code, the Capital City properties would have to meet the standards for new construction for two reasons. First, there was a proposed change of use in the upper floors from office space to residential space. Second, the proposed rehabilitation cost exceeded 50 percent of the value of the buildings.

The code mandate that new-building specifications be met was problematic. A major issue concerned meeting the new-building standard involving egress. The prevailing New Jersey building code required that buildings of this size and proposed use have two means of egress. A

[12]There are other technical issues as well, illustrated by the LHHA case study. Until recently, property owners in Miami-Dade County were *not* held responsible for work done by prior owners that was not permitted or that in other ways did not meet prevailing regulations. For instance, if LHHA bought a property that five years earlier had electrical work done by anyone other than a licensed electrician, and that 10 years before that had an illegal addition constructed, LHHA, as the new owner, would not under current rules have to correct these improperly effected changes. Under the new rule, however, LHHA would be responsible for bringing the structure entirely up to code and would have to deal with the illegal electrical work and the illegal addition. As the Little Haiti properties often have had decades of unpermitted and otherwise illegal alterations, the new rule, if applied to the letter of the law, would pose a considerable burden to LHHA.

fire escape costing about $20,000 could have been added to the front of the building, but it would not have been compatible with a nineteenth-century facade. The buildings in question were designated as historic landmarks, and, as such, constructing a fire escape on the facades would have been prohibited. Alternatively, a second means of egress could have been provided by installing a second stairway in the interior, but given the narrow width of the buildings, the plan configuration became awkward, with a lot of space used up for hallways for the second stairway. For instance, one property with 644 square feet per floor, was restricted to the point that installing two interior stairways would produce an unworkable plan—even for a studio apartment. If a fire escape or stairway could not be added to provide egress, an alternative strategy, namely the installation of a full fire-suppression (sprinkler) system, was considered. This approach would cost about $30,000 per building and was economically unfeasible. The Capital City project was ultimately abandoned because of code problems—even though its adaptive reuse is the objective of Main Street and other contemporary programs. (Resource group discussions with for-profit and nonprofit developers indicated that building code problems, such as that experienced by Capital City, were thwarting Main Street projects throughout the United States.)

MASSACHUSETTS. In theory, Massachusetts has not had a "25–50 percent rule" since 1978, when it adopted its own rehab code provisions. Instead of the "25–50 percent" approach, Massachusetts uses its Article 34 standard, which considers the degree to which the building will move up or down a hazard index scale based on its continuation in a use group or a change to a different use group. There are three primary categories (sections 3203, 3204, and 3205) for which specific requirements are spelled out. A key feature is that compliance alternatives may be proposed in all categories.

In practice, the Massachusetts case study found that Article 34 operates in a somewhat more complicated manner. Where an extensive rehabilitation project (in terms of expense) is contemplated, building code officials may demand a building improvement that goes beyond the standards specified. The building owner and architect will often comply to "move the project along" and to not antagonize the code official. In effect, building code officials are still applying the old "25–50 percent rule" that required new-construction standards for existing buildings. In short, there is an official three-tier specification of requirements in Article 34 (e.g., sections 3203 to 3205) and a "gray area" of rehabilitation requirements (expensive rehabilitation equals added demands), but both the official and gray-area improvements may be met by compliance alternatives. The Massachusetts case study also found the fire code officials in that state are influenced by the "25–50 percent" philosophy.

WASHINGTON. The Seattle case study notes that the Seattle Building Code (SBC) both provides flexibility and poses a barrier to rehab. For example, on the positive side, the SBC allows building officials to modify code requirements on historic properties. Also, as opposed to a narrow "25–50 percent" trigger, the SBC has a more textual criterion as to when a building under rehab has to be brought up to a new-building code standard. The requirement is mandated only when the renovation constitutes a "substantial alteration," which the SBC defines as "extensive structural repair [or rehab] which substantially extends the useful physical and/or economic life of the building."

However, although Seattle is not governed by a strict "25–50 percent rule," that long-criticized standard does have an impact.[13] "Extending the useful physical and/or economic life of a building" is the most common "substantial alteration" trigger, and that trigger, in turn, is most often influenced by the relative cost of a project. Groups knowledgeable about rehabilitation in Seattle describe a situation in which building code officials are typically guided by the hard costs of the rehabilitation job and will scale up their requirements accordingly. If renovation expenses exceed two-thirds of the property's value, the job is counted as a substantial alteration and a new-building code standard is required.

ILLINOIS. Numerous rehab developers interviewed in the Chicago case study recounted building code difficulties. For example, one developer argued that Chicago's sprinkler requirements were overly restrictive since the BOCA code allowed fire doors to be propped open to provide for ventilation but the Chicago code did not. Our finding that rehab problems are caused by the building code's lingering technical code problems comports with that of other research. The NAHB Research Center and Building Technology, Inc. (1995) examined code implementation in numerous jurisdictions nominally adhering to the model codes, which had eliminated the "25–50 percent rule" almost two decades ago. In practice, however, the "25–50 percent" philosophy still influenced code officials.[14]

The Chicago case study revealed other instances in which rehab and adaptive-reuse challenges were posed by building code requirements. For example, under Chicago codes, loft conversions over four stories must meet high-rise codes, which can add significantly to costs (e.g., there must be access to the roof from inside the building).

Administrative Code Problems

We have thus far focused on the technical requirements of the building code that complicate rehab. Associated with technical requirements, and further complicating matters, are administrative deficiencies. Although, in general, the building codes are competently administered by hard-working, professional officials, there are cases of questionable implementation. Administration is most challenging in the case of rehab because unlike new construction, which by and large "starts from scratch," there are more "gray areas" related to rehab. In making decisions about rehab, officials are frequently asked to determine the "intent of the code" and to grant variations. Our research found numerous instances of code administration that exacerbated difficulties in the rehab process in numerous jurisdictions.

[13]Our finding in the Seattle case study comports with other research. In describing the state's code system at a national symposium, a Seattle code official acknowledged that "the lack of a clear definition of 'substantial alteration' leads to a process similar to the old '25–50 percent rule'" (NAHB Research Center and Building Technology, Inc. 1995, 10).

[14]An example is College Station, Texas, a jurisdiction governed by the SBC. As described earlier, the SBC had nominally deleted the "25–50 percent rule" in 1982. However, the "25–50 percent rule" "is applied in College Station as a matter of policy in making the judgement of the extent of SBC compliance required in alterations." (NAHB Research Center and Building Technology Inc. 1995, 7).

NEW JERSEY. The Isles case studies illustrated many administrative problems:

- *Changing requirements.* At the start of its operations, Isles staff had numerous encounters with an official who made different demands at different points in time. They also encountered different officials who ask for different requirements. In many cases, plans that were approved by a reviewer in the subcode official's office were rejected by the field inspector. For example, at Passaic Street, the one-hour-rated exterior siding accepted by the subcode official's office was rejected in the field. At Lamberton Street, retention of the second-story stairway, a strategy accepted by the subcode office was rejected in the field. At Delawareview, the plan to convert to a two-unit building was accepted in the subcode office but rejected in the field. The many changes required by the field inspector proved chaotic and costly.

- *Unwarranted requirements.* Isles projects were often asked to meet excessive requirements. At Sheridan Avenue, and at several other properties, the 1.5-hour fire rating of existing materials (brick infill and undisturbed plaster) was simply not acknowledged. Therefore, rather than simply supplementing this existing protection with one layer of Sheetrock™ to obtain a total two-hour fire rating, Isles was forced to provide a much more extensive treatment that did not capitalize on the existing building's fire protection.

- *Inflexible requirements.* In many instances, slight deviations from code requirements could have been addressed by variances but were not. For instance, at Passaic Street and at East Trenton, breezeways that were 4'10" rather than 5' resulted in expensive problems for Isles. Similarly, variances could have been granted to Isles at Lamberton because the existing stairway was 30" versus a required 36", or at 51 Asbury and Daymond because doors were 32" rather than 36" wide. In fact, strict code adherence was required in all those cases. At Delawareview, the shortfall was even less—a stairway 3/4" too narrow and windows 5/8" too small. These should not have been code issues, but should have been routinely handled through variances; in fact, they were not.

ILLINOIS. Resource group interviews with a Chicago nonprofit found a common "lack of communication between city departments" on renovation jobs. For example, the building department reviewer allowed a 3/4" water line, but the water department countermanded that interpretation and demanded a 2" line. The difference in cost was $6,000 to $8,000.

MASSACHUSETTS. Although the state's Article 34 is generally well administered, there are gaps. There is unevenness in staffing depth and competence. In large cities like Boston, Worcester, and Springfield, the inspection services departments have extensive professional staffs capable of processing compliance alternatives. Few, however, employ rehabilitation specialists who are trained to deal with the nuances of Article 34. In many smaller Massachusetts cities and towns, the problem is exacerbated by a lack of depth and experience in the local building department. Training of Massachusetts building officials is a major issue. While the state law requires continuing education for building code officials under the auspices of the Board of Building Regulations and Standard, budget constraints severely limit this effort.

A further administrative hurdle is the conflict between the state's local building and fire departments. As a Boston architectural firm noted, "The building department and fire department are generally not together, either physically or in interest." Also, as the fire protection requirements have increased (e.g., making sprinklers mandatory with substantial rehabilitation), the flexibility of responding to Article 34 through compliance alternatives (e.g., installing sprinklers as an alternative to enclosing a stairway) has diminished in rehab projects.

Our research on building code technical and administrative problems that complicate rehab comports with the findings of others. A nationwide study on the topic concluded the following:

> The reuse of existing buildings and their adaptation to new uses are currently often discouraged by the extreme non-uniformity in regulation of work in existing buildings across the country, and by the often arbitrary, unreasonable or unjustified application of new-construction requirements to such buildings. Furthermore, current regulatory approaches that rely extensively on the judgment of local building officials are not only unpredictable, but can ultimately perpetuate unsafe or inadequate conditions even where beneficial opportunities for adaptation and reuse exist. (NAHB Research Center, Inc. 1997, vii)

BUILDING CODES: BARRIER ANALYSIS

Nature of the Barrier

The building code is a public regulation. While it is a vital application of the police power to protect the public's health, safety, and welfare, it is nonetheless a regulation that has sometimes frustrated rehab. The inherent technical nature of the building code makes it essential that the officials charged with the code's administration receive appropriate training—yet such training is often not forthcoming. Further contributing to the problem is the fact that responsibility for upholding the code may be fractured across different departments or even within the same department.

Incidence of the Barrier

The building code is typically a greater barrier to rehab in the following situations:

1. *Effecting moderate rehab as opposed to minor rehab or substantial rehab*. Because of the nature of the "25–50 percent rule," which still lingers in many jurisdictions, repairs (or minor rehab)—which are generally not expensive—often will not trigger the most extensive new-building code requirements. Substantial rehab usually will trigger a new-building code mandate, but that has less significance since substantial rehab already entails nearly total replacement of the building's systems. In contrast, the attempt to make selective repairs and replacements (i.e., moderate rehab) is often most frustrated by the building code: if the 50 percent threshold is reached in the "25–50 percent rule," then wholesale, rather than selective, replacement will be mandated.

2. *Using public or other subsidies.* Deciding what is required by the code is often a matter of interpretation (e.g., in specifying the code's "intent"). Code officials tend to interpret a higher standard (i.e., to demand more on rehab jobs) when public or other subsidies are available.

3. *Conducting more challenging rehab projects.* Building code issues tend to be more problematic in more challenging as opposed to standard rehab jobs. More challenging projects are those involving historic properties, mixed-use properties, or a change of use. For example, many Seattle properties have a commercial use (e.g., a restaurant) on the first floor and residential apartments on the upper floors. If the apartments are rehabilitated, and if that work triggers a substantial alteration building code standard, the entire building, including the first-floor commercial use, has to be upgraded to the new standard, and that can be particularly difficult for commercial uses. Compliance with the new-building standards for a restaurant, for example, will often involve extensive work on smoke dampers, air changes, and the like.

4. *Rehabilitating properties in jurisdictions where the building code environment is less supportive of rehab.* Rehab code issues will tend to be more problematic in jurisdictions that have not adopted rehab-supportive documents (e.g., BOCA's Chapter 34 or ICBO's *Uniform Code for Building Conservation*) and where building officials are too few in number, are part-time employees, are inadequately trained, do not allow variations from the code's literal interpretation, and/or in other ways are unsupportive of rehab. There is considerable variation in this regard. One member of the resource group commented, "We have found the building code to be a major barrier depending on the community and the code officials. In Omaha, things work quite well. We are blessed with a helpful planning department and a commonsense Board of Review which oversees code waivers. On the other hand, we have had some bad experiences in a couple other communities when the administration has had a negative attitude regarding rehab. You can wear people out with the building code if that is your intent."

5. *Rehabilitation of properties by less-experienced property owners, developers, and/or contractors*. Working with the building code in doing a rehab job is fostered by experience. Experience helps in navigating the system in such ways as securing variances and learning how to resolve interdepartmental code conflicts. Those without this hard-won knowledge are more prone to be frustrated by the building code. For example, the LHHA case study found that this experienced, nonprofit could "accommodate" the Miami-Dade County "25–50 percent rule" as follows. First, Miami-Dade County excludes construction work not requiring a building permit from the rehabilitation value calculation, so LHHA outlays for carpeting, painting, and other unpermitted maintenance (i.e., maintenance work done without a building permit) do not factor into the 50 percent threshold. Also mitigating the 50 percent threshold is the fact that LHHA acts as its own developer and general contractor. That arrangement allows LHHA to generously define what is counted as "maintenance" and therefore not included in the 50 percent threshold. In this way, LHHA parsimoniously values the permitted construction that is factored into the 25–50 percent calculation. Given such accounting by LHHA, the 25–50 percent rule has been triggered only a handful of times in this nonprofit's rehabilitation activities.

Severity of the Barrier

The practical difficulties posed by the building code vary. When code issues arise, they may present moderate to significant problems, including those described below:

1. *Increasing rehab expenses*. By sometimes requiring actions and materials not necessary to protect the public's safety, the building code can increase renovation costs.

2. *Making rehab costs more difficult to estimate*. Since the building code is itself not fully predictable in its effects on rehab, it is harder to estimate the cost of a rehab job. Once renovation begins, escalating and unforeseen code demands (e.g., the activation of the 50 percent threshold because hidden structural damage is revealed) can dramatically increase expenses over the estimates.

3. *Discouraging/abandoning needed rehab*. The building code can so complicate and add to the expense of a rehab job that such work will be discouraged or dropped. That was the outcome for the Trenton Capital City project. Many other jobs, especially those involving challenging historic, change-of-use, and mixed-use situations, may suffer a similar fate.

4. *Contorting rehab planning*. In addition to discouraging or causing the abandonment of rehab projects, the building code can in other ways distort the rehab process. For example, Isles might do less work than needed on its inner-city row houses to avoid triggering the "25–50 percent rule."

Potential Ameliorative Actions to Address the Barrier

1. Restrict local additions to code. States often adopt one of the three model codes and these codes have many rehab-supportive features. The problem often arises from local governments adding regulations to the model codes, either formally by attaching amendments or de facto through stringent interpretation of the model codes. Local additions should be discouraged through such means as the state mandating that the state building code or a model building code be the maximum rather than the minimum code.

2. Promote better code administration. Government must do more to give code departments additional staffing and better training. Better training is especially vital to helping code officials develop the knowledge and comfort level to grant variances, interpret the "intent of the code," and better understand historic, mixed-use, and other challenging situations. Attention must also be paid to enhanced administration (e.g., resolving conflicts within and between departments).

3. *Foster new rehab-supportive building code approaches.* Important work has recently been done in this area. For example, in 1998, New Jersey amended its building code to drop the "25–50 percent rule" and the "change-of-occupancy rule." In their place, the state implemented a "ladder system" progressing from least to most in terms of the amount of changes to the building and the degree of code requirements. The ladder encompassed (from

least to most) “repairs,” “renovations,” “alterations,” “reconstruction,” “change of use,” and “additions.”

As New Jersey was revising its code between 1995 to 1998, HUD, on a parallel track, was developing rehabilitation standards that would be a model for adoption nationwide. The new New Jersey regulations are technically termed the “Uniform Construction Code, Rehabilitation Subcode” (hereinafter “NJ Subcode”), while HUD’s regulations are termed “Nationally Applicable Recommended Rehabilitation Provisions” (hereinafter NARRP).

The Asdal case study shows the significant cost-saving potential of the NJ Subcode and the NARRP. One property renovated by Asdal incurred a total renovation outlay of $88,865. That amount could be shaved to $71,446 under the NJ Subcode—a savings of $17,419, or almost 20 percent. On another property renovated by Asdal, the New Jersey Subcode and NARRP saved $21,000 in expenses, or again, a savings of about 20 percent.

CONSTRUCTION STAGE REHAB BARRIER— MINIMUM HOUSING STANDARDS

MINIMUM HOUSING STANDARDS: BARRIER PROFILE

Background

Minimum housing standards (MHS) are codes that stipulate the minimum ventilation, safety, and maintenance requirements for existing housing (Schultz and Kasen 1984). These standards were introduced in the post–World War II period in communities across the United States in response to the Section 701 requirements mandated by the urban renewal program.

In theory, all houses are subject to the MHS and are inspected periodically by local government to see if they comply. In practice, inspection is lax or nonexistent, and the decision to enforce the MHS is usually only triggered by some type of “action.” Actions can include tenant complaint, appointment of a receiver, and an application to do rehab.

How the MHS Affects Rehab

Once rehab is in progress, local government may decide to enforce the MHS on the property being renovated. This inclination is often reinforced if the rehab is publicly subsidized because funds are available to make needed improvements. There is a belief that if government is involved, there is a practical and moral imperative to satisfy the MHS.

The LHHA case study illustrates how strict enforcement of the MHS increased rehab costs. LHHA found that when Miami-Dade county surtax assistance is used, or when HOME or other federal aids are drawn upon, the participating jurisdictions (PJs) make the acquisition and rehabilitation funding contingent upon satisfying a host of building standards, including full compliance with a stringent interpretation of the Miami-Dade MHS. This leads to costly replacement of many items that still have a useful remaining economic life (REL). Illustrative situations include the following:

1. *Replacing roofs*. The roof of a property being rehabilitated may have an REL of at least moderate duration (i.e., five to seven years). Many Little Haiti single-family detached homes retain their original tile roofs. These are attractive and can provide many years of service. Despite this, the PJs administering the public subsidies may interpret the MHS as requiring a new roof. The cost on a single-family detached home is about $3,500, and the replacement roof of vinyl is not as attractive as the original tile.

2. *Replacing windows*. LHHA prefers to keep the existing windows and to make only necessary repairs. In a house with jalousie windows, common in Little Haiti, LHHA would prefer to replace glazing and window operators as needed. For the 10 to 15 windows in a typical Little Haiti single-family detached home, the repairs would cost approximately $1,000. The PJs, however, frequently interpret the MHS as requiring new windows in an older home and make such replacement a condition of awarding acquisition and rehabilitation subsidies.

   Replacing windows in southern Florida is no simple matter in the wake of Hurricane Andrew, where much window damage was sustained. In the aftermath of that storm, window standards were upgraded. The new requirements mandate that engineers first do wind-load calculations, taking into account the building's footprint, peak, height of eaves, zones (e.g., windows at the corner of a house are more vulnerable to damage), and other measures. The wind-load calculation determines the type of window to be purchased, with respect to its impact resistance, need for hurricane shutters, and other material characteristics. Further, before the windows are installed, a permit has to be pulled and the installation inspected. This gamut of window-replacement activities is quite costly. LHHA estimates that its expenses for the purchase and installation of the 10 to 15 windows in a typical Little Haiti single-family detached home are $3,000 to $4,500—the selective rehabilitation of the existing windows would cost approximately $1,000.

3. *Replacing the electrical system*. Little Haiti homes acquired by LHHA frequently need to have their electric panels replaced, along with other electrical work. Yet, instead of simply repairing/replacing what is necessary, the PJs, citing the MHS, will often mandate redoing the entire electrical system. This typically entails breaking through plaster walls, which then have to be repaired. One of the few LHHA rehab projects to trigger the 50 percent building code rule involved an electrical replacement (and other factors) that forced LHHA to break through walls.

   Even without the escalating cost of construction work related to electrical replacement, LHHA's expense for redoing the electrical system is $5,000 to $6,000 per single-family unit. By contrast, limiting the work to electric panel replacement and selective repair results in a price tag of about $1,500.

4. *Replacing other systems*. The theme noted above is repeated in other areas. For example, instead of allowing simple replacement of the main shutoff and needed plumbing repairs, a PJ may require replacement of the entire plumbing system. Septic systems are not repaired but replaced at a cost of $1,500 to $2,000 per single-family unit. Finally, rather than simply allowing the replacement of rotted floor joists in the bathroom, a PJ may require much more structural framing work.

LHHA is not unsympathetic to the position that the replacement of mechanical, electrical, and plumbing systems at the time of rehabilitation will reduce the need for repair and replacement in the future. LHHA is committed to the long-term success of its rehabilitated units, and to that end, it makes available counseling and other support programs. LHHA also recognizes that replacement of systems can lead to operational efficiencies (e.g., new windows will reduce heating and cooling costs). However, LHHA argues that by not taking advantage of the remaining economic life of major systems, when that life is at least of moderate duration (i.e., five to seven years), a significant benefit of rehabilitation—capitalizing on what exists—is lost.

MINIMUM HOUSING STANDARDS: BARRIER ANALYSIS

Nature, Incidence, and Severity of the Barrier and Potential Ameliorative Actions

The MHS is a public regulation. It is likely to pose more of a barrier to rehab on less well kept properties that are being rehabilitated (those exhibiting MHS violations); on publicly subsidized rehab jobs (a situation that often evokes more stringent MHS enforcement); and on minor rehab to moderate rehab jobs. The minimum housing standards pose more of a barrier to moderate rehab projects than to minor or substantial rehab projects: substantial rehab projects would already be replacing most of the systems regulated by the MHS, and inspectors may be more forgiving of minor MHS infractions in minor rehab projects.

We consider the MHS a minor-to-moderate barrier because it is not always invoked. In addition, compliance with the MHS does have a benefit of extending the useful life of the renovated property.

Ameliorative actions include the following:

1. *Regular MHS enforcement.* Were the MHS regularly enforced, rehab projects would not confront mandates to correct many years of pent-up MHS violations.

2. *Nuanced MHS enforcement*. Code departments should not make the act of rehab a trigger for full MHS enforcement because this will only discourage renovation. MHS enforcement should be nuanced. Inspectors should take into account the affordability of the rehab and should differentiate between safety-threatening MHS violations and more cosmetic MHS requirements. Inspectors should focus on the safety issues. The remaining economic life (REL) of major building systems should be acknowledged. Roofs, windows, and other components with five or more years REL should be retained.

3. *Homeowners replacement reserve*. This recommendation was made in the LHHA case study. LHHA suggests that establishment of a homeowner's replacement reserve would allow rehab projects to meet the goal of maximizing the utility of existing buildings through selective rehabilitation (i.e., repairing where possible and replacing when necessary) while protecting against unaffordable major repairs/replacement. The reserve would work as follows: LHHA would do selective rehabilitation as opposed to total systems replacement, a strategy that could save perhaps $5,000 to $10,000 per unit in construction costs on its single-family

rehabilitations (LHHA currently spends approximately $30,000 in renovating these units). The $5,000 to $10,000 savings would allow LHHA to reach still lower income families and/or to draw less in subsidies. Before the rehabilitated units would be transferred, LHHA would estimate the REL of the system it was not replacing and would calculate the present value of replacing the system a stipulated number of years into the future. The borrower could save the amount needed to replace the system in the future by making monthly deposits into a replacement account.

CONSTRUCTION STAGE REHAB BARRIER— LEAD REGULATIONS

LEAD REGULATIONS: BARRIER PROFILE

Background

Lead-based paint is the most pervasive of the environmental hazards found in residential buildings and, as a result, it is subject to the most extensive regulations. As a construction barrier, lead-based paint is specific to rehabilitation. Lead in paint was once thought to be beneficial from a durability standpoint and was used in homes and buildings until the late 1970s. Lead is highly toxic and poses a health threat, especially to children. Lead can be found not only in paint, dust, and soil in the residential environment, but also in air emissions, drinking water, and other sources throughout the home. The Department of Housing and Urban Development (HUD) estimates that more than 60 million occupied homes have some lead-based paint. Many of these home may have only small amounts of lead; however, generally, the older the home, the greater the amount of lead-based paint. Lead was most frequently used in homes built before 1960. It was banned for residential use in 1978 (24 CFR Part 35).

HUD, the EPA, OSHA, and the Department of Defense have developed regulations and directives pertaining to lead removal and exposure in housing under their jurisdictions. The regulations specify minimum requirements for what must be done and when and how it should be done, as well as minimum training and certification requirements for those conducting the work.

Lead-hazard control is a rapidly changing field in which new products, methods, procedures, and standards are introduced frequently. Therefore, it is important that developers and contractors periodically review and research all updated information.

Lead-Paint Hazards and Health Effects

There are no established safe levels of lead in the human body. Lead can cause serious disability or even death. The brain and nerves are susceptible to lead poisoning. Lead interferes with the formation of blood cells, which may cause anemia or damage the kidneys, digestive system, reproductive system, and other organs. Low levels of lead can affect hearing, learning ability, and coordination.

Lead poisoning is the number one environmental hazard for children in the United States. It is estimated that 870,000 children have elevated levels of lead in their blood. Carefully controlled

scientific have shown that children under the age of six suffer neurotoxic effects on their developing brains and nervous systems. These effects cause reductions in IQ and attention span, reading and learning disabilities, hyperactivity, and behavioral problems that can be permanent in young children. The most common route of exposure to a lead hazard is through ingestion of lead-contaminated dust. A child can also be exposed to lead by swallowing paint chips or through lead-contaminated soil. A blood test is the only method to determine and detect lead poisoning early and is recommended as routine health care for young children.

The incidence of lead poisoning is highest in urban areas, among lower-income African American children living in older homes. According to data from the period 1991 to 1994, 16 percent of lower-income children under the age of six had blood levels above 10 micrograms per deciliter of blood, the level of concern set by the CDC. For African American children living in pre-1946 housing, the figure was 22 percent.

Adults are commonly exposed to lead in the workplace, by breathing lead fumes and from activities such as removing old paint. The symptoms of lead poisoning in adults usually include fatigue, headache, weight loss, stomachache or constipation, but lead-paint poisoning can also cause damage without visible symptoms. Blood tests should be done on anyone who works with or is exposed to lead.

Research has shown that even low levels of lead paint can have toxic effects on the developing fetus. Lead can be carried in the mother's blood and passed to her unborn child. Lead-paint poisoning can cause miscarriages or premature birth.

Regulatory Response to Lead-Based Paint

HUD, the EPA, and OSHA are heavily involved in various regulatory activities. Current lead-based-paint regulations derive from Title X of the Housing and Community Development Act of 1992, also known as the Residential Lead-Based Paint Hazard Reduction Act of 1992. The regulations coming out of this legislation have been eight years in the making, reflecting the difficulty of achieving consensus between the housing industry, health advocates, and the scientific community. HUD's final rule governing the treatment of lead in buildings for which HUD has provided financing or FHA mortgage insurance went into effect on September 15, 2000, but implementation was deferred until April 10, 2001, to allow jurisdictions more time to prepare. The EPA has created a number of regulations governing certifications for various inspection, testing, and abatement activities, but the agency has yet to develop regulations applicable to the unsubsidized remodeling and renovation industry.

Within the HUD regulations, there are seven strategies that range from "do no harm" to complete inspection and removal of all lead-based paint. The strategies apply in order of magnitude, depending on the level of HUD involvement in the financing and on the age of the property:

1. *Safe work practices during rehab*. Applies to rehabilitation projects with costs below $5,000.

2. *Ongoing lead-based-paint maintenance practices*. Paint is maintained so that it remains intact, and safe work practices are used. Applies to properties built between 1960 and 1977 that are subject to an application for multifamily mortgage insurance.

3. *Visual assessment and paint stabilization.* Applies to HUD-owned, single-family housing being sold with a mortgage insured by HUD or the VA; tenant-based rental assistance programs in a housing unit where a child of less than six years of age resides; multifamily housing receiving up to $5,000 per unit per year in project-based assistance; and certain other moderate assistance HUD programs.

4. *Risk assessment and interim controls with the option of performing standard treatments*. Applies to properties built before 1960 and subject to an application for multifamily mortgage insurance; multifamily properties receiving more than $5,000 per unit per year in project-based assistance; and housing receiving rehabilitation assistance.

5. *Lead-based paint inspection and risk assessment and interim controls*. Applies to HUD-owned multifamily housing that is being sold. The difference between this and the fourth strategy is that a lead-based-paint inspection is added to provide the buyers with information on the location of any remaining lead-based paint in the property.

6. *Risk assessment and abatement of lead-based-paint hazards*. Applies to properties receiving more than $25,000 in federal rehabilitation assistance.

7. *Lead-based-paint inspection and abatement of all lead-based-paint*. Applies to public housing, properties that are being converted from nonresidential to residential use, or properties undergoing major rehabilitation that are financed with HUD/FHA mortgage insurance.

OSHA has formulated regulations regarding worker protection and safety, including training, protective clothing and work procedures, and periodic testing for lead-abatement-industry workers. These regulations are found in 29 CFR 1926.62-Lead. Workers who are consistently exposed to lead in the workplace are to be protected with special clothing, respirators, changing and washing facilities, and ongoing monitoring of levels of lead in their blood. These are highly detailed and complex regulations for workers involved not only in lead-based-paint removal but also in numerous other industries that use or produce lead-containing products.

Some state laws and local housing codes address lead-based-paint hazards, but many of the codes prescribe actions that are inadequate, outdated, or so ambitious that they are unaffordable for most properties. A report for HUD concluded, “Housing codes are not effective vehicles for primary lead-poisoning prevention” (HUD 1996). The report also stated that barriers between health and code enforcement departments at the local level frequently prohibit coordinated efforts. Local officials and building inspectors are too often unfamiliar with the problems associated with lead-based paint. Those who are familiar with the issues are often unable to take action because local laws, regulations, and statutes are unclear or prescribe inadequate, outdated, and economically infeasible remedies.

Impact of Lead-Based-Paint Regulation on Rehab

The most extensive regulations for lead-based paint are set by HUD and are related only to properties that HUD or other federal agencies have some involvement in, either through ownership, insurance, or financial assistance. Therefore, the regulations affect only developers working in this area of rehabilitation. In contrast, OSHA regulations for worker safety affect lead-abatement contractors and others, including painting contractors, that routinely work with lead-contaminated material. Local health department and building code regulations do affect all rehabilitation developers but, as has been noted, these regulations are inconsistent and, therefore, affect developments in certain locations more than others. Lead-based paint is the most pervasive of environmental hazards found in residential buildings and, as a result, it is the most extensively regulated.

From a development point of view, the advantage of the new HUD regulations is that they are predictable. It will become relatively easy to determine the level of intervention necessary based on the amount and type of HUD funding and the age of a building. The unsubsidized rehabilitation industry may eventually be affected by EPA regulations, but it is expected that these will primarily cover worker training and, possibly, workplace clearance testing and disclosure.

The cost of making a house lead-safe will vary dramatically depending on the amount of lead-based paint in the house, where the lead-based paint is found, and the level of deterioration. The cost also depends on the results of the testing and the level of lead-hazard control to be done based on age of the building's occupants and the extent of HUD involvement. Initial testing and risk assessment typically costs $250 to $350 per unit. At the high end, testing, abatement, and disposal can cost $15,000 or more per unit of residential housing. Complete lead abatement is more expensive initially compared with interim controls; however, interim controls require ongoing monitoring, which, over time, may cost more.

Developers face a challenge in locating funding for lead-abatement work. Funding for lead-hazard controls and abatement in subsidized housing is sometimes available in the form of grants, deferred-payment loans, or reduced-interest-rate loans with long payback schedules, typically 10–15 years. These are typically available primarily for developers working with inner-city rehabilitation.

At this time, HUD is the only source of federal funds targeted exclusively for lead-paint-hazard control. The grants are funded under the Lead-Based Paint Hazard Control Act of 1992, also known as Title X, and are used to cover activities such as inspections, testing, abatement, or interim controls of lead-based paint. The grants also cover temporary relocation of families, blood testing, and related rehabilitation activities.

Some state and local governments have been creative in using existing sources of federal funds and tapping into other sources for lead-paint abatement. They have appropriated funds from their general budgets, created tax-credit programs for lead abatement, and raised new pools of funds from taxes on lead-generating industries. These subsidies also primarily go to support lead-

hazard control in subsidized units. For all other rehabilitation activity, developers must finance the activity as part of the development budget.

Liability Issues

In some states, it is illegal to offer a house for rent that contains flaking or peeling paint. The health department usually does not step in unless a child's blood is diagnosed as containing more than 25 micrograms of lead per deciliter, which is considered to constitute lead poisoning. Once it is determined that a child has lead poisoning, the health department initiates an inspection of the premises and issues a citation to the landlord if the house contains any peeling or flaking paint or excessive levels of lead in household dust.

Lead-paint citations are often accompanied by lawsuits against the landlord. Sometimes, landlords or owners of inner-city rental units end up abandoning their properties because they cannot afford to maintain them.

Owners are required by law to disclose known lead-based paint and lead-based hazards if they are renting or selling a home; they must provide reports to buyers, renters, and sellers. If selling a home, owners must provide the buyer with a pamphlet titled "Protect Your Family from Lead in Your Home," which provides basic information on lead poisoning, its causes, and prevention. Booklets are available from the EPA. Sales contracts and leases must contain notification and disclosure information on lead-based paint and lead hazards.

Property Insurance Issues

Owners and managers of rental properties also may have difficulty obtaining insurance for lead-poisoning liability claims. Because of litigation expense and fear of awards, insurers have restricted or excluded poisoning coverage from their third-party liability policies, especially in areas where there are a substantial number of claims. If coverage is available, it is often limited to newer and well-maintained housing.

Responsible property owners with substantial equity in rental properties worry about the lack of insurance coverage in lead-poisoning liability suits. The loss or lack of insurance may prompt such owners to a pattern of disinvestment in older rental housing. In addition, lack of insurance coverage may encourage some owners to illegally refuse to rent to families with young children in order to avoid potential lawsuits.

By inhibiting investment in property maintenance and rehabilitation, the loss of liability insurance would impose a burden on the economies of many urban centers, where older rental housing is concentrated.

LEAD REGULATIONS: BARRIER ANALYSIS

Nature, Incidence, and Severity of the Barrier and Potential Ameliorative Actions

Lead-based paint is commonly found, as it was extensively used in buildings until the late 1970s. Housing that is at least three to four decades old is therefore most vulnerable to the problem. Generally, the older the home, the greater the lead-based-paint hazard. Also, dealing with lead paint (and numerous other environmental hazards, such as asbestos) is often more difficult in a moderate rehab situation, where many finishes and existing materials are retained, as opposed to a substantial rehab project, where the existing housing unit is often gutted.

Lead-based paint is a serious health hazard, especially for young children, and an expensive problem to fix. The goal of the public regulations is to protect young children and workers from lead poisoning. Lead-abatement activities are fundamental to protecting the public's health, safety, and welfare. At the same time, these regulations and the costs they add to a rehabilitation project can present a significant barrier to any renovation; the improvement may simply not be done at all, leaving children and families in poorly maintained, privately owned rental units that have numerous problems in addition to lead. However, in many cases, rehab specifications already cover work containing lead hazards, so the added cost caused by the lead requirements are relatively small. Rehab projects developed for higher-income families (with higher rents or sales prices) can often afford the added burden of lead abatement. Developers doing moderate-income rehab in the Memphis, Tennessee, case study complained that lead-based paint abatement requires "finding the money in the budget to abate conditions."

Therefore, lead poisoning disproportionately affects poor, urban minorities, and these groups are least likely to benefit from abatement unless they are in HUD-subsidized units. Because lead-abatement costs can be expensive in deteriorated housing and funding often is not readily available, most developers, including nonprofit housing organizations, are not eager to engage in the rehab of housing that may contain lead-paint hazards. Nationally, the Enterprise Foundation has seen more and more nonprofits moving away from rehab to infill new construction or even subdivisions to avoid dealing with the issues and cost of removing lead. As a result, many inner-city families continue to live in poor conditions and often are unaware of the lead hazards that may exist in their homes until a child becomes poisoned. Some homes are simply abandoned and left vacant.

Even where nonprofit developers continue to rehabilitate units because of their commitment to the community, lead-abatement regulations often cause projects to move from moderate or selective rehabilitation to substantial rehab. The Isles case study recounted the example of one property where lead was discovered. Isles had planned to perform moderate rehab on this building, but the discovery of lead-based paint necessitated the removal of cabinetry and trim and lamination of walls and ceilings. This expansion of the project added so much to its overall cost that Isles was forced to seek additional subsidies. To quote from the case study, "The upshot is that the lead abatement has changed what was once intended to be a moderate rehabilitation of [the home] into a much more extensive and expensive renovation."

With so many occupied units in need of at least interim controls on lead to prevent childhood lead poisoning, solutions need to be found that more cost-effectively control lead while not preventing any rehab at all. A number of products, such as heavy wall coverings and epoxy paints reinforced with fiberglass, have been put forward, but the products' cost and the fact that they do not remove lead have prevented their widespread use. In any case, for the worst units with lead-based paint, substantial subsidies will be required to entice owners and developers to undertake renovation.

CONSTRUCTION STAGE REHAB BARRIER— ASBESTOS REGULATIONS

ASBESTOS REGULATIONS: BARRIER PROFILE

Background

Over 30 million tons of asbestos was used in industrial sites, homes, schools, shipyards and commercial buildings in the United States during the twentieth century. It is a naturally occurring fibrous mineral. The fibers are strong, durable, and resistant to heat and fire. The fibers are also long, thin, and flexible and can easily be woven into cloth. Because of those qualities, asbestos has been used in thousands of consumer, industrial, automotive, maritime, scientific, and building products. Asbestos-containing materials (ACMs) were widely used in the construction of houses, apartments, offices, and schools before the early 1970s. Asbestos causes asbestosis, a respiratory disease and is linked to lung cancer and other illnesses.

Many asbestos-containing products remain in buildings constructed before the early 1970s and in ships, industrial facilities, and other environments. Many homeowners are not knowledgeable enough to understand the dangers associated with asbestos products or how to identify asbestos in their homes. However, the presence of asbestos does not necessarily mean there is a problem. Asbestos is a health hazard when it is friable; that is, when it crumbles and releases particles into the air. ACMs that embedded asbestos in other materials such as vinyl (vinyl asbestos tile or VAT) or cement (asbestos shingles and siding) are considered nonfriable. While care must be taken when removing nonfriable ACMs, it is considerably less dangerous than friable asbestos. Even for friable ACMs that are intact and in a location where they are unlikely to be disturbed by remodeling or renovation, removal is not always the best option. Other options include encapsulating or covering it with a fiberglass or other durable coating.

Regulatory Response

Asbestos is regulated through the Clean Air Act (CAA), which requires the EPA to develop and enforce regulations to protect the general public from exposure to airborne contaminants. In response, the EPA established the National Emissions Standards for Hazardous Air Pollutants (NESHAP). Asbestos was one of the first hazardous air pollutants regulated under this program, and the Asbestos NESHAP was first promulgated in April 1973. These regulations specify work practices to be followed during the demolition and renovation of all structures, excluding residential buildings with four or fewer dwelling units. Buildings containing less than 80 linear feet of regulated ACM on pipes or 15 square meters or one cubic meter on other components are

beneath the threshold requirements for NESHAP. However, all facilities conducting demolition must notify the appropriate regulatory agency even if no asbestos is present, and all demolition and renovation is subject to the NESHAP requirements for determining if and how much asbestos is present at the site.

The EPA also regulates asbestos in schools under the authority of the Toxic Substance Control Act and maintains a model accreditation plan to extend training for accreditation to persons performing certain asbestos-related work.

The EPA's primary concern with buildings is demolition and construction. In addition to the EPA regional offices, there are state and local pollution control agencies that are responsible for oversight of asbestos regulations. These agencies need to be notified whenever demolition or renovation is planned and "threshold" amounts of asbestos are present. When ACMs are to be disturbed, an accredited asbestos contractor must be used. The EPA maintains the National Asbestos Registry System (NARS), which is a database of firms involved in the asbestos removal industry.

OSHA issued the New Asbestos Standard for Construction in 1995. These regulations cover worker safety through the establishment of permissible exposure limit and the duties of building and facilities owners and the "competent" person (the person trained in asbestos removal), as well as through monitoring and control measures.

ASBESTOS REGULATIONS: BARRIER ANALYSIS

Nature, Incidence, and Severity of the Barrier and Potential Ameliorative Actions

The abatement of asbestos as a health hazard needs to be regulated. Thus, the nature of the "hurdle" is regulatory, but it is a regulation that is needed to protect the public's safety.

Asbestos was widely used until the early 1970s, so housing that dates to that vintage is most vulnerable. The nature of the asbestos installation also has a bearing on the problem's incidence; it is much less of an issue when asbestos is embedded in other materials and is therefore nonfriable. Asbestos tends to be more of a problem when larger commercial or institutional properties are adaptively reused for housing.

Unlike issues concerning lead-based paint, the asbestos issue has been well developed over the past 25 years and there are clear guidelines for inspection and abatement. Asbestos is relatively easy to detect. The costs can be determined accurately before the acquisition of a property. In the Chicago and Memphis case studies, developers stated that asbestos removal was not a significant problem (especially for substantial rehab), even though it could add significantly to the cost of a project. In the New Haven case study, the nonprofit developer felt that "by and large, however, asbestos containment is not a major issue." The developer was able to "work with" the New Haven health department to encapsulate asbestos where it was found undisturbed, so full asbestos removal was not required.

The cost of asbestos abatement may impact feasibility, however, and there is no subsidy specifically targeted to asbestos removal. As with lead, asbestos abatement may push a planned moderate rehab into a substantial renovation because of the extent to which the abatement disturbs the building finishes. Along with other barriers, it can further dampen enthusiasm for renovation. In the Seattle, Washington, case study one developer is quoted as saying: "Economics is the biggest challenge in restoring very old buildings. . . In general, the amount of structural changes, as well as electrical upgrades, plumbing replacement, and asbestos removal, make it [rehabilitation] much more costly than new construction" (Murphy 1998).

For the renovation developer, asbestos is problem of regulation, which takes time as well as money. When friable asbestos is present, a developer will need to work with the local oversight agency or the EPA regional office, OSHA or its delegated local agency, and a local accredited contractor to remove or encapsulate the ACM. The developer should be aware of the threshold quantities and, in any case, follow EPA and OSHA guidelines for workplace safety and removal. For nonprofit developers or others using government subsidy for acquisition, the required environmental clearance can be quite time consuming, even where asbestos or other hazardous materials are not found. (See the Little Haiti Housing Association case study in volume 2.)

Where asbestos is found, it can be quite expensive to abate. The Los Angeles case study details typical abatement costs for asbestos in various materials. Depending upon the extent of the rehab and the amount, type, and location of the ACMs, the case concludes that "asbestos abatement can vary from $387/existing unit (roof and floors only) to $4,952/unit (roof, floors, fly sheet, plaster)." These numbers were estimated to impact on two buildings at $81,000 for a 17-unit building and $144,000 for a 36-unit building.

Based on the above observations, we consider asbestos abatement to be a minor to moderate barrier. Asbestos, like lead, is a serious health hazard. Workers as well as end users must be protected. Undoubtedly, asbestos removal must be regulated. EPA, OSHA, and state and local agencies that have delegated oversight should be aware of the impact of time and the complexity of the regulations and do everything they can to minimize the impact of dealing with the regulations while protecting the public safety. In so doing, they could remove, as much as possible, the administration of regulations from the list of barriers to rehabilitation.

CONSTRUCTION STAGE REHAB BARRIER— RADON REGULATIONS

RADON REGULATIONS: BARRIER PROFILE

Background

Radon is a cancer-causing, radioactive gas that can be found in homes throughout the United States. It comes from the natural breakdown of uranium in soil, rock, and water and gets into the air we breathe. Radon cannot be seen and it does not have an odor or taste. Radon typically moves up through the ground to the air above and into the home through cracks and other holes in the foundation. It can also enter the home through well water. The surgeon general has warned that radon is the second leading cause of lung cancer in the United States today.

New homes, as well as older homes, can have radon problems. It is estimated that one out of 15 homes in the United States have elevated radon levels. Testing is the only way to detect a home's radon level. The EPA and the surgeon general recommend that all homes be tested below the third floor for radon. Radon devices can be purchased in retail stores or ordered from laboratories that offer mail-order services, or an EPA-listed, state-certified radon tester can be hired.

Although there are no requirements for testing and mitigating radon, buyers may ask for test results or built-in mitigation. Testing equipment is used to measure the prevalence of radon gas in a structure over a time period of 48 hours to several weeks. Test results are in picocuries per liter of air (pCi/L). Mitigation is recommended if the radon level is over 4 pCi/L. In most cases, systems with pipes and fans are used to reduce radon by venting the gas from the earth below the building out into the atmosphere where it is sufficiently diluted. Sealing cracks and other openings in the foundation is also recommended, however, sealing alone has not been shown to significantly or consistently reduce radon levels.

The EPA recommends radon testing and mitigation for all residences. However, there are no federal regulations for rehabilitation concerning radon. The EPA did provide a proficiency program for radon testing and mitigation, however, this activity has been turned over to two national private proficiency boards, the National Environmental Health Association (NEHA) and the National Radon Safety Board (NRSB). States establish licensure requirements for radon professionals and testing equipment usually requires NEHA or NRSB certification. Some states have also incorporated radon-resistant construction features in their building codes, usually involving sealing and venting of foundations.

RADON REGULATIONS: BARRIER ANALYSIS

Nature, Incidence, and Severity of the Barrier and Potential Ameliorative Actions

Although radon problems vary from area to area, high levels are found in every state. Radon also affects all types of homes—new, old, drafty, and insulated, and those with as well as without basements. Construction materials, building techniques, and local geology do, however, affect home radon levels.

Radon is a minor barrier to rehab. Radon is easy to test for and relatively inexpensive to mitigate. The average cost to test and mitigate radon in a home is about $2,000.

CONSTRUCTION STAGE REHAB BARRIER— ENERGY REGULATIONS

ENERGY REGULATIONS: BARRIER PROFILE

Background and the Impact of Energy Regulations on Rehab

Energy conservation has been an important national goal since the 1973 oil crisis. HUD's Partnership for Advanced Technology in Housing (PATH) program has as one of its goals to

"Cut the environmental impact and energy use of new housing by 50 percent or more and reduce energy use in at least 15 million existing homes by 30 percent or more." Many states are concerned about energy use and have adopted state policies and directives to local jurisdictions to include energy conservation provisions into the local building codes.

The most common energy code used is the Model Energy Code (MEC) or its successor, the International Energy Conservation Code, which was first published in 1983 under the auspices of the Council of American Building Officials (CABO) and the three major model code agencies. The MEC has been revised and expanded a number of times to keep up with technological understandings of energy utilization and ways to conserve it. The last edition was the 1995 MEC which, since 1998, has been maintained by the International Code Council as the International Energy Conservation Code (IECC). The latest edition is the 2000 IECC.

Even with all this activity, the major thrust of the code has been and continues to be new construction. However, since substantial or gut rehabilitation is viewed as new construction by most codes, the MEC has been applied to those projects as well.

In 1996, HUD released the *HUD Rehabilitation Energy Guidelines* in two volumes; one for one- to four-unit dwellings and one for multifamily dwellings. The guidelines contain the "Secretary's Standards for Cost-Effective Energy Conservation" (24 CFR Part 39) for property rehabilitated with HUD assistance. Two HUD rehab programs have statutory requirements for meeting these standards: the Section 203(k) Rehabilitation Home Mortgage Insurance (for single-family projects) program and the Section 201 Flexible Subsidy Program (for multifamily projects). Both of the programs concern major capital improvements. The HUD guidelines have also been applied to renovation funded through the HOME and CDBG block grant programs to varying degrees by local jurisdictions. They are always applied to HUD-funded new construction.

The HUD guidelines primarily cover the building envelope and mechanical systems that are felt to be economically viable for specific climate zones in all 50 states. The specific recommendations concern insulation, storm windows and doors, efficiency of mechanical equipment, air infiltration, and moisture control.

Beyond the regulatory requirements, there are market issues that affect rehabilitation for resale or rental where tenants pay for their utilities. The public is aware of the cost of utilities and, therefore, those conducting a housing search tend to consider the energy efficiency of units in their buy or rent decisions. Nonprofit developers providing affordable housing also recognize that utility costs can be overwhelming for low-income occupants. For these reasons, regulation or not, nonprofit developers in particular consider energy efficiency as part of the overall renovation program, and it is often more expensive to retrofit energy efficiency than to include it in new construction. Depending on the envelope construction, insulation may need to be injected through holes bored between studs in wood frame construction or masonry walls may need to be furred out for placing insulation along the interior of the building envelope. This last process involves changes to the depth of window openings, modifying electrical outlets, and new drywall installation, even where the old plaster wall was intact.

ENERGY REGULATION: BARRIER ANALYSIS

Nature, Incidence, and Severity of the Barrier and Potential Ameliorative Actions

As mentioned, both the IECC (MEC) and HUD's *Rehabilitation Energy Guidelines* apply primarily to new construction and substantial rehab and therefore have little impact as a barrier to repairs and moderate renovation. There can be some notable exceptions to the above statement for certain HUD-funded programs. For example, the 203 (k) program could require purchasers of older property to install energy-related improvements, such as insulation, where there was no other need to disturb the envelope of the structure. The need for storm windows, along with lead-based-paint concerns, will often push the window repair/replace decision toward replacement—and that could trigger historic preservation regulations. However, energy regulation was not specifically mentioned in any of the case studies conducted for this report.

Energy efficiency is a barrier to rehab primarily because it costs more to retrofit into an older property, thereby increasing the development costs. However, if energy efficiency improvements are not made, a unit is less competitive in the marketplace. Our opinion is that energy regulations pose a minor barrier to rehab and that saving energy is in the national interest.

The argument is often heard that the intent of the regulations is to provide economic payback to the end user of the dwelling in the form of reduced utility bills. Even so, in the experience of the Enterprise Foundation, economic payback to the purchaser of a rehabilitated property does not allow the nonprofit developer to charge more for the property since the sales price (and therefore the development cost) are constrained by income affordability and the limits of subsidy. To put it more clearly, the developer cannot raise the price of the unit to cover the costs of making a unit more energy efficient. Likewise, in the for-profit market, energy-related improvements merely allow the developer to hold even with more energy-efficient new construction units.

A greater use of Energy Efficient Mortgages (EEMs), which allow for greater borrowing power to purchase an energy-efficient property with lower utility bills, might provide offsetting revenue to the developer, but EEMs have not been widely used in the affordable rehabilitation housing market. In part, this is so because it is difficult to certify that rehabilitated housing is energy efficient—energy efficiency is easier to certify in newly designed and constructed units.

CONSTRUCTION STAGE REHAB BARRIER— HISTORIC PRESERVATION CONTROLS AND PROGRAMS

HISTORIC PRESERVATION CONTROLS AND PROGRAMS: BARRIER PROFILE

Background

Until almost the mid-twentieth century, historic preservation sentiment was alien to an American society with a reverence for all things new. In fact, federal programs, ranging from urban renewal to the interstate highway system, often fueled the demolition of many historic neighborhoods.

Federal National Historic Preservation Act and Section 106

Partly in reaction to the widespread loss of historic places and growing societal environmental sensitivity, a preservation system developed by the 1960s. At the federal level, the National Historic Preservation Act (NHPA) of 1966 created a National Register of Historic Places to identify a wide variety of resources that were of national, state, or local importance with respect to history, architecture, archaeology, and other consideration. NHPA also created an executive, federal-level agency to deal with preservation (the Advisory Council on Historic Preservation [ACHP]) as well as a preservation review process (Section 106 of the NHPA).

Section 106 mandates that if there is a "federal undertaking" (liberally constructed to include a range of federal activities, such as federal licensure, subsidy, or action) that can affect a property either on or eligible for the National Register of Historic Places, the initiating federal agency must "take into account" the effect of its action "and the ACHP is given an opportunity to comment. In practice, Section 106 has evolved into a consultation and negotiation process involving the federal agency, the ACHP, and state bodies (State Historic Preservation Offices [SHPOs]) that attempt to balance preservation concerns with the need to implement the federal undertaking. For example, if Community Development Block Grant (CDBG) funds are used for rehabilitation (considered a federal "undertaking") and the rehabilitation is done on a property either on or eligible for listing on the National Register of Historic Places, then the appropriateness of the HUD rehabilitation would be evaluated under the Section 106 process.

Federal Historic Preservation Tax Credits

Another important federal influence on historic preservation involves tax credits (Delvac, Escherich, and Hartman 1996; Escherich, Farneth, and Judd 1995). These became available in the late 1970s and the current provisions were framed in 1986. The 1986 Tax Reform Act provides a 10 percent investment tax credit (ITC) for income-producing nonresidential properties built before 1936. In addition, a 20 percent ITC is granted for historic rehabilitation. To qualify for the 20 percent historic rehab tax credit (HRTC), the income-producing rehabilitated property must be a "certified historic structure" (i.e., a building individually listed on the National Register or located in and contributing to the historic significance of a registered historic

district);[15] the rehabilitation must be "substantial" (i.e., more than $5,000 or the adjusted basis of the renovated property, whichever is greater); and finally, the rehabilitation must be certified. To be certified, a rehabilitation must be approved by the National Park Service (NPS) as being consistent with the historic character of the property and, where applicable, the district in which it is located, using the Secretary of the Interior's Standards for Rehabilitation as a guide.

Secretary of the Interior's Standards for Rehabilitation

The Secretary of the Interior's Standards for Rehabilitation (hereinafter the Standards) first appeared in print in 1977 as a HUD document designed to provide practical guidance on preserving historic properties—their materials, spaces, features, and finishes—and to ensure that significant components of the property were not inadvertently destroyed in the process of rehabilitation. The Standards have become closely associated with this program. Tax certification regulations required that a project meet the Standards to be eligible for federal historic rehab tax credits.

The Standards also are consulted in the federal Section 106 review. A federal agency, an SHPO, and the ACHP can determine if federally aided rehab is appropriate on a National Register of Historic Places property by considering whether the renovation follows the spirit of the Standards.

Exhibit 7.1 in the NHNHS case study (Chapter 7) contains the Standards. The underlying principles are straightforward. Understand why a historic building is significant and identify its character-defining features. Minimize alterations: retain historic finishes, features, and spaces to the maximum extent possible. Repair existing features rather than replace them. Do not undertake treatments that irreversibly damage, alter, or destroy significant historic fabric. When constructing a new addition, distinguish between old and new. The Standards place a high premium on retaining and reusing significant historic fabric, on reusing existing materials rather than inserting new features and finishes.

Federal Policy Statement on Affordable Housing and Preservation

To better enable affordable-housing construction, such as CDBG-funded renovation, that abided by the Standards, in the mid-1990s, the ACHP formed the Committee on Affordable Housing and Historic Preservation (Keister 1996). The committee's deliberations led to the ACHP's June 26, 1995, Policy Statement on Affordable Housing and Historic Preservation (hereinafter the Statement; Advisory Council 1996). The Statement underscored the need to better coordinate the objectives and activities of the preservation and housing communities, in its words "to reconcile national historic preservation goals with the special economic and social needs associated with affordable housing."

To further the reconciliation, the Statement underscored that as a matter of policy, the ACHP "seeks to promote a new, flexible approach toward affordable housing and historic preservation." To that end, the Statement included ten principles.

[15]A registered historic district includes both those districts listed on the National Register and any state or local historic districts in which the district and enabling statute are certified by the Secretary of the Interior.

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

For example, under item 4, the Statement directed that plans and specifications for rehabilitation and new construction associated with affordable-housing projects should adhere to the Standards when feasible. Where economic or design constraints preclude application of the Standards, consulting parties may develop alternative design guidelines tailored to the district or the neighborhood to preserve historic materials and spaces. Item 6 reiterated that the Section 106 process should emphasize the treatment of exteriors and be limited to only those significant interior features and spaces that contribute to the property's eligibility for the National Register.

SHPOs, federal and state agencies, and local governments involved in the administration of the Section 106 review process for affordable-housing projects funded or assisted by federal agencies were encouraged in the Statement to be flexible and to have a broad community orientation as opposed to a narrow legalistic interpretation of strictly historic standards. They were cautioned against focusing exclusively on individual buildings that may contribute to a historic district as opposed to the "overall" historic preservation potentials of the broader community. According to the Statement, historic preservation issues should be related to community viability.

Local Historic Preservation Controls and Programs

Local efforts complement and add to the federal historic preservation controls and programs. From the 1930s to the 1950s, a handful of communities, most notably New Orleans and Charleston (South Carolina), established local preservation commissions (LPCs) to identify and protect selected historic districts. By the mid-1950s, there were about 20 LPCs throughout the United States. By 1966, a decade later, the tally had grown to 100. Bicentennial activities, along with the NHPA, sparked an upsurge to 492 LPCs by 1976. The 1978 *Penn Central* decision, in which the U.S. Supreme Court upheld local landmark designation (of New York City's Grand Central Station), and 1980 amendments to the NHPA encouraging local preservation activities led to further expansion—to 832 LPCs by 1981. The National Alliance of Preservation Commission counted 2,019 LPCs as of 1996.

The LPCs conduct surveys to identify historic resources and then act to designate those resources as landmarks.[16] Once designated, the landmarks cannot be demolished or their facades altered in a fashion not historically appropriate without the approval of the LPC; at the least, such actions would be delayed or commented on by the LPC. LPCs are active throughout the Untied States; such local action is, however, more the exception than the rule. When in place, the LPC actions are significant. Although federal regulations typically focus on governmental actions that might threaten historic resources, for the most part they are not directed at private actions by the owners of these resources. LPC activities, by contrast, regulate such private actions.

Historic Preservation Contributes to Housing Rehabilitation

Historic preservation is an important contributor to rehab ("A Showcase for Historic Preservation" 1989).[17] The most direct link occurs when a property is designated a landmark—the landmark designation can provide incentives (e.g., through the ITC)[18] to rehabilitate the property. Data that allow exact calculation of the extent of rehab occurring in the historic stock are not generally available, but rough estimates have been made. A 1998 article estimated that at least 5 percent of all rehab in the United States was occurring in properties designated as historic (Listokin, Listokin, and Lahr 1998). Oldham estimated independently that roughly 5 percent to 10 percent of all rehab is historic.

Anecdotally, we know from the housing literature that some of the most prominent examples of residential rehab in the United States (e.g., New York City's Greenwich Village, Philadelphia's Society Hill, Boston's Beacon Hill, and Providence's (RI) College Hill) are all in areas designated as historic.

Our case studies show similar rehab-preservation connections. Isles renovates in Old Trenton and other historic neighborhoods. New Haven Neighborhood Housing Services (NHNHS) concentrates its rehab activities in New Haven's historic Dwight neighborhood.

The association between historic preservation and rehab is no accident. Both from the national experience and the case studies, we observe that historic preservation fosters rehab in numerous ways.

Historic Preservation Encourages Rehab Investment and Catalyzes Revitalization

Designation as a historic site bestows a distinctive cachet on a neighborhood and, as a result, often accords prestige. Designation also affords a measure of protection. A landmark important to neighborhood character can be protected from federal agency demolition because of Section 106 review. Stylistic features that define an area will be protected by LPC review, and so on. The prestige and protective benefits of historic preservation often catalyze rehab and other reinvestment.

[16]We acknowledge that this is a very simplistic summary that improperly infers that all the laws are the same. We do not consider what actually happens administratively upon LPC designation. We also do not consider that most older homes in urban areas are *not* locally designated.

[17]There is considerable literature on this topic, for example, Beaumont 1996a, 1996b; Escherich, Farneth, and Judd 1995; Keister 1996; Listokin and Listokin 1993; Reigeluth 1979a; Matthews 1992; and "Vermont Project" 1990.

[18]Sometimes states and municipalities have incentives that result in abatement of property taxes, waiver of fees, etc.

Richard Wagner, author of the *Downtown Development Handbook* (1992), speaks of a "catalyst strategy" in the form of a "major development, such as a new festival marketplace or the rehabilitation and reuse of a major historic building to be the catalyst for additional projects" (Wagner 1993, 56). Historic-district upgrading also provides a catalyst for rehab; owners of properties in neighborhoods near the historic districts under renovation are more likely to be receptive to rehabilitating their buildings. There is, in fact, a fluidity to the process: A neighborhood is designated as a historic district and rehabilitation is catalyzed there as well as in an adjacent neighborhood. That second neighborhood may ultimately receive designation as a historic district and catalyze rehabilitation in yet another area. In San Antonio, Texas, for example, historic designation of the King William area encouraged property renovations both in King William and in neighboring areas that were, in turn, ultimately designated. In New York City, historic designation of Brooklyn Heights encouraged rehabilitation there as well as in nearby Park Slope—the latter neighborhood was ultimately designated as well.

Similar influences are observed in our case study. The historic character of the Old Trenton neighborhood contributes to its distinctiveness and appeal. The stabilization of Old Trenton, in part due to Isles' efforts, has encouraged both rehab and new construction in other areas of Trenton, some of which have been designated as well. In Seattle neighborhoods such as Pioneer Square, Pike Place Market, and the International District, historic preservation is an important theme for housing rehab. The same is true with respect to NHNHS's activities in New Haven's Dwight neighborhood.

Encouragement of a Rehab Industry

Historic preservation contributes to rehab in other ways as well. One constraint to rehab is that it involves construction skills and materials that are much more custom-crafted than those required for new construction. Historic preservationists have often taken the lead in nurturing these skills and materials development and in establishing forums for rehabilitation trades and suppliers. For example, the National Trust for Historic Preservation has released *All about Old Buildings* (Maddex 1985) and similar guides (Maddex 1983; National Trust for Historic Preservation 1983). The National Park Service (1982) published *Respectful Rehabilitation—Answers to Your Questions about Old Buildings*. People involved in many aspects of rehabilitation, not just historic preservation, have used these and similar guides. The National Center for Preservation Technology and Training (NCPTT), operating under the auspices of the National Park Service, has funded research on lead-paint abatement, termite infestation, older mechanical systems, building and fire codes, silicone applications, building crafts, and similar topics of value to historic preservationists and the rehabilitation industry (NCPTT 1997).

Fostering rehab incentives

Historic preservationists have developed incentives and programs for landmark renovation that can be successfully expanded to encourage rehab in general. For example, Article 32 of the Massachusetts Building Code is acknowledged as one of the most sensitive building regulations in the United States, encouraging rehabilitation of the existing stock. The impetus behind Article 32 was a group mainly concerned with the interaction of historic properties and the building code.

The historic rehab tax credit is an important incentive for housing rehab. Since its inception, the HRTC has been available for both income-producing housing and nonresidential projects. In fact, one of the features distinguishing the HRTC from the nonhistoric ITC is that the former can be used for income-producing housing[19] while the latter cannot be applied in such a residential situation. In practice, the HRTC has often involved housing or mixed-use (housing and nonresidential) investment. While data on the dollar distribution of HRTC investment by type are not readily available, we can track the type of projects. The distribution indicates that about half of the HRTC projects were exclusively housing projects and another 20 percent to 30 percent were in the mixed-use/other category. The remainder were commercial and office renovations. Thus, in FY1997, of the 902 HRTC projects, 406 were exclusively housing, 180 were mixed use/other, 171 were office, and 145 were commercial.

Federal historic preservation tax incentives have resulted in much housing rehab. Since the inception of the incentives in the late 1970s, 239,862 units have been completed. Of that total, 153,886 or 64 percent were existing housing units that were rehabilitated, and 85,976 or 36 percent, were "newly" created housing units (e.g., housing resulting from the adaptive reuse of once-commercial space).

Of the 239,862 total housing units completed under federal historic preservation tax incentive auspices since the late 1970s, 40,050 or almost one-fifth, were affordable to low- and/or moderate-income (LMI) families. That averages to about 2,000 LMI units per year. In FY1997, 6,239 LMI units were produced under the HRTC. While these figures are not large in an absolute sense, given national LMI housing needs, they are noteworthy when compared with the number of units produced by some better-known affordable-housing production programs, (e.g., the 5,000 new public housing units authorized in 1993 and the 8,300 HOME program units produced in 1994 [Wallace 1995, 795]). The LMI share of HRTC housing units is growing. From FY1994 through FY1997, 30 percent, on average, of all HRTC housing has been at LMI levels. In FY1997, the LMI share of all HRTC units rose to 42 percent. The amount of affordable housing produced through the HRTC is more significant than many people realize.

One way developers using the HRTC are able to reach LMI households is by "piggybacking" the HRTC's benefits with other subsidies. This can include reduced or exempt local property taxes, a federal tax benefit from creating a preservation easement, and use of housing subsidies, a prominent example being the low-income housing tax credit (LIHTC). Developers gain considerable equity from combing the LIHTC with the HRTC.

The Seattle case study illustrated how the HRTC and LIHTC could be combined to provide a powerful subsidy for affordable rehab. Seattle's Plymouth Housing Group (PHG) acquired the Pacific Hotel, located in the downtown area. Built in 1916, this property traditionally had provided transient housing; it had closed by the 1980s. PHG, a homeless-advocacy group, acquired the abandoned hotel and rehabilitated it to provide 112 units. All of the units served low-income residents; there were 75 single-room-occupancy (SRO) units in one wing and 37 studio and one-bedroom apartments in another. The Pacific Hotel's total project cost was $8,534,694 ($2,113,092 acquisition and $6,421,602 rehabilitation), or about $76,000 per unit. PHG's clientele could not afford the rents to amortize a $76,000 unit, but rents were brought

[19]The HRTC is not available for properties used exclusively as the owner's private residence.

down to an affordable level through multiple sources of equity and financing. The $8,534,694 project expense was met through $3,656,085 in equity—raised from combining the LIHTC and HRTC (see exhibit 2.7)—and $4,878,609 in debt financing. The debt's cost was reduced with subsidies received from the Federal Home Loan Bank, the Washington State Housing Trust Fund, and the city of Seattle. The project's operating costs were further subsidized from HUD's McKinney SRO MOD REHAB program (Sullivan 1998).

EXHIBIT 2.7
Combining the HRTC and the LIHTC
in the Rehabilitation of the Pacific Hotel, Seattle, Washington

TAX CREDIT ANALYSIS	
Historic Rehabilitation Tax Credit (HRTC)	Project
Total development costs	$8,534,694
Total qualifying expenditures	$5,925,041
Rehabilitation tax credit %	20%
Total rehabilitation tax credit	$1,185,008
Equity yield for rehabilitation credit	$0.80 per $1.00
Equity raised from rehabilitation credit	$948,006
Low-Income Housing Tax Credit (LIHTC)	
Total developing costs (should be the same as above)	$8,534,694
Total qualifying expenditures	$6,234,742
Less rehabilitation tax credit	[$1,185,008]
Eligible basis	$5,049,734
Low-income proportion[a]	130%
Qualifying basis	$6,564,654
Annual credit %	9%
Annual credit amount	$590,819
Total low-income housing tax credit	$5,908,190
Equity yield for low-income credit[b]	45.84 cents per $1.00
Total equity raised from low-income credit	$2,708,079
Total Combined Equity:	$3,656,085

Source: Sullivan 1998, 5.
[a]Project consists of 100% low-income units and is located in "qualified census tract," therefore, a 30% boost/increase in credit amount is allowed.
[a]Yield low due to (1) At that time the LIHTC was not yet a permanent program, resulting in few investors/little competition; and (2) 100% of HRTC and LIHTC equity was invested up front, at the start of construction.

The Chicago case study also revealed numerous instances where the HRTC was combined with other subsidies in order to provide affordable renovation. The experience of the Chicago Department of Housing (DOH) is that the use of the HRTC is better than revenue neutral—the financial benefits of the HRTC exceed incremental expenses, if any, resulting from complying with the Secretary of the Interior Standards for Rehabilitation. DOH Commissioner Markowski pointed to the rehab of the Hilliard Homes, a Chicago Housing Authority property, as a project

that would not be undertaken without the use of the HRTC. Hilliard Homes, a public housing building designed by Bertram Goldberg and located on Chicago's south side, is to be converted to a 700-unit apartment building with a 50 percent/50 percent split between seniors and families. The estimated rehab cost ranges from $75 million to $80 million. Privately developed, the project is expected to use tax credits generated by tax-exempt bonds (4 percent credit or approximately $25 million to $30 million); tax increment financing of about $6 million; tax-credit equity of about $10 million from the use of the HRTC; and a contribution of about $33 million from the Chicago Housing Authority.

A Chicago developer identified numerous advantages of combining the HRTC with the LIHTC.[20]

1. More equity can be made available to the project when the two tax credits are combined. This makes for a less risky investment. In addition, the LIHTC provides subsidized rents with a lower likelihood of foreclosure.
2. The HRTC will help cover risks of change orders and other increased costs over fixed price contracts during construction.
3. Typically, the incremental costs of a certified rehab, if any, are more than offset by the HRTC.
4. Blending of the tax credits offers a larger investment to a single investor.

Local governments often provide incentives for rehab of historic properties. Seattle, for example, offers a number of incentives to owners of landmark properties:

1. *Zoning code relief.* For a designated landmark, Seattle may authorize a use not otherwise permitted in a certain zone. This provision provides flexibility of use to encourage the preservation and use of historic buildings.

2. *Building code relief.* The Seattle Building Code allows modifications to specific requirements of the building code for landmark buildings.

3. *Special tax valuation for historic properties. Special property tax breaks are accorded to landmarks undergoing rehabilitation.*

Seattle further offers special incentives for downtown landmarks:

1. *Transfer of development rights.* To encourage the preservation of landmarks, the property owner is able to sell unused development rights to other developers. The value of these development rights is negotiated between the owners of the sending and receiving lots.

[20]This same developer acknowledges, however, that the tax-credit equity market looks at the blending of the LIHTC and HRTC in a somewhat mixed way. While there were advantages as noted above, there was also the disadvantage of risk associated with a certified rehab—the latter a prerequisite for the HRTC. Thus, some developers discounted the price of the LIHTC (when this was combined with the HRTC) because of the risk just noted.

2. *Downtown residential zone.* Seattle landmarks in a downtown residential zone are exempted from any restriction on commercial density as long as the building is restored and committed for long-term preservation.

Local preservation controls and incentives in Seattle, by almost all accounts, are an important support to housing rehabilitation in that city. Yet there are costs and other barriers to affordable-housing rehab that are posed by historic preservation in Seattle and elsewhere in the United States. We detail these hurdles below.

Historic Preservation Can Be a Barrier to Housing Rehabilitation

Section 106 as a Barrier

Section 106 of the National Historic Preservation Act, which mandates consideration of the impact of a "federal undertaking" on a property either listed or eligible for listing on the National Register of Historic Places, is triggered by the use of a federal permit, funding, or other type of subsidy for a construction project. In the context of affordable-housing rehabilitation, Section 106 kicks in with the first dollar of CDBG funds or other HUD subsidies. The historic rehabilitation tax credit does not trigger the Section 106 process.

When a federal undertaking involves rehabilitation of a historic resource, the Section 106 process uses the Secretary of the Interior's Standards for Rehabilitation in evaluating the impact. The Section 106 process is a consultation involving federal and state officials; the spirit of that consultation is one of meeting a compliance requirement in order that a project may move ahead. The extent to which the Section 106 process uses the Standards is uneven. In some cases the Section 106 review is equivalent to the rigor of a historic rehabilitation tax credit review, but often, the Section 106 review is described as "minimalist" or a "floor" rather than a "ceiling" in terms of adherence to the Secretary's Standards. The Advisory Council's Statement on Affordable Housing and Historic Preservation is intended to provide operating principles that help reconcile the goals of affordable housing and historic preservation through a "new, flexible approach."

Our case studies revealed several instances where Section 106 review was not problematical. To illustrate: A Chicago project to convert a four-story loft warehouse building to apartments for the elderly used a HUD 202 loan as financing for the development. As a result, the project required a Section 106 review—yet this was secured in a ready fashion. A primary feature of the building was the large steel sash windows. The developer found replacement steel sash windows (at a cost within the project budget) that replicated the original windows in size, number of lights, and profile. Art deco plaster relief in the lobby was also replicated for the project. Thus, the developer's ability to replicate the building's vintage features facilitated the Section 106 approval.

Compliance with the Standards within the context of Section 106 can be a challenge, however. The replacement of wooden windows that are inoperable or beyond repair is a frequently cited point of conflict. The experience of Neighborhood Housing Services of New Haven, Inc., a non-

profit developer dedicated to providing affordable housing in historic neighborhoods and structures, provides an excellent case in point.

NHNHS construction is a federal "undertaking" because it is financed with CDBG and other federal funds. To satisfying the Section 106 review of the "undertaking," the renovation must comply with the Standards' requirements for the treatment of the existing historic fabric. According to NHNHS, some Section 106 reviews insist that the original wooden windows be replaced with a similar wooden windows. These often must be custom ordered and are more difficult to install and more expensive. The wooden replacements also require painting and future maintenance.[21] The purchase and installation of a single wooden window will cost about $450 to $500—almost double the $250 to $300 cost for a vinyl window. The delays and additional cost are a burden for the provider that make it more difficult to provide housing to low- and moderate-income home owners. Moreover, if a defunct original wooden window must be exactly replicated, it will not be insulated, leading to higher energy costs for modest-income homeowners. NHNHS also argues that using vinyl replacement windows is appropriate from an affordable-housing objective as well as from a historic preservation perspective, because only the most trained eye will notice the difference when the windows are viewed from the street. [22]

NHNHS's experience illustrates not only the tension between historic preservation and affordable housing, but also the potential difference between a SHPO perspective and the views of the Advisory Council on Historic Preservation, the Washington-based federal agency charged with Section 106 responsibility under the National Historic Preservation Act. At the state level, where the first Section 106 review takes place, NHNHS's request to use vinyl windows was typically denied on the basis that such windows violate the requirement of the Secretary of the Interior Standards. After the initial rejection by the Connecticut SHPO, NHNHS would appeal the state decision to the ACHP. The appeal to allow the vinyl windows would typically be approved. Nonetheless, the appeal process could take as long as four months, and in the interim, the rehabilitation job was in limbo, adding to staffing, property-holding, and other costs.

In response to the experiences of the NHNHS in the Dwight Historic District, as well as those of other affordable-housing providers in historic districts, several pilot programs are under way to develop specially tailored guidelines. This effort is proceeding under the auspices of the Community Partners Program of the National Trust for Historic Preservation. The purpose of the Dwight Historic Design Guidelines is "to encourage rehabilitation strategies that are economical yet focus on preserving the most important historic architectural features of each house and those most important in defining the character of the neighborhood." (Grzywacz 1999, 9)

As more inner-city neighborhoods are designated National Register Historic Districts and the need grows for federal subsidies to make affordable-housing developments economically feasible, the requirements of Section 106 of the National Historic Preservation Act will remain or

[21]All windows—wood, aluminum, steel, clad, plastic, etc.—require maintenance. NHSNH claims that because vinyl windows do not require painting they impose lesser maintenance expenses.

[22]That is NHSNH's view. According to the National Park Service, data shows that many of the vinyl windows do not do well after 10 to 15 years, whereas a wooden window and storm system can be cost effective and outlive the vinyl window. That is just one of the reasons that the NPS is not sold on vinyl as an appropriate substitute. The NPS also points to the fact that multilight windows and mullions cannot be accurately duplicated in vinyl.

even increase in importance as a consideration in rehab projects. The extent to which Section 106 is a barrier to affordable-housing rehab is highly variable in terms of both projects and location. The significance of the barrier depends on the discretion of local and state historic preservation officials, the economics of the project, and the ability and willingness of developers to devise solutions to vexing rehab challenges in a manner that satisfies the state historic preservation officer and or the Advisory Council on Historic Preservation.

Because the Secretary's Standards have cost implications, particularly with regard to windows, smaller projects with a poorer economy of scale and marginal financial specifications are the most likely to suffer or to be abandoned. While the Standards themselves are quite broad, the decisions made by local and state historic preservation officials above the application of the standards can have the effect of being the "straw that breaks the camel's back"—the final regulatory requirement that adds costs too great to be borne. The development of flexible guidelines, as in New Haven, tailored to the challenges of affordable-housing rehab in poor neighborhoods—as done in New Haven—is one way to make these projects work.

HRTC Standards as a Barrier

In considering the HRTC standards as a barrier, it is important to acknowledge that the goal of the HRTC is preservation, not affordable housing, and that the preservation-oriented standards are applied to all types of use, not just housing. The following discussion, however, considers the HRTC standards against the backdrop of this study's focus on affordable housing (Gebhardt and Rosenzweig 1988).

With the passage of the 1976 Tax Act, the Secretary's Standards for Rehabilitation became most closely associated with the preservation tax-incentives program. Tax certification regulations require that a project meet the Secretary's Standards to be eligible for federal historic tax credits. Several of the developers interviewed noted that using the historic rehab tax credit, particularly for housing, can present challenges and require considerable creativity, patience, and flexibility in order to reconcile interpretation of the Secretary's Standards with market requirements, development costs, building efficiency, code, and other mandates.

The tensions are often most acute where the interiors of the properties are conceived. In Seattle, the rehab of a single-room-occupancy (SRO) structure involved an original interior with narrow hallways, reflecting the historical, modest housing amenity of the property. The original apartments were also "bare bones," essentially single rooms off of a corridor. To modernize the SRO and produce desirable, market-rate units, the developer proposed altering the interior by enlarging the units and building new corridors.

The developer sought an HRTC for the project with the proposed changes, which the National Park Service rejected. In response, the developer proposed leaving the interior of the first floor intact and remodeling only the upper floors. This proposal launched negotiations that continued for months.[23] Ultimately, the developer opted to cease negotiating and dropped his application for the HRTC. He made the interior changes he sought and kept the exterior largely intact.

[23]Months is often a very small percentage of the total time line of a project. Projects often spend time looking into several different financing options—some work for the project, others do not.

Thomas Creal, an architect who has worked on several historic rehab projects in Memphis and was interviewed in the course of this study, said, "With small buildings, it can be especially difficult to make the project feasible." He further noted that the project may not have enough units to cover the costs of restoring a historic facade. There are often not enough windows on the back of historic buildings to make units there feasible. Thus, the costs of a new roof, an elevator, and often an additional exit stair must be absorbed by a small number of units, which drives up per-unit costs. Dennis Langley, an architect interviewed in the Chicago case study, noted that accommodating interior elements such as unit trim and ceilings when trying to design new mechanical, electrical, and plumbing systems can be very challenging. Saving existing plaster or replicating plaster details can add significant costs to the rehabilitation project.

Isles, Inc., a nonprofit community developer in Trenton, New Jersey, has faced similar challenges in using the historic rehab tax credit to provide housing for low-income families. Isles sought to use the historic rehab tax credit for adaptive reuse of a former industrial building for apartments and its headquarters, triggering a debate over replacement windows. The SHPO required that replacement windows be exact replicas of the original. Isles argued against the need for, and practicality of, that request, which would entail custom crafting of oversized and un-insulated steel windows. Isles proposed the use of standard insulated windows that were half the price of custom units. After initially objecting because the standard windows were one-eighth of an inch smaller than the originals, the SHPO ultimately accepted Isles's proposal.

The historic preservation requirements triggered by the tax credit can ultimately result in an economic "wash" between expenses and benefit. On another Trenton project, Academy Place, for which Isles received $300,000 in equity from a historic tax credit, the organization hoped to reconfigure the first floor from three small apartments to two more desirable, larger units. However, the building had large open hallways and a staircase that had to be preserved, thwarting the apartment reconfiguration. The building was also found to have lead paint on much of its ornamentation, which would require an expensive stripping process to remove. Removal was not an option because these features contributed to the property's historic character. The historic character of the building also required that utility lines be installed in the rear instead of in the front. Keeping historic exterior and interior doors complicated security. These outlays, plus the cost of some additional preservation repairs, amounted to $200,000 to $300,000, about equal to the net benefit of the historic rehab tax credit. The result was to neutralize any incentive to undertake the extra preservation work. Yet in this instance, the HRTC helped realize an end product with more character and long-term desirability and resale value than a project that would have removed the historic fabric.

Isles strongly supports attention to historic detail on the exterior of the buildings and believes that Academy Place is a more desirable place to live because of the historic amenities. However, Isles calls for more flexibility in interpreting the Secretary's Standards on the interior of a building, especially where affordable housing is involved, because of the added expense of satisfying the historic preservation mandate and the loss of flexibility in doing interior alterations.

A Chicago developer noted that the tax-credit-equity investor sees the uncertainty of certification as a significant risk. As a result, some HRTC equity investors will not put money into the project

until after a project is placed in service or after certification is obtained. Alternatively, they might discount pricing on the LIHTC (when the HRTC is combined with the LIHTC) because of the construction risk associated with a certified rehab. Setting the following requirements can also help offset the risks associated with a certified rehab:

1. The developer and the general contractor should have significant rehab experience and experience with historic rehab.
2. The developer should have successfully completed one or more rehab projects.
3. The developer should have an understanding of and experience with the federal, state, and local funding programs for affordable-housing rehab.

One other issue related to the historic rehab tax credit concerns the marketability of the credit and its appeal to investors. According to several Memphis developers, there is an economy of scale challenge: the market for the credit exists if the credit value exceeds one million dollars. However, for individual investors to use the credit, a pool needs to be created for them to invest together because of the federal tax requirements related to the alternative minimum tax and limitations on passive income losses. These requirements are significant obstacles to creating small local partnerships for purchase of the credit. A savvy developer who knows how to put together a group in his or her city can pull this off, but it can be otherwise very difficult for small developers.

Another barrier noted was the basis requirement of the credit—in order to use the credit, developers must spend an equivalent of $5,000 on the rehab or the value of the adjusted basis of the property, whichever is greater. That can be a very large sum of money and is often not achievable on a small rehab project.[24] This requirement is mandated in the federal tax statute and legislation would be needed to change it.

In sum, the requirements of the tax credit[25] are not a barrier per se; the credit is an incentive and, therefore, its use is optional, not mandated. As developers in Chicago noted, the credit is used in projects where it makes the deal work. When the requirements it triggers are deemed impractical or economically infeasible, it is simply not used. We also must remember that the foremost goal of the HRTC is historic preservation, not affordable housing. Nonetheless, the question remains whether the application of the credit's requirements, which can vary broadly from state to state, have an impact on developer demand for the incentive. Since the credit has no statutory cap or allocation, it is theoretically a limitless incentive in the aggregate. Could its use be increased

[24]This problem will be most manifest where moderate rehab is contemplated in high-property-cost areas and/or when a property has recently been purchased so that little depreciation has been taken to reduce the basis.

[25]A member of the resource group working in the Midwest recounted various issues concerning windows, corridors, and the HRTC as follows:

"Windows have presented many problems over the past twenty years. Often times the SHPO wants us to reuse windows and make repairs. This often results in drafty windows and is very energy inefficient. Some of the northern climates we operate in have apartments that cannot be made comfortable enough in the winter. This has even happened where we have installed new insulated glass windows and come back and put storms over them. Part of it is just the large size of some of these windows. More flexibility by the SHPO's and the Park Service would provide a better overall product for the residents that are occupying these apartments. Corridors have also been an issue that needs resolution in several of our developments. Sometimes it is just not efficient to reuse existing corridors and again, we would like more flexibility by the SHPO's and the National Park Service."

substantially through greater flexibility or better education about the application of the Secretary of the Interior's Standards?

LPC Regulations as a Barrier

The regulations developed by local preservation commissions are the "front line" in the protection of historic resources that are privately owned or the subject of state or local actions. Local preservation controls are the first, last, and best protection against the substantial alteration or demolition of a community's significant historic resources. Yet, even for developers who wish to undertake a historic rehabilitation project, local preservation controls can be a challenge. One Seattle developer proposed the rehabilitation of a residential property in that city's landmark historic district. The work fell within the oversight of a neighborhood historic preservation board. As the board met only every two weeks and reviewed many applications, its review of the project in question took almost one year, substantially delaying the project.

Moreover, as one Los Angeles preservation professional notes, since local preservation ordinances can be as stringent as or more stringent than the Secretary's Standards for Rehabilitation, efforts to incorporate flexibility through pilot projects (e.g., in New Haven's Dwight Historic District), or through application of the Advisory Council's guidance, can prove difficult.

In sum, the layering of federal, state, and local preservation requirements, coupled with the broad and varied discretion allowed in their application, creates an enormous range of opportunity and barriers for the historic rehabilitation of affordable housing. Frustration with this variance exists on many levels within and outside of government. Local preservation requirements in and of themselves were not noted to be a significant barrier—it is the combination of those requirements with many others that can be frustrating to developers.

HISTORIC PRESERVATION: BARRIER ANALYSIS

Nature of the Barrier

Historic preservation requirements are a matter of public regulation. Section 106 of the National Historic Preservation Act is triggered by the first federal dollar given to the project and/or by a federal permit or license for a public or private project. The Secretary's Standards for Historic Preservation, which are triggered by the use of the federal historic rehabilitation tax credit, are used to ensure compliance with Section 106.

Section 106 is a public regulation that requires federal agencies or grantees to comply with procedural requirements for consideration and consultation. It is not a substantive regulation because it does not categorically prevent actions that may harm historic resources. However, the state historic preservation officer and/or the Advisory Council on Historic Preservation must "sign off" on the Section 106 review. Failure to achieve compliance with Section 106 will jeopardize federal funding (e.g., CDBG monies).

To secure a Historic Rehabilitation Tax Credit, the developer must submit documentation that the Secretary's Standards for Historic Rehabilitation have been followed in the rehab. The

documentation is submitted to the state historic preservation officer, who then forwards the paperwork to the National Park Service.

Incidence of the Barrier

In one sense, it is difficult to argue that compliance with the Secretary's Standards for the HRTC is a regulatory barrier. Application for, and use of, a historic rehab tax act is not required for any project. However, to the extent that both the HRTC review and the Section 106 review require compliance with the Secretary's Standards, it is useful to consider the Standards in both applications.

The extent to which Section 106 and tax-act reviews are barriers to affordable-housing rehab is highly variable in terms of both projects and locations. The barriers posed depend on the discretion of local and state historic preservation officials, the economics of the project, and the capacity of developers to respond to the challenge posed by the Secretary's Standards for Historic Preservation.

Historic preservation is typically a greater barrier to rehab in the following situations:

1. *Projects with marginal financial feasibility.* Requirements for retaining significant stairways, original hallway configurations, and other historic features can preclude adding additional units that might make the project economically feasible.

2. *When extensive replacement of windows is necessary.* When SHPOs reject vinyl or new-style wooden windows, the cost of replacing original wooden windows with exact replicas can greatly increase renovation costs.

3. *Small rehab projects.* The project may not have enough units to cover the costs of restoring a historic facade or building a new roof, installing an elevator, and providing an additional exit stairway. In addition, the economic burden of compliance with the tax act is greater for small projects.

4. *When removal of lead paint is required.* Most old buildings contain lead paint, and historic buildings often have it on much of their ornamentation, requiring an extensive (and expensive) stripping process. Removal of the features is usually not an option if the ornamentation contributes to the property's historic character.

5. *When rehab is done by less experienced property owners, developers, and/or contractors.* Experienced developers know the details of the tax-act review process—how the Secretary's Standards are applied in their state or jurisdiction; local preservation requirements; and which substitution materials and which are not. Inexperienced developers are more likely to be faced with an unexpected situation and, therefore, to be unprepared to adapt a rehabilitation plan.

6. *In jurisdictions where preservation officials are less supportive of goals other than historic preservation.* If state historic preservation office staff or certified local government officials

would like to use historic rehab as a tool to promote urban revitalization, affordable-housing development, and other social goals, they may be more flexible on thorny preservation problems that potentially make a project unworkable. If they are less flexible, problems can arise.

Severity of the Barrier

As noted earlier, preservation themes are often a boon to rehab and the goal for the HRTC, an optional incentive, is preservation not affordable housing. Yet in practice, the HRTC is often drawn upon in affordable-housing situations. Preservation may pose some practical concerns to affordable-housing advocates—and even those concerns will vary. While the Secretary's Standards will vary in the practical difficulty posed to historic rehabilitation, they can be quite challenging in a couple of specific areas. The Secretary's Standards will not in and of themselves prevent a project from going forward, but they can make a marginal project unworkable and a viable project more difficult or marginal as an income-producing property. Historic preservation regulations can result in the following difficulties:

1. *Increased rehab expenses.* By requiring certain materials or configurations, historic preservation standards can increase renovation costs. Delays in waiting for local reviews can add to holding costs.

2. *Discouragement or abandonment of historic rehab.* Historic preservation standards can add significantly to the expense of a rehab job so that the project—or its preservation components—will be discouraged or dropped. A difficult experience with the Standards may also discourage developers from pursuing subsequent HRTC projects.

CONSTRUCTION STAGE REHAB BARRIER—ACCESSIBILITY

ACCESSIBILITY: BARRIER PROFILE

Background and Impact on Rehab

Accessibility is the term used to describe design and construction of new or rehabilitated buildings, as well as programs and services, to provide barrier-free access for individuals with disabilities. Until the Architectural Barriers Act (ABA) was passed in 1968, little consideration was given to providing accessibility in new construction and renovation projects for people with disabilities.

Today, the Architectural Barriers Act of 1968 is only one of many federal laws governing accessibility. Both the ABA and Section 504 of the Rehabilitation Act of 1973 require buildings that are financed by federal funds to comply with new-construction accessibility standards—the requirement also applies to additions and alterations to existing buildings.

The Fair Housing Act Amendments of 1988, which are implemented by the Department of Housing and Urban Development, require housing providers to "make reasonable

accommodation" to allow physically challenged individuals to make needed alterations to their dwelling units, usually at their own expense.

The Americans with Disabilities Act (ADA) of 1990, which is under the purview of the Department of Justice, regulates public accommodations, including lobbies, rental offices, and other spaces within residential buildings (Harden 1992; Jones 1992). The ADA requires that public accommodations must remove barriers to their services and programs. In addition, when building a new facility or altering an existing facility, one must follow specific accessibility requirements. (See Exhibit 2.8 for more detail on the requirements of federal accessibility laws.)

States have accessibility laws that may be more stringent than the federal laws. The more stringent of the two applies under the Americans with Disabilities Act. While providing access is a component of civil rights protection, an important social goal, and long overdue, the implementation of the requirements can prove expensive and difficult to achieve. The ADA and Fair Housing regulations have always allowed for flexibility in extreme cases of exterior access in rehabilitation; the intent is, nonetheless, to provide access. Developers and public officials can disagree on what should be excepted in the application of state as well as federal law.

One developer in Memphis noted that accessibility requirements can add up to 50 percent to the cost of the project. It can be difficult to meet accessibility requirements in single-room-occupancy units because of the relatively small size of the units. Accessibility standards will require large bathroom facilities and, sometimes, larger overall units than otherwise desirable. Accessibility can also be difficult and costly where existing elevator shafts are too small for appropriately sized elevator cabs and when stairwells do not already provide areas of safe refuge.

The state of Washington access code combines the most stringent requirements of the Fair Housing Act and the Americans with Disabilities Act, but recognizes that it is often challenging to retrofit accessibility. It therefore allows flexibility. However, the city's topography (sloped streets), historical pattern of development (full-lot coverage), and other characteristics make it challenging to meet the access mandate, particularly for rehabilitation.

Massachusetts General Law, Chapter 22, Section 13A, mandates rules and regulations for handicapped accessibility, and establishes an Architectural Review Board. While the federal rules provide "safe harbor" guidelines but also allow compliance alternatives, the state rules and regulations prescribe absolute requirements. The federal rules also provide enforcement in the event of a specific complaint; the state rules require an affirmative sign-off in advance by building code officials as well as enforcement in response to subsequent complaints.

Moreover, although the local Massachusetts building official is responsible for enforcement under the Architectural Review Board, the state accessibility rules and regulations constitute a wholly separate code that is not otherwise part of the state building code. Therefore, alternative compliance procedures under the state building code do not apply. There is no regular appeals process for the access code, and requests for variances are forwarded to the Architectural Review Board, with considerable delays not uncommon.

EXHIBIT 2.7
Overview of Accessibility Laws

	I. Architectural Barriers Act of 1968 (ABA)	II. Section 504 of the Rehabilitation Act of 1973	III. Fair Housing Amendments Act of 1988 (FHA)	IV. Americans with Disabilities Act (ADA) of 1990
A. General applicability	Buildings financed by federal funds[a]	Activities and facilities with Federal funds[a]	All housing. Public accommodations within residential buildings (i.e., the rental office of a residential building) are not regulated by the FHA, but rather by the ADA	Public accommodations, commercial facilities, and state and local governments
B. General requirements	Buildings must provide accessible entrances, routes, and common areas	"Program accessibility" [b] such that the physically challenged must be provided with equal opportunity in housing programs and facilities	Dwellings must meet design requirements so that that the physically challenged can modify the units for their use. Units must meet spatial requirements for kitchens and bathrooms, height requirements for environmental controls (e.g., light switches, thermostats) and construction requirements (reinforced walls that allow for installment of grab bars)	For state and local governments and public accommodations: • all newly constructed buildings must be readily accessible and usable by persons with disabilities; • all altered portions of existing buildings and facilities must be readily accessible and usable by persons with disabilities; • all barriers to accessibility in existing public accommodations must be removed when "readily achievable." *For commercial facilities that are not public accommodations:* • All new construction and alterations are readily accessible.
C. Standard used	*Uniform Federal Accessibility Standards (UFAS)*	*UFAS* as a guide, or other guidelines that provide equal or greater accessibility	HUD's *Fair Housing Accessibility Guidelines* or American National Standard Institute's A117.1	• Americans with Disabilities Act *Standards for Accessible Design* (Title II or Title III) • *UFAS* (Title II only)
D. New construction	Buildings shall have accessible routes (e.g., egress routes, elevators, stairs, etc.). "At least one of each type of common area and amenity in each project shall be accessible and shall be located on an accessible route" [c]	Buildings shall have accessible routes and common areas. A minimum of 5% of dwelling units must be made accessible for persons with mobility impairments, and an additional 2% made accessible for persons with visual and hearing impairments.	Buildings shall have accessible routes and common areas. Ground-floor units in nonelevator buildings and all units in elevator buildings must comply with design requirements	• Facilities must be built in strict compliance with appropriate accessible standards • Regarding accessible routes, see ADA Standards for Accessible Design, 4.1 and 4.3. Accessible routes must connect all accessible elements that are used for getting onto the site; connect other accessible buildings and accessible site amenities; and link all accessible spaces and elements within the building or facility to accessible entrances.

Continued on next page

EXHIBIT 2.7 (continued)

E. Rehabilitation	All additions and alterations[d] must comply with new construction standards. If additions do not include entry routes and restroom facilities, an existing route and restroom must meet *UFAS* new-construction standards	All additions and alterations[4] must comply with new-construction standards. If additions do not include entry routes and restroom facilities, an existing route and restroom must meet new-construction standards. Every dwelling unit that is altered must meet the new-construction accessibility standards (see II.C. above) until minimum requirements for new construction have been achieved[e] (see II.D. above	Does not apply, however, housing providers must allow physically challenged individuals to make necessary alterations	Alterations (for Title II only): • Facilities must be renovated in accordance with appropriate accessible standards to the maximum extent feasible • See ADA *Standards for Accessible Design,* 4.1.6. Accessible routes must comply with new construction standards unless technically infeasible. If altered space is a "primary function" area, an accessible path of travel to the altered area must be provided
F. Existing Buildings	Does not apply. However, if an existing building is renovated to comply with the other laws, then ABA rehabilitation standards apply	Programs and facilities receiving federal funds must be made accessible to the physically challenged. If building alterations are not made, an aide may be assigned to the physically challenged person	Does not apply, housing providers must allow physically challenged individuals to make necessary alterations.	Existing public accommodations: • Public accommodations are required to remove barriers when it is feasible to do so without much difficulty or expense. For a list of sample of modifications, see DOJ TAMIII-4.4200. When a public accommodation can demonstrate that the removal of barriers is not readily achievable, the public accommodation must make its goods and services available through alternative methods
G. Historic Preservation				• Facilities must be renovated in accordance with appropriate standards on accessibility to the maximum extent feasible. However, if following the alterations standards would threaten or destroy the historic significance of the facility, alternative minimum standards may be used. These alternative minimum standards may be used only in consultation with the state historic preservation officer or his/her designate • For requirements for accessible routes, see ADA *Standards for Accessible Design*, 4.1.7. An accessible route is only required from one site access point; a ramp may be steeper than is ordinarily permitted; an accessible toilet is required; and accessible routes are only required on the level of the accessible entrance

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Notes

a. This includes "any building that is (1) constructed or altered by or on behalf of the United States, (2) leased by the federal government, or (3) financed in whole or in part by a grant or a loan made by the United States (if the law authorizing such grant or loan prescribes standards for design, construction or alteration)."

b. Program accessibility requires that the program must provide an equal opportunity to physically challenged persons to obtain a unit. It does not require that every unit be accessible. For instance a housing program with several buildings may provide an equal opportunity for the physically challenged by providing accessibility units in one of the buildings, or by designating an aide to the physically challenged person.

c. See Section 4.1.3 of the *Uniform Federal Accessibility Standards.*

d. According to the *UFAS*, alteration, as applied to a building or structure, means a change or rearrangement in the structural parts or elements, or in the means of egress or in moving from one location or position to another. It does not include normal maintenance, repair, reroofing, interior decoration, or changes to mechanical and electrical systems (UFAS, 3). Furthermore, if, when considered together, alterations of single elements amount to an alteration of a space, a building, or a facility, the entire space shall be made accessible (UFAS, 12).

e. According to Section 8.23 of Section 504, once 5 percent of the dwelling units in a project are readily accessible to and usable by individuals with mobility impairments, no additional elements of dwelling units, or entire dwelling units, are required to be accessible under this paragraph.

Accessibility issues were also mentioned in the Chicago case study. One developer said that "accessibility can be difficult and costly when existing elevator shafts are too small for appropriately sized elevator cabs and when stairwells do not already provide areas of safe refuge." Another Chicago developer noted that accessibility issues "can be difficult in smaller buildings, such as walk-ups, where the building is not designed for elevators. Sometimes it is difficult to meet accessibility requirements in SRO units because of the relatively small size of the units."

A key question is the extent to which access should be mandated, especially in the context of existing or historic buildings (Anderson 1991; Goldstein 1992; "ADA: What it Means for Historic Preservation" 1992; Mathison 1992; Preservation League of New York 1992; "Preserving the Past" 1991; Smith 1992; Special Report 1992; Taylor 1992). A single-issue focus provides little room for compromise when the accessibility code conflicts with other building code provisions, the Secretary's Standards, or with existing conditions in older or historic buildings. For example, if the state code calls for clear passageways of 36 inches but an existing hallway is only 35 inches wide and bounded by a structural wall, the access mandate may be to tear out the wall and widen the passage by one inch. If a three-story building has a ground floor storefront with two apartments on the floors above, an elevator may be required, even though the $50,000 cost is prohibitive and means that the building is not likely to be rehabilitated. Or, if a decorative light fixture is less than seven feet off the access path but projects more than four inches, the historic fixture may need to be moved, even if it presents no real obstruction or hazard.

The Americans with Disabilities Act provides a "safety valve" with regard to its requirements for the rehabilitation of historic buildings. There are alternative minimum standards for accessible routes, accessible entrances, toilets, signage, etc. Older and historic buildings can almost always be made accessible with little loss to the historic significance if there is the flexibility to do so in a compatible manner. There is a consultation process—regardless of whether the project is subject to Section 106—to reach a solution, and it is rare that a solution is not found.

The greatest challenge is not the ADA standards themselves but the layering of those standards with state access codes, building codes, and preservation standards and the multiple reviews required. There is a continued need for flexibility and "code-equivalency" or "performance" standards. One possible solution to be explored would be a "single" consultation process to handle all aspects of rehab—a one-stop shopping center for compliance.

ACCESSIBILITY CODES: BARRIER ANALYSIS

Nature of the Barrier

The accessibility code is a public regulation. While it is a vital application of federal and state regulation to protect civil rights and promote an important social goal, it nonetheless is a regulation that can sometimes frustrate rehab. Adding to the difficulty is the inherent technical nature of the accessibility codes and the need for adequately trained enforcement personnel. Further contributing to the problem is that responsibility for the accessibility code may be in a different department than the regular building code. In the case of state law, the accessibility

code may be a completely separate mandate, which fractures smooth implementation of both requirements.

Incidence and Severity of the Barrier

The accessibility code is typically a greater barrier to rehab in the following situations:

1. *Projects with small-sized units.* It can be difficult to meet accessibility requirements in SRO units because of the relatively small size of the units. Accessibility standards will require large bathroom facilities and, sometimes, larger overall units than otherwise desirable.

2. *Small or incompatibly configured floor plates.* Accessibility can also prove difficult where existing elevator shafts are too small for appropriately sized elevator cabs and when stairwells do not already provide areas of safe refuge.

3. *Challenging topography and historical patterns of development.* Cities with highly sloped streets and a historical pattern of full-lot coverage, such as Seattle, can face extra challenges in meeting the access mandate, particularly for rehabilitation.

4. *Especially "challenging" rehab projects.* Building codes, historic preservation codes, and other mandates make complying with access codes more challenging. Where a project involves a change of use or mixed-use projects, compliance becomes more difficult.

5. *Inflexible mandates.* The ADA provides for a consultation process and affords public officials discretion to resolve vexing accessibility problems, including alternative minimum standards. Where code officials, however, will not negotiate, a project may wind up being economically infeasible.

Accessibility regulations provide a vital social function—yet they can result in issues for rehab. By requiring elements and actions that may be incompatible with the existing layout, configuration, and floor plate of the building, the accessibility code can increase renovation costs. Delays during an appeal process will also drive up costs. Yet, in most instances, these issues are a moderate problem.

CONSTRUCTION STAGE REHAB BARRIER— DAVIS-BACON WAGE REQUIREMENTS

DAVIS-BACON WAGE REQUIREMENTS: BARRIER PROFILE

Background

The Davis-Bacon Act was passed during the Great Depression principally to support the labor movement, and, in so doing, prevent the exploitation of workers in a period of high unemployment. It requires the payment of "prevailing wages" on federally assisted construction projects and has been attached to almost every major federal construction program since. An act containing the Davis-Bacon provision is known as a Davis-Bacon Related Act or DBRA. For

federally assisted residential projects administered by HUD, the DBRAs include the U.S. Housing Act of 1937, the National Housing Act of 1949, the Housing and Community Development Act of 1974 (which set up the Community Development Block Grant program) and the National Affordable Housing Act of 1990 (which set up the HOME program).

The "prevailing wage" in a given location is the most common wage paid for that trade or category of work. Additionally, projects coming under Davis-Bacon fall into two categories: commercial and residential. Commercial projects include mixed-use buildings (buildings with a commercial component) and residential buildings over four stories or served by an elevator. Smaller multifamily projects and single-family units are considered residential. Since the most common wages for specific trades are generally those earned by unionized workers, especially in commercial construction, the prevailing wage generally reflects union construction wages for the location. Therefore, commercial construction rates are considerably higher than residential construction rates, which are often no different from nonunion street rates.

The two primary HUD programs used for residential rehab are the CDBG program and the HOME program. The CDBG program requires projects of eight units or more to be subject to Davis-Bacon. For the HOME program, the figure is 12 units or more. Davis-Bacon regulations are administered at HUD by the Office of Labor Relations (OLR). The applicability of Davis-Bacon to HOME-assisted projects is complex but is generally governed by the 12-unit trigger for units assisted. Guidelines are provided in OLR's Letter No. LR-96-02.

Davis-Bacon affects both new construction and rehab, however, renovation is often more labor-intensive and therefore may be affected to a greater degree. (A counterargument is that property acquisition is a larger cost component in the rehab budget, relative to, for example, the land cost in new construction, and, as such, the labor cost component for rehab—and hence, the Davis-Bacon impact—is less consequential in rehab relative to new construction.) Additionally, inner-city rehab disproportionately requires subsidy to be economically viable, compared with new construction, which is a function of location, appraised value, and end-user market.

In terms of the effect of Davis-Bacon on renovation projects, there is no effect on projects of fewer than 12 units for the HOME program or on projects of fewer than eight units for the CDBG program. However, for projects of larger size, the additional cost can be substantial. In addition, there is a large amount of compliance paperwork that must be provided by the contractors and administered by HUD and local jurisdictions. Following are the most common effects in practice:

1. Prevailing wage requirements for larger projects classified as commercial (buildings of five stories or more or those containing elevators) dilute the benefits of the federal subsidy. The increased labor cost substantially offsets the benefit of the subsidy. In effect, before the subsidy can be applied to the actual costs of a project, a portion of it is consumed by the increased cost of prevailing wages—an additional cost that would not be incurred if the project had not been federally subsidized.

2. Many local jurisdictions display a preference for smaller projects. In the experience of the Enterprise Foundation, many local jurisdictions, even those in larger cities, will not

encourage projects that trigger Davis-Bacon because it dilutes the effect of their subsidy, which is another measure closely monitored by HUD. As a consequence, nonprofit developers are limited to smaller projects. That limitation inhibits their growth and prevents efficient economies of scale.

3. Fewer units are built. The effort required by smaller projects is similar to that required by larger projects in many respects. To derive the maximum benefit from a subsidy, more, albeit smaller, projects must be managed—an inefficient approach. Since the use of CDBG or HOME funding for parts of projects still requires that the entire project be subject to Davis-Bacon, mixed-income projects are affected as well. While OLR Letter No. LR-96-02 offers some guidance, it is very complicated to structure a project of size that includes some HOME funds but does not, as a result, trigger Davis-Bacon for the entire project.

4. Smaller, neighborhood-based contractors are at a disadvantage, even as subcontractors. Since the administrative burden on contractors is high, smaller organizations often cannot provide the required compliance reporting, which eliminates them from the market. Many jurisdictions and nonprofits have as one of their goals the development of local economic enterprise and Davis-Bacon is a significant barrier to that goal as well.

5. Contractor issues. Construction bids for residential construction, where prevailing wages may not be significantly different from street wages, will still be higher than necessary because companies that have the "back room" ability to handle the administration carry an overall larger overhead, which is included in the bid. Because all contractors bidding on a residential Davis-Bacon project would typically be in this category of organization, they remain competitive with each other.

The case studies are illustrative. A developer interviewed in the Chicago case study reported that prevailing wage requirements increased rehab costs by 30 percent to 40 percent, particularly on a rehab project that would be well suited to a small general contractor. Union contractors are most often used by the developer because of the size and location of most of the projects his company undertakes. However, even some union crews are not usually paid what are considered to be prevailing wages in Chicago under the Davis-Bacon Act.

One member of the resource group indicated that "Davis-Bacon has been a real problem when we have to use commercial rates instead of the residential." This individual gave an example of a project in Wichita, Kansas, that called for the rehab of an entire city block comprising seven structures of varying heights (from two to five stories). The first floor of each building was commercial and the upper stories were residential. The cost breakout of the project consisted of the following:

1.	Residential–rehab	68%
2.	Residential–new construction	18%
3.	Ground-level commercial	3%
4.	Residential parking levels	9%
5.	On-grade parking–commercial/residential	2%

The project was originally classified as commercial and, under Davis-Bacon, the developer was told to use commercial wage rates. That would have been quite expensive. After the developer presented the cost breakout figures, the project was reclassified as residential.

A developer seeking a subsidy to make a project viable will find that he or she has incurred a considerable burden to ensure that Davis-Bacon is determined correctly and administered by the contractors. The developer can be liable for suit involving the entire labor force on a project if it is later determined that Davis-Bacon was not correctly administered. In the Chicago case study, the representative of Hispanic Housing reported that ". . . there is hidden cost in the educating, training and compliance issues related to the regulations that go beyond the more measurable cost of prevailing wages.

DAVIS-BACON WAGE REQUIREMENTS: BARRIER ANALYSIS

Nature, Incidence, and Severity of the Barrier and Potential Ameliorative Actions

Davis-Bacon creates a significant barrier to rehabilitation. The increased costs imposed by Davis-Bacon compound the problems related to the many other specific to rehab and the need for federal subsidy to offset them. The projects most in need of subsidy are typically those serving lower-income families in disadvantaged areas and, quite simply, the increased cost means less real subsidy or, to put it another way, fewer units produced for the same subsidy.

In the Chicago case study, ". . . all of those interviewed agreed with the purposes of Davis-Bacon but many found that the regulation increased costs unnecessarily in smaller projects where local, non-union trades people would traditionally be employed." People do not want to see their projects built on the backs of exploited labor, and many would agree that in an era such as the Great Depression, exploitation was a real threat. However in these times, many would say that the labor market for construction is tight enough to withstand exploitation pressure. From this it would follow that the Davis-Bacon Act is no longer necessary to ensure fair wages for construction labor. That conclusion, however, poses a difficult political problem. The labor movement is still a strong force in American politics, and Davis-Bacon is considered a key policy statement by the federal government as well as a regulation beneficial to labor. No effective challenge has yet been mounted and no alternative way to protect workers' rights is being considered. There is virtually no one in the development community who would not welcome a less costly alternative to the Davis-Bacon requirements.

OCCUPANCY STAGE REHAB BARRIER—RENT CONTROL

RENT CONTROL: BARRIER PROFILE

Background

Rent control, the public limiting of contractual occupancy fees for private housing units in rental tenure (Barretto 1986, 11), has been imposed in the United States for nearly a century. During this period, its incidence has ranged from near universal to much more selective. There has also been a fundamental shift in the nature of rent control from "strict," or first-generation, to "moderate," or second-generation, rent controls (Barretto 1986, 43). This is not just a change in

nomenclature but a reflection of a fundamental alteration in the nature and impact of rent regulations. The analysis below presents a brief historical chronology and discusses the changing nature of rent regulations from first to second generation.

The first rent controls in the United States were passed during World War I (Downs 1988). With this wartime increase in demand for housing, especially in key cities and defense installations, came the call for, and enactment of, first state and then federal rent controls. With the signing of the Armistice ending World War I, however, rent regulations were phased out.

With the advent of World War II, there was a resumption of federal and then state rent controls. Although the war ended in 1945, federal rent controls continued until the early 1950s (U.S. Department of Housing and Urban Development 1991, 3). This period also saw the implementation of state and local rent restrictions. For example, by 1948, 10 states and 10 cities had adopted rent controls (Barretto 1986, 38). By 1956, however, with the exception of several jurisdictions in New York State, rent control by state and local governments ended in the United States as rent control had lapsed at the federal level.

Modern rent regulations—second-generation controls—were instituted in the early 1970s. The initial impetus was from the federal government (Levin 1981, 2), namely an attempt in the early 1970s to reduce inflation by freezing prices (including rents). By 1973, federal rent regulations were lifted. Although federal controls lapsed, local and state rent controls did not, and numerous jurisdictions in the 1970s either continued existing provisions or initiated new rent regulation provisions.

As of the early 1990s, it was estimated that approximately one-tenth of all rental housing in the United States—approximately 2.8 million units—was covered by local or state rent control (U.S. Department of Housing and Urban Development 1991, 1) (Forty percent of the 2.8 million housing units were in New York City; one-sixth were in Los Angeles). Rent control was found in six states (California, Connecticut, Maryland, Massachusetts, New Jersey, and New York) and in the District of Columbia. At that time, approximately 200 jurisdictions had controls, approximately half of them in New Jersey. A sampling of jurisdictions with rent controls as of the early 1990s included San Francisco, Los Angeles, San Jose, and Santa Monica in California; Bridgeport, Hartford, and Stamford in Connecticut (Fair Rent Commissions); the District of Columbia; Boston, Brookline, and Cambridge in Massachusetts; and New York City, Buffalo, approximately 50 communities in Nassau and Westchester counties in New York State; and approximately 100 communities in New Jersey (U.S. Department of Housing and Urban Development 1991, 37).

During the 1990s, the incidence and application of rent control waned. Landlords in New York City won concessions; a Massachusetts referendum eliminated local rent controls that had existed in the cities of Boston, Brookline, and Cambridge; and the California legislature mandated that localities with rent controls allow landlords to raise rents when rent-controlled units were vacated (Keating 1998, 5).

In examining the history of rent regulations, a distinction is typically made between the first-generation and the second-generation regulations. The former include, for example, the World

War I and World War II ceilings on rents; the latter include the crop of controls that have emerged since the 1960s. In a similar vein, the evolution from first- to second-generation regulations involved a substantive change from "restrictive" to "moderate" rent controls. The first-generation controls tended to be restrictive while the second-generation controls have been overwhelmingly less restrictive.

Under first-generation, or restrictive controls, rents are often frozen or subject to minimal increase. The emphasis is solely on protecting the interests of the tenant. By contrast, under second-generation, or moderate regulations, there is a greater balance of the interests of tenant and landlord (Gilderbloom and Appelbaum 1988, 129). Rent increases are permitted, but the tenant is protected from untoward rises in costs. Owners are allowed incomes to maintain and retain their economic investment. There is a constellation of specific programmatic features with respect to rent control coverage and allowed rent increases that distinguish moderate from restrictive rent controls.

Coverage. As the objective of restrictive controls is to guard the tenant against any or all-but-minimal rent increases, these regulations tend to be inclusive in terms of the housing that is regulated. In contrast, the moderate controls have less-encompassing coverage. These are typically building size exemptions, for example, excluding a single-unit structure from rent control. In addition, moderate controls often exempt new construction from regulation and/or allow for at least some type of vacancy decontrol.

Provisions for rent increases. Strict regulations freeze rents or allow for a set minimal percentage increase that is unrelated to the costs of operation. In a similar vein, there are limited (or no) "pass-throughs" of periodic major expenses (e.g., capital improvements) or increases in significant outlays (e.g., property taxes). Additionally, the restrictive controls do not include, or have only limited, "fair return" or "hardship provisions." The former are provisions to allow property owners an adequate rate of return; the latter, special dispensation (e.g., added rent increases) when property owners encounter economic difficulties.

Moderate controls, by contrast, are more open to the need to allow rent increases that track expenditures for proper building operation, maintenance, and improvement, and for the landlord to receive a reasonable economic return. Increases in rents are allowed to recover expenses or are related to increases in costs as reflected in such indices as the consumer price index. To encourage continued building upgrading and care, "pass-throughs" are allowed for rehabilitation and other extraordinary outlays. There are additional fair return and hardship provisions.

How Rent Control Affects Rehab

First-generation, or strict, controls would discourage rehab because they typically would not allow sufficient rent increases to give sufficient return on the renovation investment. The picture is less clear with respect to today's second-generation, or moderate, rent controls. In theory, these controls would allow sufficient rent increases to justify the capital outlays. The question is whether that occurs in practice.

It is beyond the reach of this study to examine rent control in depth. However, we can report on already conducted research. The evidence here is somewhat mixed. For example, a 1991 article

in the *Journal of the American Planning Association* reviewed two decades of literature and concluded the following (Appelbaum, Dolny, Drier, and Gilderbloom 1991).

> Numerous empirical studies have been conducted on the effects of moderate rent control on rental housing investment. . . . A comprehensive review . . . finds that such controls have not caused a decline in construction, capital improvements, maintenance, abandonment, or demolition of controlled units relative to non-controlled ones. This is because of the nonrestrictive nature of moderate controls. . . . Rent controls eliminate extreme rent increases, but they do not eliminate the profits necessary to encourage investment in private rental housing.

Other analyses are less sanguine or conclusive. They show that rent regulations contribute somewhat to tenant immobility, that they cause multifamily property values to increase less rapidly, and that they have no discernible influences (Barreto 1986; Downs 1988). In still other cases, the conclusion is that the evidence is inconclusive; i.e., that a "final" judgment regarding the impacts of rent control cannot yet be made based on the empirical data and investigations to date (U.S. Department of Housing and Urban Development 1991).

For example, a national review of the rent control literature by Anthony Downs (1988) concluded the following:

1. Repeated studies of temperate rent controls in the United States provide no persuasive evidence that such controls significantly reduce new construction here. Empirical studies indicate that stringent rent controls cause more deterioration in rental units than would occur without controls. However, the evidence concerning the impact of temperate controls is more ambivalent. Some studies show that such controls reduce maintenance; other studies indicate they do not.

2. Evidence shows that tenant mobility tends to decline under rent controls, especially under stringent controls.

3. Rent controls impose several types of economic losses upon the owners of rental housing units in order to provide benefits to tenants.

In short, Downs interprets the data from the rent control studies as conclusive evidence that stringent controls are potentially more harmful, those moderate controls, which have fewer discernible effects or, at the most, mixed effects. While in many cases there is either no evidence or only weak evidence of adverse effects (e.g., on housing quality and production), in some cases (e.g., impact on property owners and tenant mobility), Downs finds that moderate controls do have some negative consequences.

A 1991 HUD study (U.S. Department of Housing and Urban Development 1991, iv–vi) also was critical of stringent rent control, but at the same time, alluded to the inherent difficulty of

examining the effects of moderate rent controls and the inconclusive nature of moderate rent control investigations to date:

> It is fairly difficult to measure housing quality empirically and, therefore, difficult to measure the extent to which rent control affects housing quality . . . . A recent study of New York City found that rent-controlled units were more likely to deteriorate . . . than units not subject to control. This appears to be the most direct and most rigorous study undertaken to date. Other empirical evidence is less direct and less conclusive. . . . More research employing improved methods and better data is desirable to develop conclusive empirical findings.

In short, there are both common and disparate elements with respect to the literature concerning the effects of rent control. There is consensus that restrictive controls, such as the historical first-generation regulations or controls that continued in that mode (e.g., rent control in New York City), had adverse consequences for housing. Second generation controls have been much more benign; only a handful of studies have alluded to some minor negative effects.

Local variability in specific rent control provisions bear significantly on the effect of this regulation on rehab. An interview with a resource group member in New Jersey elicited the following comment:

> Rent control and rehab in New Jersey plays out in varied ways. New construction is exempt (from rent control). Existing housing is controlled in about a sixth of the state's towns. Some town controls allow a reasonable return on rehab. In others, it [rent control] is a nightmare.

RENT CONTROL: BARRIER ANALYSIS

Nature, Incidence, and Severity of the Barrier

Rent control is a public regulation. On a national basis, relatively few municipalities have such controls. Because of its low incidence, and since second-generation moderate controls are generally somewhat supportive of raising rents to fund capital improvements, we rank rent control as a minor barrier to renovation.

OCCUPANCY STAGE REHAB BARRIER—PROPERTY TAX

PROPERTY TAX: BARRIER PROFILE

Background

Local governments finance their operations with a mosaic of extralocal and local sources. Extralocal sources pertain to intergovernmental transfers from the state and federal governments (e.g., CDBG from the federal government and school aid from the state); local sources comprise a variety of user charges and taxes.

Local jurisdictions use three primary types of taxes: property tax, sales tax, and income tax. Of the three, the property tax is the most significant (Peterson 1973).

The property tax is a levy on wealth held in the form of property. Property is divided into two main categories—real and personal. Real property consists of land and the improvements on it, including structures. All other property is considered personal property. Personal property includes both tangible (e.g., machinery and furniture) and intangible (e.g., stocks and bonds) items. Legally, the property tax base in a particular state may include all or some of these property categories. Practically, however, the tax base is almost always significantly composed of real property.

The property tax is the single most significant source of local government income. There are a number of reasons for the heavy reliance on property tax. First, it is a significant revenue raiser. Second, the receipts are reasonably stable and predictable and allow governments to budget well in advance. Third, the tax is hard to evade, since real property, the major component of the property tax base, is difficult to conceal. Finally, by reasoning that local public services enhance a community and thereby raise property values, it can be concluded that the tax to some extent charges those who benefit from the services it provides.

How the Property Tax Affects Rehab

A property owner may be deterred from rehab because of the prospect that the restored property will be reassessed with a consequent property tax increase (International Association of Assessing Officials 1977). George Sternlieb's (1966) study of tenement owners in Newark revealed that their fear of upward reassessment inhibited them not only from making improvements but from performing such routine maintenance tasks as painting the exterior of their properties. Others have discussed similar impacts (Sporn 1959).

Newark and many other local jurisdictions have in the last few decades offered property tax incentives precisely to encourage renovation (Delbott 1978; Eilbott and Kempey 1978; Griffith 1980; Heinberg 1971; Price Waterhouse 1974; Reigeluth 1979b; Sunley 1971; HUD 1973). These programs accord favorable property tax treatment for buildings undergoing rehab. The provisions range from reducing the existing property taxes to not reassessing the property or only partially increasing the assessment of the renovated property. All of these treatments convey property tax relief, for rehabilitation improves value and should therefore result in an increased rather than a decreased or frozen property assessment and tax obligation.

Our case studies and telephone interviews did not find the property tax to be a significant barrier to affordable rehab, in large part due to the various property tax incentives noted above. Even where such measures were not in place, an increased tax bill following renovation was viewed as understandable and tolerable. It was also not an increased burden for rehab per se because new construction would also be subject to the same property tax.

PROPERTY TAX: BARRIER ANALYSIS

Nature, Incidence, and Severity of the Barrier and Potential Ameliorative Actions

The property tax is a public levy. Because of the reasons noted above, we consider the levy to be a minor barrier to renovation.

Ameliorative actions include the following:

1. Adopt property tax incentives for rehab. Following the example of Newark and other jurisdictions, incentives might range from reducing the existing taxes to not reassessing a property or only partially increasing the assessment.

2. Improve the accuracy of the assessment system. Jurisdictions subjecting rehab to ad valorem taxation need to ensure that owners who rehabilitate their properties pay a fair measure of added taxes; but not disproportionately more than that fair measure.

TECHNICAL ANALYSES

CHAPTER 3
Estimate of the Need for and Affordability of Housing Rehab in the United States

INTRODUCTION

This chapter estimates the need for and the affordability of housing rehab in the United States. Prior literature on the topic is considered and the methodology employed in estimating renovation need, cost, and affordability is described. Results and implications are presented and the limitations of the current investigation are noted. Our findings are preliminary and represent the start of a process that will be refined over time.

PRIOR LITERATURE

Most prior studies of rehab need and affordability focus on a single building or a group of buildings. For example, in their *Tenement Landlord* investigations, George Sternlieb and Robert W. Burchell considered whether Newark multifamily housing could be renovated given prevailing construction costs and owner and tenant resources (Sternlieb 1969; Sternlieb and Burchell 1972). Michael Stegman examined similar issues with respect to older Baltimore housing (Stegman 1973). This earlier case study literature does not lend itself to the estimate of nationwide renovation need and affordability.

There is also a body of literature that considers when rehab is economically more desirable than new construction (Brochner 1978; Segsworth and Wilkinson 1967). Much of this work builds from the A. H. Schaaf and Lionel Needleman investigations of the 1960s (Schaaf 1960, 1969; Needleman 1965). This type of literature is largely theoretical, however, and focuses on economically optimal housing investment. Our intent is to empirically identify when housing rehab is needed and when it can be afforded.

It is reasonable, given our interest in housing rehab, to consider the literature on the condition of housing in the United States. In the 1960 census, enumerators attempted to identify physically deficient housing from field surveys. Follow-up investigation, however, cast doubt on the reliability of this approach (U.S. Bureau of the Census 1967), and the decennial census ceased measuring physically substandard housing.

Various measures of housing quality are included in the *American Housing Survey* (AHS). Researchers often turn to the AHS when measuring housing condition. The Joint Center for Housing Studies defines a "severely inadequate unit" as an AHS-identified housing unit with severe problems in plumbing, heating, electrical systems, upkeep, or hallways (Joint Center for Housing Studies 1999, 36). The U.S. Department of Housing and Urban Development (2000), in identifying worst-case housing needs, includes what it calls "inadequate housing"—housing with severe or moderate physical problems as defined in the AHS.

The AHS housing-quality data is a helpful reference when trying to estimate rehab need. A 1981 study by Abt Associates (hereinafter Abt study) used AHS data and housing inspectors to

measure and predict rehab need (Phipps, Feins, and Kirlin 1981). The Abt study was applied on a pilot basis to 290 dwellings in Boston, Massachusetts.

There is also a relevant body of literature that examines different rehab levels and their respective costs. Rehab can encompass many different activities. One early study differentiated between four levels of rehab: code compliance, minimal rehab, modernization, and remodeling (New York Temporary State Housing Rent Commission 1960). Most investigators prefer a three-tier division: (1) minor rehab or repair, (2) moderate rehab, and (3) substantial rehab (Kristof 1967; Sternlieb and Listokin 1976). Not surprisingly, costs differ significantly depending on the scope of rehab; repairs will tend to be relatively modest in cost, while substantial rehab can be almost as expensive as a new housing unit.

Estimating the precise cost of renovation is more art than science, and the literature on this subject is sparse. A statistical approach to cost estimating has been attempted in a few studies. An example is Albert Schaaf's formulation of a multiple-regression equation for estimating rehab expenses based upon a structure's deteriorated condition, specifically, its American Public Health Association (APHA) penalty scores (Schaaf 1960).[1] APHA data are not widely available, however, nor is other information from which a reliable rehab cost–predictive model can be formulated. More typical than a macrostatistical approach is a building-by-building estimate of rehab cost by knowledgeable construction officials, who often use industry cost guides, such as those published by Marshall and Swift (1999). The building-by-building approach does not lend itself, however, to an estimate of rehab need, cost, and affordability nationwide.

This review of the literature helps frame our approach, which is detailed below.

PILOT METHODOLOGY FOR ESTIMATING HOUSING REHAB NEED, COST, AND AFFORDABILITY NATIONWIDE

Our analysis is based on the 1995 AHS and other sources. The methodology was developed in consultation with the Enterprise Foundation and employs the following steps.

1. From the housing literature, we posit several rehab interventions, ranging from the least extensive, labeled "minor rehab," to the most extensive, labeled "substantial rehab." A midrange strategy is labeled "moderate rehab." Not every housing unit immediately needs minor rehab, moderate rehab, or substantial rehab—at least as calibrated in this study; in that instance, inaction, which we label "no (rehab) intervention," is warranted.

2. The next step is to estimate which renovation strategy (minor, moderate, or substantial 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 specify what needs to be remediated. As that on-site investigation is costly, time-consuming, subject to error, and, in any event, not practical in our nationwide 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.

[1]The APHA assigned penalty scores for housing deficiencies: for example, six penalty points for inadequate sewer connections, eight penalty points for inadequate washing facilities.

3. The AHS includes many descriptors of housing quality. For example, a housing unit might have "severe" or "moderate" physical problems (these conditions are defined in exhibit 3.1.). Thus, a severe electrical problem is indicated by a particularly incapacitating condition, such as a unit with no electricity or a multitude of electrical "failures" (e.g., three blown fuses in the last 90 days) or electrical "deficiencies" (e.g., exposed wiring). There is no obvious empirical relationship between these various AHS housing descriptors and the need for rehab (or, for that matter, the cost of the renovation). 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 using the AHS's overall and individual item descriptors of housing condition (exhibit 3.2.). The sorting strategy was developed by CUPR and the Enterprise Foundation. The most extensive renovation, substantial rehab, is assigned to housing units with the worst (i.e., severe physical) problems or to those that exhibit so many failures and deficiencies (at least four) that the most pressing housing problems are suggested. We add the four or more failures and deficiencies to the severe physical problem designation (which itself includes individual failures and deficiencies) to flag units that appear to have much physical distress even if they do not meet the AHS definition of severe physical problem (exhibit 3.1).

   Moderate rehab is linked with housing units that exhibit moderate physical problems or three individual failures or deficiencies. Minor rehab is appropriate for units that are not characterized by severe or moderate physical problems but that nonetheless exhibit some (one or two) housing-unit failures or deficiencies. Only those housing units that avoid any of the above AHS-indicated measures of inadequacy are identified as needing "no rehab."

5. The next step is to determine whether the rehab is affordable. As was the case in assigning the appropriate renovation intervention, we can only approximate affordability. First, we relate the "current" (pre-rehab) relationship of monthly housing cost to income for all occupied units in the AHS. Once a housing unit has undergone minor, moderate, or substantial rehab, its monthly cost will increase. We estimate this post-rehab housing expenditure, which is then related to the income available to the occupants of the housing units requiring renovation. The costing and affordability analysis process is shown in steps 6 through 12 below.

EXHIBIT 3.1
Severe and Moderate Physical Problems as Defined in the 1995 AHS

Severe Physical Problems. A unit has severe physical problems if it has any of the deficiencies cited in the following five categories.

Plumbing: The unit lacks hot or cold piped water or a flush toilet, or it lacks both a bathtub and a shower, all inside the structure for the exclusive use of the unit.

Heating: The unit was uncomfortably cold in the past winter for 24 hours or more because the heating equipment broke down, or the heating equipment broke down at least three times in the past winter for at least six hours each time.

Electric: The unit has no electricity or exhibits all of the following three electric problems: exposed wiring; a room with no working wall outlet; and three blown fuses or tripped circuit breakers in the last 90 days.

Upkeep: The unit has any five of the following six maintenance problems: water leaks from the outside, such as from the roof, basement, windows, or doors; leaks from inside the structure, such as pipes or plumbing fixtures; holes in the floors; holes or open cracks in the walls or ceilings; more than 8 inches by 11 inches of peeling paint or broken plaster; or signs of rats or mice in the last 90 days.

Hallways: The unit has of the following four problems in public areas: no working light fixtures; loose or missing steps; loose or missing railings; and no elevator.

Moderate Physical Problems. A unit has moderate physical problems if it has any of the deficiencies cited in the following five categories cited above.

Plumbing: On at least three occasions during the past three months, or while the household was living in the unit if less than three months, all the flush toilets were broken down at the same time for six hours or more.

Heating: The unit has unvented gas, oil, or kerosene heaters as the primary heating equipment.

Upkeep: The unit has any three or four of the six maintenance problems listed under severe physical problems.

Hallways: The unit has any three of the four hallway problems listed under severe physical problems.

Kitchen: The unit lacks a kitchen sink, a refrigerator, or a stove inside the structure for the exclusive use of the unit.

Source: U.S. Department of Commerce and U.S. Department of Housing and Urban Development 1999, A-13, A-14.

EXHIBIT 3.2
AHS Housing-Unit Condition and Suggested Rehab Strategy

Rehab Strategy	AHS housing unit condition
Substantial rehab	Severe physical problems *or* at least *four* individual housing-unit failures or deficiencies[a]
Moderate rehab	Moderate physical problems *or three* individual housing-unit failures or deficiencies[a]
Minor rehab	Severe or moderate physical problems *not* indicated *but* presence of one to two housing-unit failures or deficiencies[b]
No (rehab) intervention	*None* of the above AHS housing-unit conditions

[a]As defined in exhibit 3.1.
[b]There are many such AHS descriptors. With the assistance of the Enterprise Foundation, we selected what were deemed to be more critical conditions. These include breakdown in past three months of water supply/sewage disposal; fuses or breakers blown in the past three 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 the past three months, holes in the 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, while others differ from the individual failures and deficiencies that define severe and moderate physical problems (see exhibit 3.1).

6. Exhibit 3.3 shows the nationwide per-housing-unit cost of effecting the various levels of rehab. The figures shown are Enterprise Foundation estimates.

EXHIBIT 3.3
Costs of Effecting Rehab

Rehab Strategy	Cost Per Housing Unit
Minor rehab	$7,500
Moderate rehab	$25,000
Substantial rehab	$75,000

7. The three renovation intervention costs are adjusted by linking Marshall and Swift's (1999) geographic cost indices to the four AHS regions (Northeast, Midwest, South, and West). Thus, a moderate rehab might cost $30,000 in the Northeast but $20,000 in the South.

8. The various renovation expenditures are likely to be financed over time, rather than paid outright. Financing terms typically vary by the extent of the outlay (i.e., a longer repayment period for larger loans) and whether or not the improvement is made by a homeowner or an investor (i.e., homeowners pay less). In consultation with the Enterprise Foundation, we developed a variable financing matrix, shown in exhibit 3.4, from which we assign a principal and interest (PI) cost sufficient to pay for the rehab. This PI is added to the current (pre-rehab) housing cost indicated for each occupied housing unit in the AHS.

EXHIBIT 3.4
Assumed Financing Terms for Rehab Expenditures

	Financing Terms	
Rehab Intervention	**Homeowner**	**Renter**
Minor	6 yrs.—10%	6 yrs.—11.5%
Moderate	10 yrs.—10%	10 yrs.—11.5%
Substantial	25 yrs.—7%	25 yrs.—8.5%
Given the above terms, the added monthly payments per $1,000 of rehab intervention are as shown below.		
Rehab Intervention	**Homeowner**	**Renter**
Minor	$18.53 per $1,000	$19.30 per $1,000
Moderate	$13.22 per $1,000	$14.06 per $1,000
Substantial	$7.07 per $1,000	$8.06 per $1,000

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*). Taxes will typically increase according to the property tax rate found in the AHS for each housing unit. For example, a $75,000 substantial rehab would 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 (pre-rehab) 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 (e.g., the R-rating of a home's insulation pre-rehab versus post-rehab). Thus, we can only estimate the change in utility expense ensuing from renovation. We do that by following the field experience of The Enterprise Foundation: greater levels of energy efficiency are realized with more extensive rehab.[2]

10. The calculations in steps 5 through 9 allow a comparison of current (pre-rehab) housing cost to the post-rehab housing expenditure. The latter changes because PI and T expenses increase and U decreases[3] 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 (pre-rehab) versus post-rehab housing expenditure for every occupied housing unit in the United States monitored by the AHS.

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

Rehab Intervention	% Reduction in Monthly Utility Costs
Minor	-10%
Moderate	-30%
Substantial	-50%

[3]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.

11. To make the current versus post-rehab housing cost comparison more meaningful, we relate these respective expenses to a percentage of the current income of the occupants of the housing units—(housing expense to income ratio, or HEIR)—as reported by the AHS. A high percentage of HEIR will indicate an unaffordable or excessive cost situation. We use a 40 percent HEIR cutoff rather than the traditional front-end housing expense to income threshold of 30 percent because the AHS housing cost includes utility expenses, whereas traditional housing expense to income ratios do not factor utility outlays. Thus, if the post-rehab housing cost is 40 percent of income or higher, it is considered unaffordable or excessive.

12. In estimating rehab need, we focus on occupied, year-round housing. We also focus on permanent housing as opposed to mobile homes. We focus on occupied housing because many of the AHS variables used in estimating the rehab need, cost, and affordability (e.g., housing tenure, utility cost, and occupant income) are unavailable for unoccupied housing. We focus on year-round housing for similar reasons, and because the AHS housing condition data is more readily related to this stock as opposed to, for example, vacation homes where a "rougher" housing ambience may be tolerable, at least temporarily. We also do not consider mobile homes because we believe that our data does not capture the rehab need for that type of unit. In focusing on occupied, year-round permanent housing, we acknowledge that the total United States housing rehab need is not being counted and that the omitted housing may very well have a significant need for renovation. Therefore, our research must be viewed as a beginning in the process of comprehensively tracking the national need for rehab.

FINDINGS

Estimated Rehab Need for All Studied Housing Units

As of 1995, there were 109 million housing units in the United States. As noted, our estimate of rehab need focuses on occupied housing units that are identified in the AHS as year-round houses or apartments. Thus, from the 109 million total, we delete 3 million seasonal units, 9 million vacant units, 8 million mobile homes, and several other categories (for example, 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 about one in 20 (4.7 percent), require substantial rehab; 8.2 million housing units, or about one in 10 (9.9 percent), need moderate rehab; approximately 25.1 million housing units, or about three in 10 (30.5 percent), can make do with minor rehab; and 45 million housing units, or slightly more than half (54.8 percent), require no rehab (exhibits 3.5 and 3.6).[4]

[4]In fact, every housing unit needs some measure of repair each year. Our determination of rehab need, based on AHS data, is a crude gauge that better captures the need for improvements, replacements, and alterations as opposed to ongoing repairs and maintenance. We are also not including the rehab need for unoccupied housing, mobile homes, vacation homes, and certain other types of units. Thus, our estimates of rehab need in this section are very conservative and understate the true need for renovation.

It is important to reiterate that our calculations are gross estimates and that our investigation is a pilot study. The procedure used for flagging rehab need is reasonable, but it is *not* empirically based. For instance, while it is likely 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. The only way to verify this would be through field study, a recommendation discussed later. Also, as noted, we are not tracking the rehab need of unoccupied, seasonal, mobile, and certain other units.

Although we cannot empirically verify our estimate of rehab need at this time, we nonetheless tried to obtain feedback on our figures. The substantial rehab, moderate rehab, and minor rehab estimates were reviewed by 10 housing experts. These included state, local, and federal housing officials; representatives of housing industry associations; private remodelers; and nonprofit groups. Their feedback confirmed that our figures are "reasonable."

EXHIBIT 3.5
Estimated U.S. Rehab Need by Property Profile, 1995
(Number of Occupied Housing Units)

Property Profile	Rehab Intervention					
	Minor Rehab	Moderate Rehab	Substantial Rehab	Total Rehab Intervention	No Intervention	Total
Tenure						
Renter occupied	8,799,637	3,549,954	1,625,156	13,974,747	14,994,181	28,968,928
Owner occupied	16,261,898	4,609,022	2,272,035	23,142,955	30,050,599	53,193,553
Location						
All metropolitan	19,939,249	6,155,218	3,043,757	29,138,225	35,815,693	64,953,917
Central city	8,218,969	2,950,364	1,424,436	12,593,769	13,816,847	26,410,616
Suburbs	11,720,281	3,204,854	1,619,321	16,544,456	21,998,846	38,543,302
Nonmetropolitan	5,122,286	2,003,757	853,433	7,979,477	9,229,087	17,208,563
Region						
Northeast	5,186,127	1,541,527	972,821	7,700,474	9,736,002	17,436,476
Midwest	6,432,982	1,967,544	1,070,090	9,470,616	10,757,316	20,227,932
South	8,237,491	3,250,012	1,163,701	12,651,204	15,018,961	27,670,165
West	5,204,935	1,399,893	690,579	7,295,407	9,532,501	16,827,908
Income status[a]						
Very low income	5,202,980	2,278,567	1,123,178	8,604,725	9,920,727	18,525,452
Low income	3,715,112	1,349,486	626,757	5,691,355	7,223,382	12,914,738
Moderate income	2,684,428	861,906	423,029	3,969,363	4,924,551	8,893,915
Middle income	1,988,096	631,891	271,402	2,891,389	3,709,224	6,600,613
High income	11,470,920	3,037,125	1,452,825	15,960,869	19,266,895	35,227,764
Race						
Non-Hispanic white	19,400,985	5,552,235	2,638,703	27,591,923	36,017,113	63,609,036
Non-Hispanic black	2,772,678	1,481,755	731,606	4,986,039	4,243,760	9,229,798
Hispanic	2,042,058	856,505	378,893	3,277,456	3,235,473	6,512,928
Other	845,815	268,480	147,989	1,262,284	1,548,434	2,810,718
Age of unit						
1980–1995	4,753,736	892,904	419,673	6,066,313	10,353,629	16,419,942
1970–1979	5,273,167	1,306,980	665,341	7,245,489	10,001,250	17,246,739
1940–1969	9,337,824	3,324,117	1,520,735	14,182,676	16,507,225	30,689,901
1939 or earlier	5,696,808	2,634,974	1,291,441	9,623,223	8,182,675	17,805,898
All	25,061,535	8,158,975	3,897,191	37,117,701	45,044,780	82,162,481

Source: Authors' analysis of 1995 AHS data.

[a]Household income is differentiated as follows:

Household Income Category	Household Income Relative to Median Household Income
very low income	<0.5
low income	>0.5 but <0.8
moderate income	>0.8 to 1.0
middle income	>1.0 to 1.2
high income	>1.2

EXHIBIT 3.6
Estimated U.S. 1995 Rehab Need by Property Profile, 1995
(% of Occupied Housing Units)

Property Profile	Rehab Intervention (% of Occupied Housing Units)					
	Minor Rehab	Moderate Rehab	Substantial Rehab	Total Rehab Intervention	No Intervention	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[a]						
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	30.6	9.9	4.7	45.1	54.8	100.0

Source: Authors' analysis of 1995 AHS data.

[a]Household income is differentiated as follows:

Household Income Category	Household Income Relative to Median Household Income
very low income	<0.5
low income	>0.5 to <0.8
moderate income	>0.8 to 1.0
middle income	>1.0 to 1.2
high income	>1.2

We also tried to compare our results with those of other studies. We cannot find comparable national research. The closest effort employing AHS data to estimate rehab need was the 1981 Abt study described earlier. The Abt analysis was a pilot investigation in Boston and used 1981 AHS data. For the purposes of comparison, we apply the 1981 Abt approach to 1995 national AHS data and obtain the results shown in exhibit 3.7. We estimate that 4.7 percent of the nation's housing units require substantial rehab; the equivalent Abt figure, 5.3 percent, is close to our estimate. However, the results differ considerably with respect to moderate rehab. Here the application of the Abt procedure to current data gives an estimate of moderate rehab need (16.3 percent of occupied housing units) that is almost double our estimate (9.9 percent of occupied housing units). On an aggregate order-of-magnitude basis, however, the results for a pilot investigation bear a rough order of similarity. We estimate that about one-in-seven housing units need substantial or moderate rehab; the application of the Abt procedure to 1995 data yields an estimate of one-in-five housing units needing substantial or moderate rehab.

EXHIBIT 3.7
Comparison of 1995 Estimated Substantial and Moderate Rehab Need Nationwide (% of Occupied Housing Units)

Rehab Intervention	Rutgers–Enterprise Methodology Applied to 1995 AHS	1981 Abt Methodology Applied to 1995 AHS
Substantial rehab[a]	4.7%	5.3%
Moderate rehab[b]	9.9%	16.3%
Substantial or moderate rehab	14.6%	21.6%

Source: See text.
[a]For the Abt study, results are for housing units needing "major rehab."
[b]For the Abt study, results are for housing units failing "Section 8—low standards."

We examined the correlation between housing units in the United States identified in our methodology as needing either substantial or moderate rehab and those so designated by Abt. The correlation coefficient is 0.434 (with a 0.00001 standard error). For a pilot investigation of renovation need nationwide, that correlation is reasonably close. It shows that there is a broad, rough association between our approach and that of the Abt study conducted some 20 years ago.

We also estimated the dollar value of needed rehab investment. Nationwide, an estimated $623 billion of renovation (minor rehab, moderate rehab, or substantial rehab) is needed. We do not have a readily comparable figure of other dollar estimates of national rehab need.

The remainder of this chapter will explain our rehab estimates. First, differing rehab need is related to various housing-unit and household characteristics. Then the affordability of the indicated rehab need is detailed in a parallel two-step process: (1) affordability is examined for all housing units, and (2) affordability is examined by housing-unit and household characteristics.

Estimated Rehab Need by Housing Unit and Household Characteristics

Compared with the overall nationwide figures cited in the previous section, 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. For example, we estimate that 45.2 percent of all occupied housing units require some type of rehab. That rehab percentage increases to 54 percent for units occupied by non-Hispanic black residents and 50.3 percent for units occupied by Hispanic residents. An estimated 54 percent of housing units built in 1939 or earlier require some type of rehab—about 10 percent higher than the figure cited for all housing. Furthermore, while 7.3 percent of the pre-1939 units are considered in need of substantial rehab, the substantial rehab share drops to 2.6 percent for housing units built recently (i.e., 1980 through 1995). Units occupied by black households are estimated to require substantial rehab at twice the level of units occupied by white households (7.9 percent versus 4.1 percent). Differentiation in the needed level of renovation is also suggested by household income; 18.4 percent of housing units occupied by very low income households require substantial or moderate rehab, compared with 12.7 percent of housing units occupied by high-income households.

Estimated Rehab Affordability for All Studied Housing Units

There are 82.2 million occupied, non-mobile-home units in the United States for which the 1995 AHS housing-condition and housing-cost data necessary for our calculations are available. We can summarize the monthly housing cost of these housing units in the United States under two conditions: (1) current, or before any minor rehab, moderate rehab, or substantial rehab is effected, and (2) post-rehab (exhibit 3.8). The pre-rehab figures are those reported in the AHS; the post-rehab figures are those calculated by us as described earlier. The current median monthly housing cost is $564; after renovation, the median cost rises to $672.

Those figures alone reveal little. A more significant consideration is the monthly housing cost as a share of income. The higher that share, the more difficult it is to afford the housing cost. As noted earlier, we shall designate a monthly housing expense of 40 percent or more of income as excessive or burdensome.

The percentages-of-income figures are shown in exhibit 3.9. Currently, or without factoring added expenses for renovation, the median monthly housing cost as a percentage of current income is a low 20.8 percent; post-rehab, that median rises to 24 percent, still a rather low share. Focusing on the median masks the fact that many households have to commit a large portion of their resources to shelter. Currently, approximately 15 million housing units, or 18.4 percent of the 80.8 million total, have an excessive cost burden, as defined earlier. Households experiencing excessive burdens rise to 20.1 million, or 25 percent of the total, when factoring the added costs for rehab. Thus, there is an affordability gap even before considering rehab need, and that affordability problem is worsened if the estimated rehab is effected.

As we shall detail below, rehab affordability is an even greater problem for certain types of housing units and households.

EXHIBIT 3.8
Monthly Housing Cost: Current and Post-Rehab Intervention
(All Occupied Units)

Monthly Housing Cost	Number of Occupied Housing Units[a]	
	Current	Post-Rehab Intervention
Less than $100	2,896,415	1,498,618
$100 to $199	6,890,140	4,631,928
$200 to $249	4,850,645	3,229,942
$250 to $299	4,449,724	3,575,959
$300 to $349	4,411,792	3,849,269
$350 to $399	4,428,680	4,137,070
$400 to $449	4,390,309	4,012,986
$450 to $499	4,387,096	3,976,735
$500 to $599	8,164,296	7,688,250
$600 to $699	7,355,101	7,680,118
$700 to $799	6,088,354	6,751,973
$800 to $999	8,113,564	10,432,523
$1,000 to $1,249	6,172,848	8,037,447
$1,250 to $1,499	3,265,684	4,755,217
$1,500 or more	4,841,208	6,447,820
Total	80,705,856	80,705,856
Median monthly housing cost[b]	$564.0	$671.9

Source: AHS 95.

[a]Includes occupied housing units that are houses or apartments and for which the current and post-rehab monthly housing costs are available.

[b]Excludes no-cash rent.

EXHIBIT 3.9
Monthly Housing Cost: Current and Post-Rehab Intervention
(All Occupied Units)

Monthly Housing Cost as Percentage of Current Income	Occupied Housing Units[a]			
	Current		Post-Rehab Intervention	
	Number	%	Number	%
Less than 5%	4,971,981	6.2	3,213,051	4.0
5% to 9%	9,479,591	11.7	7,720,975	9.6
10% to 14%	12,468,207	15.4	10,360,488	12.8
15% to 19%	12,425,064	15.4	11,263,177	14.0
20% to 24%	10,232,077	12.7	10,067,164	12.5
25% to 29%	7,689,339	9.5	7,842,415	9.7
30% to 34%	5,205,932	6.5	5,938,979	7.4
35% to 39%	3,375,564	4.2	4,162,676	5.2
40% to 49%	4,166,673	5.2	5,143,864	6.4
50% to 59%	2,325,312	2.9	3,240,987	4.0
60% to 69%	1,484,151	1.8	2,038,706	2.5
70% to 99%	2,198,535	2.7	3,317,807	4.1
100% or more	3,162,826	3.9	4,874,963	6.0
Zero or negative income	1,520,605	1.9	1,520,605	1.9
Total	80,705,856	100.0	80,705,856	100.0
Excessive-cost units[b]				
- Number	14,858,102		20,136,932	
- Percentage	18.4		25.0	
Median monthly housing cost as percent of current income[c]	20.8%		24.0%	

Source: AHS 95.

[a]Includes occupied housing units that are houses or apartments and for which the current and post-rehab monthly housing costs are available.

[b]Units for which monthly housing cost is 40 percent or more of current household income.

[c]Excludes zero or negative income and no-cash rent.

Estimated Rehab Affordability by Type of Housing Unit and Household Characteristics

Rehab Affordability by Housing-Unit Tenure

Pre-rehab, renters in the United States currently spend less per month on housing ($535 median) than their homeowner counterparts ($601 median). Were minor rehab, moderate rehab, or substantial rehab effected as needed, monthly housing costs would rise to a median of $656 for renters and $689 for homeowners (exhibit 3.10). Renters would still be paying less. Of much greater import than the expenditure itself is what it represents as a share of income (exhibit 3.11). Pre-rehab, renters must commit a median of 27.4 percent of their income for housing; homeowners must commit a much lower 17.7 percent. This is explained by the fact that while homeowners pay more in absolute dollars for housing than renters, they have much higher incomes. That remains the case post-rehab. The median monthly housing cost as a share of current income rises to 33.1 percent for renters and 20.2 percent for homeowners (exhibit 3.11).

A disportionately high share of renters are cost burdened. That is true both pre- and post-rehab. Currently, 27.5 percent of renters (compared with 13.3 percent of homeowners) pay 40 percent or more of their income for housing. Were minor rehab, moderate rehab, or substantial rehab effected as needed, the percentage of excessively burdened renters would rise to 38.8 percent, or almost four in ten. That compares with the 17.2 percent of homeowners, or roughly one in six, who are cost burdened post-rehab. Thus, there is a significant affordability gap for renters. Many already face financial strain in paying for housing, and that situation is aggravated when renovation demands are addressed.

Rehab Affordability by Housing-Unit Location

Both pre- and post-rehab, monthly housing costs are lowest in nonmetropolitan areas and highest in the suburban portion of metropolitan areas (exhibit 3.12). In the central-city portion of the metropolitan area, monthly housing costs, both pre- and post-rehab, are lower than those in suburban areas by approximately 15 percent to 20 percent. Since incomes relative to housing costs are lowest in central cities, however, we find the highest incidence of cost burden there (exhibit 3.13). Pre-rehab, occupants of 23.2 percent of central-city housing units pay 40 percent or more of their income for housing. In comparison, occupants of 13.8 percent and 17.1 percent of nonmetropolitan and suburban housing units, respectively, pay 40 percent or more of their income for housing. Post-rehab, the incidence of excessively burdened households living in central-city housing units rises to more than three in 10 (31.4 percent). That compares with slightly more than two in 10 for their suburban (22.2 percent) and nonmetropolitan (21.3 percent) counterparts. Thus, many central-city residents are already facing financial strain in payment for housing; that situation would worsen if needed rehab were effected.

EXHIBIT 3.10
Monthly Housing Cost: Current and Post-Rehab Intervention
(All Occupied Units by Tenure)

	Number of Renter-Occupied Housing Units		Number of Owner-Occupied Housing Units[a]	
Monthly Housing Cost	**Current**	**Post-Rehab Intervention**	**Current**	**Post-Rehab Intervention**
Less than $100	2,348,034	1,183,152	548,381	315,465
$100 to $199	1,527,966	1,356,381	5,362,174	3,275,547
$200 to $249	970,452	550,416	3,880,194	2,679,526
$250 to $299	1,115,725	815,526	3,334,000	2,760,432
$300 to $349	1,592,256	1,065,610	2,819,536	2,783,659
$350 to $399	1,999,869	1,402,262	2,428,811	2,734,809
$400 to $449	2,312,833	1,620,112	2,077,477	2,392,874
$450 to $499	2,362,392	1,804,077	2,024,704	2,172,658
$500 to $599	4,308,690	3,782,164	3,855,606	3,906,087
$600 to $699	3,628,039	3,839,282	3,727,062	3,840,837
$700 to $799	2,517,848	3,133,998	3,570,506	3,617,976
$800 to $999	2,498,111	4,209,868	5,615,453	6,222,654
$1,000 to $1,249	1,488,957	2,722,795	4,683,891	5,314,652
$1,250 to $1,499	293,064	1,133,559	2,972,620	3,621,658
$1,500 or more	4,693	349,725	4,836,515	6,098,096
Total	28,968,928	28,968,928	51,736,929	51,736,929
Median monthly housing cost[b]	$535.0	$656.3	$601.0	$689.0

Source: AHS 95.
[a]Includes occupied housing units that are houses or apartments for which the current and post-rehab monthly housing costs are available.
[b]Excludes no-cash rent.

EXHIBIT 3.11
Monthly Housing Cost: Current and Post-Rehab Intervention
(All Occupied Units by Tenure)

Monthly Housing Cost as Percentage of Current Income	Renter-Occupied Housing Units[a]				Owner-Occupied Housing Units[a]			
	Current		Post-Rehab Intervention		Current		Post-Rehab Intervention	
	Number	%	Number	%	Number	%	Number	%
Less than 5%	2,026,200	7.0	1,119,849	3.9	2,945,781	5.7	2,093,202	4.0
5% to 9%	1,124,302	3.9	892,455	3.1	8,355,289	16.1	6,828,520	13.2
10% to 14%	2,979,104	10.3	2,113,771	7.3	9,489,102	18.3	8,246,717	15.9
15% to 19%	3,766,254	13.0	3,044,512	10.5	8,658,810	16.7	8,218,666	15.9
20% to 24%	3,689,877	12.7	3,232,164	11.2	6,542,200	12.6	6,835,000	13.2
25% to 29%	3,366,097	11.6	2,936,352	10.1	4,323,242	8.4	4,906,063	9.5
30% to 34%	2,389,344	8.2	2,528,926	8.7	2,816,588	5.4	3,410,053	6.6
35% to 39%	1,651,466	5.7	1,868,625	6.5	1,724,099	3.3	2,294,051	4.4
40% to 49%	2,199,096	7.6	2,622,677	9.1	1,967,577	3.8	2,521,186	4.9
50% to 59%	1,283,855	4.4	1,743,199	6.0	1,041,457	2.0	1,497,787	2.9
60% to 69%	842,453	2.9	1,182,930	4.1	641,698	1.2	855,777	1.7
70% to 99%	1,329,099	4.6	2,021,011	7.0	869,436	1.7	1,296,795	2.5
100% or more	1,740,700	6.0	3,081,375	10.6	1,422,126	2.7	1,793,588	3.5
Zero or negative income	581,080	2.0	581,080	2.0	939,525	1.8	939,525	1.8
Total	28,968,928	100.0	28,968,928	100.0	51,736,929	100.0	51,736,929	100.0
Excessive-cost units[b]								
- Number	7,976,284		11,232,273		6,881,818		8,904,658	
- Percentage	27.5		38.8		13.3		17.2	
Median monthly housing cost as percentage of current income[c]	27.4%		33.1%		17.7%		20.2%	

Source: AHS 95.
[a]Includes occupied housing units that are houses or apartments and for which the current and post-rehab monthly housing costs are available.
[b]Units for which monthly housing cost is 40 percent or more of current household income.
[c]Excludes zero or negative income and no-cash rent.

EXHIBIT 3.12
Monthly Housing Cost: Current and Post-Rehab Intervention
(All Occupied Units by Location)

	All Metropolitan[a] Number of Occupied Housing Units[b]		Central City Number of Occupied Housing Units[b]		Suburbs Number of Occupied Housing Units[b]		Nonmetropolitan Number of Occupied Housing Units[b]	
Monthly Housing Cost	Current	Post-Rehab Intervention	Current	Post-Rehab Intervention	Current	Post-Rehab Intervention	Current	Post-Rehab Intervention
Less than $100	1,843,512	993,355	845,959	449,462	997,553	543,893	1,052,903	505,263
$100 to $199	4,120,683	2,785,384	1,976,282	1,299,931	2,144,401	1,485,452	2,769,457	1,846,545
$200 to $249	3,130,451	2,056,353	1,413,902	886,089	1,716,549	1,170,264	1,720,194	1,173,589
$250 to $299	3,102,766	2,434,059	1,300,519	988,008	1,802,247	1,446,051	1,346,958	1,141,900
$300 to $349	3,284,792	2,713,572	1,554,761	1,187,384	1,730,031	1,526,188	1,127,000	1,135,696
$350 to $399	3,275,283	2,848,738	1,649,814	1,256,234	1,625,469	1,592,504	1,153,398	1,288,333
$400 to $449	3,390,577	2,939,707	1,658,600	1,369,309	1,731,977	1,570,399	999,733	1,073,279
$450 to $499	3,479,003	2,991,643	1,680,309	1,381,091	1,798,694	1,610,552	908,092	985,092
$500 to $599	6,763,794	6,101,837	3,264,521	2,985,176	3,499,273	3,116,661	1,400,502	1,586,414
$600 to $699	6,168,898	6,133,317	2,572,467	2,787,292	3,596,431	3,346,026	1,186,203	1,546,801
$700 to $799	5,231,511	5,603,516	2,002,064	2,334,229	3,229,447	3,269,287	856,843	1,148,458
$800 to $999	7,087,008	8,881,032	2,366,661	3,492,918	4,720,347	5,388,113	1,026,556	1,551,491
$1,000 to $1,249	5,644,606	7,195,004	1,775,143	2,556,941	3,869,464	4,638,063	528,241	842,443
$1,250 to $1,499	3,028,603	4,359,906	817,541	1,418,252	2,211,062	2,941,654	237,081	395,311
$1,500 or more	4,541,315	6,055,380	1,075,264	1,561,491	3,466,051	4,493,889	299,893	392,440
Total	64,092,801	64,092,801	25,953,806	25,953,806	38,138,995	38,138,995	16,613,055	16,613,055
Median monthly housing cost[c]	$609.0	$718.0	$535.0	$654.3	$672.0	$767.4	$377.0	$471.0

Source: AHS 95.
[a]Includes central-city and suburban portions.
[b]Includes occupied housing units that are houses or apartments and for which the current and post-rehab monthly housing costs are available.
[c]Excludes no-cash rent.

EXHIBIT 3.13
Monthly Housing Cost: Current and Post-Rehab Intervention
(All Occupied Units by Location)

Monthly Housing Cost as a Percentage of Current Income	All Metropolitan[a]				Central City				Suburbs				Nonmetropolitan			
	Number of Occupied Housing Units[b]				Number of Occupied Housing Units[b]				Number of Occupied Housing Units[b]				Number of Occupied Housing Units[b]			
	Current		Post-Rehab Intervention		Current		Post-Rehab Intervention		Current		Post-Rehab Intervention		Current		Post-Rehab Intervention	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Less than 5%	3,260,056	5.1	2,146,729	3.3	1,289,426	5.0	833,162	3.2	1,970,629	5.2	1,313,567	3.4	1,711,926	10.3	1,066,322	6.4
5% to 9%	6,808,909	10.6	5,559,184	8.7	2,461,039	9.5	1,900,539	7.3	4,347,870	11.4	3,658,645	9.6	2,670,682	16.1	2,161,791	13.0
10% to 14%	9,536,260	14.9	7,941,641	12.4	3,522,663	13.6	2,893,351	11.1	6,013,597	15.8	5,048,291	13.2	2,931,946	17.6	2,418,846	14.6
15% to 19%	9,867,940	15.4	8,842,735	13.8	3,763,556	14.5	3,246,292	12.5	6,104,384	16.0	5,596,443	14.7	2,557,124	15.4	2,420,442	14.6
20% to 24%	8,467,597	13.2	8,198,854	12.8	3,288,350	12.7	3,003,248	11.6	5,179,247	13.6	5,195,606	13.6	1,764,480	10.6	1,868,310	11.2
25% to 29%	6,449,325	10.1	6,458,465	10.1	2,569,469	9.9	2,582,529	10.0	3,879,856	10.2	3,875,936	10.2	1,240,014	7.5	1,383,950	8.3
30% to 34%	4,331,130	6.8	4,917,235	7.7	1,797,723	6.9	1,931,362	7.4	2,533,407	6.6	2,985,873	7.8	874,802	5.3	1,021,744	6.2
35% to 39%	2,810,476	4.4	3,423,028	5.3	1,229,468	4.7	1,414,018	5.4	1,581,008	4.1	2,009,010	5.3	565,089	3.4	739,648	4.5
40% to 49%	3,506,754	5.5	4,235,741	6.6	1,602,973	6.2	1,906,679	7.3	1,903,782	5.0	2,329,062	6.1	659,918	4.0	908,123	5.5
50% to 59%	1,987,328	3.1	2,660,146	4.2	932,607	3.6	1,225,018	4.7	1,054,720	2.8	1,435,128	3.8	337,984	2.0	580,841	3.5
60% to 69%	1,239,931	1.9	1,649,018	2.6	590,218	2.3	801,599	3.1	649,714	1.7	847,419	2.2	244,220	1.5	389,689	2.3
70% to 99%	1,874,406	2.9	2,767,194	4.3	934,529	3.6	1,391,710	5.4	939,877	2.5	1,375,484	3.6	324,129	2.0	550,612	3.3
100% or more	2,703,616	4.2	4,043,758	6.3	1,367,117	5.3	2,219,633	8.6	1,336,499	3.5	1,824,124	4.8	459,210	2.8	831,206	5.0
Zero or negative income	1,249,073	1.9	1,249,073	1.9	604,667	2.3	604,667	2.3	644,406	1.7	644,406	1.7	271,532	1.6	271,532	1.6
Total	64,092,801	100.0	64,092,801	100.0	25,953,806	100.0	25,953,806	100.0	38,138,995	100.0	38,138,995	100.0	16,613,055	100.0	16,613,055	
Excessive-cost units[2]																
- Number	12,561,109		16,604,929		6,032,112		8,149,306		6,528,997		8,455,624		2,296,994		3,532,002	
- Percent	19.6		25.9		23.2		31.4		17.1		22.2		13.8		21.3	
Median monthly housing cost as percentage of current income[d]	21.5%		24.7%		22.9%		27.1%		20.7%		23.2%		17.2%		20.7%	

Source: AHS 95.

[a]Includes central-city and suburban portions.

[b]Includes occupied housing units that are houses or apartments and for which the current and post-rehab monthly housing costs are available.

[c]Units for which monthly housing cost is 40 percent or more of current household income.

[d]Excludes zero or negative income and no-cash rent.

Rehab Affordability by Household Race

A similar affordability gap is discerned when we consider the race of the households occupying the housing unit. Despite the fact that they often pay less for housing than their majority counterparts (exhibit 3.14), minorities' lower incomes result in their being disproportionately challenged to afford housing. Even without factoring renovation demands and costs, about three in 10 non-Hispanic black households (28 percent) and Hispanic households (28 percent) pay 40 percent or more of their income for housing. That compares with about one in six (15.7 percent) non-Hispanic white households (exhibit 3.15). The situation is made worse with the added expense of renovation. Post-rehab, about four in 10 minority households (40.1 percent of non-Hispanic black and 38.2 percent of Hispanic households) would be cost burdened, compared with about two in 10 non-Hispanic white households (21.1 percent).

Rehab Affordability by Household Income

Much of the affordability strain experienced by renters and minorities is due to their relatively low incomes, compared with the incomes of their homeowner and majority counterparts, respectively. We find a particularly acute affordability problem among the lowest earners when household income is the criterion for determining housing affordability.

Households are categorized in one of five income groups according to their relationship to the median household income (exhibit 3.16).

EXHIBIT 3.16
Income Groups by Median Household Income

Household Income Category	Household Income Relative to Median Household Income
Very low income	<0.5
Low income	>0.5 to ≤0.8
Moderate income	>0.8 to 1.0
Middle income	>1.0 to 1.2
High income	>1.2

Households with modest earnings expend much less for housing. For instance, pre-rehab, very low income households spend a median of $358 monthly—less than half the $766 median monthly outlay of their high-income counterparts (exhibit 3.17). However, the extremely constrained resources cause many modest earners to experience affordability problems. Currently, almost six in 10 (58.1 percent) very low income households pay 40 percent or more of their income for housing. Pre-rehab, excessive cost is experienced by two in 10 (20.1 percent) low-income households, one in 10 (10.1 percent) moderate-income households, one in 20 (5.5 percent) middle-income households, and even fewer (1.7 percent) high-income households (exhibit 3.18).

EXHIBIT 3.14
Monthly Housing Cost: Current and Post-Rehab Intervention
(All Occupied Units by Race)

	Non-Hispanic White Number of Occupied Housing Units[a]		Non-Hispanic Black Number of Occupied Housing Units[a]		Hispanic Number of Occupied Housing Units[a]		Other Number of Occupied Housing Units[a]	
Monthly Housing Cost	Current	Post-Rehab Intervention	Current	Post-Rehab Intervention	Current	Post-Rehab Intervention	Current	Post-Rehab Intervention
Less than $100	1,976,441	1,079,680	552,482	239,837	288,805	135,225	78,686	43,877
$100 to $199	5,245,304	3,653,216	1,021,742	549,273	482,337	340,055	140,758	89,384
$200 to $249	3,955,522	2,675,982	545,391	345,102	281,562	161,035	68,170	47,824
$250 to $299	3,612,495	2,923,490	535,951	411,069	200,679	164,110	100,600	77,290
$300 to $349	3,430,903	3,044,003	567,397	493,632	310,866	224,490	102,626	87,144
$350 to $399	3,352,832	3,272,751	628,647	515,995	351,971	286,709	95,230	61,615
$400 to $449	3,275,185	3,054,498	613,129	562,195	396,220	308,848	105,775	87,444
$450 to $499	3,253,248	3,012,380	600,220	544,078	416,783	335,852	116,844	84,425
$500 to $599	5,980,961	5,678,709	1,043,743	1,075,386	890,290	722,773	249,302	211,381
$600 to $699	5,499,285	5,730,576	821,557	984,093	745,204	726,747	289,055	238,702
$700 to $799	4,709,944	5,169,664	589,064	732,779	531,274	618,826	258,072	230,705
$800 to $999	6,555,530	8,001,206	682,598	1,114,128	576,549	906,424	298,888	410,765
$1,000 to $1,249	5,051,862	6,284,775	378,344	723,506	449,646	669,284	292,995	359,882
$1,250 to $1,499	2,683,472	3,739,558	152,070	318,033	216,457	400,196	213,685	297,430
$1,500 or more	4,032,129	5,294,624	166,813	290,043	269,003	407,073	373,263	456,080
Total	62,615,113	62,615,113	8,899,148	8,899,148	6,407,646	6,407,646	2,783,949	2,783,949
Median monthly housing cost[b]	$574.0	$674.1	$464.0	$595.7	$573.5	$700.0	$732.5	$881.2

Source: AHS 95.

[a]Includes occupied housing units that are houses or apartments and for which the current and post-rehab monthly housing costs are available.

[b]Excludes no-cash rent.

EXHIBIT 3.15
Monthly Housing Cost: Current and Post-Rehab Intervention
(All Occupied Units by Race)

	Non-Hispanic White Occupied Housing Units[1]				Non-Hispanic Black Occupied Housing Units[a]				Hispanic Occupied Housing Units[a]				Other Occupied Housing Units[a]			
Monthly Housing Cost as Percentage of Current Income	**Current**		**Post-Rehab Intervention**		**Current**		**Post-Rehab Intervention**		**Current**		**Post-Rehab Intervention**		**Current**		**Post-Rehab Intervention**	
	Number	**%**	**Number**	**%**	**Number**	**%**	**Number**	**%**	**Number**	**%**	**Number**	**%**	**Number**	**%**	**Number**	**%**
Less than 5%	4,008,603	6.4	2,691,263	4.3	516,547	5.8	256,997	2.9	333,204	5.2	187,271	2.9	113,628	4.1	77,520	2.8
5% to 9%	8,158,079	13.0	6,723,369	10.7	625,333	7.0	461,751	5.2	462,860	7.2	347,232	5.4	233,319	8.4	188,623	6.8
10% to 14%	10,497,154	16.8	8,803,930	14.1	1,032,338	11.6	770,422	8.7	621,781	9.7	523,989	8.2	316,934	11.4	262,147	9.4
15% to 19%	10,040,257	16.0	9,344,631	14.9	1,175,425	13.2	929,337	10.4	845,499	13.2	690,736	10.8	363,883	13.1	298,473	10.7
20% to 24%	8,065,963	12.9	8,134,374	13.0	1,062,989	11.9	940,342	10.6	755,451	11.8	637,403	9.9	347,674	12.5	355,045	12.8
25% to 29%	5,765,786	9.2	6,096,526	9.7	900,254	10.1	795,827	8.9	699,615	10.9	648,070	10.1	323,683	11.6	301,992	10.8
30% to 34%	3,865,329	6.2	4,550,276	7.3	617,129	6.9	652,462	7.3	525,447	8.2	523,052	8.2	198,026	7.1	213,190	7.7
35% to 39%	2,404,984	3.8	3,067,066	4.9	479,105	5.4	527,370	5.9	344,658	5.4	400,701	6.3	146,817	5.3	167,540	6.0
40% to 49%	2,845,228	4.5	3,655,706	5.8	632,464	7.1	735,471	8.3	508,695	7.9	567,807	8.9	180,286	6.5	184,880	6.6
50% to 59%	1,506,184	2.4	2,145,825	3.4	369,123	4.1	503,279	5.7	317,636	5.0	446,661	7.0	132,369	4.8	145,222	5.2
60% to 69%	960,582	1.5	1,377,126	2.2	272,938	3.1	342,368	3.8	187,880	2.9	228,277	3.6	62,751	2.3	90,935	3.3
70% to 99%	1,342,428	2.1	2,012,152	3.2	391,926	4.4	646,658	7.3	350,140	5.5	493,471	7.7	114,042	4.1	165,527	5.9
100% or more	2,082,465	3.3	2,940,797	4.7	583,562	6.6	1,096,850	12.3	342,523	5.3	600,719	9.4	154,277	5.5	236,596	8.5
Zero or negative income	1,072,072	1.7	1,072,072	1.7	240,015	2.7	240,015	2.7	112,257	1.8	112,257	1.8	96,261	3.5	96,261	3.5
Total	62,615,113	100.0	62,615,113	100.0	8,899,148	100.0	8,899,148	100.0	6,407,646	100.0	6,407,646	100.0	2,783,949	100.0	2,783,949	100.0
Excessive-cost units[b]																
- Number	9,808,959		13,203,678		2,490,028		3,564,641		1,819,130		2,449,192		739,985		919,420	
- Percentage	15.7		21.1		28.0		40.1		28.4		38.2		26.6		33.0	
Median monthly housing cost as percentage of current income[c]	19.4%		22.2%		25.2%		31.6%		27.2%		32.7%		25.2%		28.3%	

Source: AHS 95.

[a]Includes occupied housing units that are houses or apartments and for which the current and post-rehab monthly housing costs are available.

[b]Units for which monthly housing cost is 40 percent or more of current household income.

[c]Excludes zero or negative income and no-cash rent.

If minor rehab, moderate rehab, or substantial rehab were effected as needed, housing expenses would increase. By coincidence, the post-rehab increase is about $100 monthly for all the household income groups (exhibit 3.17). A $100 monthly increase for renovation, however, is a proportionately much greater addition to the pre-rehab monthly shelter cost for the modest-earner households. A $100 monthly increase is also much more significant for those at the bottom of the economic spectrum. Those factors explain the following. Post-rehab, the incidence of households paying 40 percent or more of their income for shelter rises to more than seven in 10 (71.1 percent) for the very low income households and almost three in 10 (32.4 percent) for the low-income households (exhibit 3.18). Post-rehab, the share of those excessively burdened rises more modestly to almost one in five (18.0 percent) and one in 10 (9.9 percent) for moderate-income and middle-income households, respectively. Very few of their high-income counterparts (2.8 percent) would be burdened post-rehab. Thus, the poorest households face a daunting affordability challenge even before rehab need and cost are factored. That situation is tremendously aggravated by the added expense of renovation.

Rehab Affordability by Housing-Unit Age

A similar situation is observed for older housing units. We assign housing units to age-group cohorts by their year of construction: (1) 1939 or earlier; (2) 1940 to 1969; (3) 1970 to 1979; and (4) 1980 to 1995. On the whole, older housing is less expensive than younger housing. Pre-rehab, the monthly costs for the four housing age groups are $470, $507, $598, and $794, respectively (exhibit 3.19). Poorer people tend to cluster in the older housing units. As such, even pre-rehab, there are more cost-burdened households in the oldest stock (see exhibit 3.20). Pre-rehab, 21.4 percent of the units built in 1939 or earlier have households spending 40 percent or more of their incomes on housing, compared with 15.8 percent of the units built during the period 1980 to 1995.

That situation is aggravated post-rehab. There is a greater need for rehab in older units, and that renovation tends to cost proportionately more. For example, renovation increases the monthly housing cost of units built 1939 or earlier from $470 (pre-rehab) to $610 (post-rehab), a gain of $140, or 30 percent. For the newest housing units, those built in the period 1980 to 1995, renovation increases the monthly housing cost from $794 (pre-rehab) to $870 (post-rehab)—a gain of only $76 monthly, or 10 percent (exhibit 3.19). The impact of the higher renovation cost for the older housing units is compounded because these units tend to be occupied by the less affluent. Post-rehab, 30.2 percent of the 1939 or earlier units are cost burdened; that incidence of excessive cost is approximately double the share (15.8 percent) for the newest housing, units built in the period 1980 to 1995. The post-rehab incidence of housing units whose occupants pay 40 percent or more of their income for shelter is about one in four for units built in the periods 1940 to 1969 and 1970 to 1979 (exhibit 3.20).

EXHIBIT 3.17
Monthly Housing Cost: Current and Post-Rehab Intervention
(All Occupied Units by Income Status)

	Very Low Income[a] Occupied Housing Units[b]		Low Income[a] Occupied Housing Units[b]		Moderate Income[3] Occupied Housing Units[b]		Middle Income[a] Occupied Housing Units[b]		High Income[a] Occupied Housing Units[b]	
Monthly Housing Cost	**Current**	**Post-Rehab Intervention**	**Current**	**Post-Rehab Intervention**	**Current**	**Post-Rehab Intervention**	**Current**	**Post-Rehab Intervention**	**Current**	**Post-Rehab Intervention**
Less than $100	1,571,913	779,337	458,402	234,273	295,901	158,585	158,759	93,720	411,441	232,703
$100 to $199	3,370,246	2,209,073	1,234,081	846,152	681,115	471,581	442,372	321,439	1,162,326	783,683
$200 to $249	1,721,552	1,183,238	997,117	651,320	551,016	368,237	326,147	227,971	1,254,814	799,175
$250 to $299	1,401,261	1,283,687	866,396	664,573	494,414	395,510	383,174	304,203	1,304,479	927,986
$300 to $349	1,405,674	1,309,122	863,417	757,836	511,902	454,714	344,723	296,518	1,286,076	1,031,078
$350 to $399	1,264,259	1,330,233	959,365	880,636	569,606	470,868	370,718	291,015	1,264,733	1,164,318
$400 to $449	1,195,563	1,154,232	950,820	830,707	565,456	502,964	388,799	294,975	1,289,671	1,230,109
$450 to $499	1,038,121	1,068,853	871,274	827,838	613,499	508,055	393,807	345,087	1,470,396	1,226,901
$500 to $599	1,559,925	1,868,476	1,649,028	1,522,292	1,070,368	951,935	764,383	662,367	3,120,592	2,683,180
$600 to $699	1,153,325	1,518,447	1,261,061	1,383,345	963,905	1,086,696	653,833	705,196	3,322,977	2,986,435
$700 to $799	827,216	1,250,032	843,518	1,149,748	722,280	784,375	608,235	677,386	3,087,104	2,890,432
$800 to $999	694,951	1,432,665	792,285	1,346,143	818,942	1,141,096	787,656	929,170	5,019,732	5,583,450
$1,000 to $1,249	438,382	896,729	478,482	799,374	456,392	765,846	521,701	722,951	4,277,891	4,852,548
$1,250 to $1,499	161,894	393,548	190,657	391,194	185,105	321,557	207,158	362,363	2,520,869	3,286,555
$1,500 or more	263,263	389,873	209,049	339,521	202,935	320,816	154,993	272,098	4,010,967	5,125,513
Total	18,067,545	18,067,545	12,624,951	12,624,951	8,702,835	8,702,835	6,506,457	6,506,457	34,804,068	34,804,068
Median monthly housing cost[c]	$358.0	$468.7	$472.0	$563.0	$531.0	$631.0	$580.0	$685.0	$766.0	$868.0

Source: AHS 95.

[a]Very low income: < 0.5 median household income.
Low income: ≥0.5 to 0.8 median household income.
Moderate income: > 0.8 to 1.0 median household income
Middle income: > 1.0 to 1.2 median household income.
High income: > 1.2 median household income.

[b]Includes occupied housing units that are houses or apartments and for which the current and post-rehab monthly housing costs are available.

[c]Excludes no-cash rent.

EXHIBIT 3.18
Monthly Housing Cost: Current and Post-Rehab Intervention
(All Occupied Units by Income Status)

Monthly Housing Cost as Percentage of Current Income	Very Low Income[3] Occupied Housing Units[b]				Low Income[a] Occupied Housing Units[b]				Moderate Income[a] Occupied Housing Units[b]				Middle Income[a] Occupied Housing Units[b]				High Income[a] Occupied Housing Units[b]			
	Current		Post-Rehab Intervention		Current		Post-Rehab Intervention		Current		Post-Rehab Intervention		Current		Post-Rehab Intervention		Current		Post-Rehab Intervention	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Less than 5%	881,819	4.9	425,877	2.4	394,572	3.1	189,469	1.5	317,658	3.7	178,195	2.0	217,672	3.3	150,485	2.3	3,160,261	9.1	2,269,026	6.5
5% to 9%	149,759	0.8	92,386	0.5	664,677	5.3	507,102	4.0	929,391	10.7	637,933	7.3	887,957	13.6	653,406	10.0	6,847,807	19.7	5,830,149	16.8
10% to 14%	636,615	3.5	375,988	2.1	1,521,371	12.1	1,004,507	8.0	1,191,632	13.7	955,908	11.0	1,038,704	16.0	812,786	12.5	8,079,884	23.2	7,211,298	20.7
15% to 19%	1,019,335	5.6	671,258	3.7	1,501,660	11.9	1,229,323	9.7	1,336,164	15.4	1,128,120	13.0	1,246,926	19.2	1,003,448	15.4	7,320,978	21.0	7,231,028	20.8
20% to 24%	1,116,330	6.2	771,405	4.3	1,792,374	14.2	1,441,438	11.4	1,378,609	15.8	1,234,665	14.2	1,173,074	18.0	1,132,225	17.4	4,771,691	13.7	5,487,430	15.8
25% to 29%	1,425,008	7.9	959,910	5.3	1,754,324	13.9	1,538,146	12.2	1,276,727	14.7	1,157,130	13.3	854,852	13.1	954,532	14.7	2,378,428	6.8	3,232,698	9.3
30% to 34%	1,258,737	7.0	971,240	5.4	1,429,671	11.3	1,462,547	11.6	882,355	10.1	1,084,943	12.5	468,978	7.2	712,553	11.0	1,166,191	3.4	1,707,695	4.9
35% to 39%	1,077,658	6.0	954,165	5.3	1,031,843	8.2	1,158,567	9.2	509,157	5.9	757,488	8.7	263,083	4.0	441,439	6.8	493,823	1.4	851,016	2.4
40% to 49%	1,813,286	10.0	1,641,634	9.1	1,290,859	10.2	1,708,530	13.5	482,414	5.5	797,403	9.2	219,810	3.4	372,473	5.7	360,304	1.0	623,823	1.8
50% to 59%	1,347,101	7.5	1,466,555	8.1	594,618	4.7	997,164	7.9	204,031	2.3	412,937	4.7	72,114	1.1	166,307	2.6	107,448	0.3	198,024	0.6
60% to 69%	1,035,313	5.7	1,187,472	6.6	279,955	2.2	547,827	4.3	83,314	1.0	162,912	1.9	19,610	0.3	42,282	0.6	65,959	0.2	98,214	0.3
70% to 99%	1,787,784	9.9	2,455,556	13.6	265,571	2.1	611,376	4.8	64,706	0.7	141,163	1.6	35,087	0.5	52,867	0.8	45,387	0.1	56,844	0.2
100% or more	2,998,193	16.6	4,573,495	25.3	103,454	0.8	228,953	1.8	46,679	0.5	54,038	0.6	8,592	0.1	11,655	0.2	5,907	0.0	6,822	0.0
Zero or negative income	1,520,605	8.4	1,520,605	8.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	18,067,545	100.0	18,067,545	100.0	12,624,951	100.0	12,624,951	100.0	8,702,835	100.0	8,702,835	100.0	6,506,457	100.0	6,506,457	100.0	34,804,068	100.0	34,804,068	100.0
Excessive-cost units[c]																				
- Number	10,502,283		12,845,317		2,534,458		4,093,851		881,143		1,568,452		355,213		645,584		585,005		983,727	
- Percent	58.1		71.1		20.1		32.4		10.1		18.0		5.5		9.9		1.7		2.8	
Median monthly housing cost as percentage of current income[4]	46.6%		62.5%		27.2%		32.1%		22.7%		26.8%		19.9%		23.2%		14.8%		16.5%	

Source: AHS 95.

[a]Very low income: < 0.5 median household income.
Low income: ≥0.5 to 0.8 median household income.
Moderate income: > 0.8 to 1.0 median income.
Middle income: > 1.0 to 1.2 median household income.
High income: > 1.2 median household income.

[b]Includes occupied housing units that are houses or apartments and for which the current and postrehab monthly housing costs are available.

[c]Units for which monthly housing cost is 40 percent or more of current income.

[d]Excludes zero or negative income and no-cash rent.

EXHIBIT 3.19
Monthly Housing Cost: Current and Post-Rehab Intervention
(All Occupied Units by Age of Unit)

	1980–1995 Number of Occupied Housing Units[a]		1970–1979 Number of Occupied Housing Units[a]		1940–1969 Number of Occupied Housing Units[a]		1939 or earlier Number of Occupied Housing Units[a]	
Monthly Housing Cost	Current	Post-Rehab Intervention	Current	Post-Rehab Intervention	Current	Post-Rehab Intervention	Current	Post-Rehab Intervention
Less than $100	309,089	213,905	497,373	289,062	1,236,522	591,420	853,431	404,230
$100 to $199	680,135	496,490	1,166,113	835,185	3,219,389	2,143,183	1,824,503	1,157,070
$200 to $249	529,503	427,480	888,011	604,636	2,230,076	1,493,627	1,203,055	704,200
$250 to $299	506,264	455,942	822,293	667,593	1,929,635	1,628,904	1,191,533	823,519
$300 to $349	468,237	447,568	829,151	695,588	1,870,788	1,738,267	1,243,616	967,845
$350 to $399	499,564	488,651	913,418	872,349	1,840,000	1,768,868	1,175,698	1,007,203
$400 to $449	526,336	471,025	937,682	818,565	1,737,229	1,726,230	1,189,061	997,166
$450 to $499	587,681	520,537	956,659	847,786	1,745,216	1,616,359	1,097,539	992,053
$500 to $599	1,382,665	1,190,430	1,908,443	1,726,837	3,068,614	2,978,868	1,804,574	1,792,116
$600 to $699	1,509,170	1,363,883	1,594,814	1,671,458	2,783,953	2,909,070	1,467,164	1,735,708
$700 to $799	1,530,472	1,421,896	1,411,569	1,458,966	2,122,273	2,442,107	1,024,039	1,429,004
$800 to $999	2,462,761	2,611,028	2,007,822	2,399,381	2,414,270	3,428,442	1,228,711	1,993,672
$1,000 to $1,249	2,087,773	2,283,545	1,440,110	1,899,583	1,728,037	2,397,126	916,927	1,457,192
$1,250 to $1,499	1,253,286	1,530,480	754,972	1,035,628	906,718	1,397,392	350,709	791,717
$1,500 or more	1,999,578	2,409,654	958,217	1,264,032	1,260,959	1,833,814	622,453	940,320
Total	16,332,514	16,332,514	17,086,650	17,086,650	30,093,679	30,093,679	17,193,014	17,193,014
Median monthly Housing cost[b]	$794.0	$870.0	$598.0	$692.9	$507.0	$610.5	$470.0	$610.1

Source: AHS 95.

[a]Includes occupied housing units that are houses or apartments and for which the current and post-rehab monthly housing costs are available.

[b]Excludes no-cash rent.

EXHIBIT 3.20
Monthly Housing Cost: Current and Post-Rehab Intervention
(All Occupied Units by Age of Unit)

Monthly Housing Cost as Percentage of Current Income	1980–1995 Occupied Housing Units[a]				1970–1979 Occupied Housing Units[a]				1940–1969 Occupied Housing Units[a]				1939 or earlier Occupied Housing Units[a]			
	Current		Post-Rehab Intervention		Current		Post-Rehab Intervention		Current		Post-Rehab Intervention		Current		Post-Rehab Intervention	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Less than 5%	709,658	4.3	547,128	3.3	890,873	5.2	647,559	3.8	2,113,057	7.0	1,314,495	4.4	1,258,393	7.3	703,869	4.1
5% to 9%	1,417,956	8.7	1,229,955	7.5	1,981,734	11.6	1,608,571	9.4	4,077,302	13.5	3,419,843	11.4	2,002,598	11.6	1,462,606	8.5
10% to 14%	2,254,058	13.8	2,005,954	12.3	2,567,635	15.0	2,202,889	12.9	4,967,924	16.5	4,040,444	13.4	2,678,589	15.6	2,111,201	12.3
15% to 19%	2,958,230	18.1	2,665,451	16.3	2,649,204	15.5	2,458,133	14.4	4,336,005	14.4	3,952,482	13.1	2,481,625	14.4	2,187,111	12.7
20% to 24%	2,488,550	15.2	2,561,614	15.7	2,253,786	13.2	2,191,371	12.8	3,546,535	11.8	3,458,304	11.5	1,943,206	11.3	1,855,875	10.8
25% to 29%	1,899,682	11.6	1,882,663	11.5	1,717,722	10.1	1,673,110	9.8	2,568,013	8.5	2,702,238	9.0	1,503,922	8.7	1,584,404	9.2
30% to 34%	1,268,797	7.8	1,363,083	8.3	1,165,956	6.8	1,256,238	7.4	1,797,405	6.0	2,091,945	7.0	973,775	5.7	1,227,713	7.1
35% to 39%	762,089	4.7	904,286	5.5	717,156	4.2	878,009	5.1	1,223,198	4.1	1,518,352	5.0	673,122	3.9	862,029	5.0
40% to 49%	789,029	4.8	965,537	5.9	799,870	4.7	1,052,510	6.2	1,588,487	5.3	1,972,219	6.6	989,286	5.8	1,153,597	6.7
50% to 59%	406,555	2.5	543,716	3.3	531,325	3.1	672,508	3.9	842,772	2.8	1,235,262	4.1	544,660	3.2	789,501	4.6
60% to 69%	262,673	1.6	324,748	2.0	321,481	1.9	474,957	2.8	530,265	1.8	744,675	2.5	369,732	2.2	494,325	2.9
70% to 99%	360,508	2.2	476,010	2.9	473,296	2.8	678,346	4.0	759,252	2.5	1,224,206	4.1	605,479	3.5	939,244	5.5
100% or more	516,985	3.2	624,625	3.8	660,424	3.9	936,262	5.5	1,167,117	3.9	1,842,867	6.1	818,300	4.8	1,471,210	8.6
Zero or negative income	237,743	1.5	237,743	1.5	356,188	2.1	356,188	2.1	576,347	1.9	576,347	1.9	350,328	2.0	350,328	2.0
Total	16,332,514	100.0	16,332,514	100.0	17,086,650	100.0	17,086,650	100.0	30,093,679	100.0	30,093,679	100.0	17,193,014	100.0	17,193,014	100.0
Excessive-cost units[b]																
- Number	2,573,493		3,172,379		3,142,584		4,170,771		5,464,240		7,595,576		3,677,785		5,198,205	
- Percentage	15.8		19.4		18.4		24.4		18.2		25.2		21.4		30.2	
Median monthly housing cost as percentage of current income[c]	21.6%		23.2%		21.0%		23.8%		19.9%		23.5%		20.8%		26.0%	

Source: AHS 95.

[a]Includes occupied housing units that are houses or apartments and for which the current and post-rehab monthly housing costs are available.

[b]Units for which monthly housing cost is 40 percent or more of current income.

[c]Excludes zero or negative income and no-cash rent.

Rehab Affordability by Dollar Magnitude

Of the $623 billion in estimated national rehab need, $396 billion, or about two-thirds, is affordable (i.e., the post-rehab HEIR is less than 40 percent) and $227 billion, or about one-third is unaffordable (i.e., the post-rehab HEIR is 40 percent or more) (exhibit 2.3). Of the $623 billion, the greatest rehab investment is indicated for such groups as the following:

- Rental housing units need $288 billion in rehab and owned units require $336 billion in renovation. Rental units therefore need 46 percent of the total national rehab need of $623 billion—higher than renters' one-third share of the total housing stock. Of the $288 billion in renter-unit housing need, $150 billion, or 52 percent, is unaffordable—far higher than the 23 percent of the owned-unit rehab need that is unaffordable (exhibit 2.3).

- Units in central cities need $228 billion in rehab or 36 percent of the national total—somewhat higher than the central-city 32 percent share of all occupied year-round housing. We also find that almost half of the $228 billion in central-city rehab need is unaffordable—far higher than the unaffordable share for other areas (e.g., only 31 percent of the suburban rehab need is unaffordable; see exhibit 2.3).

- Older housing units (i.e., those built 1939 or earlier) require 30 percent of the national rehab need ($185 billion of $623 billion)—higher than the older units' 22 percent share of the housing studied here. A higher share of the older units' total $185 billion rehab need is unaffordable ($80 billion or 43 percent), compared with younger housing (e.g., only about a quarter of the rehab need for units built in the period 1980 to 1995 is unaffordable; see exhibit 2.3).

- Minority-occupied housing units (i.e., units occupied by non-Hispanic blacks and Hispanics) require $158 billion in rehab, or 25 percent of the national need ($623 billion), a higher proportion than their 19 percent representation of the housing examined here. About 55 percent of the minorities' $158 billion rehab need is unaffordable, compared with 29 percent of unaffordable rehab for non-Hispanic whites (exhibit 2.3).

Summary of the Ability to Afford

Even without factoring the need for and cost of renovation, many households currently face an affordability problem. Those most at risk in this regard are renters, central-city residents, minorities, the poor, and residents of older housing. Many of these characteristics are interrelated. For instance, a higher share of minorities are renters and poor. The ability of these at-risk groups to afford housing would be even more compromised if moderate rehab and substantial rehab were to be effected as needed. At-risk populations tend to live in housing with the greatest need for renovation, and they can least afford it.

CHAPTER 4
LOW-INCOME HOUSING TAX CREDITS AND REHAB

INTRODUCTION

The low-income housing tax credit (LIHTC) is an important subsidy for affordable housing. The LIHTC can be used for both new construction and rehab. This chapter focuses on its application in rehab projects. An overview of the LIHTC, is followed by an examination of its implementation in housing rehab consideration of how the process of selecting projects for LIHTC assistance affects rehab.

OVERVIEW OF THE LIHTC

The low-income housing tax credit (LIHTC) was recently described as the "de facto federal (low-income) housing production program" (Cummings and DiPasquale 1999, 251). Created by the Tax Reform Act of 1986, the LIHTC provides an incentive for investors to direct funds into the provision of rental housing for low-income households (Guggenheim 1994). The program currently allocates approximately $300 million annually in tax credits to the states. If all the credits are used, the program currently has the potential for providing $2.1 billion of equity per year for low-income housing. During the period 1992 to 1994, LIHTC funds accounted for an average of 1,300 projects and approximately 50,000 to 60,000 affordable housing units placed into service annually. LIHTC housing production far exceeds that of "direct" housing subsidies such as the HOME Program (Wallace 1995, 1998). As the largest federal program currently financing affordable housing, the LIHTC warrants careful evaluation.

The LIHTC is jointly administered by the Internal Revenue Service (IRS) and state agencies. Each state receives an annual tax credit allocation from the IRS equal to $1.25 per state resident. The process of securing tax credits is competitive, and awards are made according to project criteria specified in a Qualified Allocation Plan (QAP) prepared by each state. Once the state allocates tax credits to a project, the developer often offers the credits to private investors (usually recruited by syndicators), who can use the credits to offset their federal income tax liability (U.S. General Accounting Office 1990). The credits available from a project are determined by the development cost (excluding land), the proportion of low-income units, and the credit rate (which typically varies annually between 4 percent and 9 percent of the project's qualifying basis for a period of 10 years) (Abt Associates 1996, 1-1). The funds paid by investors in exchange for the credits provide equity financing for the housing development and can be used to bridge the gap between project development costs and conventional sources of financing.

To qualify for LIHTC financing, project developers must reserve a specified proportion of units for lower-income households. The minimum set-aside within a given project must equal or exceed one of two possible targets: At least 20 percent of the units are reserved for households at or below 50 percent of area median gross income ("20/50 Test"); or, at least 40 percent of the units are set aside for households at or below 60 percent of the area median income ("40/60 Test"). In both tests, the eligible income is adjusted for family size. In addition, rents on these units may not exceed 30 percent of household income (i.e., 30 percent of the elected 50 percent or 60 percent of area median income). Investors may claim the credits annually against their federal income tax over the 10-year credit period, as long as the specified minimum number of

units in the project are rented to low-income households within the rent limits described above for a period of up to 15 years (30 years for projects placed in service since 1990) (Shashaty 1997).

Research by Abt Associates (1996), the U.S. General Accounting Office (1997), Cummings and DiPasquale (1998, 1999), Ernst and Young (1997), and others has examined some of the overall characteristics of the LIHTC projects and units. The following section examines differences in LIHTC activity by *construction category*; that is, those projects/units that are *new construction* versus those that are *rehab*. To accomplish that, we analyze a data file on LIHTC activity prepared by Abt Associates (1996) and released by HUD (hereinafter the "LIHTC file").

PROFILE OF LIHTC ACTIVITY: NEW CONSTRUCTION VERSUS REHAB

The LIHTC file contains information on most LIHTC projects initiated in 1990 and 1991 and virtually all the projects initiated from 1992 through 1994. Because the most complete portion of the LIHTC database covers the period from 1992 through 1994, we shall focus on that three-year span. Abt, in preparing tables on the LIHTC, also focused on the 1992 through 1994 period.

There are many fields of data in the LIHTC file, such as the state and city where the project is located, surrounding tract characteristics, and the total number of units and the share of units that are set aside for low-income households. The construction strategy is also noted: (1) new construction, (2) acquisition and rehab (hereinafter abbreviated to rehab), or (3) a hybrid strategy, for example, combining both new construction and rehab. While the LIHTC database for 1992 through 1994 covers 4,007 projects encompassing 168,163 units, construction information (new, rehab, or hybrid) is lacking for many projects (1,072) and housing units (48,257). That leaves 2,935 projects (73 percent of all LIHTC projects) and 119,906 housing units (71 percent of all LIHTC units) for which construction type is reported. Of the 2,935 projects with construction strategy data, 1,931 (66 percent) are new construction, 980 (33 percent) are rehab, and 24 (1 percent) are hybrid. There is a roughly similar distribution by units. Of the 119,906 units for which the construction strategy can be identified, 72,786 units (61 percent) are new construction, 45,477 (38 percent) are rehab, and 1,643 (1 percent) are hybrid. In general terms, about two-thirds of the 1992 to 1994 LIHTC projects are new construction and about six in 10 units are new. The remainder are largely rehab with a trace level of hybrid product. Our distribution by construction strategy comports with previous reporting by Abt Associates (1996), GAO (1997), and, most, recently Cummings and DiPasquale (1999).

Exhibit 4.1 profiles the LIHTC projects and units by construction strategy, and the following discussion highlights some of the differences. Since the hybrid group is so small, our comments will focus on the new-construction and rehab categories.

EXHIBIT 4.1
Profile of LIHTC Projects and Units by Construction Strategy: 1992 to 1994

	Construction Strategy—Projects			Construction Strategy—Units			Total Production (NC, R, and Hybrid)[a]	
	New Construction (NC)	Rehab (R)	Hybrid (e.g., NC and R)	New Construction (NC)	Rehab (R)	Hybrid (e.g., NC and R)	Projects	Units
Number and Profile								
Number of projects[b]	1,931	980	24	Not applicable			4,007	Not applicable
Number of units[c]	Not applicable			72,786	45,477	1,643	Not applicable	168,163
Distribution (%)	66	33	1	61	38	1	100	100
Distribution by Region—Observations with Data								
Northeast (%)	7	24	33	8	18	25	14	13
Midwest (%)	35	31	13	30	22	6	33	27
South (%)	41	37	33	39	53	52	39	42
West (%)	16	7	21	24	7	17	15	19
Total (%)	100	100	100	100	100	100	100	100
N[d] = Number of projects or units	1,906	977	24	71,373	45,147	1,643	3,978	166,410
Distribution by Metropolitan Location								
Metro/non–central city (%)	22	20	17	32	22	10	21	26
Metro/central city (%)	39	63	83	41	67	90	49	54
Nonmetropolitan (%)	39	17	-	28	10	-	30	20
Total (%)	100	100	100	100	100	100	100	100
N = Number of projects or units	1,296	841	18	49,115	38,976	1,379	2,851	122,483
Nonprofit Sponsor								
With nonprofit sponsor (%)	16	24	56	19	26	44	20	23
N = Number of projects or units	1,497	759	18	60,864	35,871	1,257	2,928	128,243

Source: LIHTC file analyzed by the Center for Urban Policy Research, Rutgers University.
[a]Includes all projects/units, even those lacking construction strategy information.
[b]A total of 4,007 LIHTC projects were initiated during the period 1992 through 1994. Construction data are available for 2,935.
[c]A total of 168,163 LIHTC housing units were initiated in the period 1992 through 1994, construction data are available for 119,906.
[d]N = sample size.

Continued on next page

EXHIBIT 4.1 (continued)
Profile of LIHTC Projects and Units by Construction Strategy: 1992 to 1994

	Construction Strategy—Projects			Construction Strategy—Units			Total Production (NC, R, and Hybrid)	
	New Construction (NC)	Rehab (R)	Hybrid (e.g., NC and R)	New Construction (NC)	Rehab (R)	Hybrid (e.g., NC and R)	Projects	Units
Presence in Difficult Development Area (DDA) or Qualified Census Tract (QCT)								
Not in a QCT or DDA (%)	72	56	50	69	60	54	63	63
In a DDA (%)	16	7	11	20	7	7	14	16
In a QCT (%)	12	37	39	11	33	39	22	21
Total (%)	100	100	100	100	100	100	100	100
N = Number of projects or units	1,296	841	18	49,115	38,976	1,379	2,851	122,483
Project-Tract Demographics / Housing (1990)								
Tract population density (per sq. mile)	2,719	7,790	8,292	Not applicable			5,467	Not applicable
Elderly households (%)	23	23	19	Not applicable			23	Not applicable
Tract percent minority (%)	30	48	37	Not applicable			37	Not applicable
Median housing value ($)	69,894	57,627	79,795	Not applicable			67,429	Not applicable
Median contract rent ($)	304	291	366	Not applicable			301	Not applicable
N = Number of projects or units	1,295	841	18	Not applicable			2,850	Not applicable
Project-Tract Median Income[e]								
Median household income ($)	24,972	20,568	22,581	Not applicable			23,177	Not applicable
As percentage of Section 8 median (%)	75	58	57	Not applicable			69	Not applicable
Average Project Size (Number of units)	38	47	68	Not applicable			42	Not applicable

[e]Sample size for project-tract median income is nearly identical as for project-tract demographics/housing.

Continued on next page

EXHIBIT 4.1 (continued)
Profile of LIHTC Projects and Units by Construction Strategy: 1992 to 1994

	Construction Strategy—Projects			Construction Strategy—Units			Total Production (NC, R, and Hybrid)	
	New Construction (NC)	Rehab (R)	Hybrid (e.g., NC and R)	New Construction (NC)	Rehab (R)	Hybrid (e.g., NC and R)	Projects	Units
Unit Distribution by Number of Bedrooms								
Studios/efficiencies (%)		Not applicable		4	8	10	Not applicable	5
1-bedroom units (%)		Not applicable		43	35	49	Not applicable	40
2-bedroom units (%)		Not applicable		35	43	37	Not applicable	39
3-bedroom units (%)		Not applicable		16	12	4	Not applicable	15
4-bedroom units (%)		Not applicable		2	2	-	Not applicable	1
Total (%)		Not applicable		100	100	100	Not applicable	100
Average number of bedrooms		Not applicable		1.7	1.6	1.3	Not applicable	1.7
N = Number of projects or units		Not applicable		40,788	25,762	424	Not applicable	70,140
Unit Tenant-Income Profile								
Low-income units		Not applicable		68,752	43,452	1,589	Not applicable	155,721
Average percentage of total units that are low income (%)		Not applicable		94	96	97	Not applicable	93

A general comment on sample size is warranted. As noted above, construction information is not available for many projects. When we examine the profile of the new versus rehabilitated projects/units by their location, sponsorship, and so on, there is yet further attrition in the LIHTC data. For although, although 2,935 LIHTC projects report their construction category, only 2,155 also identify their locations in the metropolitan area. Sample sizes are indicated in detail in exhibit 4.1 and are further noted in our discussion below. We do this by indicating the sample size (shown as *N*) in terms of reporting projects and units.

Location by Region (*N* = 2,907 projects/118,163 units)

Rehab is more prevalent than new construction in the Northeast. Twenty-four percent of the LIHTC rehab projects and 18 percent of the rehabilitated units are in the Northeast; only 7 percent of the new projects and 8 percent of the new units are found in that region. The converse is true in the West, where new construction is far more evident (exhibit 4.1). This may reflect enhanced rehab opportunities in the Northeast, as well as other factors (e.g., perhaps the region's state QAPs favor rehab). The rehab and new-construction strategy concentrations are more on a par in the Midwest and in the South.

Distribution by Metropolitan Location (*N* = 2,155 projects/89,470 units)

Rehab is concentrated in the central-city portions of the metropolitan areas. Approximately two-thirds of both the LIHTC rehab projects and units are found in the central cities, compared with about 40 percent of the new-construction projects and units. In contrast, in nonmetropolitan areas, there are about twice as many new-construction projects as there are rehab projects (in terms of percentage apportionment) and three times as many newly constructed units as opposed to rehabilitated LIHTC units. These differences may reflect greater or lesser rehab opportunities (possibly more rehab projects in central cities as opposed to nonmetropolitan locations). It also may reflect differences in sponsorship. Rehab is the strategy of choice of nonprofits; they, in turn, may focus their activities disproportionately in the central cities. For-profit LIHTC sponsors understandably may opt for typically easier-to-develop and less-expensive projects in nonmetropolitan areas.

Nonprofit sponsorship (*N* = 2,274 projects/97,992 units)

LIHTC rehab is frequently sponsored by nonprofits. Approximately one-fourth of the LIHTC rehab projects have a nonprofit sponsor, compared with one-sixth of LIHTC new projects. Nonprofits may be drawn to rehab for various reasons. Nonprofits working in a neighborhood may choose to repair the most deteriorated existing properties before embarking on new construction. Also, rehab is often viewed (mistakenly) as being easier to undertake than new construction. As such, nonprofits just getting started in housing may opt to "cut their teeth" on rehab projects.

Presence in Challenging Areas (*N* = 2,155 projects/89,470 units)

LIHTC projects located in "challenging areas" qualify for a 30 percent increase in the eligible basis used in calculating the tax credit amount. The locations include both "Difficult Development Areas" (DDAs) and "Qualified Census Tracts" (QCT). A DDA is an area where construction, land, and utility costs are high relative to household income; a QCT is a census tract in which at least half the households have incomes of less than 60 percent of the area median gross income.

Perhaps because they are likely to be located in central cities and to be sponsored by nonprofits (which may be more likely to focus their activities in neighborhoods of greatest need), rehab projects are often located in challenging areas. While 44 percent of the LIHTC rehab projects are located in QCTs and/or DDAs, only 28 percent of the new LIHTC projects are located in such areas. The disparity is most evident with respect to location in a QCT; more than one-third of the rehab projects are in QCTs, compared with 12 percent of new-construction projects. In a somewhat similar vein, 40 percent of rehabilitated housing units are found in challenging areas (especially in QCTs), compared with about 30 percent of the newly constructed units.

Neighborhood Demographics/Housing Profile (*N* = 2,154 projects)

Given the fact that rehab projects are disproportionately located in QCTs and central cities, it is not surprising that LIHTC rehab activity is most often concentrated in higher-density, higher-minority, and less-advantaged areas. LIHTC rehab projects are located in tracts with an average 1990 population density of 7,790 per square mile, almost three times the average density for LIHTC new-construction projects (2,719 persons per square mile). On average, LIHTC rehab projects are located in tracts where, in 1990, almost half (48 percent) of the residents were minorities. In comparison, LIHTC new-construction projects are located in tracts where, in 1990, 30 percent of the residents were minorities. Average incomes are lower in the LIHTC rehab project tracts than in the new-construction project tracts ($20,568 compared with $24,972), as are the average tract incomes as a percentage of the Section 8 median (58 percent in the rehab-project tracts, compared with 75 percent in the new-construction tracts). Median house values are considerably lower in the tracts where the LIHTC rehab projects are found ($57,627 compared with $69,894 in the new-construction tracts). There is a difference, albeit slight, with respect to median monthly rents ($291 in the rehab-project tracts, compared with $304 in the new-construction tracts). With respect to the LIHTC projects themselves, almost all of the units (about 95 percent) in both the rehabilitated and the new buildings are occupied by low-income tenants.

Unit Amenities (*N* = 66,974 units)

The LIHTC file contains very little information on housing amenities aside from the number of bedrooms. Essentially, rehabilitated and new units have the same number of bedrooms. The former, on average, contain 1.6 bedrooms; the latter, on average, have 1.7 bedrooms.

In summary, approximately two-thirds of all LIHTC activity in the period 1992 through 1994 was in support of new-construction projects; one-third was in support of rehab projects. We find

some similarities in new and rehab construction. Both have a preponderance of low-income tenants (more than nine in 10), and both new and rehabilitated LIHTC units have a nearly identical number of bedrooms. Yet, there are many distinctions. Compared with their new-construction counterparts, LIHTC rehab projects are disproportionately located in the Northeast and in central cities; they are more often sponsored by a nonprofit organization; and they are disproportionately found in DDAs and/or QCTs. In a similar vein, LIHTC rehab projects are more often located in areas with higher percentages of minority population and lower-income households and lower housing values.[1]

The LIHTC program has been criticized for concentrating low-income people (i.e., for the most part, the LIHTC projects are aimed at low-income households) in central-city locations (half the projects and 55 percent of the units are found there) and in poorer neighborhoods ($23,177 average tract income) with large minority populations (37 percent, on average). That criticism and related topics, such as whether frequent nonprofit involvement in LIHTC housing is "efficient," have been discussed in different forums (Cummings and DiPasquale 1999; Roberts and Harvey 1999; Stegman 1999; U.S. General Accounting Office 1999; ICF 1991). The underlying theme of that discussion echoes the recurrent question of whether it is preferable to focus low-income housing in areas of greatest need (e.g., central-city, minority, and low-income neighborhoods) or to disperse that housing to locations of greatest opportunity (e.g., suburban, more-advantaged neighborhoods).

Critics of the focus of LIHTC activity might very well take issue with the rehab component of that program, because rehabilitated LIHTC housing is most likely to be effected in distressed locations. However, it is also true that LIHTC rehab activity is taking the lead in providing housing in areas of pressing need and challenge, such as poor central-city neighborhoods with large minority populations. If we accept that role as an important one, and many do, then it behooves us to examine whether rehab is being encouraged or discouraged in the LIHTC project selection process. As the selection of projects is guided by each state's QAP, we should consider how the QAP criteria bear on the competitiveness of a rehab versus a new-construction LIHTC application.

EFFECTS OF QAP SCORING CRITERIA ON REHAB

States participating in the LIHTC program are required by the IRS to prepare a QAP. Federal expectations for the QAP include the low-income occupancy tests (20/50 and 40/60); procedures for monitoring the long-term compliance of the LIHTC projects in terms of affordability; a mandated 10 percent minimum allotment of tax credits to projects involving nonprofits; and general categories of selection criteria (e.g., project location and project characteristics). The

[1]It is important to note that both the distinctions between and the similarities in new and rehabilitated LIHTC housing are not necessarily mirrors of the inherent characteristics of the two housing interventions; rather, they represent the denouement of the LIHTC selection process. The LIHTC projects and units we observe are those that were successful in the competition for each state's tax credits. The successful LIHTC applicants most closely match the selection criteria emphasized in each state's QAP rather than the generic characteristics of the housing intervention in question. For example, rehabilitation experts acknowledge that rehab—because of its smaller scale and higher fixed soft costs and other costs—is typically as expensive as expensive as or more expensive than new construction on a per-unit basis. However, Cummings and DiPasquale (1999) found in their analysis of LIHTC projects that new construction was slightly *more* expensive per unit than rehabilitation. This might reflect QAP priorities, namely that QAP ceilings on per-unit costs may very well exclude higher-cost rehabilitation projects from securing QAP credits. This again underscores the importance of examining the QAP criteria.

state QAPs include the federal mandates and specific criteria that reflect each state's affordable-housing priorities. The synthesis of the federal and state requirements results in scoring or other selection criteria used in the evaluation of LIHTC project applications. This competition is popularly referred to as a "beauty contest." The scoring method for each state varies. Some states rely on a point system throughout the qualifying process. Others require projects to embody all the elements of their "threshold criteria" and then rank the successful projects based on a point allocation system. The threshold requirements often carry more weight than the various point allotments or the state housing priorities. In some states, in order to advance in the "beauty pageant," the threshold requirements must first be met in full. The points given projects are clearly most important in those states with no threshold criteria (beyond the requirements of the tax code). In states that do set threshold criterion, the point system is important in prioritizing projects after the threshold criteria have been met.

How do the state QAP scoring criteria either encourage or discourage LIHTC rehab projects? A recent study authored by Alison Barr[2] (1998) examined a variation of the above query—namely, how the state QAP criteria affected *historic* rehab projects. Barr found that certain criteria either directly benefited historic rehab projects (e.g., extra points for historic rehab) or indirectly aided such projects (e.g., point awards for smaller-scale projects benefit historic rehab since it is often of smaller scale). Conversely, Barr noted various criteria that could hinder historic rehab, such as states awarding additional points for low project costs (historic projects tend to offer enhanced amenities and to incur higher costs). The Barr report summarized these findings and also reported the QAP criteria on a state-by-state basis.

Drawing on the Barr study and the state-by-state compilation, we have researched the ways in which state scoring criteria may more generally influence selection of LIHTC applications by overall construction category—namely, new construction versus rehab. Like Barr, we find countervailing influences.

Our national review finds 10 state QAP criteria that may either encourage or hinder rehab projects in the LIHTC "beauty contests." Only four of the 10 criteria either directly or indirectly favor rehab. The remaining six criteria will tend to favor new construction, perhaps making rehab LIHTC applications somewhat less competitive.

Exhibit 4.2 details the presence of QAP scoring criteria in the 50 states that may favor rehab and the presence of those that may favor new construction. In some states, these criteria are part of the set-asides; in others they are part of the threshold requirements; and in still others, points are received for the various criteria. To simplify matters in the discussion below, we shall generalize and always refer to the criteria as adding points or as affecting the project scoring.

Scoring Criteria That Favor Rehab

Points for rehab. Approximately two-thirds of the states (34) give points for rehab. This criterion directly assists rehab projects in competing with their new-construction counterparts. Many states, however, give an equal number of points or more points to new construction, thus putting

[2]The Barr study, conducted for Preservation Action, funded by Preservation Action, came out of initial research conducted by the National Park Service as part of the June 1998 Symposium on Affordable Housing.

rehab at a disadvantage. Therefore, what appears at first glance to be a positive for rehab is often less effective than it seems. For example, Alabama gives two points for rehab but five points for new construction.

Points for historic rehab. Eight states give points for historic rehab, in addition to the points granted for rehab in general: Indiana, Louisiana, Oklahoma, Rhode Island, Texas, Vermont, Virginia, and Washington. The historic criteria is directly supportive of the rehab of existing historic buildings.

Points for small-scale projects. Approximately, half of the states (23) award points for smaller-scale projects. Rehab experts have informed CUPR that rehab jobs generally account for fewer units compared with new construction.[3] Points for smaller-scale projects thus may indirectly favor LIHTC rehab proposals. Also, bonus points for smaller scale may somewhat offset the rehab-hindering influence of limitations on fees and overhead, to be discussed below.

Points for location in challenging areas. Almost 80 percent of the states (39) award points for projects located in such challenging locations as targeted community revitalization areas, QCTs, and/or DDAs. While these locations do not *exclusively* host rehab as opposed to new construction, it is likely that they are the setting of much rehab work (Barr 1998, 4). Therefore, the points awarded for projects in challenging locations may favor the LIHTC rehab applications.

[3]The opposite is the case with respect to LIHTC projects, where the average number of rehab units is greater (47 units) than the number of new-construction units (38 units). This result, however, is likely influenced by the QAP competition itself, as is noted in our description in the text.

EXHIBIT 4.2
LIHTC State Scoring Criteria Favoring Rehab or New Construction

	Criteria Favoring Rehab				Criteria Favoring New Construction					
State	*Points for Rehab*	*Points for Historic Rehab*	*Points for Small-Scale Project*	*Points for Location in Challenging Areas*	*Points for New Construction*	*Points for Lowest Cost/Unit*	*Limitations on Fees and Overhead*	*Points for Large Units*	*Points for Amenities*	*Points for "Ready to Go"*
Alabama			x				x		x	x
Alaska			x	x		x	x		x	
Arizona				x		x		x	x	
Arkansas	x								x	
California			x			x	x			
Colorado	x		x	x					x	
Connecticut				x		x	x			
Delaware	x			x	x	x		x	x	
Florida				x		x	x	x	x	x
Georgia					x		x		x	x
Hawaii				x		x	x	x	x	
Idaho	x		x	x		x			x	x
Illinois	x		x	x				x	x	
Indiana	x	x	x	x			x	x	x	x
Iowa	x		x		x			x	x	x
Kansas	x			x		x		x	x	x
Kentucky	x		x	x				x	x	
Louisiana	x	x	x	x	x		x	x	x	
Maine	x			x		x		x	x	x
Maryland	x		x	x						
Mass.			x	x		x			x	x
Michigan	x			x		x		x	x	x
Minnesota	x			x				x	x	
Mississippi	x		x	x			x	x	x	x
Missouri			x	x			x		x	

Continued on next page

EXHIBIT 4.2 (continued)

	Criteria Favoring Rehab				Criteria Favoring New Construction					
State	*Points for Rehab*	*Points for Historic Rehab*	*Points for Small-Scale Project*	*Points for Location in Challenging Areas*	*Points for New Construction*	*Points for Lowest Cost/Unit*	*Limitations on Fees and Overhead Costs*	*Points for Large Units*	*Points for Amenities*	*Points for "Ready to Go"*
Montana	x		x				x			x
Nebraska	x					x	x	x	x	
Nevada	x			x					x	x
New Hamp.				x			x		x	
New Jersey	x			x	x	x	x	x	x	x
New Mexico	x		x	x		x	x		x	
New York						x	x			x
N. Carolina	x			x	x	x	x		x	
N. Dakota	x								x	
Ohio	x			x		x	x			x
Oklahoma	x	x	x	x				x	x	
Oregon				x		x		x	x	
Pennsylvania	x			x		x	x			
R. Island	x	x		x		x	x			x
S. Carolina	x		x	x	x					x
S. Dakota			x	x	x			x	x	x
Tennessee	x			x	x	x	x	x	x	
Texas	x	x	x	x	x	x	x	x	x	x
Utah				x	x	x	x	x		x
Vermont	x	x		x					x	
Virginia	x	x		x				x		
Washington	x	x	x	x	x			x	x	x
W. Virginia			x		x			x	x	
Wisconsin	x		x	x				x		
Wyoming	x				x					
# of States	34	8	23	39	14	24	24	26	37	22

Source: Data in Barr (1998) as analyzed by the Center for Urban Policy Research, Rutgers University.

Scoring Criteria That Favor New Construction

1. *Points for new construction.* Fourteen states give points specifically for new construction. This QAP scoring criteria directly adds to the competitiveness of new construction.

2. *Points for lowest cost per unit.* In an attempt to maximize the LIHTC, about half the states (24) give additional points to those applications showing the lowest cost per unit. Because rehab can be costlier than new construction, this criterion may negatively affect rehab in the LIHTC competition. In many states, this variable is one of the threshold criteria, which immediately hinders rehab applications. If project costs are too high, rehab applications are immediately disqualified from further consideration.

3. *Limitations on fees and overhead.* In addition to considering total cost per unit, approximately 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 overheard may be charged). Therefore, the limitation on soft costs may have a negative impact on rehab. Some states, however, set a limit on soft expenses but will allow for exceptions for rehab. Colorado, for example, provides a range from 10 percent to 15 percent, depending on whether the project is new construction or rehab. Other states set a very high maximum, which allows rehab projects to be considered for the credits. Indiana, for example, provides for a maximum of 20 percent for soft costs for projects costing up to $1 million.

4. *Points for large units.* Approximately half the states (26) award points for projects with a higher share of larger (e.g., two- and three-bedroom) units. Providing more family-size units is a laudable housing goal, but it can be problematic if one is rehabilitating existing buildings with mainly smaller apartments (e.g., studio and one-bedroom units).[4]

5. *Points for amenities.* Many states (37) give additional 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 rehab at a disadvantage.

6. *Points for "ready to go."* Nearly half the states (22) give points for this criterion. Few LIHTC projects can be easily "ready to go." New construction is often subject to challenges related to NIMBYism and other obstacles. It may be even harder for rehab to be "ready to go." For example, raw land in new construction can often be secured with an option. However, for an existing building, where purchase–rehab is contemplated, an option may not be available (the owner may demand an outright sale); or if an option can be had, it may be of limited duration and/or relatively expensive. Building code and other regulations may make the rehab effort more complicated compared with new construction. These and other issues make closure on rehab projects more difficult. As a result, "ready to go" points can negatively affect rehab projects in the LIHTC "beauty contest."

[4]Although the number of bedrooms in our LIHTC file was similar for both the rehabilitated and the new units, this uniformity probably reflects the outcome of the LIHTC competition as guided by the QAPs.

As we have seen, more QAP scoring criteria (six versus four) favor new construction rather than rehab. There are other ways in which the QAP can add to the challenges rehab projects face in seeking to secure tax credits. Some states use set-asides for different elements of the state's population to ensure that projects securing the tax credits represent all deserving populations and areas. These set-asides may make it more difficult for rehab projects to obtain tax credits. For example, some states have separate urban and rural set-asides. Rehab projects are frequently competing in the urban pool, and competition is often stiffer there.

For example, in New Jersey, approximately one in four LIHTC applicants statewide secures a tax credit. However, in the urban pool, with its greater number of applicants, the attrition rate is higher: only about one in six urban-area applicants is successful. Yet, it is in the urban pool that New Jersey's rehab applications are concentrated. Thus, in addition to the individual QAP criteria noted earlier, the set-asides may in this case work against LIHTC rehab applicants.

EFFECT OF THE QAP CRITERIA ON THE OUTCOME OF LIHTC APPLICATIONS

In the preceding section, we examined the ways in which the QAP criteria may "stack the deck" against rehab. Do these criteria empirically affect whether a rehab applicant or a new-construction applicant will persevere in securing the LIHTC?

To provide a definite answer is difficult and would require, at a minimum, information on the *applicants* for the LIHTC. We would need to segregate the applicants into new-construction and rehab applicant pools by state, then determine the success rate of each of the pools by state, and, finally, analyze whether the success ratio, if different, could be the result of the respective state's QAP considerations. We can't do this, however, because applicant data are not available; only information on the outcome—namely, those who secure the LIHTC—can be had.

From the LIHTC file, however, we can derive the LIHTC application *outcome* for most states for the 1992 through 1994 period (exhibit 4.3). States not reporting these data include Arkansas, Hawaii, Idaho, Indiana, and Iowa, Kentucky, Maryland, New Hampshire, New York, Utah, and Wyoming. Locations included in the LIHTC database but not in our analysis of the QAPs include Washington, D.C., Puerto Rico, and the Virgin Islands.

While nationwide about two-thirds of LIHTC activity is new construction, there is considerable variation by state. In 11 states, rehab makes up about half the LIHTC projects (Illinois, Louisiana, Massachusetts, Michigan, Mississippi, New Jersey, Oklahoma, Pennsylvania, Rhode Island, Texas, and Vermont). Alabama and Washington, D.C., funded only rehab projects. Colorado also had a reasonably high share (about four in 10) of rehab projects. In contrast, Nevada gave tax credits to new construction only. In six states, 85 percent or more of the LIHTC projects were new-construction projects (California, Delaware, Minnesota, Montana, North Carolina, and North Dakota).

There are many reasons certain states might lean toward rehab or toward new construction in their LIHTC production. Factors include the state's housing culture (e.g., Massachusetts has

traditionally emphasized rehab, but Nevada has not); available new-construction or rehab opportunities; and political influences (e.g., politically connected sponsors may opt for rehab instead of new construction, or vice versa). Another possible influence is the QAPs. States that use QAPs with relatively more criteria favoring rehab and fewer criteria hindering rehab often have a larger rehab apportionment. Conversely, states with QAP criteria leaning toward new construction tend to have a larger new-construction apportionment. Examples of states with larger rehab apportionments are Colorado, Illinois, Louisiana, Oklahoma, Rhode Island, Texas, and Vermont. Examples of states with larger new-construction apportionments are California, Delaware, North Carolina, and North Dakota.

Connection between the QAP criteria and LIHTC construction strategy outcome is often clearer when we move beyond a cursory classification of the QAP factors (as in exhibit 4.2), to a more detailed state review. Following is a review of QAPs in three states that favored rehab in their LIHTC projects during the period 1992 through 1994 (Louisiana, Oklahoma, and Texas) and in three states (Georgia, Nevada, and West Virginia) where LIHTC activity in the same period emphasized new construction.

From 1992 through 1994, 57 percent of Louisiana's LIHTC projects were rehab. That is not surprising, given the state's many opportunities and longtime support for rehabilitating historic areas and structures (such as in the Vieux Carre in New Orleans). Louisiana's QAP may also be an influence: it is based on a point-scoring system with a 10 percent set-aside for projects that involve qualified nonprofit organizations and a minimum threshold criterion that requires a market study with evidence for the need of the project for every application of 16 or more units. Neither the set-aside nor the threshold requirements have exclusively positive or negative implications for rehab.

EXHIBIT 4.3
LIHTC Activity and Rehab Incidence by State (1992 to 1994)

	Projects[a]		Units[a]	
State/Territory	***Total Projects***	***% Rehab***	***Total Units***	***% Rehab***
Alabama	4	100	447	100
Alaska	6	17	229	23
Arizona	36	30	2,456	21
California	154	13	8,302	15
Colorado	39	39	1,646	35
Connecticut	17	47	841	34
Delaware	16	13	804	28
District of Columbia	3	100	102	100
Florida	118	31	12,203	27
Georgia	80	30	3,944	37
Illinois	123	48	3,674	62
Kansas	47	30	2,348	49
Louisiana	85	57	3,741	70
Maine	32	34	955	53
Massachusetts	27	48	1,469	68
Michigan	161	45	6,826	30
Minnesota	75	11	2,531	18
Mississippi	82	50	3,576	71
Missouri	219	24	4,485	24
Montana	15	13	528	5
Nebraska	50	26	1,080	35
Nevada	12	0	631	0
New Jersey	67	63	3,939	60
New Mexico	10	40	328	18
North Carolina	290	10	3,980	26
North Dakota	25	12	668	14
Ohio	119	44	4,729	32
Oklahoma	46	59	1,648	69
Oregon	42	19	2,825	13
Pennsylvania	206	72	5,565	62
Puerto Rico	26	12	1,697	19
Rhode Island	18	67	717	81
South Carolina	82	21	2,644	34
South Dakota	42	17	1,075	10
Tennessee	72	44	1,824	26
Texas	161	44	11,870	77
Vermont	22	55	438	56
Virginia	80	28	5,110	19
Virgin Islands	2	0	46	0
Washington	60	25	3,426	22
West Virginia	41	29	1,060	22
Wisconsin	123	21	3,499	21
TOTAL (39 states + D.C., PR, and VI)	2,935	34%	119,906	39%

[a]Projects and units with construction strategy data.
Source: LIHTC file analyzed by the Center for Urban Policy Research, Rutgers University.

A project needs a minimum of 120 points to qualify for the tax credits in Louisiana. Projects located in challenging areas are awarded 25 points. Frequently, such areas are within the older sections of cities and have substantial numbers of buildings suitable for rehab. In addition, Louisiana awards 25 points to distressed federal properties. Such properties are critical in the retention of affordable-housing units and also lend themselves to rehab rather than new-construction intervention. Louisiana further awards up to 40 points for historic buildings. It awards 25 points to buildings that qualify for the historic rehab tax credit (HRTC) and 15 points to projects within a historic district that do not qualify for the HRTC. In addition, Louisiana provides up to 30 points to projects that preserve otherwise abandoned housing units; this criterion also lends itself to rehab.

Louisiana's QAP provides points for new-construction projects as well. However, those points tend to be more modest than those available for their rehab counterparts. Only 10 points are available to new-construction projects, and projects with four or more bedrooms receive 15 points. Other amenities also receive points, but they are fewer than those received for rehab. Louisiana does impose cost limitations per unit; however, these are not absolute if greater costs can be justified, as is often the case in rehab.

Oklahoma's QAP point system also is supportive of rehab. That may explain why 60 percent of its LIHTC projects in the period 1992 through 1994 used this construction strategy. Oklahoma provides 10 points for stabilizing threatened existing affordable housing, up to 35 points for the substantial rehab of existing units, and 20 points for projects that use the HRTC. Up to 20 points are given if the community supports the LIHTC housing proposal—such support may be more readily forthcoming when rehab is proposed as opposed to new construction (the latter often confronts NIMBYism). Oklahoma also allows for developer's fees of up to 18 percent for smaller projects and 15 percent for larger projects. That allowance may help keep rehab applications within Louisiana's cost thresholds.

Texas's threshold criterion is geared for projects that are "ready to go." Generally this factor is not favorable to rehab. In addition, Texas sets aside 15 percent of its credits for rural or prison town locations, and these considerations may favor new construction.

Texas does award substantial points to rehab, giving five points for location in QCT/DDAs or government-sponsored empowerment or enterprise zones. Five points are given to projects that preserve existing affordable housing, and eight points are awarded for the rehab of existing rental housing. Four points are awarded to projects that rehabilitate vacant and uninhabitable buildings. Ten points are awarded to projects whose owners are historically underutilized businesses, thus providing for adaptive reuse. The combination of all these points may help explain why 45 percent of Texas's LIHTC projects from 1992 through 1994 were rehab.

In contrast to the circumstances that support rehab in Louisiana, Oklahoma, and Texas, circumstances in Georgia, Nevada, and West Virginia favor new construction.

Georgia at one time gave points for historic rehab but decided that the high cost per historic unit did not justify this award. Georgia's threshold requirements include a maximum per-unit cost limitation. The cost limitation is generally upheld and has prevented many rehab projects from

proceeding to the point-award process. While waivers are available for extenuating circumstances, they are granted at the discretion of Georgia's Department of Community Affairs and are not encouraged for rehab use.

Georgia's allocation of points also favors new construction. Preferred locations are in suburban and exurban areas that have insufficient affordable housing; this locational orientation may primarily encourage new construction. Also, a high percentage of points is given to projects that exceed stiff energy efficiency standards and supply amenities like dishwashers. These improvements can be supplied more easily and more cheaply in new construction.

Nevada's QAP appears to be favorable to rehab, yet the state did not fund even one rehab project from 1992 through 1994. On closer inspection, one sees that the vast majority of Nevada's QAP points are given for tenant income and development team characteristics and not for location or type of project, or any of the other considerations that are supportive of rehab. Nevada's emphasis is clearly on funding an experienced development team that can provide the most units at the least cost. Even though 30 points are nominally given to acquisition and rehab projects, these points are still granted if an existing building is demolished and new construction is built on the site. The awarding of points based on sponsor and developer characteristics should be project neutral; however, that may not be the case because the larger, more established developers may prefer new construction.

West Virginia's QAP repeats the pattern found in Nevada. Although pro-rehab points are available, 71 percent of the tax credits awarded in West Virginia during the period 1992 through 1994 were for new construction. As in Nevada, points given for acquisition and rehab may be used instead for acquisition, demolition, and new construction. There is a set-aside for the preservation of HUD housing, but the points may also be used for new construction funded by HUD. Only 5 percent of the credits are set-asides to be used for HUD projects, but 15 percent of the credits are set aside for projects with 50 or more units. (Many buildings suitable for rehab are smaller than 50 units.) As in Nevada, most of the points awarded are for sponsor and developer characteristics, with a large number of points going to experienced, well-financed developers. The points awarded for location are not specifically limited to inner-city or urban locations, but rather reflect the lack of affordable rental housing.

CONCLUSION

Nationwide, the LIHTC is an important resource for rehab, and LIHTC-funded rehab has aided places in severe need, such as high-minority, low-income, central-city neighborhoods. The state QAPs seem to differ in the extent to which they favor or hinder rehab. This phenomenon may, in fact, be contributing to the variation in LIHTC outcome by state; that is, the share of state LIHTC activity comprising rehab as opposed to new construction. If states wish to foster rehab, it behooves them to reexamine their QAPs in terms of their potential impact on the competitiveness of rehab project applications in the LIHTC "beauty contests."

CHAPTER 5
Building Code Standards and Rehab

INTRODUCTION

Building codes regulate the myriad required construction specifications (e.g., for means of egress, structural loads, and fire protection) for both new construction and rehabilitation. While regulating both types of activities, building codes are largely oriented to new construction and that perspective creates problems for renovation. The building code, in practice, sometimes mandates a new-construction standard for rehab and such required retrofitting of an existing building to a new-building standard is technically problematical and expensive.

Two building code provisions in particular, the "25–50 percent rule" and "change-of-occupancy rule," have often proven most difficult for rehab. This chapter draws and quotes extensively from research conducted by NAHB Research Center, Inc., and Building Technology, Inc. (BTI). The authors worked with BTI in rehab code reform in New Jersey. This chapter explains the provisions of the "25–50 percent rule" and the "change-of-occupancy rule," describes the evolution of each, and summarizes the current (of mid to late 1990s) regulatory climate and recent efforts to revamp the building code to make it supportive of rehab.

25–50 PERCENT RULE

Provision

There are several variations of the "25–50 percent rule," however, all versions seem to set the following requirement: If the total estimated cost of the proposed project over some stated period of time exceeds 50 percent of the estimated cost to replace the existing building, the end result must be a building that is in complete compliance with the building code. The requirement applies to all existing portions of the building, renovated areas as well areas not undergoing rehab. Variations of the rule come into play when the estimated cost of the proposed project is less than 50 percent of the estimated cost to replace the existing building:

- If the cost of the proposed work falls between 25 percent to 50 percent of the estimated cost to replace the existing building, one variation requires only the new work to comply with the code for new construction. A different approach leaves the extent of compliance required for the new work to the professional judgment of the local building official.

- If the estimated cost of the proposed work falls below the 25 percent threshold, one of two approaches is used. Under the first, the new work is generally allowed to comply with the code enforced at the time of construction of the existing building. There are a number of exceptions to this either explicitly stated in the code (e.g., structural renovations might be required to comply with the present code) or covered by the overriding requirement that the building official use his or her judgment in determining that the building will not be more hazardous as a result of the new work. The second approach requires the building official to determine the extent to which the new work must comply with the present code.

Historical Background[1]

According to research conducted by the National Conference of States on Building Codes and Standards (NCS/BCS), the "25–50 percent rule" first appeared in building codes as part of provisions dealing with nonconforming buildings within fire districts (U.S. Dept. of HUD 1986, 16). As population and building density increased in urban areas, several fire disasters alerted communities to the danger of fire literally consuming entire areas of a city where many buildings were of wood-frame construction. The demolition or replacement of frame exterior walls with conforming construction was required when the value of work to be undertaken exceeded 50 percent of the building's value. The original purpose of the rule, therefore, was to prevent rather than promote the rehabilitation of certain classes of buildings.

In the late 1970s, the "25–50 percent rule" could be found in each of three model codes: the National Building Code (NBC) 1978, of the Building Officials and Code Administrators International (BOCA); the Standard Building Code (SBC) 1979, of the Southern Building Code Congress International (SBCCI); and the Uniform Building Code (UBC) 1976, of the International Conference of Building Officials (ICBO). In all three codes, the rule applied to work done in a 12-month period, and required current code compliance for the *entire* building when the cost of the work exceeded 50 percent of the building's value. The codes used the "physical value of the building" as determined by the building official. The NBC stated that this value was to be based on "replacement costs." The SBC stated that it was "the then physical value." Each of the codes differed slightly in the requirements for work in the 25 percent to 50 percent range and for work below 25 percent.

HUD became concerned about the issue of building regulations for rehab in the 1970s. This concern led to the development of a series of documents entitled *Rehabilitation Guidelines*, the intention of which was to encourage and facilitate housing rehab. The guidelines addressed both administrative and technical issues, including the "25–50 percent rule." The *Rehabilitation Guidelines* also recommended changes with respect to the "change-of-occupancy rule."

Exhibit 5.1 provides a chronology of events from the late 1970s through the late 1990s that affected "25–50 percent rule."

[1]This section is derived from research conducted by Building Technology, Inc. for Rutgers University and sponsored by the New Jersey Department of Community Affairs (NJDCA). The research was done in conjunction with NJDCA's efforts to improve New Jersey's building code (see exhibits 5.5 and 5.7).

EXHIBIT 5.1
Chronology of Changes in "25–50 Percent Rule"

1979	The UBC drops the "25–50 percent rule" and requires that additions and alterations comply with the code and not cause the building to become "unsafe and overloaded." In 1985, the UBC expands the meaning of "unsafe." These provisions remain virtually unchanged into the late 1990s.
1980	The *HUD Rehabilitation Guidelines* are published. They recommend modifying or eliminating the "25–50 percent rule" in cases where it is determined that the rule discourages rehabilitation. Also included are technical guidelines for meeting the intent of the building code in noncomplying existing buildings.
1981	The NBC drops the "25–50 percent rule," requires that a building not become unsafe. It also requires that egress, fire protection, and light and ventilation be addressed when a building is expanded.
1982	The SBC drops the "25–50 percent rule," but requires that a building not become unsafe. The SBC gives building officials the authority, subject to appeal, to determine the extent to which the building must conform to the code. With minor editorial and format changes, and the elimination of specific reference to the right to appeal (1985), these provisions remain in the code into the late 1990s.
1984	BOCA publishes the *Existing Structures Code*, which includes maintenance requirements (the earlier maintenance code) and improvements for existing buildings that become "unsafe." The *HUD Rehabilitation Guidelines*, nos. 5–8 (technical guidelines) and portions of nos. 2 and 3 (administrative and statutory), are included in the appendix. The *Existing Structures Code* is referenced in the NBC section on existing structures.
1985	The ICBO publishes the *Uniform Code for Building Conservation* (UCBC) as a code ". . . to encourage the continued use or reuse of legally existing buildings and structures." It constitutes ". . . the minimum standards for change of occupancy, alteration, or repair of existing buildings . . . ." Unlike the BOCA *Existing Structures Code*, the UCBC does not include the maintenance requirements, which remain in a separate code. The *HUD Rehabilitation Guidelines,* nos. 5–8, are included as UCBC guidelines at the end of the document. The UCBC is reissued in 1987, 1991, and 1994 with changes primarily in the seismic requirements.
1987	BOCA modifies the *Existing Structures Code* by eliminating all the rehabilitation provisions and returning it to a maintenance code (with a name change to *Property Maintenance Code* in 1990). Article 32 is added to the NBC as an alternative to compliance with new-construction requirements (in all buildings existing before a date to be defined) where ". . . there is work involving repairs, alterations, additions, or changes of use." Changes are made to Article 32 in 1989 and 1990, and in 1993, it becomes Chapter 34.
1988	The SBCCI publishes the *Standard Existing Building Code* (authorized in 1986) as a rehabilitation code (similar to the UCBC); it does not include maintenance provisions (which remain in the housing code). Appendix 5 includes technical guidelines from the *HUD Rehabilitation Guidelines* (nos. 5–8 plus structural assessment guidelines).

Source: Research provided to authors by Building Technology, Inc.

CHANGE-OF-OCCUPANCY RULE

Provision and Historical Background

Building codes address a change of use or occupancy in existing buildings because such a change may introduce new or greater hazards (U.S. Dept. of HUD 1996, 227). Generally, the three model building codes require that the entire building comply with the new-construction requirements for the new occupancy. For instance, if industrial space was adaptively reused for housing, then the new-building code standard for housing would have to be satisfied.

In the late 1970s, each of the model codes (the National Building Code [NBC], the Standard Building Code [SBC], and the Uniform Building Code [UBC]) addressed this issue in a slightly different manner (exhibit 5.2).

EXHIBIT 5.2
"Change-of-Occupancy Rule" Provisions

NBC 1978	The building official must certify that the " . . . structure meets the intent of the provisions of law governing building construction with a proposed new use and occupancy, and that such change does not result in any greater hazard to public safety or welfare." This language remained virtually unchanged in the NBC until the late 1990s.
SBC 1979	A change of use or occupancy requires that " . . . the building be made to conform to the requirements of this code for the new occupancy." This remained in place until 1982.
UBC 1979	A change of occupancy requires that " . . . such building is made to comply with the requirements of this code for such division or group of occupancy." However, the UBC added the following exception: The building need not conform " . . . to all the requirements of this code . . . , provided the new or proposed use is less hazardous, based upon life and fire risk, than the existing use." This language remained virtually unchanged in the UBC until the late 1990s.

Source: Research provided to authors by Building Technology, Inc.

The *HUD Rehabilitation Guidelines* prompted some changes with respect to the "change-of-occupancy rule." The historical chronology of modifications is shown in exhibit 5.3.

EXHIBIT 5.3
Chronology of Modifications to "Change-of-Occupancy Rule"

1980	The *HUD Rehabilitation Guidelines* are published. They recommend modifying or eliminating the change-of-occupancy trigger where it is determined that it discourages rehabilitation. Included are several examples of jurisdictions that have developed new requirements for changes in occupancy, based on risk reduction. Also included are technical guidelines for meeting the intent of the building code in noncomplying existing buildings.
1982	The SBC modifies its change-of-occupancy requirements to compliance with the "intent of the code." This has remained virtually unchanged into the late 1990s.
1984	BOCA publishes the *Existing Structures Code* which includes maintenance requirements (the earlier maintenance code) and improvements for existing buildings that become "unsafe." The *HUD Rehabilitation Guidelines*, Nos. 5–8 (technical guidelines) and portions of nos. 2 and 3 (administrative and statutory guidelines), are included in the appendix, presumably as a guide to "the intent of the code." The *Existing Structures Code* is referenced in the NBC section on existing structures.
1985	The ICBO publishes the *Uniform Code for Building Conservation* (UCBC) as a code " . . . to encourage the continued use or reuse of legally existing buildings and structures." It constitutes " . . . the minimum standards for change of occupancy, alteration, or repair of existing buildings. . . ." Presumably the UCBC is intended as a guide for the analysis of "life and fire risk." Unlike the BOCA *Existing Structures Code*, the UCBC does not include the maintenance requirements, which remain in a separate code. The *HUD Rehabilitation Guidelines*, nos. 5–8, are included as UCBC Guidelines at the end of the document. The UCBC is reissued in 1987, 1991, and 1994 with changes primarily in the seismic requirements.
1987	BOCA modifies the *Existing Structures Code* by eliminating all the rehabilitation provisions, and returning it to a maintenance code (with a name change to *Property Maintenance Code* in 1990). Article 32 is added to the NBC as an alternative to compliance with new-construction requirements (in all buildings existing before a date to be defined) where " . . . there is work involving repairs, alterations, additions, or changes of use." Changes are made to Article 32 in 1989 and 1990, and in 1993, Article 32 becomes Chapter 34.
1988	The SBCCI publishes the *Standard Existing Building Code* (authorized in 1986) as a rehabilitation code (similar to the UCBC); it does not include maintenance provisions (which remain in the housing code). It includes in the Appendix five includes technical guidelines from the *HUD Rehabilitation Guidelines* (nos. 5–8 and structural assessment guidelines), which, presumably, are intended as guidance for the "intent of the code."

Source: Research provided to authors by Building Technology, Inc.

CURRENT (MID TO LATE 1990s) BUILDING CODE REGULATORY SYSTEM AS APPLIED TO REHABILITATION

Exhibits 5.4 and 5.5 summarize how the contemporary building code regulatory system applied to rehab. As further background, we cite the following recent report.

> All three codes address work in existing buildings in their respective Chapters 34. While each code addresses existing buildings using the same basic terminology ("repair," "alteration," "additions," and "change of occupancy"), a close examination shows that each code is different. All three require alterations to comply with the building code. However, while the NBC and UBC specify that this be done without requiring the rest of the building to comply, the SBC allows the building official to determine the extent to which the rest of the building shall be made to comply. The differences between the three codes are more extensive in the case of change of occupancy, where the UBC requires compliance with the building code with an exception based on risk analysis, the SBC requires compliance with the intent of the building code, and the NBC requires compliance with the intent of the code and provides a detailed rating system that is intended to establish compliance alternatives that meet the code's intent.
>
> In addition, two of the three model code organizations publish separate model codes that address existing buildings: the SBCCI *Standard Existing Building Code* (SEBC) and the ICBO *Uniform Code for Building Conservation* (UCBC). These two codes also differ from each other.
>
> When the model building codes are adopted by states and local jurisdictions, Chapter 34 is frequently and extensively amended. This leads to nonuniformity at the local level even within a single model code region. Massachusetts and New Jersey, for example, are states that use the BOCA National Building Code, but both have found that the NBC's Chapter 34 does not suit their needs. Massachusetts developed its own rehabilitation requirements in 1979 with the purpose of encouraging the reuse of existing buildings. Before it recently adopted a new state-developed rehab code, New Jersey continued to maintain the "25–50 percent rule," a cost-based trigger of new construction requirements in existing buildings, even after it was dropped from the NBC.
>
> This situation of diversity among jurisdictions is further compounded because the model codes (to varying degrees) leave much of the regulation of work in existing buildings to the discretion of the local building official. There is evidence that local officials, in exercising this discretion, sometimes fall back on the "25–50 percent rule," or some other cost-based trigger, in requiring compliance with the code for new construction. And while the SEBC and UCBC were developed to provide uniform guidance to officials in exercising discretion, neither code is widely adopted and there is little information indicating the extent of their use, even as reference materials. (NAHB Research Center, Inc. and Building Technology, Inc., 1997, viii)

EXHIBIT 5.4
Building Code Regulation of the Rehabilitation of Existing Buildings: National Model Codes (1995)

Provisions	Model Code Regulations				
	NBC/BOCA[1]	ICBO/UBC[2]		SBCCI/SBC[3]	
	Chapter 34	Chapter 34	UCBC[4]	Chapter 34	SEBC[5]
Applicability	Applied to all buildings, except that Section 3408 (Compliance Alternatives) is applicable to buildings existing before a date to be specified by the local jurisdiction	All buildings	All buildings	All buildings	All buildings
Regulations governing additions/ alterations	Additions and alterations must conform to new-construction requirements, and portions not affected do not OR Building cannot be made less safe in accordance with the compliance alternatives PLUS a few general requirements	Additions and alterations must conform to new-construction requirements; nonstructural and non-fire-safety-related alterations allowed with same materials. Building cannot become more hazardous based on life safety, fire safety, and sanitation considerations	Additions must conform to new-construction requirements. Alterations may not reduce the degree of safety required by the code under which the building was constructed. Alterations must conform to several specific requirements	Additions and alterations must conform to new-construction requirements. A building official determines the *extent* to which the rest of a building must comply with the code	Same as SBC Chapter 34, with the addition of reasonable means of egress and fire safety requirements. Nonstructural and non-fire-safety-related alterations allowed with same materials
Regulations governing change of use	Building must meet the *intent* of the code for new construction, or meet or exceed mandatory safety scores in accordance with the compliance alternatives	Building must comply with new construction requirements, unless the new use is less hazardous based on life and fire risk considerations	Compliance with alteration requirements and a few additional requirements; compliance with other code requirements determined by five occupancy hazard scales	Meet the *intent* of the code for new construction; seismic requirement triggered by occupancy hazard scale	Same as SBC Chapter 34
Compliance alternatives	Scoring for each of 17 parameters provides a detailed methodology for arriving at compliance alternatives	Not specifically addressed	Acceptance of alternatives encouraged. Reference to HUD Rehabilitation Guidelines appended	Not specifically addressed	Building official is allowed to accept alternatives. Appended HUD Rehabilitation Guidelines provide guidance

Source: Detailed analyses of the respective model codes by the Center for Urban Policy Research (CUPR) and Building Technology, Inc.

[1]NBC = National Building Code published by the Building Officials and Code Administrators, International (BOCA).
[2]UBC = Uniform Building Code published by the International Conference of Building Officials (ICBO).
[3]SBC = Standard Building Code published by the Southern Building Code Congress International (SBCCI).
[4]UCBC = Uniform Code for Building Conservation (UCBC).
[5]SEBC = Standard Existing Building Code.

Continued on next page

EXHIBIT 5.4 (continued)

Provisions	Model Code Regulations				
	NBC/BOCA	ICBO/UBC		SBCCI?SBC	
	Chapter 34	Chapter 34	UCBC	Chapter 34	SEBC
Minimum requirements of all existing buildings	BOCA National Property Maintenance Code and BOCA National Fire Prevention Code, and a few general requirements	Uniform Fire Code, Uniform Housing Code, Uniform Code for the Abatement of Dangerous Buildings, and UBC Appendix Chapter 34 (separately adopted), which includes retroactive life safety requirements	See UBC	Standard Housing Code, Standard Fire Prevention Code, and Standard Unsafe Building Abatement Code	See SBC
Ordinary repairs	Permit not required if safety and services are not affected	Nonstructural and non-fire-safety-related alteration allowed with same materials	Nonstructural and non-fire-safety-related alteration allowed with same materials	Repairs may be made without permit with the approval of a building official	Nonstructural and non-fire-safety-related alteration allowed with same materials
Special historic building provisions	Exempt from requirements of the code if judged to be safe	Exempt from requirements of the code if changes make the building no more hazardous than before	Chapter 6, Historic Structures provides general guidance	Exempt from requirements of the code if building judged to be safe	Same as SBC Chapter 34

EXHIBIT 5.5
Building Code Regulation of the Rehabilitation of Existing Buildings: Illustrative State Approaches (1995)

Provisions	Illustrative State Regulations			
	New Jersey (Before Adoption of the Rehab Code)	Massachusetts (Article 32)	Georgia (Article 3)	New York (Article E)
Applicability	All buildings	Buildings 5 years or older	Buildings built in 1979 or earlier	Buildings 10 years or older or applicant can elect to use Chapter B (Building Construction)
Regulations governing additions and alterations	25–50% Rule Under 25%—Code official determines standards to be met 25%–50%—Items added or altered must meet new-construction code standards (remainder of existing building not affected) 50%—Entire building must meet new-construction code standard	Existing building becomes the minimum standard and minimum requirements (e.g., removal of hazardous conditions and providing for safe loads) must be maintained. Further, the degree of compliance after rehab must not be below that existing before the rehab See also "change of use"	Existing building is the minimum standard. Hazardous conditions must be removed, and degree of compliance following rehab must not be below that existing prior to rehab. See also "change of use"	Minor alterations (excluding modifications to structure, egress, equipment, etc.) not required to meet new-construction code standards 50% rule—If additions or alterations exceed 50%, entire building must meet new-construction code standard 50% rule excludes an addition if it is separated with a 2-hour wall
Regulations governing change of use	If there is a change of use, the new use must meet new-construction code standards	Article 32 rates buildings by use group with a "Hazard Index Scale" from 1 to 8: 1. If there is a reduction or no change in hazard, then there are minimal requirements (e.g., safe loads maintained) 2. If the hazard scale goes up by 1, then requirements increase 3. If the hazard scale goes up by 2 or more, then new-building standards must be met	There is an implicit but not defined hazard scale: 1. If the proposed use after rehab is of equal or lesser hazard, then new-construction standards do not have to be met 2. If the proposed use is more hazardous, then the new-construction standards have to must be met	Most conversions required to meet new-construction code standards, except 5 specific use changes to a lower-hazard use. Sprinklers required if a building becomes a public assembly (occupancy greater than 100 persons). Places of worship are exempt

Source: Center for Urban Policy Research (CUPR) and Building Technology, Inc. detailed analyses of the respective state regulations.

Continued on next page

EXHIBIT 5.5 (continued)

Provisions	Illustrative State Regulations			
	New Jersey (Before Adoption of the Rehab Code)	Massachusetts (Article 32)	Georgia (Article 3)	New York (Article E)
Compliance alternatives	Not specifically but variations can be granted that allow for "life safety equivalent"	Alternatives allowed and encouraged with examples noted in Article 32	Alternatives allowed with examples given	Some alternatives provided in Special Conditions section (fire area; space requirements; exits; int. finishes; some mixed uses; transient dwelling of less than 8 units)
Minimum requirements of all existing buildings	Uniform Fire Code; Housing Code; State; hotel/multiple dwelling regulations	Separate fire prevention laws. Article 32 (3200.4) requires removal of certain hazardous conditions such as "hazardous stairways"	Fire housing; other codes	Fire prevention; housing maintenance; Multiple Residence Law (less than 3 units)
Ordinary repairs	Can be made without application or notice to the construction official	Do not have to comply with Article 32 and can be performed without permit (3200.3.6)	Can be performed without permit	Can be performed without permit if alteration cost is less than $10,000 and if project will not affect structure; fire safety features; electrical and fuel-burn assemblies and their chimneys
Special historic building provisions	Full code provisions on historic buildings can be waived by the construction official if the building is "safe" and allows for public safety	Extensive "special treatment" of historic buildings under Section 635	Yes, museum buildings are exempt from other than basic requirements in the building code	When the primary purpose is the preservation or display of the building, relocations or conversions to museums are not required to meet new construction code standards. State Preservation Office must approve, and fire protection requirements apply
Other				Exception to 50% rule for alterations Additional compliance alternatives exist for structures that qualify as "minor buildings" Alternative requirements exist for evaluating existing structures, or existing building equipment and systems. 1- and 2-family residences can be relocated without full compliance

Source: Center for Urban Policy Research (CUPR) and Building Technology, Inc. detailed analyses of the respective state regulations.

In summary, while the model codes had made progress in developing a building code regulatory climate more supportive of rehab, both technical (i.e., code provisions) and practical (i.e., continued field level utilization of the 25–50 percent rule) impediments remain. This led to efforts for further reform at both the state and federal levels. We summarize three state and one federal (HUD) initiative below.

STATE AND FEDERAL INITIATIVES TO IMPROVE THE BUILDING CODE REGULATION OF REHABILITATION

Massachusetts

We consider Massachusetts's regulation of rehab in depth in a case study (chapter 7), so we shall just briefly note its provisions here.

Massachusetts is regarded as a leader in adopting regulations that foster rehabilitation of existing buildings. A prime example of this is Article 34 of the Massachusetts State Code. Article 34 replaced the rigid "25–50 percent rule" with a much more flexible standard. Rehab requirements are determined by the extent of increase in hazard rating involved in the rehab. If there is no increase (or a decrease) in the hazard involved in the rehab, then Article 34 mandates few changes in the building. If the rehab significantly increases the hazard rating, then new-construction standards have to be met but "compliance alternatives" are permitted (see exhibit 5.5).

Regulation of additions to and repair, alteration, and change of use of existing buildings under Article 34 is proceeding with relative success in Massachusetts. Following are some of the comments made by experts interviewed by the authors: "Article 34 provides an effective framework for looking at each project and an avenue to work out solutions." "Article 34 generally works well, especially compared to the 25–50 percent rule that was absolutely wrong." and "Article 34 provides latitude in making decisions." (Persons interviewed are included in the References section of chapter 7.)

While Article 34 and its accomplishments are to be lauded, the article does have limitations.

- Lack of Awareness/Need for Training. One problem regarding the use of Article 34 is that building officials are frequently not fully aware of its provisions and how it works. Coupled with this is the overall need for more training for building officials at the local level and more staff at state and local levels.

- Unnecessary Requirements. When an extensive rehabilitation project (in terms of expense) is contemplated, code officials sometimes demand building improvements that go beyond the standards specified in Article 34. Thus, the "25–50 percent rule" in effect sometimes lingers.

- Coordination with Fire Protection Regulations. Better coordination with fire officials and linkage of the fire code requirements and Article 34 would result in an improved system in Massachusetts. As things stand now, there is some conflict.

New York

New York state has its own building code that since the 1950s regulated rehabilitation on the following basis:

- Alteration must comply with building code requirements.
- The entire building must comply if the value of alterations in a 12-month period exceeds 50 percent of the replacement value of the buildings (In 1973, the period was reduced to 6 months, thereby somewhat relaxing the 50 percent rule).
- A building must comply with the code requirements when there is change in use.
- Special conditions are applicable to conversion of 3-story wood frame buildings. . . .

Two principal weaknesses in this approach became apparent over time:

- There were excessive reliance on the Board of Review's variance process in the enforcement of the rehabilitation provisions.
- The 50 percent rule was too undefined.

In response to these weaknesses a process to amend the code was initiated in 1989 by a broadly based committee. In December 1994, New York amended its code to incorporate more comprehensive requirements affecting the rehabilitation of existing buildings [exhibit 5.5]. . . .

- "Minor" alterations are defined and permitted without requiring code compliance.
- The 50 percent rule (in a six-month period) is retained but clarified.
- Certain changes of occupancy from obviously higher to lower hazard—are exempted from full code compliance.
- Reduced building code requirements are defined for "minor" buildings and buildings over 10 years old.
- Building relocation triggers foundation requirements only.

A fire safety scoring system was considered during the development of the amendment but was abandoned because code officials on the committee found it

to be too complicated. (NAHB Research Center, Inc., and Building Technology, Inc., 1995, 18–19)

Federal Nationally Applicable Recommended Rehabilitation Provisions

HUD has a long involvement in attempting to foster public building regulations that would be supportive of rehabilitation. Research it sponsored some 20 years ago led to the publication of the *Rehabilitation Guidelines*. In 1995, it sponsored a National Symposium on the Status of Building Regulations for Housing Rehabilitation that was convened by the NAHB Research Center. The meeting included representatives from the agencies that administer the three national model codes, code enforcement officials operating under the codes, and other knowledgeable individuals. The symposium participants recommended that HUD sponsor a self-contained, national model rehab code that would be proposed for adoption by the three national model code organizations. That work was done by the NAHB Research Center, Inc.; Building Technology, Inc.; Koffel Associates, Inc.; and Melvyn Green and Associates, Inc. The Nationally Applicable Recommended Rehabilitation Provisions (NARRP) were released in May 1997.

> The purpose of the NARRP is to set forth a regulatory framework that will encourage the continued use or re-use of legally existing buildings through a predictable system of requirements that will maintain or improve public health, safety, and welfare. The intention is to clarify the requirements that apply when different types of work are performed in existing buildings, and to establish proportionality between the work an owner of an existing building intends to do on a voluntary basis and the additional improvements required to accompany that work as matter of regulatory policy. A regulatory framework that achieves such proportionality will go far towards ensuring that building rehabilitation work will be both affordable and cost effective.
>
> The NARRP implement this proportionality by expanding the term "alteration," currently used by the model codes to cover work in an existing building, into three terms: "renovation," "alteration," and "reconstruction." . . .
>
> [By way of background], the model codes currently address work in existing buildings under four categories:
>
> - Repair
> - Alteration
> - Change of occupancy
> - Addition
>
> Thus the NARRP [which expands the model term "alternation" into the three terms of "renovation," "alteration," and "reconstruction") establishes six categories of work in existing buildings:

- Repair
- Renovation
- Alteration
- Reconstruction
- Change of occupancy
- Addition (NAHB Research Center, Inc., and Building Technology, Inc., 1997, vii, xiii)

The NARRP assigns requirements that increase both in nature and in scope as the rehab work changes from one category to the next. The requirements are assigned according to need as opposed to the often arbitrary mandates that characterized the historical application of the "25–50 percent rule" and the "change-of-occupancy rule." Exhibit 5.6 summarizes how the NARRP regulates repair, renovation, alteration, and reconstruction. "The NARRP approach to change of occupancy adopts the concept of use group hazard indices from the UCBC. A change of occupancy in a building, or portion thereof, to an equal or lower hazard rating is generally treated like a reconstruction throughout the portion or building. A change of occupancy to a higher hazard rating also triggers compliance with related building code requirements, with some exceptions." (NAHB Research Center, Inc., and Building Technology, Inc., 1997, xiii)

New Jersey Rehabilitation Code

> The starting point for the development of the NARRP is [New Jersey's] *Code for Rehabilitation of Existing Buildings* . . . . [Before the new New Jersey code was promulgated, rehab in New Jersey was governed by BOCA's National Building Code. As noted previously, New Jersey had not adopted the NBC's Chapter 34 but followed the 25–50 percent and change of occupancy rules. This system proved unsatisfactory and New Jersey developed a new code so as to foster a more effective regulatory system for rehab that would be characterized by]
>
> - Timeliness (i.e., few projects handled as special cases),
> - Predictability (i.e., due process—people need to know the law applicable to them and be free from arbitrary treatment), and
> - Reasonableness (i.e., provide a reasonable level of safety without imposing excessive additional costs).
>
> New Jersey analyzed several current approaches to the regulation of work in existing buildings in light of these criteria. The analysis focussed on three approaches:

- Article 32 of the Massachusetts building code,
- The *Uniform Code for Building Conservation*, and
- Chapter 34 of the BOCA *National Building Code* (NAHB Research Center, Inc., and Building Technology, Inc., 1997, ix)

New Jersey's *Code for Rehabilitation of Existing Buildings* works to combine the best features of each of these three approaches. That code is summarized in exhibit 5.7. In brief, the New Jersey rehab regulations applies to all buildings as opposed to just "older" buildings as is the case of Massachusetts' Article 32 and New York's Article E. At the heart of the New Jersey approach is a sliding scalar of requirements depending on the work category as follows:

- Repairs
- Renovations
- Alterations
- Reconstruction
- Additions

As indicated in exhibit 5.7, as one ascends the above scalar from the most minor work (repairs) to the most extensive change (reconstruction), increasing more demanding specifications have to be met.

In parallel, the New Jersey rehab code establishes varying provisions for a change of use. That change must satisfy additional requirements if the new use places a building in a higher hazard category. The determination of the "relative hazard" that is associated with the varying requirements encompasses three elements: life, safety and exits; heights and areas; and exposure of exterior walls and exteriors stairway enclosures.

EXHIBIT 5.6
Overview of NARRP for Repair, Renovation, Alteration, and Reconstruction

Building Element or System	Repair		Renovation		Alteration		Reconstruction	
	Planned Work	**Triggered Work**	**Planned Work**	**Triggered Work**	**Planned Work**	**Triggered Work**	**Planned Work**	**Triggered Work**
Structural system	Like material	None	Refinishing of load bearing elements (including fire resistance), or changing, strengthening, or addition of load bearing elements: materials and methods	No reduction in design capacity Accessibility per building code When area > 50%: reinforce URM buildings in high seismic zones	n.a.	No reduction in design capacity	n.a.	Design loads at time of construction
Architectural spaces	Like material except safety glazing	None	Replacement: materials and methods Code wall covering and carpeting	Accessibility per building code When reroofing: parapet work in seismic zones	Reconfiguration of spaces of tenancies: Materials and methods	Accessibility per building When area > 50%: treat as reconstruction	n.a.	Comply with renovation and alteration requirements
Shared egress spaces	Like material Except safety glazing	None	Replacement: materials and methods	Accessibility per building code	n.a.	n.a.	Reconfigurations of egress spaces	Improvements in work area, floor, or building
Fire protection systems	Like material	None	Replacement of component: materials and methods	Accessibility per building code	Reconfiguration or extension of a system, or installation of a new system: materials and methods	Accessibility per building code Few selected improvements When area > 50%: treat as reconstruction	n.a.	Improvements in work area, floor, or building
Mechanical, electrical, and plumbing	Like material With some exceptions	None	Replacement of component: materials and methods	Accessibility per building code			n.a.	Comply with renovation and alteration requirements

Source: NAHB Research Center, Inc. and Building Technology, Inc. 1997, p. xiv.
Note: N.a. = not applicable.

EXHIBIT 5.7
New Jersey Code for Rehabilitation of Existing Buildings

Provisions	New Jersey Rehab Code						
Applicability	All existing buildings						
Regulations governing construction work	A sliding scale of requirements is established depending on the work category as per the following matrix						
	Requirements	A Repairs	B Renovations	C Alterations	D Reconstruction	E Additions	F Change of Use
	1. Do not add hazard/violations	X	X	X	X	X	X
	2. Certain materials prohibited/required	X	X	X	X	X	X
	3. Materials/methods required		X	X[1]	X[1]	X[1]	X[1]
	4. Basic requirements (work area)			(Cannot reduce compliance with basic)	X	X	X
	5. Supplemental requirements (beyond work area)				With triggers by use group	X	X
Regulations governing change of use	6. Additional requirements (for change of use)	Change of use must satisfy additional requirements if the new use places a building in a higher hazard category. Determination of "relative hazard" encompasses 3 elements: life safety and exits, heights and areas, and exposure of exterior walls and exterior stairway enclosures					X

Source: Center for Urban Policy Research (CUPR) and the New Jersey Department of Community Affairs.
[1]Newly constructed elements comply with the UCC.

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BARRIERS TO HOUSING REHAB: LITERATURE ANNOTATION

Abramowitz, Michael. 1993. Access rules relaxed. *Washington Post*, July 22.

The article reports the development of a new building code in Prince George County, Virginia. The new code represents a compromise between developers and representatives of the physically challenged, who fought for years over requirements concerning accessibility by the physically challenged. The previous code was much more stringent than national standards, requiring *all* units to be accessible to the physically challenged, as opposed to only first-floor apartments. The previous code was largely unenforced by building inspectors, who viewed the requirement as unreasonable; the lax attitude exhibited by inspectors was criticized by the physically challenged community. The new code sets up a sliding-scale system in which standards are more stringent for larger developments. The new solution is regarded as an improvement by both developers and representatives of the physically challenged.

Advisory Commission on Regulatory Barriers to Affordable Housing. 1990a. *Unedited transcript of the First hearing of the Advisory Commission on Regulatory Barriers to Affordable Housing*. Hearings held in Chicago, Illinois, July 31. Washington, DC: Ann Riley & Associates, Transcript Service.

This transcript is the record of the first day of hearings held by the Advisory Commission on Regulatory Barriers to Affordable Housing in Chicago. Reports on building rehabilitation were given by Bruce Gottschall, executive director of Neighborhood Housing Services of Chicago, and Kelley A. Bergstrom, chairman of the Board of Directors of the National Multi-Family Housing Council. Mr. Gottschall stressed that codes pose a severe problem to rehabilitation when they are prescriptive rather than performance-based. Mr. Bergstrom reported that local building code restrictions often raise the cost of housing without corresponding health and safety benefits. He also noted that the current mandates for physically challenged accessibility frequently result in significant increases in rehabilitation and construction costs. Mr. Bergstrom further commented that the liability of lenders under the Superfund cleanup law hampers the availability of financing for building renovation.

Advisory Commission on Regulatory Barriers to Affordable Housing. 1990b. Unedited transcript of the *Second hearing of the Advisory Commission on Regulatory Barriers to Affordable Housing*. Hearings held in Chicago, Illinois, August 1. Washington, DC: Ann Riley & Associates, Transcript Service.

This transcript is the record of the second day of hearings held by the Advisory Commission on Regulatory Barriers to Affordable Housing. William E. Farnsel, executive director of Neighborhood Housing Services of Toledo, Inc., testified that building inspectors, fearful of liability, are often overly strict when enforcing the building code. He also commented that stringent historic preservation standards may sometimes conflict with the goals of saving affordable housing (i.e., it is more difficult and expensive to weatherize historic structures because of restrictions on changing windows or using vinyl siding). Salvatore Ferrera, president of the Metropolitan Housing Development Corporation, emphasized that the

building code needs to be performance-based. Mr. Ferrera referenced a case study, comparing the Chicago building code and the BOCA code, to prove that the Chicago code's more stringent standards resulted in significantly increased costs.

Advisory Commission on Regulatory Barriers to Affordable Housing. 1991a. *Not in my back yard: Removing barriers to affordable housing.* Washington, DC: U.S. Government Printing Office.

The report examines regulatory restrictions on urban rehabilitation and infill. Problems experienced in the rehabilitation of existing properties include delays in acquisition, historic preservation issues, and difficulties presented by codes. The report discusses the challenges in removing the barriers, including the "not in my backyard" attitude.

Advisory Commission on Regulatory Barriers to Affordable Housing. 1991b. *Removing barriers to affordable housing: How states and localities are moving ahead.* Washington, DC: U.S. Government Printing Office.

The report profiles the progress of different states in reducing barriers to affordable housing. Virginia is commended for its uniform statewide building code and for the establishment of the Virginia Building Code Academy in 1989—the first such school for building officials. The State of Washington is noted for a research project focusing on building code impediments to affordable housing.

Advisory Commission on Regulatory Barriers to Affordable Housing. 1992. *Creating a local advisory commission on regulatory barriers to affordable housing*. Washington, DC: U.S. Government Printing Office.

The report describes a process for establishing a local advisory commission and gives the criteria to be used by such a commission in evaluating building regulations so as to reduce housing costs. With respect to the building code, the report emphasizes that such codes should be performance-based ,to the maximum extent possible, and should allow for state-of-the-art materials and techniques.

Berry, Sandra A., ed. 1979. *Proceedings of the National Conference of Regulatory Aspects of Building Rehabilitation.* Washington, DC: U.S. Department of Commerce, National Bureau of Standards.

The National Conference on Regulatory Aspects of Building Rehabilitation met in October of 1978 to address the specific concerns of those involved in building rehabilitation, including the impact of building codes. Richard P. Kuchnicki of the National Association of Home Builders noted the problem posed by the requirement to adhere to building codes that have a new-construction orientation. He specifically complained of the 25–50 percent rule, that forced many rehabilitation projects to meet the standards of new construction, including measures which are not necessary for life safety. Kenneth M. Schoonover of Building Officials and Code Administrators, International followed with remedial suggestions. Schoonover outlined the "hazard-level index" system, which would mandate new-building

regulations would be mandated only if the hazard level is significantly changed during rehabilitation. He also recommended that building inspectors be allowed more leeway in evaluating existing buildings, and that information should be made available about the performance capabilities of historical construction systems. Paul Folkins of the City of Boston Building Department described a sample building rehabilitation project, pointing out conflicts with existing regulations that could be resolved by instituting the hazard-level index. The session concluded with a panel discussion on the suggested reforms. The conference also held sessions on technical evaluation guidelines and administrative procedures for building rehabilitation.

Building Technology, Inc. 1981a. *Building regulations and existing buildings: Improved techniques for regulation of existing buildings.* Report prepared for the U.S. Department of Housing and Urban Development. Silver Spring, MD: Building Technology, Inc.

The report by Building Technology, Inc. (BTI) outlines an improved system for regulating existing buildings. It gives an outline for a system of regulation and describes what the activities of that system should encompass. A single-model system, which would be directly applicable to communities, is not given because of the variation in local needs. Rather, the report outlines factors that must be accounted for in the designing of systems on the local level (e.g., each regulation should include an identification in the responsible government agency). Recommendations are made for improvements of both organizational and operational aspects of building regulation. Attention is also given to the need for maintenance of and change in code standards over time. This is deemed especially important on the statewide level so that localities can follow the statewide guidelines. The improved techniques that are recommended in the report are designed to compensate for, or at least draw attention to, the problems outlined in BTI's *Building Regulations and Existing Buildings: Problems with Existing Building Regulatory Techniques.*

Building Technology, Inc. 1981b. *Building regulations and existing buildings: Problems with existing building regulatory techniques*. Report prepared for the U.S. Department of Housing and Urban Development. Silver Spring, MD: Building Technology, Inc.

The report by Building Technology Inc. (BTI) identifies problems in building regulation, including the attitudes exhibited by regulatory personnel (e.g., inspectors overemphasize health and safety requirements), the need for organizational separation in regulatory administration (e.g., conflicts in the regulations of fire prevention and safety agencies), and the orientation of building codes toward new construction. Based on a telephone survey of 28 jurisdictions across the country, nine problematical areas related to housing rehabilitation and building regulations are identified:

1. Statutory system problems: Existing statutory systems do not emphasize rehabilitation or allow for its efficient implementation.
2. Absence of a submittal and approval process for rehabilitation: Rehabbers dealing with building departments are forced to follow procedures designed for new construction.
3. Fear of liability: In an effort to reduce the potential for liability, officials follow a rigid, by-the-book approach to interpreting code requirements.

4. Local rehabilitation must adhere to statewide preemptive codes: The state codes, however, have a new-construction orientation.
5. Inadequate training of field inspectors: Training is sporadic and emphasizes new construction rather than rehabilitation contexts.
6. Inadequate budgets for code enforcement: Inadequate budgets affect the quality and efficiency of the building department.
7. The rule arbitrarily imposes new-construction codes on rehabilitation.
8. Technical problems with new construction criteria: New-construction criteria are often inadequate for rehabilitation needs and discourage alternative solutions.
9. Lack of information on assessment: There is an absence of readily available information to assess the performance of archaic systems.

The report cites as sources the congressional hearings before the 1978 Proxmire Committee and the National Institute of Building Science's *Rehabilitation Guidelines 1980*.

Building Technology, Inc. 1981c. *Building regulations and existing buildings: Techniques for assessing safety and health in buildings*. Silver Spring, MD: Building Technology, Inc. Report prepared for U.S. Department of Housing and Urban Development.

This Building Technology, Inc. (BTI) report focuses on health and safety standards and techniques for determining building performance. It describes the Structural and Fire Evaluation Model (SAFEM), in which buildings are rated on indices of "risk to life." The report also describes how the SAFEM system can be applied and provides detailed information necessary for the assessment of the safety of building attributes (e.g., how to account for factors that need to be considered when determining the risk of the vertical spread of fire). It further stresses the need for additional research to improve the means of assessment of existing systems. The National Institute of Building Science's *Rehabilitation Guidelines 1980* is cited for recommendations of improved standards for such building assessment.

Building Technology, Inc. 1982. *Building regulations and existing buildings: Final report.* Report prepared for the U.S. Department of Housing and Urban Development. Silver Spring, MD: Building Technology, Inc.

This report by Building Technology, Inc. (BTI) summarizes BTI's *Building Regulations and Existing Buildings* series of studies. It describes the evolution of building regulations in the United States and outlines modern building regulations pertaining to existing buildings. The report identifies specific aspects of the regulatory process that inhibit building rehabilitation (summarizing BTI's study, *Problems with Existing Building Regulatory Techniques*). The report also provides criteria for establishing a state-of-the-art local regulatory system (based on the BTI study, *Improved Techniques for Regulation of Existing Buildings*) using improved methods of determining performance levels of existing buildings (detailed in BTI's *Techniques for Assessing Safety and Health in Buildings*).

Bunnell, Gene. 1978. *Final report—Removing obstacles to building reuse and community conservation at the local level*. Washington, DC: U.S. Department of Housing and Urban Development.

The report identifies areas for improvement in the Massachusetts building code and makes recommendations for improvement that are incorporated in Article 22—an amendment to the Massachusetts code. Problem areas are identified by analyzing the original code, reviewing appeals, and studying six test cases (which compare expenses and procedures of rehabilitation under both the original code and the suggested amendment). The report stated that a more flexible code was needed. As a result, Article 22 was adopted. Article 22 uses a performance-based hazard-level index to determine when standards should be mandated for a change in occupancy. Article 22 also allows compliance alternatives. The report recommends development of regional appellate boards for rehabilitation.

Center for Community Development and Preservation. 1979. *Building a foundation for urban revitalization: Tools and techniques for the moderate rehabilitation of multifamily housing.* White Plains, NY: Center for Community Development and Preservation.

The report outlines several barriers faced when rehabilitating multifamily housing. A lack of clearly defined objectives, including the degree of rehabilitation, and a poorly designed work plan often create problems. Inadequate skills possessed by people involved with rehabilitation and a lack of support from key sectors, including the public and financial sectors, and building owners, are barriers. Lack of cooperation from tenants in occupied buildings is a barrier in rehabilitating multifamily housing.

Coleman, Margaret D. 1989. *Building codes and historic preservation*. Washington, DC: National Trust for Historic Preservation.

The publication focuses on regulatory system impediments to historic preservation. She identifies the following as still being problematical, despite recent progress: (1) strict egress requirements; (2) lack of fire ratings for existing materials; (3) extensive approval time; (4) overly strict code officials, who are often afraid of liability; (5) officials unaware of historic preservation code provisions; and (6) stringent accessibility rules for the physically challenged. Recent improvements in building code regulation of historic preservation are mentioned, including Section 513 and Article 32 of the BOCA National Building Code, section 104(f) of the Uniform Building Code; the Uniform Code for Building Conservation (UCBC); and the Standard Existing Buildings Code published by the Southern Building Code Congress. Coleman also cites the legislation of some states that has allowed for flexible code enforcement for historic sites in order to encourage historic preservation. Also emphasis is the need for protection of building code officials from liability and recommends improved relations between code officials and preservationists (e.g.,. through workshops). The publication includes the edited transcript of the Third State Preservation Legislation Conference: Building Codes and Historic Preservation, held in Washington, DC, on October 7, 1987.

Community Development Digest. 1990. National preservation group tries innovative revitalization strategy. *Community Development Digest* (November.)

This article summarizes the National Trust for Historic Preservation's plan to revitalize a historic neighborhood while maintaining and improving the opportunities for low-income people of the neighborhood to remain in their homes. Designed in three stages, the plan focuses on job training and placement programs for current neighborhood residents, as well as on vacant housing rehabilitation and renewal of commercial development. Building codes are mentioned in the discussion.

Community and Economic Development Task Force of the Urban Consortium. 1977. *Recycling of obsolete buildings.* Washington, DC: Public Technology, Inc.

This report mentions two public-policy barriers to rehabilitation. Zoning laws are cited as a barrier when they prevent a change in use and add parking and other requirements. Tax laws were cited as favoring new construction over rehabilitation.

Council of State Community Development Agencies. 1993. Regulatory reform and design recommendations for affordable housing. *The State Line* (July 8).

This article reviews document #68, which is part of Washington's continuing effort to examine the impact of regulations on the cost of housing. The article describes the report's four main topics: information about the impact of regulations on housing affordability; reform of land use; reform of building codes; and design issues related to increased density, such as accessory apartments, parking, and circulation patterns.

Ferro, Maximilian L. 1993. "Building codes and older structures: The Massachusetts experience. In David Listokin, ed. *Preservation and affordable housing: Accomplishments, constraints, and opportunities.*. New Brunswick, NJ: Center for Urban Policy Research, Rutgers, The State University of New Jersey. Draft manuscript of papers submitted at a conference sponsored by the National Trust for Historic Preservation in Newark, New Jersey, May 1990.

This paper gives a brief history of the regulation of existing housing and discusses the formation and effects of Article 22 of the Massachusetts building code. Ferro describes the "25–50% rule" and its effects, showing it to unreasonably increase rehabilitation costs if applied stringently. The paper also describes the evolution of a hazard-level-index system that was applied to rehabilitation. Article 22 incorporates that system and, in addition gives the option of "compliance alternatives" rather than strictly mandating new-construction specifications. Ferro points out that adoption of Article 22 led to "controlled construction" in smaller jurisdictions, where building inspectors deemed all building designs submitted by architects and engineers to be "compliance alternatives." In a controlled construction system, the architect or engineer who submitted the design is held liable. The paper also comments on the cumbersome overlapping responsibilities of local fire marshals and building inspectors.

Green, Melvyn. 1988. Building codes and historic preservation: An overview. *Preservation Forum* (Spring): 11–12.

The article outlines the evolution of the regulation of historic buildings since 1974. The evolutionary process includes movement away from the "25–50 percent" rule toward performance-based historic preservation building provisions. Melvin cites Article 22 of the Massachusetts code; *Rehabilitation Guidelines 1980*; the Uniform Code for Building Conservation (UCBC); and Article 25 (currently Article 34) of the BOCA Code, as significant achievements in making the building code more compatible rehabilitation. The article, for instance, details the modern UCBC, which allows for existing buildings to be rehabilitated without the requirements to comply with new-construction standards. The UCBC is also noted for judging performance based on the hazard levels of building attributes (e.g., egress, ventilation) rather than on a change in occupancy. The UCBC uses the National Institute of Building Science's *Rehabilitation Guidelines* as the standard for rating existing buildings. Article 25 of the BOCA code is acknowledged for not requiring full compliance (e.g., building alterations or additions) with new-construction specifications, and the Southern Building Code Congress is noted as well for plans to publish more flexible code standards for existing buildings.

Greer, Nora Richter. 1989. Affordable housing crisis sparks revolutionary solutions. *Preservation Forum* 3, 3 (Fall): 16–21.

This article focuses on the connection between low-income housing and historic preservation with an emphasis on financing strategies, building codes, renovation, and zoning.

Gross, James G. 1979. *Improving building regulations for rehabilitation*. Washington, DC: National Bureau of Standards, Building Economics and Regulatory Technology Division.

This paper provides an overview of the building regulations applied to rehabilitation. Gross discusses constraints imposed by regulation, recent technical activity to improve rehabilitation regulation. He also identifies research needed to permit more effective use of the existing building stock. A study by the National Bureau of Standards Center for Building Technology identified several regulatory problems. Most codes contain administrative provisions stating that a building's conformance with the requirements of the building code for new construction should increase in relation to the dollar amount of rehabilitation planned (i.e., the "25–50 percent rule"); compliance with those provisions is very expensive. The building codes for new construction present difficulties because they may not address the types of construction present in many older buildings. In addition, new-construction codes are structured to follow the new-construction process, in which the building is designed to comply with established requirements. The technical basis of some codes has been questioned; some building officials feel that they limit innovative solutions because there is a lack of technical flexibility to allow code deviations. Several technical actions are required to alleviate these regulatory problems: (1) evaluation of technical constraints in current codes for various occupancies to determine validity or provide basis for removal; (2) development of a comprehensive set of performance requirements for existing buildings; and (3) preparation of a catalog of building systems no longer in use for evaluating the

performance of archaic systems against code requirements. HUD's *Model Rehabilitation Guidelines* are listed, and research needs for building rehabilitation are noted, including test methods, analytical procedures, field inspection guidelines, and economic considerations.

Harper, R. Eugene, Hydie, and Hopkins. 1988. *To save our past for our future. . . a report*. West Virginia: Task Force for Historic Preservation Legislation.

The authors argue that building code requirements are often so stringent that rehabilitation becomes more expensive than demolition and new construction. They recommend adoption of state-wide building codes with special consideration (e.g., not strictly mandating new-construction building code solutions) given to rehabilitation and historic preservation. The authors call for further research into code barriers to rehabilitation and recommend that code officials be given greater liability protection when accepting compliance alternatives.

Hart, Marion. 1987. "Save the walls." *Civil Engineering* (September): 63–66.

The article demonstrates how meeting historic preservation needs can unnecessarily add to the expense of building rehabilitation. Hart describes the problems encountered during the rehabilitation of an Army and Navy Club. The club had only two walls worth saving for historical reasons, but the remainder of the building was required to be reconstructed in the original style as well. Although most of the historic preservation standards were met, others were not, in order to reduce costs (e.g., less expensive concrete was used as opposed to steel, which in this case was more historically appropriate). Unfortunately, because the reconstruction process deviated from rehabilitation guidelines, the building did not receive tax credits, which would have made the project more economical.

Hoben, James, and Todd Richardson. 1992. *The local CHAS: A preliminary assessment of first year submissions*. Washington, DC: Office of Policy Development and Research, U.S. Department of Housing and Urban Development.

The study reflects the results of a survey of localities that adopted the U.S. Department of Housing and Urban Development's (HUD's) interim Comprehensive Housing Affordability Strategy (CHAS) requirements, including the identification of "areas in need of improvement." The study reveals that 54 percent of the CHAS sample reported that building codes were barriers to affordable housing (barriers to affordable housing are defined as "public policies that affect the maintenance, improvement, and/or production of affordable housing").

Kaplan, Marilyn E. 1992. Building and safety codes: An introduction. *Alliance Review* (Winter): 4–5.

The article addresses the coordination of historic preservation with building and safety codes.

Kapsch, Robert J. 1979. Building codes: Preservation and rehabilitation. *Selected papers dealing with regulatory concerns of building rehabilitation*. Washington, DC: U.S. Department of Commerce, National Bureau of Standards.

This report was used by the National Bureau of Standards in the preparation of its study, *Impact of Building Regulations on Rehabilitation: Status and Technical Needs*. Kapsch seeks to clarify the nature of the problem of building codes hampering the rehabilitation of buildings. Kapsch cites the growth of interest in housing renovation and the constant upgrading of building codes. Since it is prohibitively expensive and impractical for existing buildings to adopt current systems for health and safety, the author recommends that building codes should have performance standards rather than rigid prescriptive requirements.

Levatino-Donoghue, Adrienne. 1979. *The rehabilitation profession.* Washington, DC: National Association of Housing and Redevelopment Officials.

The author discusses several barriers facing the rehabilitation industry. There is a lack of definition and organization in the industry. The uniqueness of each job presents problems of unpredictability and a lack of standardization. Contractors may have security concerns whenworking in inner-city areas, and the Davis-Bacon Act, which requires prevailing wages for tradespeople and apprentices, increases the cost of rehabilitation.

Matthews, Melinda J. 1992. Affordable housing and historic preservation. *Historic Preservation Forum* 6, 3 (May/June): 6–11.

Matthews discusses the ways in which affordable housing can work with, rather than against, historic preservation goals. She also examines how two communities that are economically dependent on their historic fabric—Nantucket Island and Key West—have met the affordable-housing challenge. Codes are not mentioned as a barrier to the housing programs in these two jurisdictions.

McKenna, William F. 1982. *The report of the President's Commission on Housing*. Washington, DC: Government Printing Office.

The report describes national housing problems and makes recommendations for improvement. With respect to the building code, the commission notes that codes often unnecessarily increase the cost of rehabilitation. It states that codes frequently have a new-construction orientation and do not address older types of construction. Codes are also said to hamper innovation because building codes do not incorporate innovative techniques and materials unless private firms secure their adoption (e.g., the manufacturer of plastic pipes will lobby for code adoption, while an innovative design is neglected by a code because no private firm will spend the money to secure its adoption). The report further states that building officials often hesitate to allow alternative solutions that deviate from strict code specifications. It also cites the diversity in local codes, which increases the cost of construction and rehabilitation (e.g., a supplier of building materials would have to meet the different specifications of each locality being supplied, thereby increasing costs). The report supports mandatory statewide codes that prohibit more stringent local codes and that require testing and licensing of local building officials. It also views rigid access requirements for the physically challenged as an impediment to low-cost rehabilitation and calls on the American National Standards Institute (ANSI) to refine its standards to specify scope rather than

universal requirements (i.e., mandating 5 percent of apartments to be accessible to the physically challenged, rather than design requirements that apply to all apartments).

Metz, F. Eugene. 1977. *Housing conservation technology.* Washington, DC: Center for Building Technology.

The study states that building codes are a hindrance to innovations, new construction, and rehabilitation. Codes are shown to hamper innovation, often being extremely slow in adopting technological advances in design and material (e.g., plastic pipe) because of building officials' fear of liability. The study identifies codes as often being prescriptive and not allowing for alternative solutions to a problem. The study also criticizes the "25–50 percent rule," which mandates compliance with the new-construction code if rehabilitation costs escalate to the "25–50 percent" thresholds.

Meyer, Wayne M. 1990. The rehab code: The Building Officials and Code Administrators, International, Inc. (BOCA) approach to code equivalencies in rehabilitation. In Stephen J. Kelley, and Philip C. Marshall, eds., *American Society for Testing and Materials.* Philadelphia, PA.

Meyer addresses the problem of rehabilitation projects being hampered by the need to adhere to modern (new-construction-oriented) building code requirements. He recommends rehabilitation codes that appropriately credit older buildings for their performance capabilities rather than unnecessarily requiring rehabilitation to incorporate modern systems. Article 25 developed by the Ohio Consultative Council of the National Institute of Building Sciences ("Repair, Alteration, Addition to and Change of Use of Existing Buildings"), is presented as an exemplary solution. Under this system, rehabilitated buildings must meet performance levels outlined in an index system. (Points are given for different areas of performance, and a set score must be achieved to comply with the rehabilitation code requirements.) This system allows for older designs to be judged on their performance capabilities; older buildings are not forced to arbitrarily adhere to modern standards. Article 25 (currently Article 34) has been adopted by BOCA.

National Bureau of Standards. 1979. *Impact of building regulations on rehabilitation—Status and technical needs.* Washington, DC: U.S. Department of Commerce, National Bureau of Standards.

This report focuses on the ways in which building codes hamper building rehabilitation. It includes studies by experts and, based on these, makes recommendations for change. The report emphasizes that building codes generally are orientated toward new construction and, accordingly, are inapplicable to rehabilitation. The report calls for codes to require existing buildings to adhere to performance levels rather than to mandate the use of modern systems. Therefore, it argues that technical manuals need to be developed cataloging building systems no longer in use and evaluate their performance capabilities. Furthermore, it stresses the need for elimination or modification of the "25–50 percent rule"; as an alternative, it recommends systems that base evaluation on hazard analysis (citing Article 22 of the Massachusetts Building Code as an exemplary model) rather than on monetary or physical parameters (e.g.,

the dollar value of the rehabilitation). The report also suggests that building officials be given greater decision-making authority and that attempts should be made to legally shield building officials from liability for their decisions. The conclusion emphasizes the need for the United States to preserve its resource of existing buildings.

National Conference of States on Building Codes and Standards, Inc. 1980. *Building rehabilitation research and technology for the 1980's.* Dubuque, IA: Kendall Hunt Publishing Company.

Most of the barriers to affordable rehabilitation mentioned in this report concern building codes. It is difficult to apply codes for new buildings to old buildings. Strict application of the "25–50 percent rule" increases costs by requiring excessive improvements. Costs are also increased when energy conservation requirements for new buildings are applied to rehabilitation.

National Institute of Building Sciences. 1981a. *Rehabilitation guidelines 1980: Egress guideline for residential rehabilitation.* Report prepared for the U.S. Department of Housing and Urban Development, Office of Policy Development and Research. Washington, DC: U.S. Government Printing Office.

The fifth volume of *Rehabilitation Guidelines* gives technical design specifications for elements of egress that are regulated by building codes (e.g., the number of exits needed in different residential situations). The guideline also analyzes current codes with respect to each aspect of egress and provides specific design alternatives to rehabilitation problems within the parameters of current codes.

National Institute of Building Sciences. 1981b. *Rehabilitation guidelines 1980: Electrical guidelines for residential rehabilitation.* Report prepared for the U.S. Department of Housing and Urban Development, Office of Policy Development and Research. Washington, DC: U.S. Government Printing Office.

The sixth volume of *Rehabilitation Guidelines* recommends model electrical code standards and details procedures and criteria for electrical inspection. The guideline also describes sample problems that frequently occur and offers solutions.

National Institute of Building Sciences. 1981c. *Rehabilitation guidelines 1980: Guideline for approval of building rehabilitation*. Report prepared for the U.S. Department of Housing and Urban Development, Office of Policy Development and Research. Washington, DC: U.S. Government Printing Office.

The second volume of the *Rehabilitation Guidelines* series outlines the regulatory processes of rehabilitation and distinguishes them from those of new construction. It details a five-step approval process for rehabilitation: (1) outreach program; (2) preliminary review; (3) construction permits; (4) construction inspections; and (5) maintenance inspections. It further recommends improvements in the administration of granting permits and conducting inspections (e.g., giving inspectors greater authority).

National Institute of Building Sciences. 1981d. *Rehabilitation guidelines 1980: Guideline for managing official liability associated with building rehabilitation.* Report prepared for the U.S. Department of Housing and Urban Development, Office of Policy Development and Research. Washington, DC: U.S. Government Printing Office.

The fourth volume of *Rehabilitation Guidelines* recommends specific legislation with respect to liability (i.e., granting immunity to public entities and employees) that can be directly adopted by states and localities. It also recommends measures that agencies can adopt to reduce their level of liability (e.g., providing building inspectors with detailed manuals).

National Institute of Building Sciences. 1981e. *Rehabilitation guidelines 1980: Guideline for setting and adopting standards for building rehabilitation.* Report prepared for the U.S. Department of Housing and Urban Development, Office of Policy Development and Research. Washington, DC: U.S. Government Printing Office.

The first volume in the *Rehabilitation Guidelines* series describes the types of regulations that apply to housing rehabilitation, gives examples of problems communities might have with building codes, and offers solutions. It stresses solutions that are modifications to the application of existing codes, rather than systematic changes. For example, if the "25–50 percent rule" becomes cumbersome, it should be "liberally" interpreted (e.g., defining the value of a building by its replacement cost, or excluding plumbing expenses from the cost of the rehabilitation). The volume also includes an appendix of various codes that are recommended as models.

National Institute of Building Sciences. 1981f. *Rehabilitation guidelines 1980: Guideline on fire ratings of archaic materials and assemblies.* Report prepared for the U.S. Department of Housing and Urban Development, Office of Policy Development and Research. Washington, DC: U.S. Government Printing Office.

This volume of the Rehabilitation Guidelines focuses on the fire-related performance of "archaic" construction, which generally encompasses those buildings constructed before 1950. It contains the fire ratings of building materials and assemblies no longer listed in current building codes or related reference standards. The report can be used by architects, engineers, and code officials when evaluating the fire safety of a rehabilitation project. Introductory material explains flame spread, the effects of penetrations, and methods for determining the ratings of assemblies not listed in the guideline. Code requirements for the fire performance of key building elements (e.g., walls, doors, floor/ceiling assemblies, and so on) are appended. Requirements are stated in performance terms—hours of fire resistance. The final evaluation phase of a rehabilitation project is examined, and the experimental and theoretical approaches to design solutions that can make possible the continued use of archaic materials and assemblies in the rehabilitated structure are described. Harmathy's "Ten Rules of Fire Endurance Ratings" are also included to provide a foundation for extending the appended data to analyze or upgrade current as well as archaic building materials and assemblies. Footnotes, illustrations, and 165 references are supplied.

National Institute of Building Sciences. 1981g. *Rehabilitation guidelines 1980: Introduction.* Report prepared for the U.S. Department of Housing and Urban Development, Office of Policy Development and Research. Washington, DC: U.S. Government Printing Office.

This pamphlet describes the background of HUD's eight-volume *Rehabilitation Guidelines*, published in 1980, their benefits for cities and states, and the topics covered by each volume. HUD developed the voluntary guidelines to help jurisdictions overcome a serious impediment to rehabilitation: codes and the application of regulatory processes designed for new construction imposed on rehabilitation activities. Rehabbers of old buildings often find it expensive, time-consuming, or even impossible to comply with new construction requirements in building codes. Some cities with successful rehabilitation programs have overcome these problems by instructing their inspectors to ignore certain building code requirements in rehabilitation projects, although this encourages other violations of city ordinances and may create liability problems. The first volume, *Guideline for Setting and Adopting Standards for Building Rehabilitation,* describes methods for identifying regulatory problems and recommends ways to revise existing legislation. The second, *Guideline for Approval of Building Rehabilitation,* focuses on the differences between regulating new construction and regulating rehabilitation projects. The third, *Statutory Guideline for Building Rehabilitation*, contains enabling legislation that promotes rehabilitation through more effective regulation. The guideline for *Managing Official Liability Associated with Building Rehabilitation* considers code officials' liability. The final four volumes address the following topics: components of egress; electrical systems; drain, vent and waste systems; and fire ratings of building materials and assemblies no longer listed in current codes or references.

National Institute of Building Sciences. 1981h. *Rehabilitation guidelines 1980: Plumbing DWV guideline for residential rehabilitation.* Report prepared for the U.S. Department of Housing and Urban Development, Office of Policy Development and Research. Washington, DC: U.S. Government Printing Office.

The seventh volume of *Rehabilitation Guidelines* gives technical criteria for codes that apply to plumbing in existing buildings and recommends procedures for inspections. It also offers sample problems that may be encountered during rehabilitation and provides detailed solutions. The appendixes to the guideline include performance criteria and model designs for drain, waste, and vent (DWV) systems.

National Institute of Building Sciences. 1981i. *Rehabilitation guidelines 1980: Statutory guideline for building rehabilitation.* Report prepared for the U.S. Department of Housing and Urban Development, Office of Policy Development and Research. Washington, DC: U.S Government Printing Office.

The third volume of *Rehabilitation Guidelines* recommends legislation that would assist rehabilitation regulation. It details a rehabilitation code encompassing (1) basic policymaking; (2) code revision; (3) administration and enforcement; (4) special applications (e.g., for buildings with changing occupancy, historical buildings, and so on); and

(5) appellate review. The study further recommends the creation of a technical advisory board, a code enforcement agency, and an appellate body.

National Institute of Building Sciences. 1987. *Meeting America's housing needs through rehabilitation of existing housing and vacant buildings*. Washington, DC: National Institute of Building Sciences.

This report details the worsening trends in providing affordable housing for low-income households during the past 40 years and recommends the rehabilitation of abandoned buildings and poor-quality units as a solution to this problem. It notes that the goal of a decent home for every American family, set in 1949, has not been met and that the federal government appears unlikely to expand housing subsidies to reach more needy households. Statistics show that housing has improved in quality and has become less crowded over the past 40 years. However, that improvement has not extended to housing for very low-income people. The analysis concludes that nonprofit organizations and private developers that still provide housing for low-income renters and homeowners should focus on using abandoned buildings because those structures can be acquired for little or no cost and rehabilitated for less than the cost of new construction. Detailed recommendations for accomplishing this effort are provided in four areas: zoning, building codes, regulations, and finance.

Paxton, Gregory B. 1988. The Georgia Trust building and fire code project. *Preservation Forum* 2, 1 (Spring).

Paxton outlines the model ordinance developed by the Georgia Trust for Historic Preservation, which is designed to allow rehabilitation projects to implement alternative solutions code compliance (and new-construction-oriented) code compliance. The Georgia ordinance emphasizes compliance alternatives; model solutions are offered for specific problems encountered during rehabilitation (e.g., inadequate number of exits). A minimum performance standard requires that the degree of compliance to current code after the rehabilitation process be equal to or greater than the degree before rehabilitation. Specific unsafe conditions (e.g., structural defects) must be remedied through compliance alternatives. The ordinance mandates that new additions and mechanical systems meet modern code requirements. It further states that if a change of use alters the hazard level of the building, then modern code requirements or compliance alternatives would apply. Special considerations are given to historic buildings that are open to the public and that have a high degree of architectural integrity. The ordinance does not require historic buildings to meet code standards, but set minimum safety requirements that must be met (e.g., the number of fire alarms to be included).

Pielert, James H. 1981. *Removing regulatory restraints to building rehabilitation: The Massachusetts experience*. Washington, DC: Center for Building Technology, National Bureau of Standards.

The report describes the creation and implementation of Article 22 of the Massachusetts building code. It cites research by the National Bureau of Standards (*Impact of Building Regulations on Rehabilitation—Status and Technical Needs*) that identified areas where

existing building codes impeded rehabilitation. The NBS research, for example, argued the need to replace the "25–50 percent rule" with a performance-based system. The formulation of Article 22, which was based on the conclusions of the NBS research. The Pielert report includes the text of Article 22—an amendment to the Massachusetts building code is included—Article 22 applies a hazard-level-index system that mandates new building standards only if the hazard level (determined by occupancy and use) significantly changes. Article 22 also gives building officials greater decision-making authority and includes appendices with information on archaic systems and compliance alternatives. The Pielert describes the implementation of Article 22 and provides four case studies that demonstrate its impact on improving the process of building rehabilitation.

Rothberg, Alan E. 1976. *The impact of real estate lending biases on the purchase and rehabilitation of older urban residences.* Washington, D.C.: HUD.

Rothberg identifies the financial-lending impediments to rehabilitating and refurbishing residences in older city neighborhoods and suggests financially viable solutions. He examines interactions between community groups and lending officers and discusses how lending decisions are influenced by traditional, emotional, economic, and "irrational" factors. Rothberg also explores lending discrimination, particularly discrimination based on the age and location of structures, and suggests ways in which it can be avoided.

Shoshkes, Ellen. 1991. *Balanced housing evaluation: Promise, process, and product rehab.* Newark, NJ: NJIT/Architecture and Building Science.

This study was sponsored by the New Jersey Department of Community Affairs to evaluate the Balanced Housing Program of New Jersey with respect to new construction and rehabilitation. It notes impediments to affordable-housing rehabilitation and provides case studies to support its findings. The study notes that building codes often require complete building transformation rather than just refurbishment to meet health and safety needs. It states, for example, that requirements to ensure access for physically challenged accessibility are often unnecessarily stringent (e.g., *all* units are required to be accessible, not just first-floor units), and impede rehabilitation. The study reports that rehabilitation is often hampered by building officials who require compliance with current code specifications as opposed to reliance on the performance capabilities of existing systems. The report contains numerous case studies. An example is the Aleda project, which experienced cost increases and time delays as the result of having to comply with not only a stringent building code but one that unexpectedly changed as the project progressed.

Simpson, James R., and Mary S. Simpson. 1977. *Constraints to the introduction of innovative technology in the repair, replacement and renovation of existing housing.* Report prepared for National Bureau of Standards, Center for Building Technology. Annandale, VA: Simpson Associates.

The report highlights barriers to the use of new-construction technologies in rehabilitation. Among those cited are contractors' lack of access to building materials professionals and

increases in costs and time due to the lack of innovation in the construction business. Rigid specification of materials is also a problem.

Skalko, Stephen V. 1992. Building codes versus preservation of historic property. *Alliance Review* (Winter) 1–3.

Skalko examines the goals of the Standard, BOCA National, and Uniform Model Building Codes and their interpretations for historic structures.

Smith, Baird. 1979. Information structure of building codes and standards for the needs of existing buildings. *Selected papers dealing with regulatory concerns of building rehabilitation*. Washington, DC: U.S. Department of Commerce, National Bureau of Standards.

This report was used by the National Bureau of Standards in the preparation of its study *Impact of Building Regulations on Rehabilitation—Status and Technical Needs*. The report details the problem posed by the orientation of building codes toward new construction, including the use of prescriptive standards and the lack of reliable information about older materials and systems. The report recommends a decision process that could be incorporated into building codes, as follows: (1) determine the current occupancy classification (e.g., residential, business, storage, and so on); (2) evaluate the performance level of each attribute (e.g., fire prevention, egress, and so on); (3) determine the performance level of each attribute; (4) improve each attribute's performance level. The report also advocates on-site testing of materials (which is deemed to be more accurate than off-site testing) and gives needed information about the performance capabilities of older materials.

Solon, Thomas E. 1992. Protecting buildings for life: a fire safety equivalency system. *CRM Bulletin* 15, 6: 30–32.

Solon discusses the application of fire-safety codes to historic structures.

Turner, Margery Austin, and Veronica M. Read. 1990. *Housing America: Learning from the past, planning for the future*. Washington, DC: The Urban Institute.

This brochure summarizes seminars held by the NAHB; Center for Urban Policy Research, Rutgers University; and the Center for Public Dialogue. The regulatory reform seminar, held March 15, 1989, included discussions on the JVAH demonstration project, the *Mount Laurel* decision, the Massachusetts Anti-Snob Act, and the California Mandated Inclusionary Housing Act. It recommended a review of building codes to allow innovative and cost-saving construction; encouragement of high-density development aimed at a variety of income levels, and research on the effect of the property tax on affordability.

U.S. Department of Commerce. 1979. *Selected papers dealing with regulatory concerns of building rehabilitation.* Washington, DC: U.S. Department of Commerce, National Bureau of Standards. February.

A collection of six papers dealing with rehabilitation and preservation of existing buildings and how the current system of regulating construction presents various barriers to rehabilitation. Two of the papers cover problems with existing building codes and standards. Another examines the importance of contractors understanding the costs involved in rehabilitation. A fourth paper details the role of fire prevention and control on building construction and regulations. Rehabilitation as a way to meet housing needs is covered in a fifth paper. The collection concludes with a report on building codes and historic preservation in Savannah, Georgia.

U.S. Department of Housing and Urban Development. 1976. *Housing in the seventies. Working papers 2.* National Housing Policy Review. Washington, DC: U.S. Department of Housing and Urban Development.

One of a two-volume set of working papers produced in response to a 1973 presidential directive, this anthology organizes the papers in the following categories: (1) building codes, (2) housing subsidies and housing markets, (3) tax law, (4) rehabilitation and preservation, (5) housing production, (6) housing revenue sharing, (7) housing allowances, (8) equal opportunity, and (9) general. Specific topics include building codes for manufactured housing and the influence of model codes on local builders' acceptance of innovative technology; housing subsidies and their influence on housing starts; and the social aspects of federal low-income housing. Also discussed are existing and proposed tax regulations related to real estate development and investment; rationales for homeowners' tax benefits; tax credits as a housing assistance system; rehabilitation versus redevelopment; and scattered versus concentrated housing rehabilitation. A parent report, based on the working papers, was published in 1973.

U.S. Department of Housing and Urban Development. 1979. Draft rehabilitation guidelines. *Federal Register*, vol. 44, no. 215. Washington, DC: Department of Housing and Urban Development, Office of the Assistant Secretary for Policy Development and Research.

HUD's draft rehabilitation guidelines, developed for voluntary adoption by states and communities, are presented for use with existing building codes in the inspection and approval of rehabilitated properties. The National Institute of Building Sciences developed the guidelines with the assistance of a committee of representatives from various organizations within the building community; the participation of the organizations in the development of the rehabilitation guidelines is described. The administrative and legal guidelines for building rehabilitation include guidelines for setting and adopting standards for decisions on municipal approval, statutory guidelines, and guidelines for managing official liability. An appendix furnishes rehabilitation provisions adopted in states and municipalities. Technical guidelines for residential rehabilitation include guidelines for egress, electrical installations and plumbing drains, and waste and venting. The technical guidelines are intended for architects, contractors, and building officials who have specific building code problems. Finally, fire ratings of archaic materials and assemblies provide technical data no longer available in current regulatory documents. Extensive entries are provided for the fire ratings of walls, columns, floors, and ceilings. Introductory material discusses flame spread,

the effects of penetration, and methods for determining the ratings of assemblies not listed in the guidelines.

U.S. Department of Housing and Urban Development. 1994a. *Cost-saving construction opportunities and the HOME program: Making the most of HOME funds.* Washington, DC: U.S. Department of Housing and Urban Development, Office of Affordable Housing. December.

This report presents a model for encouraging the widespread use of cost-saving technologies and construction techniques in projects receiving HOME funding, including rehabilitation projects. A goal of the program is to limit the extent to which properties are "substantially rehabilitated" at a cost in excess of $25,000 per unit—which would subject the property to additional requirements.

U.S. Department of Housing and Urban Development. 1994b. *Energy conservation and housing rehabilitation under the HOME program.* Washington, DC: U.S. Department of Housing and Urban Development, Office of Affordable Housing. May.

A guide to using HOME funds to ensure energy conservation in housing rehabilitation programs. Includes information on federal resources for energy efficiency and housing rehabilitation, models for combining housing rehabilitation, and examples of joint housing-energy programs. The report details specific energy-saving improvements that should be made during rehabilitation.

U.S. Department of Housing and Urban Development. 1995a. *Innovative rehabilitation technologies: A state of the art overview.* Report prepared by the NAHB Research Center for the U.S. Department of Housing and Urban Development, Office of Policy Development and Research. December.

A study conducted of the building industry that examined new technologies and advances in materials, products, and systems use in residential buildings. The goal was to promote these new technologies as a way to lower costs, decrease the time needed for rehabilitation, and improve the quality of rehabilitation. The study includes information about materials and products and information technology improvements that are applicable to rehabilitation..

U.S. Department of Housing and Urban Development. 1995b. *The status of building regulations for housing rehabilitation.* Report prepared by the NAHB Research Center and Building Technology, Inc., for the U.S. Department of Housing and Urban Development, Office of Policy Development and Research. December.

A report on a national symposium convened to provide a status of rehabilitation in the United States. The symposium examines the three model building codes used in the United States and enforcement of the codes as they relate to rehabilitation. Three states, New York, New Jersey, and Massachusetts, present their approaches to the regulation of rehabilitation. The report concludes with recommended HUD actions at a national level.

U.S. Department of Housing and Urban Development. 1997. *Nationally applicable recommended rehabilitation provisions.* Prepared by the NAHB Research Center, Inc., for the U.S. Department of Housing and Urban Development, Office of Policy Development and Research. May.

The Nationally Applicable Recommended Rehabilitation Provisions (NARRP) provide a national regulatory framework for the reuse of existing buildings and their adaptation to new uses. The report includes information on the current regulatory system, including the three model building codes, relationships to other regulatory and public policy goals of building rehabilitation, and categories of work covered by the NARRP. The NARRP implements these regulations proportionally by replacing the single category "alteration," currently used in the model codes—with three categories: renovation, alteration, and reconstruction. This makes the NARRP more precise than the current codes.

U.S. Department of Housing and Urban Development. 1998. *A national survey of rehabilitation enforcement practices.* Prepared by the Building Research Council, School of Architecture, University of Illinois at Urbana-Champaign, for the U.S. Department of Housing and Urban Development, Office of Policy Development and Research. June.

The report summarizes a nationwide survey of code enforcement administrators. The survey examined the extent to which rehabilitation provisions of model building codes have been adopted by local agencies. Responses to the survey showed that HUD's promotion of specific code provisions for rehabilitation had been successful. Findings about code enforcement showed variety from jurisdiction to jurisdiction, as well as from region to region. Many requirements in the technical code provisions continue to discourage rehabilitation. The report also includes many open-ended comments and case studies that illustrate both barriers to rehabilitation and approaches to encouraging rehabilitation.

U.S. Department of Housing and Urban Development. 1983. *Streamlining rehabilitation programs.* Report prepared by Dialogue Systems, Inc. for the U.S. Department of Housing and Urban Development.

This report about rehabilitation programs includes a section on determining the feasibility of rehabilitation. Among the barriers cited are increased costs and time due to duplicative tasks in the rehab process. Another barrier is the lack of a coordinated framework for rehabilitation.

U.S. National Commission on Urban Problems. 1969. *Building the American city: Report of the National Commission on Urban Problems.* Washington, D.C.: U.S. Government Printing Office.

The commission details the many problems facing urban communities, including housing needs and barriers. It criticizes the prevailing building code standards intended for new construction as being unsuitable for housing rehabilitation. The commission calls for federal regulation of standards for housing rehabilitation and a new building code.

Werwath, Peter. 1993. The price of regulation. In David Listokin and Barbara Listokin, eds., *Preservation and affordable housing: Accomplishments, constraints, and opportunities.* New Brunswick, NJ: Center for Urban Policy Research, Rutgers, The State University of New Jersey. (Draft manuscript of papers submitted at a conference sponsored by the National Trust for Historic Preservation in Newark, New Jersey. May 1990.)

The article discusses the specific administrative and technical aspects of building regulation that hamper housing rehabilitation. Administrative problems include the necessity of receiving approval from multiple government departments and multiple review boards. The article also describes technical problems arising from building codes that are either too strict or too lenient. It points out that codes often have a new-construction orientation and lack sensitivity to rehabilitation contexts. The article also notes that "jack-in-the-box" codes (codes that arise only under certain circumstances) often are discovered only after rehabilitation has begun, making compliance problematical. It further states that when the "25–50 percent rule" was eliminated from building codes, most authority was deferred to building inspectors; although this represents was an improvement over the strict "25–50 percent" rule, the new system is far from ideal. Building inspectors are thus judged to have excessive decision-making authority that too often leads them to require rehabilitation procedures not absolutely mandated by the code. The article recommends such improvements as formation of code interpretation manuals, refinement of the rehabilitation code to establish standards of performance, and elimination of codes that are unenforceable. The article includes tables that give examples of costs added by "unnecessary" building regulations.

APPENDIX B: NATIONAL REHAB STUDY HOUSING RESOURCE GROUP

NAME/AFFILIATION
Robert Adams—VMH, Inc.
Randall P. Alexander—The Alexander Company
DeWayne H. Anderson—Anderson Development Company
Alfred Arezzo—Hoboken, NJ
William Asdal—Asdal Builders
James E. Babbitt—Flagstaff, AZ
Richard Baron —McCormack Baron & Associates
Eddie Belk—Belk Architects
Peter Bell—National Housing & Rehabilitation Association (NHRA)
Bruce Block—Milwaukee, WI
Jim Bonar—Skid Row Housing Trust
William Brenner—National Institute of Building Sciences (NIBS)
Thurman Burnette—Rural Development
Andrew Chaban—Princeton Properties
William Connolly—New Jersey Department of Community Affairs, Division of Codes and Standards
Karen A. Danielsen—Director of Housing Policy and Practice, Urban Land Institute (ULI)
William F. Delvac—Latham & Watkins
Linda Dishman—LA Conservancy
Dan Dole—Scottsdale, AZ
Carl Dranoff—Dranoff Properties
David Engel—Office of Policy Development and Research
Dan Falcone—New Economics for Women
Mario Fonda-Bonardi—Fonda-Bonardi & Hohman, Architects
Joan Galleger—Garsten Management Corporation
Terry Goddard—Law Offices of Terry Goddard
Tony Goldman—Goldman Properties, Inc.
Dean Graves—FAIA
Frank Green—Chattanooga Neighborhood Enterprise (CNE)
Cissy Gross—Kansas City, MO
George Haecker—Bahr Vermeer & Haecker Architects
David Harder, Executive Director—Little Haiti Housing Association (LHHA)
James Harger—Winn Management
David Hattis—Building Technology, Inc.
Curt Heidt—Federal Home Loan Bank
Michael Hervey—Jackson, MS
Kitty Higgins—National Trust for Historic Preservation
Bill Huang—Community Partners (National Trust)
Lawrence Jacobsen—Mortgage Bankers Association
Marty Johnson—Isles, Inc.
Anthony Jones—Clearwater, FL
Will Jones, Research Officer—National Association of Housing and Redevelopment Officials (NAHRO)
Wendall C. Kalsow—McGinley Hart & Associates
Kevin Kelley—Leon Weiner Associates
C. Theodore Koebel—Center for Housing Research, Virginia Tech
Karl K. Komatsu—AIA Komatsu Architecture
Richard Kuchnicki—International Code Council
Robert Kuehn—Keen Development Corporation
Michael Lappin—The Community Preservation Corporation (CPC)

NAME/AFFILIATION
John Leith-Tetrault—Community Partners (National Trust)
Aaron Lewit—Enterprise Foundation
Kelley Lindquist—Artspace Projects, Inc.
Stanley Listokin, Executive Director—Masada Construction
Stanley Lowe, Executive Director—Pittsburgh Housing Authority
Weiming Lu—Lowertown Redevelopment Corporation
Alan Mallach—City of Trenton, NJ, Department of Housing & Development
Christy McAvoy—Historic Resources Group
Bob McLoughlin/Helen Lopez—Albuquerque Housing Services
Michael Mills—Ford Farewell Mills & Gatsch Architects
D. Thomas Mistick—Mistick Construction
William Mosher—Mile High Development
Ronald F. Murphy—Stickney Murphy Romine Architects
Jerry Myers—Pocatello, ID
James Paley, Executive Director—Neighborhood Housing Services of New Haven
Bryan Park—Northwest Housing Resources (NHR)
Sharon Park, Heritage Preservation Services—National Park Service
Brian Patchan—National Association of Home Builders (NAHB)
Perry Poyner Alley—Poyner Architects
Jonathan F. P. Rose—Affordable Housing Construction Corp.
Donovan Rypkema—Washington, DC
Clark Schoettle—Providence Preservation Society Revolving Fund
Howard B. Slaughter, Jr.—Pittsburgh, PA
Kennedy Smith—National Main Street Center (National Trust)
Robin Snyder—U.S. Environmental Protection Agency
Gary Stenson—MetroPlains Properties, Inc.
Kathleen Taylor, Owner—Taylor Construction Services
Pat Tiller—National Park Service
Stephen Turgeon—Memphis, TN
Mike Turner—*Professional Remodeler*
George Vallone—West Bank Realty
Emily Wadhams—Burlington, VT
Ronald Wells—Spokane, WA
Kathleen H. Wendler—Southwest Detroit Business Association
Peter Werwath—The Enterprise Foundation
Jim Wheaton—Chicago Neighborhood Housing Services (NHS)
Bradford J. White, Esq.—Project Management Advisors, Inc.
David Wood—*Professional Remodeler*

The Housing Resource Group is a diverse group as we illustrate below.

Organization Representatives

Individual	*Organization*
Bell	NHRA
Brenner	NIBS
Danielson	ULI
Jacobsen	MBA
Jones	NAHRO
Kuchnicki	ICC
Patchan	NAHB
Wood, Turner	*Professional Remodeler* (magazine)

Public-Sector Representatives

Individual	*Agency*
Arezzo	Hoboken, NJ
Burnett	Farmers Home Administration
Connolly	N.J. Dept. of Community Affairs
Dole	Phoenix, AZ
Falcone	Los Angeles, CA
Jones	Tampa, FL
Mallach	Trenton, NJ
Park (S.)	National Park Service
Snyder	EPA

Private-Sector Representatives

Individual	*Company*
Alexander	Alexander
Anderson	Anderson
Asdal	Asdal
Chaban	Princeton Properties
Dranoff	Dranoff
Kelley	Leon Weiner Assoc.
Kuehn	Keen Development Corporation
Listokin	Masada Construction
Mistick	Mistick
Taylor	Taylor
Vallone	West Bank

Community Organization–Nonprofit-Sector Representatives

Individual	*Organization*
Adams	VMH
Bonar	Skid Row
Green	CNE
Harder	LHHA
Johnson	Isles
Lappin	CPC
Lewit	NYC Enterprise
Lindquist	Artspace
Lowe	PHA
Paley	New Haven NHS
Park (B.)	NHR
Rose	Affordable Housing
Schoettle	PPS
Stenson	Metro Plains
Wheaton	Chicago NHS

Architect/Attorney/Representatives from Other Professions

Individual	*Organization*
Belk	Belk Architects
Delvac	Latham & Watkins
Hattis	Building Technology
Kalsow	McGinley Hart
McAvoy	Historic Resources Group
Mills	Ford Farewell
Murphy	Murphy