

National Survey of Rehabilitation Enforcement Practices

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Foreword

In 1978 Congress passed Section 903 of the Housing and Community Development Act, charging the U.S. Department of Housing and Urban Development (HUD) with developing guidelines for State and local governments for building rehabilitation regulation. At that time, construction in existing buildings -- whether additions, remodeling, or renovations -- was governed by building code provisions and enforcement practices that were primarily intended for new construction. The application of these new code provisions to rehabilitation often resulted in unnecessary additional costs.

The resulting *Rehabilitation Guidelines*, developed by the National Institute of Building Sciences, were not written as a code. Rather, they were designed for voluntary adoption and use by States and communities as a means of upgrading and preserving the nation's building stock, while maintaining reasonable standards for health and safety. The initial edition of the *Guidelines* was published in eight volumes. The first four were designed for use by building officials and members of the executive and legislative branches of government. The remaining volumes were technical in nature and were designed for use by code officials, inspectors, designers, and builders.

During the fifteen years that the *Guidelines* have been in use, their impact has been felt in many ways. For example, the three major building code organizations now include specific provisions for rehabilitation construction in their model codes. In fact, two model code organizations are currently publishing portions of the *Guidelines* as appendix material.

In 1995, HUD sponsored a national symposium on housing rehabilitation issues in the nineties for representatives of model code organizations, municipalities, not-for-profit developers, and others. During the discussions it became clear that although there were anecdotes about code enforcement in rehabilitation, there was insufficient information to form a clear picture of the prevailing conditions. As a result, the participants recommended a national survey of rehabilitation codes and their enforcement.

A National Survey of Rehabilitation Enforcement Practices is a result of that recommendation. Because this report is a "first glimpse" of the actual code enforcement practices in rehabilitation construction, many questions remain unanswered. Nevertheless, it should be useful to local communities and code organizations as they reflect on current practices. The resulting insights will contribute to continuing efforts to create codes that protect -- while not necessarily limiting -- use of our national building stock.

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Executive Summary

Background

The U.S. Department of Housing and Urban Development (HUD), during the last 17 years, has encouraged the simplification of building regulation for housing rehabilitation. A primary vehicle for encouraging regulatory simplification was the set of ***Rehabilitation Guidelines***¹, published from 1980-1986. In 11 volumes, these ***Guidelines*** addressed a range of issues, including assessment of the condition of existing structures and the process of regulating construction in existing buildings.

The intent of the ***Rehabilitation Guidelines*** was to encourage rehabilitation of the existing building stock. Rehabilitation has many financial, environmental, and cultural benefits for individuals, local cities, and the Nation. For example, rehabilitation allows cities to commit fewer financial resources to the development of city infrastructure, can reduce the need for sprawl inducing new construction, minimizes problems of removal of building materials, and can help maintain a sense of community and place.

In May 1995 the U.S. Department of Housing and Urban Development sponsored a symposium on ***The Status of Building Regulation for Housing Rehabilitation***² that brought together a diverse set of individuals and organizations with roles in building rehabilitation. HUD undertook this symposium because of the continuing need for affordable housing and the need to preserve the existing building stock in the cities of our country -- needs that will increase as we enter the 21st century.

Discussions at the symposium indicated that although the ***Rehabilitation Guidelines***

¹*Rehabilitation Guidelines, 1980*, U.S. Department of Housing and Urban Development, Office of Policy Development and Research under Cooperative Agreement H-5003, Washington, D.C., (1980).

²*The Status of Building Regulations for Housing Development*, U.S. Department of Housing and Urban Development, Office of Policy Development and Research, NAHB Research Center, Upper Marlboro, MD and Building Technology, Silver Springs, MD, (December, 1995).

were not mandatory, they have had an impact on model codes, and on state and local agencies' enforcement practices. However, the overall extent of progress was unclear, leading to a recommendation by symposium participants that HUD undertake a nationwide assessment of building code enforcement as it relates to rehabilitation construction. This report presents findings from a national survey of building code administrators that was undertaken in response to that recommendation.

Questionnaires were mailed to 506 code enforcement administrators. All questionnaires contained 237 common items and an additional 5 to 7 items concerned with the 3 model code agencies: the Building Officials and Code Administrators International, Inc. (BOCA), the Southern Building Code Congress, International (SBCCI) and the International Congress of Building Officials (ICBO). Through an initial mailing and an exhaustive follow-up process, 223 responses were received. Together with 7 responses obtained during the pilot study, in total, 230 administrators responded to the questionnaire. These respondents represented 45 percent of the sampled places.

Agencies and Administrators

The response of code administrators provide clear evidence of the diversity of code enforcement agencies in this nation. While most were municipal agencies, a few were county agencies. The municipalities had populations ranging from 10,000 to over 7 million. These agencies had at least 1 full-time person, and at most 836 persons. As could be expected, there was great diversity in the amount of construction in the communities of responding agencies. The agency with the least activity reviewed only 3 projects in 1996. At the other extreme, one community reported reviewing 38,630 projects in 1996, with 36,070 of these described as rehabilitation construction, a clear indication of the need for codes to address construction in existing buildings.

As individuals, the responding code administrators were almost entirely male -- 94 percent of those indicating gender. Code administrators are generally well educated -- more than one-half (53 percent) holding college degrees. As might be expected, the administrators with only a high school education were found in the smaller communities. The majority of code administrators (65 percent) had prior work experience in general construction. In fact, for administrators with experience in general construction, the average length of that experience was

15 years. Eighteen percent indicated that they had work experience in architectural design while only 13 percent had experience in engineering.

Use of Rehabilitation Provision of Model Codes

All three model codes now contain recommended sections (Chapter 34) that specifically address rehabilitation. Much of this language was modeled after suggested language in HUD's *Rehabilitation Guidelines*. However, until now the extent to which these provisions had been adopted at the local level has been unclear. The code administrators were asked to identify any model code provisions addressing construction in existing buildings that had been adopted in their community. The responses showed that HUD's promotion of specific code provisions for rehabilitation construction had been successful. Chapter 34 provisions have been adopted by approximately one-half of each region's respondents: BOCA, 57 percent; SBCCI, 47 percent; and ICBO, 67 percent. In addition, a small proportion have also adopted separate codes specifically designed for existing buildings -- the *Standard Existing Building Code* (SEBC) and the *Uniform Code for Building Conservation* (UCBC).

Findings About Code Enforcement

The extent of code enforcement varies from one jurisdiction to another. The HUD survey also found that different regions tend to focus on different code provisions.

- In some communities, code administration and enforcement for rehabilitation follows the same procedures that exist for new construction. Others have developed processes and procedures specifically tailored to rehabilitation.
- More than three-fourths of the administrators responded that their local processes provided for preapplication reviews that are a part of the review process for rehabilitation construction projects. Such reviews were mandatory in 13 percent of the projects.
- It also appears that local rehabilitation professionals that responded had a more positive view of pre-application reviews than did the code administrators.
- Twenty-nine percent of the administrators indicated that building permits are *always* required while 40 percent *always* required construction documents.
- If there was a change of use in the existing building, the entire building has to meet the code

requirements for new construction in 35 percent of the cases; another 35 percent invoked the new construction code if the new use is more hazardous.

- The cost of the review and inspection process ranged greatly. While one agency may charge only 0.2 percent of the project costs, another may charge 1.5 percent for a similar project.
- There are concerns about being personally liable for code enforcement activities. When asked if they had looked for streamlined approaches to code enforcement, less than one-fourth reported that they had.

Enforcement also differed depending upon which model code was used in the community. The administrators in the ICBO region appeared to have a greater inclination to thoroughness in considering loads during structural assessments. Code administrators in the BOCA region seem to consistently respond more conservatively for issues regarding fires, asking for fire rating times, as well as smoke detectors and vertical fire stops.

Technical Code Provisions

Virtually all of the jurisdictions (88 percent) considered deadloads in their structural assessment of buildings. Wind loads were considered by 83 percent, although, as could be expected, 100 percent of the respondents in Florida considered wind loads. Conversely, although only 40 percent of those responding considered earthquake/seismic forces, in California 93 percent of the responding communities considered such forces.

Many requirements continue to discourage rehabilitation:

- Surprisingly, more than 10 percent reported that they would expect more than a 2-hour fire separation rating for corridor walls.
- Although allowed by the model codes, the code administrators were not supportive of exterior fire escapes. More than one-fourth did not accept either existing or new fire escapes.
- One fourth of the administrators indicated that they **always** required a dwelling's electric service to be upgraded to 100 amperes, 29 percent indicated that they usually required the upgrading, and 42 percent replied that they sometimes required the upgrading -- only 5 percent never required it.

- For additional plumbing fixtures, code administrators in 40 percent of the cases stated that they *usually* permitted additions without upgrading service.

One common belief is that rehabilitation is often impeded by a multiplicity of separate local codes administered by unrelated and uncoordinated local regulatory agencies. The survey indicated that, in fact, there are a vast multiplicity of codes in place. In addition to the local building code, fire prevention codes were adopted by 89 percent of the jurisdictions, property maintenance by 80 percent, health or housing codes by 80 percent, historic preservation by 69 percent, accessibility by 65 percent, Life Safety Code by 46 percent, asbestos by 45 percent, lead hazard by 37 percent, extreme wind by 32 percent, earthquake by 25 percent, and radon hazard by 21 percent.

Open Ended Comments & Case Studies

There were three open-ended questions in the survey that yielded additional information that should be useful to national as well as local policy makers. The comments indicated that: there are many communities that have local incentives to encourage rehabilitation (20 percent); 15 percent of the communities provide special handouts and informational materials; 13 percent of the jurisdictions encourage flexibility in interpretation of the local code; pre-inspection measures were cited in 11 percent of the responses; programs that stimulate rehabilitation were received in 9 percent of the responses; good customer service was noted in 9 percent of the responses; and time-saving plan review procedures in 7 percent of the responses.

It was also not surprising to see a lack of financing and resources as the most frequently mentioned for a lack of greater rehabilitation. Respondents also listed cost, limited market demand and other issues of economic feasibility as reasons that they perceived as preventing greater rehabilitation. Zoning, accessibility, and other code requirements were also a group of responses that frequently cited.

Finally, this report includes a series of case studies that contain an important context with which to view the survey results. Included in these studies are discussions regarding a number of innovative approaches including: housing rehabilitation loan programs; prereview of projects; a housing resale inspection program; creation of special revitalization districts; one-stop permit centers; express plan checks; customer friendly handout/guidelines; same-day permitting ;

training programs; informal advisory committees; and other novel approaches to encouraging rehabilitation.

1: Background

With the growing rehabilitation needs of the existing building stock in the nation's cities, there is a need to examine the building rehabilitation process nationwide. Rehabilitation has many financial, environmental, and historical benefits for communities. For example, rehabilitation frequently allows cities to commit fewer financial resources to the development of city infrastructure, minimize the problems of removing building materials, and preserves buildings that are a part of a community's history and culture; buildings are the physical memory of our cities. The existing building code regulations were seen as an impediment to rehabilitation (*Impact of Building Codes on Housing Rehabilitation: Hearing before the Committee on Banking, Housing, and Urban Affairs, United States Senate, Ninety-Fifth Congress, March 1978*). As a result of the hearings and growing rehabilitation need, the U.S. Department of Housing and Urban Development (HUD) sought to facilitate the simplification of the regulation of construction practices in existing buildings by making recommendations for building code provisions to regulate rehabilitation construction. This effort is summarized in HUD's eleven volumes of *Rehabilitation Guidelines*. The *Guidelines*, published from 1980-1986, provide information on assessing the integrity of existing buildings with respect to structural, electrical, plumbing, and fire safety practices. The *Guidelines* recommend compliance alternatives, specific regulatory provisions, and specific administrative practices. In essence, the *Rehabilitation Guidelines* contained the first broad summary of administrative and technical issues relevant to encouraging and facilitating affordable housing rehabilitation, and provided the first definition of issues that were common across the nation.

Although the *Guidelines* were not mandatory, some innovative changes in the regulation of the rehabilitation and reuse of existing buildings has resulted. For example, the *Guidelines* have had impact on the approach of the three model code agencies to regulating construction in existing buildings. In fact, two model code organizations incorporated large portions of the *Guidelines* as appendices to their model building codes. Some local jurisdictions adopted regulations that are designed to encourage rehabilitation while accepting compliance alternatives that maintain a level of safety equivalent to that specified in the building codes. However, the extent and the success of such adoptions at the municipal level are unclear at this time. The enforcement of these compliance alternatives often relies on the discretion of local code enforcement officials, which means that enforcement may vary between and within jurisdictions.

In May of 1995 *The National Symposium on the Status of Building Regulations for Housing Rehabilitation* was held. The primary purpose of the symposium was to assess the status of building rehabilitation in the United States. HUD sponsored the symposium fifteen years after the publication of the *Rehabilitation Guidelines* as an expression of the need to revisit

the issues of building rehabilitation guidelines and the nation's existing building stock. Participants agreed that although the *Guidelines* had strongly influenced building rehabilitation (for the last 15 years), differing nationwide philosophies, policies, and practices underscored the need for a review of current status and trends. For example, there is a growing concern about the vulnerability of existing buildings to the effects of natural disasters such as earthquakes and hurricanes.

During the symposium a need was expressed by participants to collect information on building code enforcement as it relates to rehabilitation construction. The conclusion of the *Status of Building Regulations for Housing Rehabilitation Report* contains five recommendations of the symposium. One recommendation called for a nationwide survey of rehabilitation code enforcement practices and was the impetus for this research investigation.

Purpose of the Report

The purpose of the report is to present the findings of the National Survey of Rehabilitation Enforcement Practices, as well as information about the procedures of the study. The report provides an important perspective that should be useful in future efforts to revise building codes and practices to further stimulate the conservation of the nation's existing building stock. With the data in this report, HUD also gains information that can be a base line. This can be used in the future to effectively evaluate the success of changes to code provisions that regulate construction in existing buildings.

The information in this report can also be useful to the three model code agencies, state code agencies, and municipalities as they create more efficient rehabilitation construction codes. This may be especially true for state and local code enforcement agencies with limited resources for studying code enforcement beyond their own jurisdictions.

2: Rehabilitation Provisions and Enforcement

This study represents HUD's first effort at a nationwide assessment of building code enforcement as it relates to rehabilitation construction. No existing data collection instrument or sampling process was available to collect the information needed in this study. Therefore, two key features of the work were the development of a self-report data collection instrument and development of a nationwide random sample strategy for selecting code administrators to be surveyed. These key features were crucial to the success of the investigation. Appendix A contains details of how the questionnaire was developed. Appendix B describes the survey process.

This chapter presents findings from a national sample of building code administrators. (Appendix C contains a copy of the questionnaire with summary results for each item.) It presents the findings by topic, and in an order that is generally consistent with the order of their occurrence in the questionnaire. Chapter 3 continues by examining the differences in the questionnaire responses by specific groups. First there is an examination of differences by model code region, then by community size. This is followed by comparisons of the code administrators' responses with responses from smaller samples of enforcement agency staff and rehabilitation professionals. Chapter 4 provides a discussion of the written comments of the administrators to three open-ended questions. Some open-ended responses were followed up by telephone discussions. These discussions allow Chapter 4 to conclude with case studies of specific communities.

Not all respondents completed every question in the questionnaire. To reflect this changing sample size the reader often will find that the number of respondents to a question is presented as the question is discussed. This will take the format of a parenthetical "N=" in the text. It will be noted that there is generally a large N for each item in the questionnaire.

This study began with a sample of 507 building code administrators from 498 randomly selected places. These administrators received a structured questionnaire, a postage paid reply envelope, and an explanatory cover letter in March 1997. All questionnaires contained 237 common items and an additional five to seven items concerned with the three model code agencies: BOCA, ICBO, and SBCCI. The initial mailing was followed by two reminder letters. Additionally, eight weeks after the initial mailing telephone call reminders were made to the two largest non-responding communities in each state. This exhaustive distribution process resulted in 223 responses. Together with seven responses obtained during the pilot study,³The pilot study questionnaire contained all of the items in the same order, as the final questionnaire. 230 administrators responded to the questionnaire. These represented 44 percent of the sampled places. This rate of return was slightly lower than expected, since seven of nine administrators responded to the pilot test questionnaire during an equivalent time period.

Diversity of Code Enforcement Agencies

The responding code administrators provide information about a diverse set of code enforcement agencies. While most were municipal agencies, a few were county agencies. The municipal agencies came from places with 1990 populations ranging from 10,227 to 7,322,564. These agencies had at least one full-time person, and at most 836 persons. Part-time staff

augmented 86 agencies. Thirty-eight agencies (16.5% of responding administrators) relied upon outside contractors to assist with plan review of rehabilitation projects; twenty-four agencies (10.4% of responding administrators) relied upon outside contractors to assist with site inspections of rehabilitation construction.

There was diversity in the amount of construction that the responding agencies monitored. The agency with the least activity reviewed only three projects in 1996. At the other extreme one community reported reviewing 38,630 projects in 1996, with 36,070 of these described as rehabilitation construction, a clear indication of the importance of having code provisions that address rehabilitation construction. The proportion of rehabilitation projects ranged from less than one percent to one hundred percent of the agencies work. Across the 151 agencies that provided information on the value of construction monitored in 1996, the average value of all rehabilitation construction in a community was \$39,753,053, with a reported range from \$5,000 to \$1,000,000,000.

Diversity of Code Administrators

As individuals, the responding code administrators were almost entirely male; 93.9 percent of the 213 respondents indicated that gender. The average age of the respondents was 48.69 years, with the median age being 48 years. The female respondents were typically younger than their male counterparts. The average age of the females was 43.85 years (with a 95% confidence interval of 40.22 to 47.47) compared to an average of 49.0 years for the males (with a 95% confidence interval of 47.73 to 50.27). At the same time, the youngest administrator was a male, 27 years of age. He was one of five males younger than the youngest female, 34 years of age.

Figure 2 shows the administrators had a variety of educational backgrounds. Code administrators are generally well educated. It should be noted that over half (53.4%) of the respondents held college degrees. As might be expected, the administrators with only a high school education were found in the smaller communities.

In summary, a random sample of places was selected to provide a nationally representative study of the code enforcement of rehabilitation construction in the United States. The diversity of respondents, agencies, and municipalities indicates a level of success in achieving a nationally representative study of code enforcement in rehabilitation construction.

Use of Model Codes

The United States has three separate model code organizations: the Building Officials and Code Administrators International, Inc. (BOCA), the Southern Building Code Congress, International (SBCCI), and the International Congress of Building Officials (ICBO). These organizations respectively produce the *BOCA National Building Code*, the *Standard Building Code (SBC)*, and the *Uniform Building Code (UBC)*, as well as a variety of other model codes. In addition to these three model codes, some states and municipalities have chosen to write their own code. New York and Wisconsin are states that have done this. Four municipalities have also done this: Chicago, Illinois; Fort Lauderdale, Florida; Miami, Florida; and New York, New York. The research used these five sources of code provisions as sampling strata (see Appendix B for more detail).

It should also be noted that state governments take different positions with respect to code enforcement in their states. For example, some mandate that municipalities follow a specific model code, while other states leave adoption up to the municipalities.

Table 1 presents a breakdown of the number of responses from each code region, as they were defined in the sampling process. Thus, the state strata included New York and Wisconsin, but did not include states that required one of the three model codes. The first row shows the number of responses from each of the five sample strata. The following rows indicate the codes that were reported as being adapted within these five strata.

It is interesting to note that the UBC model code was indicated as being adopted by four communities in the BOCA region. In confirming these unexpected results a building inspector in Michigan indicated that he believed that about half of that state was using UBC. He believed that the reason for this was that UBC was less complicated, although he believed that the latest UBC document had become more complex. One community in Indiana indicated adopting both the BOCA code and the UBC code. Discussions with this agency later indicated that the UBC code was adopted for construction, the BOCA code was adopted for plumbing.

Table 1: Adopted Model Codes by Model Code Region, Numbered Responses

	Model Code Regions				
	BOCA	SBC	UBC	Municipal	State
Number Returned	65	55	85	2	20
Adopted BOCA	49	0	1	0	0
Adopted SBC	0	36	0	0	0
Adopted UBC	4	8	85	0	0
Adopted CABO	34	13	17	0	0
State Mandated	24	12	36	0	18
Municipal Code	0	0	0	2	0
No Code	0	1	0	0	0

Texas is a state that is part of two code regions. While maps generally show only the panhandle and western portion of the state as being in the UBC region (see Appendix D), the table shows that there were eight communities in the eastern half that we sampled as SBC communities, that reported having adopted the UBC. From this survey it appears that the CABO 1 and 2 Family Dwelling Code is most likely to be found in BOCA region communities.

The code administrators were asked to identify any model code provisions addressing construction in existing buildings that had been adopted in their community. Figure 3 shows that the “chapter 34” provisions of the three model codes have all been adopted by about half of each regions’ respondents with the greatest rate of adoption within the UBC region: BOCA, 57 percent; SBC, 47 percent; and UBC, 67 percent.

Table 2 shows that the specific model codes for construction in existing buildings, the *Standard Existing Building Code (SEBC)* and the *Uniform Code for Building Conservation (UCBC)*, have not been adopted as extensively as the chapter 34 provisions. In most cases, when they have been adopted it is in addition to the chapter 34 provisions. Only seven percent of the responding SBC jurisdictions had adopted the SEBC, and 12 percent of the responding UBC jurisdictions had adopted the UCBC.

Table 2: Adopted Code Provisions for Construction in Existing Buildings, Number of Responses

	Model Code Regions		
	BOCA	SBC	UBC
Number Returned	65	55	85
BOCA, C. 34	37	4	0
SBC, C. 34	0	26	0
UBC, C. 34	2	8	57
SEBC	0	4	0
UCBC	0	0	10

Table 3 shows that there is very little use of non-adopted material in making code enforcement decisions. The exception appears to be in the UBC region where 37 percent of the responding administrators reported using the UCBC on a non-adopted basis.

Table 3: Use of Non-Adopted Codes for Guidance, Number of Responses

	Model Code Regions				
	BOCA	SBC	UBC	Municipal	State
Number Returned	65	55	85	2	20
HUD Guidelines	7	5	4	0	2
BOCA	-	5	1	0	2
SBC	1	-	0	0	0
UBC	2	6	-	0	1
SEBC	0	2	0	0	0
UCBC	1	2	32	0	0

Changing the Code

The model code groups produce new editions of their code every three years. However, it is generally up to the local jurisdictions to decide when they will adopt a new model code, or amend their current code (the exception being in states that have mandated a code). The code administrators were asked what time cycle was followed by their jurisdiction in amending the building code. Twenty-two percent (N=223) indicated that their jurisdiction did not have the authority to amend because of state mandated codes. However, Figure 4 shows that the majority of the respondents did indicate that the *three year* cycle was followed; 55.2 percent of all responses, and 70.8 percent of those who had authority to amend the code. The *other* cycle response included *two years*, and *as needed* as responses.

The code administrators were asked when their local code was last amended. Figure 5 shows the range of years reported as the most recent amendment in the building code and in the

rehabilitation provisions of the code. One community had no amendments since 1981. However, most have amended their codes since the 1993 model code editions. It seems that the building code may be amended more quickly than the rehabilitation provisions.

Pre-Application Review

Several specific questions about the pre-application review were asked in the questionnaire. The first question asked code enforcement administrators if their agencies conduct pre-application reviews of potential rehabilitation projects. Figure 6 shows that 13.5 percent of the administrators responded *yes, the review is mandatory practice* (N=207), 63.0 percent responded *yes, the review is a voluntary practice*. Almost a quarter (22.7%) responded that pre-application reviews are not part of their practice. Still, with 77.3 percent indicating either mandatory or voluntary pre-application reviews, there is a willingness among code enforcement officials to work with developers in the early stage of a rehabilitation construction project. This practice was also identified in the open-ended comments as an approach that can save time and money.

A series of nine questions addressed specific aspects of pre-application reviews. When asked if design professionals were involved in pre-application reviews the response strongly indicated (95%) that some involvement of design professionals occurs: 11.1 percent answered *always* (N=190), 41.4 percent answered *usually*, and 42.6 percent answered *sometimes*. Only 5.3 percent answered *never*. These *never* responses were from communities under 60,000 in population.

Pre-application reviews are emerging as effective tools in rehabilitation construction projects. These preliminary meetings allow the code enforcement officials and the development team the opportunities to discuss code requirements and regulation early in the project and to assess the impact of new code requirements and any specific codes that a community has adopted on the proposed project. In some cases, negotiations on specific code requirements (especially new construction requirements) are also conducted. These meetings may allow the code officials and developers the opportunity to establish rapport and address any concerns or issues early in the development phase.

The second question asked about the inclusion of negotiations in pre-application meetings. Figure 7 shows that about one-fifth said that this *never* happened. The other respondents indicated that negotiation was a part of these meetings: 34 percent responded *sometimes*, 33 percent responded *usually*, 13.3 percent answered *always* (N=188). It is interesting that the administrators did not necessarily think of negotiation as one of the activities of the pre-application meetings. One administrator added the comment on the questionnaire that "*yes, I guess negotiation does occur.*"

Three questions asked about on-site inspections being part of a pre-application review. Figure 8 shows the results of these. The figure strongly indicates (89%) that on-site inspections can be a part of the pre-application process. When they do occur it also appears that observations of life-safety features are much more likely to be recorded than measurements of the existing structure.

One possible outcome of a pre-application meeting is the decision that an application and a building permit really are not needed. Figure 9 shows that a relatively large percent of code administrators (66.3%, N=190) answered that they *sometimes* make the decision not to require a building permit in a rehabilitation project. Less than one-third (30.0%) answered they *never* make the decision not to require a building permit. Six code administrators provided the

surprising response that they *always* decide not to require a building permit if there is a pre-application review. These were from communities of between 25,000 and 60,000 in population.

A pre-application review can reveal otherwise undetected hazards that are the responsibility of other agencies. Figure 9 shows that 37.9 percent of the administrators indicate they *always* report these hazards to the appropriate agency. On the other hand, 7.4 percent indicate they *never* report these hazards. It is interesting to note that administrators that never report the hazards identified in pre-application reviews came from eleven states and all code regions. And, while most came from communities with populations of less than 40,000, three came from communities with populations ranging from 200,000 to 350,000.

Finally, Figure 9 shows that, in general, information from pre-application reviews is incorporated into the application: 38.9 percent of code administrators answered *always*, 36.8 percent responded *usually*, 19.5 percent responded *sometimes*, and 4.7 percent answered *never* (N=190).

Examining only the responses from code administrators that said they have a pre-application review (either mandatory or voluntary), 40.9 percent answered it is *always* valuable, 49.7 percent answered *usually*, 8.8 percent answered *sometimes*, and only 0.6 percent answered *never* (N=189; Figure 10). From these responses it is clear that code administrators, familiar with a pre-application process, view it positively.

Requirements

Two questions asked about requirements for building permits and construction documents: are building permits always required for rehabilitation construction and are construction documents always required for obtaining a permit for rehabilitation construction? The frequency distributions in Appendix C show that for over one-fourth of the administrators,

Table 4: Requirements for Construction

Question	Building Permits	Construction Documents
Yes, Always	29.6%	40.0%
No, not when work is only restoration of materials or components	16.9%	23.8%
No, not when work is only repairs or replacement of trim, finishes, doors, etc.	52.2%	41.9%
No, as long as load bearing members, doors, & windows are not eliminated	10.0%	11.3%
N	224	224

the response category to both of the questions was *other*. Upon closer examination these *other* responses were almost always combinations of the other specific responses. When these multiple responses were counted with the single responses, the results are as presented in Table 4.

In 29.6 percent and 40.0 percent of the cases building permits and construction documents are *always* required. Those projects most likely to *not* require building permits and construction documents are those where the work is repair or replacement of trim, finishes, doors, etc.; 52.2 percent of the administrators did not feel these would need a permit, and 41.9

percent did not feel they would need construction documents. When the work is only the restoration of materials or components 16.9 percent would not require a building permit and 23.8 percent would not expect construction documents. Even though load bearing members, doors, and windows would not be eliminated in a rehabilitation construction project, only 10.0 percent of the code administrators would be willing to forego building permits, and 11.3 percent would see construction documents as unnecessary.

Change of Use

The enforcement of some provisions in the building code is dependent upon how the building is used. Thus, when an owner decides to change the use of an existing structure, there may be changes required to remain in compliance with the code. Code administrators were asked if, “regardless of whether construction occurs, when there is a change of use or occupancy in an existing building, the entire building must meet the code requirements for new construction for that use.” Figure 11 shows that 35.1 percent responded, *yes, always* while another 35.1 percent responded, *yes, if the new use is more hazardous*. On the other hand 16.9 percent responded *no* and 12.9 percent had a variety of other, specific responses.

The two groups responding, *Yes* provide an interesting contrast. Those replying *Yes, always* are taking an immovable position which may inhibit change in their communities. Those replying, *Yes, if the new use is more hazardous* seem to be taking a flexible position, one that implies the exercise of discretion. On the other hand, those replying, *no* appear to be taking a discretionary position that encourages community change.

Cumulative Change

Earlier editions of the model codes sometimes contained provisions that specified that enforcement was dependent upon a specific amount of change occurring over a specific period of time. Those thresholds for code enforcement could be crossed by one large project, or by several smaller projects. The three major model codes have.

The administrators were asked if their code provisions required that the entire building meet the requirements for new construction if the value of alterations, repairs, or additions exceeded a specific proportion of the building value over specific period of time. Forty-five percent (N=220) replied *no*. Another, 16.4 percent replied *no*, but added that such thresholds were useful rules-of-thumb. Thirty-eight percent replied *yes*. For this group thresholds appear to be 50 percent of building value and twelve months time.

If unseparated space is added to an existing building, beyond a fire wall or above an existing number of stories, do the provisions for new construction apply only to the addition, or do they apply to the entire structure? Sixty-two percent of the administrators replied that the entire structure would need to meet new construction requirements for egress and height/area. However, only 43.7 percent would require the entire structure to meet light/ventilation requirements.

On-Site Inspections

The questionnaire contained several items that addressed the process of on-site inspections in the code enforcement agencies.

The administrators were asked to estimate the number of inspections made by the agency during the course of an average rehabilitation building project. Figure 13 shows the distribution of the responses. The range of estimates was between one and thirty-five. The average estimate

of the number of inspection visits was 8.7 (N=196). Five percent of the responding administrators estimated that there were twenty, or more, inspections during a typical rehabilitation project. These high estimates came from individual communities in the states of Alabama, California, Illinois, Nevada, Ohio, Texas, and Virginia.

The administrators were asked to estimate the number of inspectors that would visit a site during construction. This estimate was to include state inspectors, as well as all of those working for the local government. Figure 13 also shows the distribution of these responses. The average estimate was 3.7 inspectors, with over half estimating that three or fewer inspectors conducted all of the inspections.

The code administrators were asked to indicate which inspections had to occur during construction in an existing building. Figure 14 shows the results of this. Plumbing/mechanical inspections, structural, electrical, and fire safety are indicated as having to occur in virtually all communities. Eighty-three percent of the code inspectors indicated that an accessibility inspection was a requirement. Inspections focusing on energy, elevators, and hazardous materials are required least often; of course, elevators do not occur in all projects.

One of the recommendations from the *Rehabilitation Guidelines* was that code enforcement agencies have detailed field manuals for the use of on-site inspectors. Figure 15 shows that over 40 percent of the administrators said they had such manuals. More specifically, 10.5 percent of the responding administrators said, *yes, and their use is required*, and 31 percent said, *yes, they had such manuals and they were used for reference*. It is interesting that for at least one responding administrator, the field manual is the published model code.

During the course of a rehabilitation construction project inspections can reveal unexpected conditions. If this occurs, Figure 15 shows that over half (58.6%, N=210) of the reporting administrators said that inspectors can make on-site approval of changes in the required rehabilitation work, a clear indication of the implementation of discretion. The figure also shows that the majority (73.4%, N=222) of administrators indicated that inspectors perform unannounced inspections at construction sites.

Structural Assessment of Buildings

Volume 9 of the *Rehabilitation Guidelines 1982* is subtitled *Guideline for Structural Assessment*. The intention of this document was to provide methods and approaches for the evaluation of structural systems in existing buildings to architects, builders and other rehabilitation professionals. When code administrators were asked how often they used this document, it was not surprising that ninety percent (N=220) of the administrators said *never*. Those administrators that reported some use of the structural assessment document were from communities with populations below 70,000 persons. There was no apparent geographic pattern to the use of this guideline. Administrators from Arkansas, California, Colorado, Florida, Indiana, Kansas, Mississippi, New Jersey, New York, Ohio, Oklahoma, Washington, and Wisconsin said that they had used the document.

Four questions addressed some specific kinds of structural loads that might be considered in assessing the structural system of an existing building: dead loads, snow loads, wind loads, and earthquake/seismic loads. Not surprisingly, virtually all (87.6%, N=225) of those responding to this set of questions said they considered dead loads in a structural assessment. Wind loads were considered by 83.1 percent (N=225). Snow loads were considered by 57.3 percent (N=225). It is interesting to note that a responding administrator from Georgia indicated that snow loads were considered. Earthquake/seismic loads were only considered by 40.6

percent (N=224). Some communities in seismic zones 1 and 2A did not indicate that they considered seismic loads. This included communities in Arizona, Georgia, Missouri, and Oklahoma. In light of efforts by FEMA to focus on seismic issues, it is surprising that there is apparently greater concern for wind loads than for seismic loads. However, individual states reveal an expected pattern. Ninety-three percent of the administrators in California reported considering seismic loads and wind loads. In Florida, 100.0 percent reported considering wind loads, but only 13.0 percent considered seismic loads.

Fire and Life Safety Provisions

Building codes attempt to protect the structural elements of a building, and to compartmentalize a building to protect it from fire for a specific period of time. This time period may vary with building code, building type, occupancy and type of construction. For example, the *Uniform Building Code* and *Uniform Code for Building Conservation* require at least one-hour fire resistive construction. While, the *Standard Existing Building Code* specifies the level of performance required for fire stairs and Group R.

To examine the practices of the code administrators, they were asked what the minimum fire separation ratings would be for corridor walls, walls between units, and interior staircase enclosures for a multi-unit building. Figure 17 shows that the majority (87.8%, N=205) of the administrators expected a one-hour fire separation rating for corridor walls, and 81.7 percent (N=202) expected one-hour fire separation ratings for walls between the units. A surprising finding is that a few (11.2%) chose to be more conservative and expected fire separation ratings of more than two-hours for the corridor walls. Similarly, 14.4 percent of the administrators expected fire separation ratings of more than one-hour for the walls between units in multi-unit buildings.

The Figure 17 shows the highest expectation for fire separation ratings is for interior stairway enclosures. Only 56.2 percent (N=201) of the respondents expected fire separation rating of one-hour. A higher number (41.8%) of the respondents expected fire separation ratings of two-hours or more, for the interior stairways.

The model codes generally grant discretion if additional fire protection measures are taken, e.g., alarms, sprinklers, etc. Code administrators were asked if they used this discretion in specific instances. Figure 18 shows the majority (62.5 percent, N=208) of the administrators reported that they accepted lesser fire separation ratings if other fire protection measures were in place. Specifically, a high number (67.6%, N=213) of the respondents reported that they accepted an increase in maximum travel distance to an exit when additional fire protection measures were taken. Respondents explained that the provision of appropriate alarms, sprinkler systems and smoke barriers could potentially increase the travel distance in the event of fire. At the same time, the figure shows that only a quarter of the administrators agreed with the idea of increasing the length of dead end corridors if other fire measures such as alarms, sprinklers and smoke barriers were in place. Finally, only 7.4 percent of the respondents thought that the number of exits could be reduced if other fire protection measures were taken.

Code administrators were asked if they accepted existing lath and plaster construction in existing buildings as satisfying one-hour enclosure requirement if all penetrations and openings were sealed or properly protected. The majority (81.2%, N=202) of the administrators reported that they accepted such construction, whereas, another 18.8 percent did not.

The three model codes permit the use of existing fire escapes (and BOCA and SBCCI permit new fire escapes) for existing buildings when adequate exit facilities cannot be provided,

although fire escapes usually can not constitute more than 50 percent of the required exit capacity. In light of this it is surprising that code administrators were not more supportive of fire escapes. Code administrators were asked if they accepted fire escapes for meeting egress requirements in existing structures. Figure 19 shows about half (51.0%, N=208) of the administrators reported they accepted existing fire escapes. Only six percent of the respondents accepted new fire escapes, and 16.8 percent accepted both existing and new fire escapes. Over a quarter of the respondents (26.4%) reported that they did not accept either existing or new fire escapes.

Code administrators were also asked about three fire protection measures: one hour separation between units in multifamily buildings, smoke detectors wired into the electrical system, and fire stops between floors. Over half (54.5%, N=221) reported that they always require a one hour rating. Code administrators widely differed concerning the practice of wiring smoke detectors into the electrical system. When asked if they required smoke detectors to be wired into the electrical system as a part of the rehabilitation of dwelling units, only 39.0 percent (N=218) of the respondents reported that they *always* required smoke detectors to be wired into the electrical system in the rehabilitation of dwelling units. Another 25.2 percent and 26.1 percent of the respondents respectively reported that they *usually* or *sometimes* required smoke detectors to be wired into the electrical system. A smaller proportion (9.6%) of the respondents reported that they *never* required smoke detectors to be wired into the electrical system in case of rehabilitation of dwelling units. Figure 20 also shows the majority (57.6%, N=217) of the respondents reported that they *always* required vertical fire stops between floors in the rehabilitation of multi-story dwelling units. However, this question may have been ambiguous to some respondents. Fire blocking, fire separation assembly, and shaft enclosure are other terms that might have better described measures to prevent the movement of flame and gases through concealed passages in building components.

Codes administrators were asked for the maximum acceptable dead end corridor length in existing buildings without sprinklers. Figure 21 shows that the majority (76%, N=194) responded with 20 feet. However, it is interesting that the remaining administrators gave responses ranging from less than 10 feet to over 50 feet.

Electrical Codes

Code administrators were asked a set of questions on implementation of electrical codes for a residential rehabilitation project. They were asked if they ever allowed fewer receptacle outlets per room than required by the current code for new structures. This was meant to be a broad question, although some may have limited it by thinking only about construction in an existing situation, while others may have thought of the entire structure where rehabilitation was occurring. Only 2.0 percent (N=196) of the respondents reported that they *always* allowed fewer receptacle outlets (see Figure 22). A certain inflexibility is revealed by the 39.8 percent of the respondents reporting that they *never* allowed fewer receptacles. However flexibility is seen among the 40.8 percent of the respondents reporting that they *sometimes*, and the 17.3 percent reporting that they *usually* allowed fewer receptacle outlets. Figure 22 shows that in a residential rehabilitation project, the majority of the administrators (69.2%, N=198) reported that they *always* required ground-fault-circuit-interrupter-devices (GFCI) for bathrooms, kitchens, and other outdoor outlets. Only one percent of the respondents reported that they never required GFCI for protection.

Figure 23 shows the responses to two questions concerned with the electrical service. One-fourth, 24.9 percent, of the administrators indicated that they *always* required a dwelling's service to be upgraded to 100 amperes. Another 29.0 percent of the administrators replied that they *usually* required a dwelling's service to be upgraded, and 41.5 percent replied that they *sometimes* required the dwelling's service to be up-graded to 100 amperes. Only 4.7 percent of the respondents did not require it.

Another question asked if they accepted detailed calculation of current and future loads showing the existing service to be adequate. Figure 23 shows that 8.9 percent (N=192) of the administrators replied that they *always* accept calculations and would allow an existing service to remain, even if it was undersized for a new structure. On the other hand, twenty-six percent would *never* accept such calculations of existing loads and anticipated loads as evidence of adequacy, and therefore allow an existing service (undersized by new construction criteria) to remain.

Figure 24 indicates that there may be a tendency to be lenient towards existing ungrounded circuits. When asked if they permitted existing underground branch circuit to remain when a room's electric circuits were not modified, the greatest number of respondents (52.6%, N=192) reported *usually*, and an additional 14.1 percent reported they *always* permitted such circuits to remain. Only 11.5 percent of the respondents reported that they *never* permitted an existing ungrounded branch circuit to remain without modification.

A more general question asked respondents if they required all branch circuits in a building to be upgraded to the current requirements. Figure 24 shows that the majority (62.0%, N=192) of the respondents reported that they *sometimes* required all branch circuits to be upgraded. Only 9.9 percent of the code administrators reported that they *always* required all branch circuits in a building to be upgraded to the current code requirements. And 10.9 percent of the respondents reported a position supportive of rehabilitation; they never required all branch circuits to be upgraded.

When asked whether the entire electrical system in a dwelling unit were required to meet the current code requirements if part of the dwelling unit was remodeled, or an addition was built, 20.6 percent responded *always*. This was in contrast to those taking the position (20%) that they never expect the whole system to be brought to the current code standards. Figure 24 also shows the majority (52.6%, N=194) of the sample indicated they *sometimes* required all of the unit's electrical system to meet current code requirements.

Plumbing Codes

Code administrators were asked questions about improvements in the plumbing. Respondents were asked if modifications or additions to an existing plumbing system would require the existing plumbing system be upgraded in its entirety to meet current code requirements for new construction. Figure 25 shows that the majority (75.0%, N=216) responded *sometimes*. Taking a position supportive of rehabilitation were the 15.3 percent reporting that they *never* require the entire existing plumbing system be upgraded to meet current code requirements. Only 2.3 percent of the respondents reported that they expect the entire existing structure to be upgraded to meet current code requirements.

Administrators were asked if they permit the addition of new fixtures to plumbing and waste systems without requiring existing systems to meet current code requirements. Figure 25 shows that 39.5 percent *usually* permit addition of new fixtures to plumbing and water systems without requiring the existing system to meet current code requirements, and 5.1 percent always

permit this. However, 12.6 percent of the administrators reported that they *never* permit the addition of new fixtures to plumbing and waste system without requiring the existing plumbing system to meet current code requirements.

Some residential renovation, additions, etc., involve the replacement or addition of a bathroom. Figure 25 shows that 35.9 percent (N=217) of the respondents reported that they *never* expect the remainder of the plumbing system of a dwelling unit to meet current code requirements, if a bathroom is replaced or added in the dwelling unit. Only 2.3 percent reported that they *always* require the remainder of the plumbing system of the dwelling unit to meet current code requirements if a bathroom is added or replaced in the unit.

In another question code administrators were asked about the ways their agencies deal with an existing building containing unvented waste lines. The majority (43.2%, N=213) of the agencies require proper venting in the area affected by the rehabilitation construction, leaving the rest alone. Another, 29.1 percent of the agencies require additional venting to be provided in a manner that minimizes the impact on the building. And, 23.9 percent of the agencies require proper venting throughout the existing building. Only a few (3.8%) code administrators reported that they would require proper venting in the area affected by the rehabilitation construction and additional venting in a manner that minimizes the impact on the building. Finally, in a question concerning natural gas system, the majority (83.0%, N=194) of the respondents reported that a dwelling unit’s natural gas system needed to be updated to current code requirements. Whereas 17.0 percent of the respondents reported that dwelling unit’s gas system need not be updated to current code requirements.

Separate Codes

One common belief is that rehabilitation is often impeded by a multiplicity of separate codes administered by unrelated organizations. A set of questions sought to find out the extent of codes and ordinances that apply in addition to the provisions of the building code. Less than half (46.4 percent, N=192) of the respondents indicated that their municipality had adopted National Fire Protection Associates (NFPA) 101. This contrasts to a later question asking about the presence of an ordinance that addresses fire prevention; 89.4 percent (N=207) indicated the presence of such an ordinance.

Table 5 lists nine other possible codes or ordinances, the percent of respondents that indicated their jurisdiction had such a code, and the number of code administrators responding to the question. Codes addressing radon hazards are the least frequent, while codes addressing property maintenance and health, as well as fire, are the most frequent. Because the model codes have specific provisions for some of these issues, e.g. seismic, it is actually surprising that the reports of separate codes are as high as they are.

Table 5: Jurisdictions Having Separate Codes

Type of Code	Percent Adopted	Count
Fire Prevention	89.4%	207
Property Maintenance	79.6	211
Health	79.9	199
Historic Preservation	68.7	201
Accessibility	64.5	203

NFPA 101 46.4 192

Table 5 - Continued

Type of Code	Percent Adopted	Count
Asbestos	44.7	188
Lead Hazard	37.0	189
Extreme Wind	31.6	187
Earthquake	25.3	194
Radon Hazard	21.0	186

The code administrators were asked whether the requirements of hazard and retroactive codes had to be met when construction occurs in an existing building. Figure 26 shows that more than one-fifth (21.3%) replied that they would have to be met throughout the entire existing building. This is a surprising finding if we interpret hazard and retroactive codes to be codes that are in addition to the building code, and that apply to buildings constructed prior to their enactment. It should be expected that a very much higher percent would enforce these codes throughout buildings. At the same time, 69.9 percent replied that these codes would only be enforced in the construction area. As might be expected only a small proportion (3.9 percent, N=207) indicated that the requirements of hazard and retroactive codes would not need to be met. Another 5.3 percent expressed an assortment of other responses.

A related question asked code administrators if the existing portions of an un-insulated or under-insulated building would be required to be insulated to current energy code requirements. Only 21.8 percent (N=197) indicated that insulating the existing building would be required.

Standard Operating Procedures

In proposed renovation projects, certain measures must be taken when the structure is found to contain: lead-based paint, lead water distribution pipes, asbestos, radon, termite and other pest damage. Table 6 provides the response from the code administrators to the type of measures undertaken to address these problems. Fifty percent of responding code administrators indicated abatement measures to remove lead-based paint and 32.4 percent indicated removal measures, while 17.6 percent indicated other measures (N=170). Abatement was applied to lead water distribution pipes by 34.5 percent of administrators, removal was applied to 49.1 percent and other approaches were applied 16.4 percent of the time (N=165).

Buildings which contain asbestos receive abatement measures 51.3 percent of time, removal measures 32 percent of the time and other approaches 16.8 percent of the time (N=197). Responses to radon abatement measures received 47.7 percent, removal measures received 20.3 percent while other approaches received 32 percent responses (N=128). The final question on termite and other pest damage received a 58.3 percent abatement response, removal a 30.7 percent response and other approaches a 10.9 percent response (N=192).

Table 6: Measures Taken When Hazards Encountered

Measure	Abatement	Removal	Other	Count
Lead-based Paint	50.0%	32.4%	17.6%	170
Lead Water Pipes	34.5%	49.1%	16.4%	165
Asbestos	51.3%	32%	16.8%	197
Radon	47.7%	20.3%	32%	128
Termite and Pest Damage	58.3%	30.7%	10.9%	192

Code administrators were asked if a pre-inspection was required prior to issuance of the building permit when a building has been boarded up or red tagged by the Building Department.

Most of the agencies (67.3%, N=217) reported that they require a pre-inspection prior to issuance of the building permit when the building had been red tagged. Another question asked if buildings that had been vacant for a lengthy period of time were required to upgrade to comply with current code requirements prior to occupancy. Twenty-nine percent responded that this was required. The length of vacancy to trigger this requirement was most often 12 months.

The administrators were also asked if their respective agencies issued conditional permits to allow for selected demolition to determine the condition or adequacy of existing materials. Figure 27 shows that almost one-third (31.4%, N=220) took a restrictive position, indicating that the agency *never* issues conditional permits to allow for selective, investigative demolition.

A related question asked if their agencies issued partial permits when there was not sufficient information to determine the total scope of a project's rehabilitation task. Less than one-third (29.8%) reported that they did not ever issue partial permits to investigate the scope of work. In most of the agencies (65.6%, N=157) total permit fees for a project involving partial permits are not greater than the single fee for a full permit. In those communities where partial permits are issued 34.6 percent reported that the total permit fees were greater than for a full permit.

To understand the difference, if any, in the cost of review and inspection processes between new construction and rehabilitation construction, code administrators were given a sample case. They were separately asked what was the minimum cost of the review and inspection process for new construction and rehabilitation construction for a detached house, which was approximately 2000 square feet in size and had no special characteristics. There was considerable diversity in response.

Appendix C shows that the average cost of the review and inspection process for new construction of the sample case was \$894, and for rehabilitation construction was \$511. The range of permit costs for new construction were from \$15 to \$6,828. This was less than the range for rehabilitation construction, \$15 to \$4,000. Seven responded to these questions by reporting zero or no cost. These individuals may have misunderstood the questions.

A comparison of the average costs by the three code model regions, shows that the UBC code administrators reported an average for new construction of \$1,358, compared to \$616 for BOCA and \$566 for SBC. For rehabilitation construction, UBC reported an average of \$703, compared to \$555 for BOCA and \$246 for SBC.

User Friendly Activities

Several questions were addressed to understanding the measures that the code enforcement agencies are taking towards informing the public about rehabilitation requirements and construction review processes. The code administrators were asked if their agencies distributed information about the rehabilitation process to design professionals, contractors, developers, or private owners in the last year. Figure 28 shows that 63.4 percent (N=224) of the agencies had materials to distribute to interested parties explaining the permit process for rehabilitation projects. Less than half the respondents (45.5%, N=222) reported that their agency took the initiative to distribute such information in the last year. Only 20.2 percent (N=223) of the agencies ever conducted or sponsored any workshops about rehabilitation processes to inform design professionals, contractors, developers and private owners, in the last year.

The code administrators were asked if their agencies offered any extended office hours. Figure 28 shows that only 15.3 percent (N=212) of the agencies offered extended office hours. Most of these were offered in the evenings rather than on weekends. Also, only 34.2 percent (N=219) of the agencies had compliance alternatives to suggest to owners or contractors when reviewing rehabilitation construction.

Record-Keeping

Code administrators were asked if their agencies had a record-keeping system that kept track of the discretionary decisions of plan reviewers and site inspectors. Figure 29 shows the majority (58.8%, N=221) of the agencies had some sort of record-keeping system that kept track of the discretionary decisions of plan reviewers. Fewer agencies (56.5%, N=223) had a record keeping system that kept track of the discretionary decisions of site inspectors. When asked if they knew of these records ever being used in a legal setting to support the degree and reasonableness of discretion, only a quarter of the respondents replied *yes*.

Just more than half (51.4%, N=220) of the agencies employed any methods to measure the consistency between different site inspectors' assessments.

Administrators' Perceptions of Liability

The law grants to governments and their officials the authority to act with discretion and to seek new solutions to code requirements for rehabilitation. For example, the 1996 edition of BOCA says in paragraph 104.6 that code officials or employees shall not be rendered personally liable "for any damage accruing to persons or property as a result of any act required or permitted in the discharge of official duties;" similar language is found in the recent editions of the other codes. However, the fear of liability may influence the inclination of the officials and employees to use discretion.

To determine their actual experience with liability claims, administrators were asked if they had been involved in a situation where they were accused of negligence. The majority (80.6%, N=217) reported that they were *never* involved in such situation. However, 19.4 percent

of the respondents reported that they had been involved in situations where they were accused of negligence.

In another question, administrators were asked if they ever came upon situations where they believed that they could be held liable while performing their duties in reviewing rehabilitation construction projects. The majority (65.0%, N= 220) of the respondents reported that they *sometimes* came across such situation (see Figure 30). While 8.2 percent of the administrators replied that they *usually* and 7.3 percent *always* came across such situation. There were only one-fifth (19.5%) of the respondents that felt able to report that they *never* came upon situations where they believed that they could be held liable.

A question was asked of the administrators to assess if there is any effect from fear of risk of liability. The administrators were asked if they would hesitate to approve an innovative compliance alternative because of fear of liability. Figure 31 shows that one-third (N=215) of the administrators reported that fear of liability *never* caused them to hesitate in approving an innovative compliance alternative. However, 54.9 percent administrators reported that they did *sometimes*, and 8.4 percent did *usually* hesitate to approve an innovative compliance alternative because of fear of liability. At the same time, only 3.7 percent of the respondents *always* hesitated to approve an innovative compliance because of fear of liability.

The administrators were asked if their city had the legal ability to grant immunity to them from liability due to negligence. Figure 32 shows that slightly more than half (52.3%, N=199) of the respondents reported that their city had the legal ability to grant immunity to them from liability due to negligence. However, 47.7 percent of the respondents reported that their city did not have the legal ability to grant immunity to them from liability due to negligence. The knowledge of immunity for liability seems to be unclear in many states and municipal governments. All of the of the respondents from the states of Alaska, Arizona, Maine, Maryland, Nebraska, and Virginia reported that they were provided legal immunity to liability due to negligence by their city. In contrast, all of the respondents from Connecticut, Kansas, Kentucky, Montana, North Carolina, North Dakota, Nevada, South Dakota, and Tennessee clearly indicated that they were not protected by their cities against liability due for negligence.

Four additional questions sought to understand the administrators' beliefs about immunity to liability in specific situations. These are shown in Figure 33. Seventy percent (69.9%) (N=196) of the administrators reported they were legally immune from *personal liability for inspections*. Also, a majority (67%, N=193) of the respondents reported that they were legally immune from *personal liability for issuance or denial of permits*. Respondents from Alaska, Arizona, Hawaii, Idaho, Kansas, Missouri, Nebraska, Hew Hampshire, Pennsylvania, Rhode Island, Utah, Virginia, and Wyoming all reported that they were immune from personal liability for issuance or denial of permits and inspections. Each of the respondents from Connecticut, Kentucky, North Dakota, Nevada, and Tennessee reported that they were not immune.

Responses to two questions showed that less than half of the respondents believed immunity was present. Code administrators were asked if they were immune from personal liability for *failure to inspect*. Figure 33 shows forty-seven percent reported that they were not legally immune for failure to inspect. Ambiguity seems to be high in the majority of the states.

For example, all respondents from Missouri, Utah, Virginia, and Wyoming reported that they had this immunity. At the same time all respondents from New Jersey reported that they did not have this immunity, a belief that is contrary to reality for that state.

Finally, the administrators were also asked if they were immune by law from personal liability for *failure to enforce discovered violations*. A high (60.6%, N= 193) number of administrators reported that they were not provided immunity from personal liability for failure to enforce discovered violations. In this case, all respondents from Virginia reported that they were immune from personal liability for failure to enforce discovered violations. In contrast all respondents from Michigan and New Jersey reported that they did not have this immunity.

These findings do not indicate what the actual legal status is in any of the individual jurisdictions. However, they do indicate the existence of a significant level of concern for personal liability among the code administrators while performing duties within the scope of employment.

Appeal of Code Enforcement Decisions

In *Rehabilitation Guidelines 1980: Statutory Guideline for Building Rehabilitation* recommendations are made that would emphasize rehabilitation experience in code rule-making and appellate bodies. Three questions directly addressed this.

The responding code administrators indicated that over half (57.5 percent, N=222) of the communities had a Board of Appeals specifically for cases involving construction in existing buildings (Figure 34). Another question asked if the Board of Appeals contained members with construction experience in rehabilitation construction; 79.0 percent indicated that they did. The responding code administrators also indicated that 69.1 percent (N=191) of the jurisdictions had a Board of Appeals containing members with engineering experience in rehabilitation construction. Relatively few appeals are brought forward. The code administrators indicated that the average rate of appeal for new construction projects was 2.23 percent (N=191), with a slightly higher the average rate of appeal for rehabilitation construction projects; 3.38 percent (N=192).

Staff Support

In rehabilitation projects, the need to strike a balance between life/safety and financial constraints can make or break a project. In rehabilitation project review, code enforcement officials must incorporate flexible approaches yet still maintain the spirit and intent of the codes. Providing this type of reasonable flexibility begins with the level of agency support provided for difficult on-site decision making and the amount of staff training.

A series of three questions asked code administrators about the agency's ability to provide assistance to field inspectors making difficult on-site decisions, the level of training provided to new personnel, and continuing education to staff. Figure 35 provides the responses from the code administrators to this series of questions.

Administrative support for staff making the difficult on-site decisions received a high response of 61.5 percent as *always* available in the agencies. Only 2.8 percent indicated that

they *never* had support for staff in making difficult decisions. Training for new staff received a 50.7 percent response as *always* undertaken. Annual training was indicated as *always* being implemented in 66.5 percent of agencies.

Intergovernmental Cooperation

Intergovernmental cooperation between building code departments and other agencies can sometimes produce special situations for rehabilitation construction codes and their enforcement. These special situations can result in the change of code requirements or change in the code enforcement process as a means of achieving a specific community goal.

A set of questions asked the code administrators to indicate if their communities used building code requirements, or employment practices to achieve specific community goals

One question asked if buildings that are considered historic, or located in an historic district, are subject to special code requirements that are different from other rehabilitation construction. Seventy-two percent of the administrators (N=201) responded *yes* while 21.4 percent said *no*. The creation of historical districts and/or special designation for historic buildings does provide flexibility in the enforcement of code requirements. Policies of this nature will preserve older neighborhoods and cultural resources.

Finally, a question asked if the code administrator's jurisdiction makes special provisions in the building code, or in the enforcement of the code, to stimulate rehabilitation construction in enterprise zones, during disaster recovery, and to stimulate neighborhood improvements. Figure 36 provides the responses from the code administrators: 16.3 percent indicated using the codes to stimulate rehabilitation in Enterprise Zones, 24.0 percent indicated using the code to stimulate neighborhood development, and 29.4 percent indicated using the code to stimulate rehabilitation in disaster recovery. It is interesting that relatively few jurisdictions adjust their code requirements to achieve goals of community development. When codes are adjusted it is most likely in response to disaster recovery.

Opinions: Rehabilitation Guidelines

The *Rehabilitation Guidelines* were published in 1980 to provide code enforcement agencies and the rehabilitation construction industry with information that would facilitate code enforcement of construction in existing buildings. As they were issued, they were freely distributed and included in model codes as appendices. However, after fifteen years, they seem to have become neglected. When code administrators were asked if they found the *1980 Guidelines* useful, the vast majority (62.4%, N=221) reported that they were not aware of the *Guidelines* (see Figure 37). Another 31.7 percent reported that they were aware of the *Guidelines*, but did not use them. Five code administrators (2.3%) reported they had used it, but that they did not find it useful. Only eight individuals (3.6%) reported that they had used it and that they found it useful.

Another question asked if the *Rehabilitation Guidelines* provide useful methods of on-site tests for existing materials and systems in an older structure. This question was answered by only 121 of the respondents, not surprising in light of the previous findings. The frequencies of

response for these questions are shown in Appendix C. However, there were only 71 that had previously said that they had some awareness of the *Guidelines*. Figure 38 shows the frequency of response for this group. The responses were given on a five point scale from always to never. Thirty-nine percent (N=71) indicated a neutral response by selecting the midpoint. Fifteen percent gave a positive response. Forty-five percent indicated a negative response.

Opinions: Discretion

Over the last several decades there has been a trend to move the model building codes from prescriptive requirements to performance requirements. As individual communities adopted the codes they also shifted to codes with greater emphasis on performance requirements. The code administrators were asked if the codes in their jurisdiction had become more flexible by this move from prescriptive requirements to performance requirements; 43.5 percent (N=209) said *yes*. There were two negative response categories; 34.0 percent said that their code was essentially prescriptive, and another 22.5 percent said there had been no increase in flexibility.

Early in the questionnaire the code administrators were asked if the rehabilitation provisions of their building code clearly indicated when discretion could be exercised. Twenty-nine percent (N=218) felt that their code *always* was clear about when discretion could be exercised. Figure 39 shows that the other positive responses were 37.2 percent indicating *usually*, and 26.1 percent indicating *sometimes*, approximately one in twelve indicated *never*.

Three questions in the **Opinions** section asked about the usefulness of discretion in specific situations. Table 7 shows the responses to these questions. Approximately one quarter of the respondents provided a neutral response, approximately 60 percent provided positive responses and less than fifteen percent provided negative responses.

Table 7: Usefulness of Discretion

	Very Useful				Not Useful	Count
Accepting alternate materials	39.6	23.7	23.7	6.3	6.8	207
Accepting alternate construction methods	34.9	25.8	26.3	4.8	8.1	209
Accepting alternate designs	30.5	26.2	29.5	6.7	7.1	210

Streamlining

A question asked if the respondents had looked for streamlined approaches to code enforcement that might eliminate duplicate or unnecessary tasks. Figure 40 shows that 23.6 percent (N=212) of the respondents said that they had done this. A follow-up question asked these respondents to explain what streamlined approaches had been tried. Forty-four respondents provided a comment. Eighteen gave responses that dealt with the delegation of responsibility. The delegation was either to the contractor, to a design professional, or to the a homeowner. Some simply said that what occurred was “delegation to the owner’s P.E. or R.A.”

Others indicated that a certification was expected as the fulfillment of the delegation. One said that privatizing plan review was a streamlining approach.

In contrast to a streamlining approach focusing on delegation, two responses implied their agency exerted more control. One respondent said that although the applicant selects the contractor, “*payments to the contractor are subject to agency approval of progress and work-in-place.*” Another reported that the use of contractors was subject to their approval.

Four comments suggested that streamlining occurred because of changes in the inspection process. Two referred to increasing the rate of inspection: “*inspect often*” and “*continuous special inspections.*” At the same time one referred to using only “*spot checks*” and another spoke of “*combining inspections,*” rather than having many individual inspections. However, it was implied that combining inspections could meet with resistance from unions.

Centralization was a concept common to five respondents. One referred to “*combining building and zoning into one responsibility.*” Another spoke of the internal relationship between building, fire, planning, zoning, and engineering. Three spoke of the idea of one-stop shopping for code enforcement.

Efficiency was the essence of seven responses. Using a computer system, standardizing review forms, standardizing bid documents and specification, and standardization of methods and materials were all mentioned.

Other comments included approaches that have been suggested before: pre-inspection conferences, public handouts, and a development review board. One responded simply that “*duplication does not exist.*”

Opinions: Costs of Compliance

There are many kinds of costs in rehabilitation in construction, costs of time, money, materials, etc. Three questions asked about some of the potential costs of compliance with the rehabilitation provisions of the building codes. Figure 41 shows that about nineteen percent stated that compliance *never* required the replacement of perfectly serviceable older material with modern counterparts. At the other extreme, one person reported that replacement of useable materials was *always* a result of compliance and only five percent marked the two choices closest to *always*. It would seem that the unnecessary replacement of older, existing materials is not a problem in the eyes of the code administrators. A second question shown in Figure 41 asked a more general question about compliance increasing the cost of rehabilitation and preservation projects without a proportionate increase in building performance. Close to fifteen percent marked either of the two choices closest to *always*. Still the majority (61.6%) indicated either of the two choices closest to *never*.

The final question in this set, also shown in Figure 41, was concerned with the costs of the appeal process limiting the number of appeals in small projects. Here was the strongest response. Over half responded *never*. Still the proportion indicating *always* or the next closest response was almost fifteen percent. This may indicate that there are some communities where the cost of appeal is perceived as a problem.

Opinions: Do Codes Limit Rehabilitation

Code administrators were asked whether they agreed that specific code requirements had limiting effects on the amount of building rehabilitation in their jurisdiction. The responses to these are shown in Figure 42.

The response to requirements that make buildings accessible to the mobility impaired received a mixed range of responses. Only 7.7 percent said accessibility requirements *always* limit rehabilitation, while 22.5 percent said *never*. The remaining 69.8 percent (N=222) ranged between *always* and *never*.

The response was quite strong by code administrators saying that the requirements that would improve the seismic characteristics of buildings did not limit rehabilitation. The responses were 47.2 percent saying that seismic requirements never limit building rehabilitation in their jurisdiction to 2.5 percent said the requirements always limit rehabilitation. The range of responses between always and never was 52.7 percent (N=199).

The response rate was also very strong to the question asking if requirements that limit the damage to buildings from high winds have limited the amount of building rehabilitation in their jurisdiction. Figure 42 shows the *never* response was 49.2 percent while 1.4 percent said *always*. The range between *always* and *never* was 47.2 percent (N=217).

Other Opinions about the Code

The code administrators were asked how much they agreed or disagreed with three statements about rehabilitation code enforcement. Each of these was answered on a five point scale. The mid-point (3) can be considered a neutral position.

The first statement was that current building codes are geared toward new construction projects rather than rehabilitation. Figure 43 shows that code administrators generally agree with this. Sixty percent indicated some level of agreement, while only eighteen percent indicated some level of disagreement. This provides confirmation of the implicit hypothesis underlying initiation of the *Guidelines* in 1980, and confirms industry concerns that began to be expressed in the Douglas Commission report in 1968, and that have continued to the present.

The second statement was that current code requirements have improved building performance. Eighty-five percent of the administrators agree with this. The figure shows that only 2.2 percent (just five individuals) expressed any disagreement with this statement.

The third statement was an evaluative one: it is good that existing buildings are improved to meet current standards for safety. Again, the figure shows strong agreement. Eighty-one percent showed some level of agreement and less than five percent indicated any level of disagreement.

Figure 44 shows two more general opinions about the codes. Again code administrators were asked how much they agreed or disagreed with two statements. The first statement was that building code provisions should be developed at the local level and specific to that area. The majority (59.6%) of code administrators disagreed with that statement. Twenty-one percent agreed with the statement, but only 6.2 percent (13 individuals) strongly agreed with this statement. This support for locally developed codes, goes against the work of the model code organizations and the American Institute of Architects, as well as that of HUD.

The second statement proposed an opposite position, code requirements for rehabilitation should be uniform across the nation. The figure shows that fifty-four percent of the code administrators agreed with this position. Twenty-four percent disagreed with the statement, with thirteen percent disagreeing strongly.

BOCA Section 3408.0

Several questions were only asked of code administrators in the BOCA region. These concerned the Section 3408.0 provisions in the model code. The first question asked for a comparison of the use of Section 3408.0 to the use of the standard provisions for rehabilitation construction. Table 8 describes the responses. At one extreme, two administrators reported that

Table 8: Use of Section 3408.0

Percent of Projects Using Section 3408.0	Frequency	Valid Percent	Cumulative Percent
0%	7	18.9	18.9
1	5	13.5	32.4
2	3	8.1	40.5
5	3	8.1	48.6
10	3	8.1	56.8
15	1	2.7	59.5
20	2	5.4	64.9
25	2	5.4	70.3
40	3	8.1	78.4
50	4	10.8	89.2
60	1	2.7	91.9
90	1	2.7	94.6
100%	2	5.4	100.0
Total	37	100.0	
Missing	29		
Total	66		

Section 3408.0 was used 100 percent of the time. At the other extreme, seven administrators reported using the standard method 100 percent of the time. The pattern is that the standard method is used the majority of time. Seventy percent (N=37) of the administrators reported using Section 3408.0 for 25 percent, or less, of their projects.

The administrators were asked which method provides the most flexibility to the builder in reaching code compliance. In light of the pattern of greater use of the standard methods, it is interesting to note that 55.6 percent of the administrators felt that Section 3408.0 provided the builder the most flexibility. The BOCA administrators were asked if they used Section 3408.0 for change of occupancy, additions, or alterations. Figure 45 shows that forty-three percent (N=34) reported using it for all of these changes. Eighty-seven percent used it for change of occupancy conditions, fifty-six percent used it for additions, and sixty-eight percent used it for alteration.

A final question asked the BOCA administrators if they would allow a Section 3408.0 evaluation of an existing building to be the floor for safety in that building. Interestingly enough, 76.5 percent (N=34) reported that they would.

3: Comparisons Model Code Region Differences

The responses from the code administrators were grouped into responses from the three model code regions. The data were examined for differences in responses among the three code regions using one-way analysis of variance. This analysis compared the mean values of the three groups for all items that were not categorical in their response scale.

Table 9 lists the questions where there were statistically significant differences among the model code region respondents. The table also describes the nature of the differences. These differences have a probability of occurring by chance at the rate of 5 times in 100, or less ($p \leq .05$). The actual mean values and significance levels are reported in Appendix D. It should be remembered that when a large number of comparisons are made, some will appear different by chance. However, the 35 differences shown in Table 9 are many more than would be expected by chance.

Table 9: Summary of Significant Differences by Code Region

Question	Difference
Part-time Staff?	BOCA more staff
Date of Last Amendment	UBC more recent
On-Site Observations, Life Safety	SBC more often
Energy Inspection Conducted	UBC more often
Accessibility Inspection Conducted	UBC more often
# Of Inspectors Working at a Site	BOCA fewer
Inspectors Perform Unannounced Inspections	BOCA more often
Dead loads considered	UBC more often
Snow loads considered	BOCA, UBC more often
Wind loads considered	UBC more often
Earthquake loads considered	UBC more often
Corridor Walls fire rating	BOCA higher
Wall Between Units, fire rating	BOCA higher
Interior Stairway, fire rating	BOCA higher
Change Fire Separation	BOCA more flexibility
Wired smoke detectors required	BOCA, SBC more often
Vertical Fire Stops	BOCA more often
One hour separation, multi-family	BOCA, SBC
Maximum dead end corridor length	BOCA, UBC
Allow handrails to remain	SBC more often
NFPA 101 adopted	SBC more often
Property maintenance code adopted	BOCA more often

Table 9 - Continued

Question	Difference
Issue partial permits to explore	UBC more often
Partial permit increase fees	BOCA, SBC lower
Agency employ methods to measure staff	SBC more often
Agency seeks prosecution	BOCA more often
Cost of permits for new construction	UBC higher
Cost of permits for rehabilitation	UBC higher
Immune from liability for inspections	BOCA less fear
Immune from liability for failure to inspect	UBC less fear
Immune from liability for issuance/denial of permits	UBC less fear
Supervisors available to assist	SBC more often
Vacant buildings upgraded to current code	SBC
Code increases cost without equal increase in performance	SBC less likely
Codes are geared toward new construction	UBC less likely
Time spent on site inspection	UBC less

In looking at the items in the list some patterns begin to appear. The administrators in the UBC region appear to have a greater inclination to thoroughness in considering loads during structural assessments. Code administrators in the BOCA region seem to consistently respond more conservatively to the three questions asking for fire rating times, as well as smoke detectors and vertical fire stops.

Additional comparisons among the responses of the code administrators by code region can be seen in Tables 10 and 11. The questionnaire contained two items that asked about the ease of use of the model code provisions for construction in existing buildings. For the BOCA region this addressed Section 3408.0; for the SBC region it addressed the SEBC; and for the UCBC it addressed the UCBC. Administrators were asked, if they used this material, to indicate how easy or difficult they found it to be and how easy or difficult they believed builders and developers found it to be. It is interesting to note that no difference showed up concerning enterprise zones and disaster recovery.

Table 10: Administrators' Ease of Use of Rehabilitation Provisions

	*+ -					Count
	Easy				Difficult	
Section 3408.0	17.1%	11.4%	42.9%	14.3%	14.3%	35
SEBC	26.3%	21.1%	39.5%	5.3%	7.9%	38
UCBC	11.1%	44.4%	35.2%	5.6%	3.7%	54

About one half of the respondents answered these questions. That could indicate that these provisions are not used by the other administrators. Table 10 indicates that Section 3408.0

is thought to be difficult to use by over one quarter of those indicating that they have used it. On the other hand, over half of those using either SEBC or UCBC report some degree of ease of use.

Table 11: Builders' Ease of Use of Rehabilitation Provisions

	Easy				Difficult	Count
Section 3408.0	8.6%	5.7%	28.6%	22.9%	34.3%	35
SEBC	13.5%	8.1%	37.8%	21.6%	18.9%	37
UCBC	16.7%	35.2%	40.7%	5.6%	1.9%	54

Table 11 reports the administrators' beliefs about how easy or difficult builders and developers find these rehabilitation provisions. There is a very strong belief among the responding BOCA administrators that builders and developers find Section 3408.0 difficult to use. It also seems clear that UCBC administrators have a strong positive belief about builders and developers finding the UCBC easy to use.

Comparisons by Community Population

It is interesting to examine differences in the way that code administrators responded based upon the size of their community. There are different approaches that might be taken to grouping the communities. An equal interval approach (e.g., where each group had the same range of population) was tried and abandoned. There were relatively few communities with large populations and a large proportion with smaller populations. This made the equal interval approach difficult. Instead, a grouping approach was used that placed approximately the same number of communities in each of six categories. These groups were: less than 20,000; 20,000 to 39,999; 40,000 to 59,999; 60,000 to 99,999; 100,000 to 299,999; and equal or greater than 300,000.

Table 12 lists the questions where there were statistically significant differences among these population groups. The table also describes the nature of the differences. Again, these differences have a probability of occurring by chance at the rate of 5 times in 100, or less ($p \leq .05$). The actual mean values and significance levels are reported in Appendix E. And, it should be remembered that when a large number of comparisons are made, some will appear different by chance. However, the 38 differences shown in Table 12 are many more than would be expected by chance.

Table 12: Summary of Significant Differences by Population Group

Question	Differences
Full time staff	Towns of 100,000 or over had more
Full time staff in Plan Review for rehab	Towns of 100,000 or over had more
Full time staff in Site Inspection	Towns of 100,000 or over had more

Number of "ALL" projects reviewed	Towns of 300,000 or over had more
Value of rehabilitation	Towns of 100,000 or over had more
Edition of CABO	60,000 to 100,000 used a more recent version (compared to 20t to 40t and more than 300t)
Use UBC-34 for guidance	UBC-34 was used the most in 40,000 to 60,000
No other codes used for guidance	40t to 60t most often marked this (tapering down on each side)
Year of last amendment	60t to 100t had the most recent, while 100t to 300t had the least recent
Architect/engineer involved in pre-application	The larger the city, the more often one is involved
On-site pre-application inspections	The larger the city, the less often they are made
On-site inspection of life safety	100t or more, less often
Pre-application negates building permit	Unusually more in the 40t to 60t case
# of inspectors visiting site	The larger the town, the more inspectors
Unannounced inspections performed	100t to 300t very close to yes, compared to 300t and more and 20t to 40t: no apparent pattern
BOCA method used	60t to 100t peaks, using Alternate unanimously, it tapers down on both sides towards the standard method
Earthquake loads considered	60t to 100t do more often, tapering down on both sides (sig with less than 20t)
Accept existing lathe/plaster construction	The larger the city, the more likely to answer yes
Wired smoke detectors required	100t to 300t less likely than less than 20t or 40t to 60t (no apparent pattern)
Measures increase dead end corridors	More than 300t more likely to answer yes than 20t to 40t (no apparent pattern)
If part of a unit is remodeled, (electric)	More than 300t and 20t to 40t less likely than 20t or less (no apparent pattern)
Health code adopted	The larger the city, the more likely to answer Yes
Asbestos Code adopted	The larger the city, the more likely to answer Yes
Historic preservation code adopted	The larger the city, the more likely to answer Yes
Asbestos code adopted	40t to 60t and 100t to 300t less likely to answer yes than 60t to 100t(no apparent pattern)

**Table 12 -
Continued**

Differences

Partial permits increase fees	Less than 20t more likely to say no than 20t to 40t or greater than 300t (no apparent pattern)
Prosecution sought in enforcement	in general, the larger the town, the more likely (with the exception of 40t to 60t which was most likely)
Cost of permits for new constrcn.	Peaks at 60t to 100t and descends on either side (significant with less than 100t to 300t unanimous Yes, sig with less than 20t (no apparent pattern?))
Board of Appeals, construction	The larger the city, the more likely
Board of Appeals, engineering	The larger the city, the more likely
Supervisors available to assist	40t to 60t most likely to agree, 300t and greater least likely (no apparent pattern)
Good that exist bldgs meet current	Most in 20t to 40t, least in greater than 300t (no apparent pattern)
Time spent on plan review	

Time spent on site inspection	Possibly generalized by the smaller the city, the more time spent on site inspection (with the exception of 100t to 300t which is larger than expected)
Time spent on administration	Peak at 60t to 100t, descending on both sides, with the lowest number at less than 20t

Comparisons of Code Administrators with Site Inspectors

An abbreviated questionnaire was sent to inspectors of code agencies in twenty communities. Although the resources available for this study did not allow including the staff in every surveyed community, there may be insights to gain from a general comparison of the administrators with the field inspectors.

Table 13: Summary of Significant Differences between Administrators and Inspectors

Question	Positive
Code indicates when discretion possible	Insp, closer to always
Use UCBC for guidance	Insp, more do
Use OTHER for guidance	Admin, more do
Inspectors perform unannounced inspections	Admin, more Yes
Detailed field manuals available for on-site inspectors	Admin, more Yes
BOCA methods used	Admin, higher percentage
Snow loads considered	Insp, more Yes
Wind loads considered	Insp, more Yes
Earthquake loads considered	Insp, more Yes
Engineering or approval required for replacing materials	Admin, more towards Always
Increase dead end length in exchange for fire protection	Admin, more Yes
One hour separation multi-family	Admin, more towards Always
Pre-inspection of red-tagged buildings	Insp, more Yes
Compliance alternatives available	Admin, more Yes
Sufficient resources for training	Insp, more Yes

Table 13 - Continued

Question	Positive
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Record keeping for site inspectors decisions	Insp, more Yes
Record keeping for plan reviewers decisions	Insp, more Yes
City can grant liability	Admin, closer to Always
Immune from liability for inspections	Insp, more likely to be immune
Immune from liability for failure to inspect	Insp, more likely to be immune
Immune from liability for issuance or denial of permits	Insp, more likely to be immune
Supervisors available to assist in on site decisions	Insp, more towards Always
Training when officials start the job	Insp, more towards Always
Useful: discretion in accepting alternate materials	Insp, more towards very useful
Useful: discretion in alternate methods of construction	Insp, more towards very useful
Useful: discretion in alternate designs for rehabilitation	Insp, more towards very useful
Code increases the cost	Admin, more towards Always
Building code should be developed at the local level	Admin, closer to Agree
Code requirements should be uniform across the nation	Insp, closer to Agree
General construction experience	Admin, longer
HVAC experience	Admin, longer
Code enforcement -- plan review experience	Insp, longer
Code enforcement -- site inspection experience	Insp, longer
Code enforcement -- administration experience	Insp, longer
Time spent on site inspection	Admin, higher
Time spent on administration	Insp, higher
Time since training	Admin, shorter period of time
Gender	Admin, all male (Insp had some female)
Age	Insp, older

Comparisons of Code Administrators with Rehabilitation Professionals

An abbreviated questionnaire was sent to contractors, architects, and directors of Habitat for Humanity construction programs. Although the resources of this study did not allow including these rehabilitation professionals from every surveyed community, there may be insights to gain from a general comparison of the administrators with the rehabilitation professionals.

Table 14: Summary of Differences between Administrators and Professionals

Question	Difference Described
Code indicates when discretion possible	Prof, closer to Always
Edition of SBCCI	Admin, more recent year
Use HUD rehabilitation guidelines for guidance	Admin, more likely
Use UBC for guidance	Admin, more likely
Architect/engineer involved in pre-application	Admin, closer to Always

Table 14 - Continued

Question	Difference Described
On-site inspections made in pre-application	Prof, closer to Always
On-site measurements of structure in pre-application	Prof, closer to Always

Pre-application negates building permit	Prof, closer to Always
Pre-application review incorporated into the applications	Prof, closer to Always
BOCA methods used	Admin, higher percentage Standard
Use HUD guidelines for structural assessment	Admin, more likely to have used it
Interior Stairway fire separation rating	Prof, lower rating used
Wired smoke detectors required	Admin, closer to Always
Allow fewer outlets per room than new construction	Admin, more likely to allow
Addition of plumbing new fixtures requires upgrade?	Prof, more likely to require
Code agency has sufficient resources for training?	Prof, more likely Yes
Code used to increase urban revitalization	Prof, more likely Yes
Code used to increase affordable housing	Prof, more likely Yes
Code agency distributes information in the last year	Prof, more likely Yes
Code agency prepares materials to explain permit process	Prof, more likely Yes
Painting not a replacement cost	Prof, more likely Yes
Landscaping not a replacement cost	Prof, more likely Yes
Immune from liability for inspections?	Admin, more likely Yes
Immune from liability for failure to inspect?	Admin, more likely Yes
Immune for failure to enforce discovered violations?	Admin, more likely Yes
Immune for issuance or denial of permits?	Admin, more likely Yes
Board of Appeals, construction experience in rehabilitation	Prof, more likely Yes
Supervisors available to assist	Prof, closer to Always
Compliance brings unnecessary destruction of important features	Admin, closer to Always
HUD guidelines provide useful on-site tests	Admin, closer to Always
Compliance requires replacement of good materials	Admin, closer to Always
Code increases cost without equal increase in performance	Admin, closer to Always
Code improves building performance	Prof, closer to Agree
Accessibility requirements have limited rehabilitation	Admin, closer to Agree
Seismic requirements have limited rehabilitation	Admin, closer to Agree
Wind requirements have limited rehabilitation	Admin, closer to Agree
Years of architectural design experience	Admin, longer
Gender	Admin, all male (Prof some female)

It appears that the professionals that responded may have a more positive view of pre-application reviews than do code administrators. At the same time the administrators are more likely to perceive that inspectors have immunity for liability than rehabilitation professionals are.

4: Analysis of Open-Ended Comments

Introduction

Most questions in the national survey of rehabilitation code enforcement allowed only the selection of pre-defined responses. This is a valuable way to obtain information that is comparable between individuals, as well as between groups. However, it is also useful to provide an opportunity for people to express additional issues that they feel are important, but not included in the fixed format questions. Also, some responses are not easily reduced to a fixed format response.

This chapter examines the responses of code administrators to three open-ended questions that concluded the survey. The questions addressed:

- Innovative approaches to code enforcement that encourages building rehabilitation
- Usual reasons that building rehabilitation projects fail to proceed
- General comments about rehabilitation code enforcement practices

Unlike the structured questions, these open-ended questions were answered by a minority of the respondents. The question with the most responses was “usual reasons that building rehabilitation projects fail to proceed,” with 40.2 percent (N=219). Almost twenty-three percent responded to “general comments about rehabilitation code enforcement practices,” and 20.1 percent responded to “innovative approaches to code enforcement that encourages building rehabilitation.”

The open-ended responses to each question were transcribed into three individual lists. (These lists are found in Appendix E). Such lists of open-ended responses are usually interesting on a response-by-response basis, although a general interpretation is difficult without further processing. In this case the processing consisted of grouping similar responses together and giving them a common label. This process is often referred to as content analysis.

The final step in examining the open-ended questions was to ask selected respondents to elaborate on what was written on the questionnaires. Respondents were selected because of their apparent innovative nature or because they addressed important issues, e.g. ADA. These discussions with these selected respondents are described in the case studies that follow the analysis of open-ended comments.

Innovative Approaches

Perhaps of most interest to the objectives of this study were the responses to the question asking for administrators to describe their “innovative approaches to code enforcement that encourage building rehabilitation.” A review of the individual responses to this question found that answers could be collapsed into nine categories of response. These categories are shown Figure 46. In addition, six respondents indicated no innovation was present, e.g. “*We are in the dark ages.*”

Generally the categorization of individual responses was very clear, for example, “*I meet with people involved before the job starts*” was one of individual responses assigned to the category “preliminary meetings”. At the same time, categorization of some responses was less clear. For example, statements such as “*low interest loans are available to qualified property owners to encourage housing rehabilitation in targeted areas,*” could have been categorized as a program or as an incentive. There had to be “judgement calls.”

The written responses to the open-ended questions began to indicate at least two things. First, by collapsing them into categories two broad types of responses began to appear: indirect and direct. That is, some ideas dealt *directly* with the process of code enforcement, while others dealt *indirectly* with enforcement by emphasizing other programs and processes, e.g. loans available for rehabilitation. Second, it became clear that some respondents were providing information about approaches that were not necessarily innovative, but that they just seemed to consider as successful or important. Examples are the housing resale/rental pre-inspection programs. In some communities, programs of this type have been adopted for years. In the case of University City, MO, the city passed an ordinance in the 1960s to implement this program. This program has been considered successful in maintaining an affordable housing stock.

Several administrators supplied written comments, and later the telephone comments, that stressed the importance of providing good customer service. Figure 46 shows that good customer service is provided by easy access to information which was 8.7 percent of the responses, user friendliness in handouts and informational materials (15.2%) of the responses, time-saving plan review procedures (6.5%) of the responses, incentives that encourage shown in rehabilitation construction (19.6%) of the responses, programs that stimulate rehabilitation received (8.7%) of the responses, pre-inspection measures (10.9%) of the responses and penalties were (10.9%) of the responses. The flexibility in interpretation of codes was (13%) of the responses.

Reasons for Failure

Content analysis of responses to the request for reasons that rehabilitation projects fail to proceed resulted in the ten categories shown in Figure 47 (again, Appendix E contains exact responses). It is not surprising to see a lack of funding as the most frequently mentioned reason for failure to proceed. Three other categories provide other financial reasons that a project might fail: economic feasibility, funding, cost, and market demand. Zoning, accessibility, and other code requirements were also a group of responses that occurred frequently. It is surprising to find accessibility requirements on this list. The ADA is lenient where existing structures are concerned. Still, six code administrators listed access code requirements as reasons for failure of projects. The building stock was mentioned as another reason for the failure of rehabilitation. The building stock was seen as too new for rehabilitation (jurisdiction is 75% new since 1975).

Finally, there was a group of other comments. These include, “no comment” or “we have very little rehab,” as well as other unique responses (e.g., lack of public support for old buildings).

General Comments

Content analysis on the “general comments about rehabilitation codes or their enforcement” were categorized as

Figure 48. The individual responses of the administrators are found in Appendix E.

Philosophy/opinions was the largest category of response with 35.4% (e.g., “*We have too many codes already*”). Comments on specific codes issues received 31.3% (e.g., “*New ADA requirements for bathrooms are ridiculous*”). General comments on information request received 20.8 percent. Comments on federal policies comprised 12.5% of the comments (e.g., “*The HUD Rehabilitation Guidelines should be redone ...*”).

Community Case Studies

Once the data analysis was completed, the research staff conducted telephone interviews with selected code administrators. The administrators were selected for their innovative, or the representative nature of their, open-ended comments. The following section provides community case studies which describe some of the identified innovative approaches to code enforcement practices.

Calexico, California

Housing Rehabilitation Loan Program

The City of Calexico, California administers a Housing Rehabilitation Loan Program that works very closely with the Building Department to promote housing rehabilitation, neighborhood preservation, and affordable housing. The program is funded by HOME and CDBG money. It has two full-time project managers, and is located in the city’s redevelopment agency. The entire city is targeted to participate in this program. There is a waiting list.

The program is administered as follows: application consists of a person applying for the loan for the rehabilitation work to be completed. This is followed by a Pre-review.

Pre-Review

The housing staff collects the necessary paper work for loan approval, conducts an on-site assessment of the house, and discusses requested modifications with code enforcement staff. If the changes are major or complex, a field inspector will conduct an on-site inspection of the structure. Once pre-approval has been arranged, housing staff work with the applicant to develop plans for the proposed rehabilitation work and submit to the code enforcement department. The plans are submitted to the Building Department for review and approval by the inspectors. If plans are approved, permits are issued to begin work. Following approval both housing staff and field inspectors conduct progress inspections of the site.

To be eligible applicants must own the property, although it can be a rental unit. The city completes about 40-50 housing rehabilitation projects a year under this program. The program has been very successful in the rehabilitation of housing units in Calexico.

Davis, California

Housing Resale Inspection Program

The city administers a Housing Resale Inspection Program. The purpose of the ordinance created program is to maintain the quality of housing in the city and to ensure health and safety to the city's residents by inspecting dwelling units upon resale. The program is administered by the Planning and Building Department. A potential seller will request a Resale Inspection Checklist. This checklist outlines what is required for health and safety reasons before resale of the dwelling. The dwelling units include: single-family, two-family, multifamily residence buildings, motels, hotels, rooming or boarding houses, and fraternity or sorority houses. An application for inspection is filed with the planning and building department. Within five working days, the department sends a code inspector to inspect the dwelling according to the housing code, the zoning ordinance and other ordinances of the city relating to health and safety issues. A report is issued which outlines results of the inspection including identified deficiencies. The department allows time for deficiencies to be repaired. If the unit is brought in compliance, the administrator issues a certificate of inspection. The department has one full time staff member assigned to the program. This program has helped maintain the quality of the housing stock in the City of Davis.

Oakdale, California

The Chief of the Community Development Department of Oakdale, California developed two special revitalization districts to encourage rehabilitation projects and have implemented a one-stop permit center. The Chief also expressed comments on ADA requirements.

Creation of Two Special Revitalization Districts

The City of Oakdale has created two special districts in the downtown area. The Design District has been in place since the early 1990s. The Downtown Revitalization District was developed about a year and an half ago. Within these districts there are older buildings not on the federal register but with historical significance. Flexibility with building codes is allowed with some variation on codes but not the codes that deal with life safety issues, including seismic upgrades.

The City Council, acting as a redevelopment agency has provided some incentive to replace the original outside facades of the historic buildings in the targeted districts, by providing low interest loans to complete these projects. Most of the historic buildings in the special districts are two stories. The codes require upgrade to current seismic codes for new construction. The Community Development Department, which is composed of building, planning, and zoning, will work with the developers to allow some flexibility with new code requirements. For example, seismic upgrades are based on one-half to three-fourths of new construction codes requirements. This flexibility allows more rehabilitation work to be completed, and increases health and safety standards.

One- Stop Permit Center

Oakdale has also developed a one stop permit center for plan reviews and issuing permits. The department is composed of building, planning, and zoning staff. The staff is available to jointly review plans. Any plans which require additional agency review, such as

public works or fire, are forwarded to the appropriate agency by the Community Development Department.

Description of ADA Comments

Additional comments were made concerning the costs of rehabilitation construction in relation to ADA requirements. The cost of meeting ADA requirements when the applicant is requesting to change an older home to a business was said to be very high. Couple this cost with the cost of life safety codes, and it breaks the bank. It was said that the successful projects are those that have begun with design professionals. The design professionals know the ADA requirements and incorporate the requirements in the early design and budget, therefore eliminating surprises.

San Jose, California

The Chief Building Official of San Jose, California was selected for a telephone discussion because of comments about innovative practices. San Jose has been working over the last 5-6 years to streamline the permit issuing process. The programs of *Express Plan Check*, *One-Stop Permit Center*, and *User Friendly Handout/Guidelines* have been developed to provide more effective and efficient service to the community.

Express Plan Check for Residential Remodeling and Additions:

Purpose: Fast turn around for small residential projects

Requirements for project review:

1. Additions/or modifications less than 500 sq ft.
2. Interior remodeling of the home
3. Limited to 2 story structures (if structurally simple)

Process for project review:

1. Applicant calls for an appointment, usually the within two days
2. Appointment scheduled with applicant, design professionals, and agency Plan Reviewer
3. Plans are reviewed. During this step, any uncertainty about the plans is clarified, the plans' accuracy in meeting current codes is reviewed, and any problem areas in the plans are identified and marked for applicant to correct.
4. If plans meet the required criteria, approval is given and the applicant usually receives the permit within an hour

This Express Plan Check is available on an as needed basis. This process provides good customer service, review in a timely fashion which benefits homeowners (what used to take 2-3 weeks for review has been condensed to a few hours), separates the large projects from the small projects. The larger projects are handled by a separate process. This reduces delay for review and permit issuances for the larger projects. A full-time and a half-time Plan Reviewer have been assigned to this program. Over 2,000 projects were completed in this fashion last year.

Express Plan Check for Commercial Tenant Improvements:

Purpose: To work with industry to create a process to streamline the review, permit issuance process

Requirements for Review:

1. Interior improvements
2. Does not involve hazardous materials
3. Less than 10,000 sq ft. building

Review Process:

1. Applicant phones to schedule an appointment, usually within two days
2. Applicant/Developer meet with the Plan Reviewer; any concerns are discussed and plans are marked where changes need to be made; usually 60% are approved in this process; permits are issued within 1 hour

A full-time staff person is allocated to this review. The Plan Reviewer is an engineer. About 1,000 projects were completed last year.

One-Stop-Permit Center

During the last 5-6 years the city has worked to streamline its permit issuance process. In 1992, the city remodeled the building that issues the permits into a one-stop permit center. The purpose of the permit center is to provide a comfortable place where applicants' development needs are handled. The center was created to be customer friendly, including the physical environment. It was redesigned to eliminate stand-up counter spaces for the staff and applicants. Twelve sit-down counter spaces were provided; each with a computer terminal. This design keeps staff from tiring (from standing all day), the applicants are more comfortable, and the body language is more positive: the message is let's sit down and discuss instead of confronting one another. Neutral colors were selected for the walls: gentle blues, pinks, and pink-purple to create a calming environment.

Staffing of the permit center includes:

- 2 mechanical inspectors
 - 2 plumbing inspectors
 - 1 electrical inspector
 - 2 building inspectors
 - 8 permit-technicians
 - 1 planner
 - 1 supervising engineer
 - 1 supervising inspector
 - 1 manager
 - 2 receptionists
-

The combined expertise of field inspectors and professional engineers makes it easier to address customers' questions and concerns. A cashier is available to handle transactions on the spot if needed. Every 2 minutes a customer is served. About 43,000 customers were served last year.

Customer Friendly Handout/Guidelines

In San Jose, information is available on building technology, and the permit issuing process, in the form of magazines, handouts, and videos on building technology. This information is available in the waiting area. A comfortable waiting area has been designed with a TV and VCR to play videos on building technology.

Boynton Beach, Florida

Boynton Beach is a coastal city of 55,000 in southern Florida. It is fast growing. During the month of November 1997, building permits worth \$6,649,884 in construction costs were issued.

The Department of Development consists of Building, Planning and Zoning, Community Redevelopment, Engineering and Occupational Licenses. The Department issues several types of building permits each tailored to specific building conditions and types, The permit review process is also short or long depending on the nature of the application. The Department has working PERT diagrams which describe the flow, sequence, activities and duration of each permitting steps to be taken for each type of permit. These diagrams are continuously reviewed and revised to shorten and simplify the process.

Pre-application Conference

The process starts with a pre-application conference between the analyst and the owner or his/her authorized agent (usually the contractor) where the subject of the application is reviewed for its validity and completeness. Unreasonable applications are not accepted and are returned by the Supervisor of Applications. Simple subjects such as fences and burglar alarms are processed on the spot., fees are collected and permits are issued within 15-20 minutes if all necessary information is given. Complex subjects, such as "Planned Unit Developments" or conditions requiring "variances", are accepted for their respective processes and a file is opened. The screening of applications at the pre-application conferences serves two purposes. It prevents unnecessary, unreasonable or technically not-feasible applications from entering the permit process. It also helps resolve cases before they become critical legal issues.

Communications

Striving for simplicity and for clear communication between the Department and the owner or his/her authorized agent, is key to a short permitting process. Printed materials are available at the Department for all applicants. A reference library with all City ordinances,

codes, maps, aerial photographs is open to the general public at the Boynton Beach Public Library. It will be attended by a volunteer soon. The objective is to educate the builders and the general public alike before they start the permit process.

A computerized filing system is in place. This allows all applications to be immediately available to the Department Plan Analysts and Field Inspectors at all times.

Rockford, Illinois

The Building Department of Rockford, Illinois has developed practices to issue same-day permits for most residential remodeling and new single-family homes, and a permit center with building, zoning, and fire staff.

Same-Day Permits for Residential Remodeling & Single-Family Homes

The city will soon be implementing a new procedure: same-day permits for most residential remodeling and single-family homes. The homeowner/builder makes an appointment to review the plans. A checklist review of structural items is completed. Only one plan approval is necessary for a prototype of units in the development. This does not require that 1-2 family units be designed by design professionals. Corrections to plans can be made on the spot before the permit is issued. The process will be most effective when the builder is present.

Permit Center with Building, Zoning, and Fire Staff

The city established a permit center to handle plan reviews. The center is staffed by a fire prevention inspector, zoning staff, building staff, and planning staff. A same day payment center has also been established. If public works staff is required for a plan review, the permit center will contact the appropriate person from this office. By using this team approach, staff understand the projects and the project needs. Staff can discuss and come up with innovative solutions to problems.

Louisville, Kentucky

The City of Louisville, Kentucky has taken steps to consolidate their inspections, permits, and licenses into one department with one set of goals, affecting both new construction and rehabilitation construction. The city annually hosts a training conference to outline changes in codes and requirements for the design professionals in the community and provides pre-development construction meetings.

Consolidation of Departments

The Director of the Department of Inspections, Permits and Licenses reported that Louisville has consolidated all the inspections, permits and licenses into one department. This includes consolidated plan review and code enforcement in one location with one director and one set of goals. The department views its role as helping people and sees the community as customers. All staff that need to review plans are located in one office. If a major development

project is under review, the department will bring in the other appropriate agencies (such as flood plain staff or state officials) to review the project. This consolidation has been very successful. It allows members to know what each other do, understand the roles of different staff and departments, and provides better communication, and provides cross training opportunities. The staff is composed of the director, building inspectors, electrical inspectors, HVAC inspectors, an elevator inspector, plan reviewers, a fire prevention officer, landscape & traffic review officers, a historic preservation specialist, and housing maintenance inspectors (handling housing, zoning, rodent control, illegal parking, junk cars, etc.). This approach has been very successful in moving the process along by reviewing the plans, making appropriate changes and corrections, and if appropriate, consulting with other agencies.

Training

The city hosts an annual one day development conference to outline changes in codes and requirements for the design professionals in the community. The development conferences have been very successful. Over 300 attended this year.

Pre-Development/Construction Meetings

The department encourages pre-development/construction meetings even before the plans are developed. Everyone involved with the plan comes in to discuss the requirements involved. The director feels most people want to do the right things as long as they are aware of what those are. Meeting with the development team very early in the process is very helpful in moving the process along. This conference process is confidential, and alleviates anger and uncertainty about the plans.

Hopkins, Minnesota

The Chief Building Inspector reported that Hopkins, Minnesota has developed special assessment legislation for targeted neighborhoods. He also provided some general comments on ADA.

Special Assessment Legislation for Targeted Neighborhoods

The City of Hopkins has obtained special legislation that allows the city in cooperation with building owners, to finance major improvements in specifically targeted neighborhood areas to rehabilitate older single-family residences, patio homes, and condominiums. The city receives repayment through an agreed assessment on individual property taxes. This demonstration project has been established to develop more affordable housing, preserve older neighborhoods and facilitate renovation that would not otherwise be possible. The city also provides grants and loans in this special district, as well as the rest of the community, for rehabilitation work to be completed. These grants and loans are funded through CBDG block grants and revolving fund dollars. The city has also used its bonding authority to finance an owner occupied townhouse development in order to reduce market rates and create a three year

lease program where purchasers who do not qualify for a loan can apply their lease payments toward their down payment. The building codes adopted within the community allow new products and are flexible. They allow the use of alternate materials and methods as long as health and safety are not compromised. The city is an older community where remodeling and rehabilitation is a way of life. Special assessment procedures, grants, low-cost loans and a city-sponsored remodeling fair help to stimulate rehabilitation of older structures.

ADA/Fair Housing Comments

It was suggested that HUD needs to work more closely with the model code organizations to develop enforcement language for inclusion in the model codes, establishing a mechanism at the local level for enforcing ADA and Fair Housing requirements. This is the only way to achieve effective, consistent implementation of the requirements. Typically construction projects are governed by major building codes, state and local amendments, and federal government requirements. The local code enforcement official is familiar with the model code system, and is trained to enforce the model codes along with the state amendments at the local level. Federal requirements tend to be poorly communicated to local enforcement officials, yet training and education on the model codes and state amendments are regularly conducted. If HUD would work closely with the model code organizations, the federal guidelines could be fit into the model codes. Appropriate training for code enforcement and design professionals could then be implemented through the normal and familiar process. HUD's input into the model code system would pay off in more uniform enforcement of the federal requirements on a local level and would allow local code administrators and design professionals to work more effectively in creating functional new and remodeled building projects for building owners and the disabled.

University City, Missouri

Housing Resale/Rental Pre-Inspection Program

In the 1960s University City, Missouri developed a Housing Resale/Rental Pre-Inspection Program. The Director has also provided some general comments on the role of the Federal government in relation to adopted codes.

The city ordinance created a Housing Resales/Rental Pre-Inspection Program that is administered by the Department of Planning and Development. The program deals with a wide variety of housing values (from \$30,000 to \$350,000) and has been very successful in maintaining an affordable housing stock. The pre-inspection program required both resale and rental properties to participate.

The Director expressed the opinion that there is a need for the federal government agencies (HUD, FEMA, etc) that promulgate documents on building and property guidelines (for example, *HUD Rehabilitation Guidelines* and *Housing Quality Standards*; HQS), to engage more in the consensus building process with the model code agencies. This would create the opportunity for the federal guidelines to be adopted into more formal standards or laws. The

incorporation of these federal documents into adopted standards would carry a great deal more weight with cities than unenforceable guidelines. By engaging in the model code agencies' consensus processes, the Federal policies and programs would really reach the local levels. The model code agencies regulations are the documents that reach the local code officials. Most of the Federal publications or guidelines are missed because they were not properly directed to local code officials.

HUD should be involved with the consensus building process of developing new International Codes. HUD should use the International Codes as a framework/guideline for the development of their programs and regulations.

Fairfax County, Virginia

Fairfax County, Virginia provides on-going training for design professionals, project owners, contractors and staff, as well as open monthly informational sessions with the residential and commercial inspectors from the private sector. The county has also established an informal advisory committee to review requests for projects which will use new construction or design technology and draft code requirements.

Staff & Community Training

The county provides on-going training on new codes to its staff, and staff of other jurisdictions, and in application of new codes to design professionals. In addition, the first Tuesday of every month, management staff of the Residential Inspections Branch conduct open information sessions for the residential construction industry. During these sessions, current and new county policies that affect the construction industry are discussed. Additional topics may include: patterns of construction deficiencies, code interpretations, inspection procedures, industry complaints and concerns, or anything else that affects construction work or county practices. These sessions are intended to be open and maintain a permanent channel of communication that will benefit all. The commercial Inspection Branch holds similar meetings every month. This monthly exchange has been very beneficial in developing a positive rapport with the community.

Informal Advisory Committee

Fairfax County has established an informal advisory committee which reviews requests to use new construction or design technology and/or draft code requirements. The Committee was seen as necessary because requests are sometimes made for approval of a plan designed according to future codes rather than current codes. Because new codes are published ahead of time, plans may include them, e.g., the draft 1999 codes. In addition, requests are sometimes made for new products, technologies, design, and construction methods. The Advisory Committee is also the means to submit proposals for code changes to the State Board of Housing

& Community Development and to BOCA. The Committee formulates policies & procedures to increase effectiveness and efficiency of code enforcement practices in the county.

The advisory committee is composed of the Director & Deputy Director of Inspection Services, the Deputy Fire Chief, the Chief of Commercial Inspections Branch, the Chief of Residential Inspections Branch, the Chief Mechanical Engineer, the Chief Plumbing Engineer, the Chief of Building Plan Review Branch, and the Chief of Permits.

To be considered by the Advisory Committee, applicants write a letter of request to the chief of the appropriate division. The request is assigned to an appropriate staff member for review. The members of the committee meet to discuss the request and decide the issue. The Director of the Department writes a letter to the applicant on the decision. If approved, a building permit is issued. All decisions can be appealed to the Board of Appeals by the applicants.

Data is collected on all requests and entered into a data base. In 1996, there were fifty-two requests. Some of the decisions did go to the Board of Appeals.

Appendix A

Instrument Development



Appendix A: Instrument Development

Since this was the first nationwide survey of code enforcement practices in rehabilitation construction, a data collection tool had to be developed to appropriately address the task order objectives. This chapter presents the key steps necessary to the design, development, and administration of the data collection tools, including the pilot testing.

Design and Development of the Data Collection Instrument

The design of the data collection tool was begun by staff after completing the review of literature, codes, etc., to summarize the issues. Questions from individual readings were drafted and a pool of questions was developed. Questions from the project consultants were also included in the pool of questions. Staff began to organize the collected questions. Sub-headings were developed and redundant questions were discarded. Finally, the questions were edited and formatted into a framework for responses with question formats ranging from yes/no to opinions.

The initial draft survey instrument was divided into three separate questionnaires. Survey instrument A served as the primary questionnaire. Survey instruments B and C were subsets of Survey A. Survey instrument A was developed to be distributed to code enforcement administrators. Survey instrument B was to be distributed to code enforcement field inspectors and plan reviewers. Survey instrument C was to be distributed to rehabilitation professionals (defined as architects, developers and contractors). The reduced versions B and C are the same as A with general language revisions to appropriately address the specific groups.

Expert Review of Code Administrator Questionnaire

The final design of the survey instruments was done in consultation with HUD staff and relevant organizations outside the agency. The following representatives reviewed and commented on the questionnaires: Dave Engel, Bill Freeborne, Jackie Kruszek, and Alan Rothman of the HUD, Policy Development & Research (PD&R) office; Bill Tangye and Rick Vognild of the Southern Building Code Congress International, Inc; Paul Armstrong of International Conference of Building Code Officials; Ken Schoonover of Building Officials Code Administration International, Inc.; David Hattis of Building Technology; Paul Hancher of the National Conference of States on Building Codes and Standards (NCSBCS); Joel Zingesser of the National Association of Home Builders (NAHB) Research Center; and Bill Duncan of the Enterprise Foundation.

It was the general consensus of the review groups that the questions were clear and concise but the questionnaire was lengthy. Length became the issue of primary concern in the feedback received from the review groups.

Readability Analysis

A readability analysis was conducted to analyze the data collection tools' choice of language and grammatical structure. Adjustment of questions based upon the readability analysis was made to ensure an appropriate level of reading comprehension for the intended audience. The analysis was performed by computer software created specifically for text analysis. This approach minimized the response burden by designing the data collection instruments in a concise and simply worded fashion. Wording of the questions was assessed by examining and evaluating reading levels and writing style. The program also conducted an analysis of: style diagram of length of words for the technical manual (there was a 33% match); sentence characteristics, (82% of the sentences were simple); and word length, (the average word length was 1.7 letters). The questions were found to be on a *technical manual* level which is appropriate for this audience of code administrators.

Final Development of Subsets of Questionnaires

Because of concern for the length of the questionnaire, three subsets of questionnaires were developed. This decision was made to shorten the length of the data collection instrument by eliminating questions that applied to other model codes. The three subsets are:

1. ICBO (Uniform Building Code) which included questionnaires for building code enforcement administrator, field inspectors, and rehabilitation professionals
2. SBCCI (Standard Building Code) which included questionnaires for building code enforcement administrator, field inspectors, and rehabilitation professionals
3. BOCA (National Building Code) which included questionnaires for building code enforcement administrator, field inspectors, and rehabilitation professionals

OMB Submission and Approval

Two phases of OMB Submission and Review were required. The first phase was providing public notice on the Federal Register of the proposed information to be collected. The purpose of this phase was to notify the public of the data collection effort and to gather public comments. On May 30, 1996, HUD's Office of the Assistant Secretary for Policy Development and Research placed a notice of proposed information collection in the Federal Register (Volume 61, Number 105, 27091), as required by the Paperwork Reduction Act of 1995. No public comments were received.

The second phase was the submission and review of the OMB Clearance Package. The

OMB Clearance Package stated that there were no special circumstances that would require the information to be collected in a manner inconsistent with this item. No questions of a sensitive nature would be asked of respondents. The data collection effort would be conducted according to the guidelines specified in 5CFR 1320.6. The OMB Expiration Date would be displayed on all data collection instruments.

The necessary paperwork for the second phase of the OMB Review Process was completed and submitted to HUD on August 22, 1996. The document was submitted by HUD to OMB on November 30, 1996. OMB approval and assigned control number were issued on January 27, 1997.

Pilot Test of Survey

A pilot test was conducted while the questionnaire was being reviewed for OMB Clearance. The objectives of the pilot test were to examine: the respondents' interpretation of the questions and response format; the administration of the questionnaires; to a limited extent, the respondents' rate of return. The pilot test was conducted from September to November, 1996. The primary activities of: identification of targeted municipalities and populations; sample selection; the mailing distribution process; findings and recommendations are presented.

Identifying Pilot Test Jurisdictions

The first step in the administration of the pilot test was to identify and select appropriate communities, building code officials, and rehabilitation professionals to participate in the survey. The initial sample was determined by:

1. Selecting communities in the 3 model code regions of BOCA, SBCCI, and ICBO
2. Selecting communities with populations ranging from 100,000 to 15,000 in each model code region
3. Reviewing the community's total value of building permits, total value of nonresidential building permits, total value of residential permits, total value of new residential construction, and total value of residential alterations and additions, all in 1994 dollars
4. Identifying the names, titles, addresses, and phone numbers of code enforcement administrators and/or municipal personnel directors, field inspectors, and rehabilitation professionals

Three reference sources were used to collect this information:

1. *1996 County and City Extra: Annual Metro, City and County Data Book*, Edited by Courtenay M. Slater and George E. Hall, this is an annual publication providing

statistical information available for every state, county, metropolitan area, congressional district, and for all cities in the U.S. with a 1990 population of 25,000 or more. It was of interest because it shows values of construction authorized by building permits. The 1996 edition provides this information for 1994.

2. *Carroll's Municipal Directory, Elected and Appointed Officials*, Apr/Sep '95, this directory lists over 35,000 municipal government officials from more than 7,800 cities, towns, townships, villages, and census designated places across the country. The municipalities are listed alphabetically in two groups: 1) populations over 15,000 with listings of agencies and 2) populations under 15,000 with only a single contact person listed.

3. *PhoneDisc*, phone books on CD-ROM, 1996 updated version, this CD-ROM provides U.S. business and residential listings. The listings are divided into six regional areas throughout the country. Searches can be conducted by business category by typing in SIC (Standard Industrial Classification) code numbers or by descriptive text. The six regions are western, Midwest, northeast, southeast, mid-Atlantic, and central states.

Pilot Test Sample

Since this is a nationwide survey, three communities were randomly selected from each model code region. Three sample groups of code enforcement administrators, field inspectors, and rehabilitation professionals were randomly developed.

Selection of Municipalities: Initially sixteen municipalities were randomly selected using the criteria of selecting three from each model code region and small, medium, and urban sized communities. Of these sixteen communities, nine were randomly selected to participate in the pilot test. Two communities were from the BOCA region (Burlington, VT; Carbondale, IL) three were from the SBCCI region (Beaumont, TX; Savannah, GA; and Auburn, AL), three were from the ICBO region (Portland, OR; Boise, ID; and Flagstaff, AR), and one was from a state code region (Utica, NY).

Selection of Participants: Nine code enforcement administrators were selected to receive the questionnaires designed for them. Eight field inspectors were selected to receive the questionnaires designed for them. Nine rehabilitation professionals were selected to receive the questionnaires designed for them. Eight field inspectors were surveyed because the selected community only had eight on staff. Of the nine rehabilitation professionals, four are architectural firms, 2 are remodeling and addition businesses, and 3 are general contractors.

Selection of Code Enforcement Administrators and Field Inspectors: The *Carroll*

Municipal Directory provided the primary listing of code enforcement officials in the selected communities. If a specific code enforcement administrator was not listed or the appropriate code official could not be determined by the listed title, the municipal clerk or personnel officer was phoned for the appropriate name, title, and address. In the case of Utica, NY, where the building field inspectors were also surveyed, the city personnel director was phoned for a listing of the names, titles, and addresses. She provided the information without a written request.

Selection of Rehabilitation Professionals: As already stated, for purpose of this study rehabilitation professionals are defined as architects, contractors, and developers. Members of this sample group were selected by using SIC codes and searching the *PhoneDisc Directory*. A listing of SIC codes which appropriately corresponds to the objectives of the study was prepared. These codes were used to search the directory for each selected community. The computer then listed the businesses in the selected community that corresponded with the SIC code. For example, code number 87299 is architectural services. This code listed architects in the community. The SIC code responses were printed out. The printed document listed names, addresses, and phone numbers. Consistent rules for elimination of rehabilitation professionals were applied to each SIC code category. Businesses that did not fit the objectives of the study were deleted from the listing of possible selections. Some examples are *Service Master*, carpet maintenance, excavating, and asphalt maintenance businesses. Participants were then randomly selected from these listings.

For this pilot test, Utica, NY, was selected for distribution of the nine rehabilitation professionals' questionnaires. After a review of the lists, businesses were randomly selected from the SIC codes. Ten businesses were selected from SIC code 152101, two were selected from SIC code 152199, and four were selected from SIC code 871299.

Mail Distribution Schedule & Follow-up

The initial distribution plan was a three-step process. The first step was the mailing of a complete distribution package. This included the cover letter, questionnaire, and return postage-paid envelope. The second step was a reminder postcard mailed one week later. The third step was the mailing of a second complete distribution package to non-responding participants. The first mailing was September 24 to all building code enforcement officials (including field inspectors and administrators in all three model code regions). September 26 was the first mailing to all nine rehabilitation professionals. The reminder postcard was mailed one week later (October 1st and October 3rd) to all participants. Finally, a second complete distribution package was mailed to non-responding participants (October 8 and October 10). A decision was made to conduct a fourth mailing because of the lingering returns. Another complete distribution

package was mailed on October 22 to all non-respondents. Finally, telephone contact was made with non-respondents in late October.

Pilot Test Returns

A summary of the final return rates, pilot test participants comments, findings and recommendations are presented. Table 15 represents the return rates for the three subsets of questionnaires sent: code enforcement administrators, field inspectors, and rehabilitation professionals.

Table 15: Pilot Test Return Rates

Sample Participants	Number Selected	Number Returned	Percentage Returned
Code Enforcement Adm.	9	7	78%
Field Staff*	8-4=4	1	25%
Rehabilitation Professionals: 2 groups	9-1=8	3	37.5%
1st group: Architects**	4-1=3	2	67%
2nd group: Contractors	5	1	20%

* Four field staff selected to receive questionnaires were listed as senior housing code inspector (1 person) and housing code inspectors (3 persons). From telephone conversations, it was learned that the staff assigned to these positions do not handle building code enforcement work. This reduced the gross sample of this group.

** One Architect replied that he is retired and not equipped to respond. This reduced the gross sample size.

Interview of Pilot Test Participants

Telephone interviews were conducted from late October to early December with some of the survey participants. Eight general questions were asked: 4 addressed the survey’s format,

content, clarity, and length; 3 questions asked if the participants had received and returned a survey and if not why not; and 1 question asked if the cover letter clearly explained the purpose of the survey.

General Comments: On the whole, the comments were positive. Many commented that the survey was self-explanatory and the questions were easy to understand. The cover letter was presented in a clear and concise fashion which explained the purpose of the survey. Participants felt that the survey was lengthy but offered no suggestions for revisions. One participant commented that it would be hard to make the questionnaire any more concise because of the purpose of the survey.

Specific Comments: One code administrator felt that the questions that relate to activity within the agency (page 1) were a bit confusing to him. On the question that asked for an estimate of the number of projects reviewed and value of projects, he wanted to know if it was for the fiscal year or calendar year of 1996. His city's fiscal year falls differently than the calendar year. For the second question, which asked the percentage of building rehabilitation projects, he wondered if new additions on existing buildings should be counted as new construction or rehabilitation.

Pilot Test Findings and Recommendations

Finding 1: Development of Sampling Frame: This project was the first to survey the practice of the enforcement of rehabilitation codes at the local level. A primary issue was the development of a sample for distribution of surveys. No existing lists provided complete or up-to-date information on the names and titles of potential participants. Of the 26 names, titles, and addresses selected for the pilot test, there were 2 changes in code enforcement administrator personnel, 1 change in field inspector personnel, and 4 field inspector staff positions that did not apply to the objectives of the survey.

The Carroll's Municipal Directory worked well for identifying a telephone number for contacting randomly selected communities. However, the Directory did not go into the level of detail required for this project. The directory did not list staffing positions, only key administrative staff and elected officials. More research was needed to confirm names, titles, and addresses of selected code administrators. The pilot test also revealed that names, titles, and addresses of code enforcement administrators had to be verified by calling the local communities. Some of the Directory listings were either incomplete or in error.

It was decided to directly mail surveys to field inspectors instead of requesting code administrators to distribute them. This approach would provide more control to the project staff

in collecting returns. In the pilot test, the necessary information was collected from the City's Personnel Director. However, not all personnel offices may be as cooperative in providing this information. It was decided to ask the chief code enforcement administrator for the information. The chief code enforcement administrator could be contacted by either a joint letter from the University and HUD's PD&R Office or by telephone.

The pilot test revealed that there were some differences in the ease of identifying architects, developers, and builders/contractors that could participate in the study.

Finding 2: Slow Response Rate: The pilot test indicated that response times for code administrators was longer than previously expected. **Six weeks were expected. However, eight weeks were required with extra phone follow-up.** Telephone contact was important in the collecting of returned surveys. The follow-up procedures in the administration of the surveys would be adjusted to fit this finding. The pilot test also indicated that returns from rehabilitation professionals were low, even after several follow-up procedures.

Finding 3: Questionnaire's Length: The pilot test indicated that very few changes were necessary. The survey was lengthy but no code administrators were able to offer any suggestions for revisions. However, after review of the participants comments and responses, it was decided to delete two questions. The two questions were deleted because the respondents in the pilot test did not complete them. The deleting and reformatting resulted in the number of pages of the code enforcement administrator surveys being reduced. The font size, layout, and graphics remained the same.

Finding 4: Agency Structures Vary Among Communities: Different communities are organized in different ways. For example, in some communities the housing inspections were for Housing Quality Standards (HQS) compliance not building rehabilitation requirements. Housing code inspectors were not the same as building code inspectors. In development of the sample data base, staff needed to specifically request code enforcement and field inspectors that conduct plumbing, heating, building, and electrical inspections.

Finding 5: Definition of Rehabilitation: In some communities the term rehabilitation applies only to housing projects developed for not-for-profit housing group for low-income housing programs, such as projects which engage in low-interest loans to encourage rehabilitation of neighborhoods. The terms commercial or owner-occupied apply to projects that involve remodeling or tenant occupied building permits.

Finding 6: Innovative Practices: Innovative programs and practices were found in some of the pilot test communities. For example, in Portland, Oregon the term rehabilitation applies only to housing projects developed by not-for-profit housing groups for low-income housing programs. Also included are projects which engage in low-interest loans to encourage rehabilitation of neighborhoods. The terms commercial or owner-occupied applies to projects that involve remodeling or tenant occupied building permits. Portland administers a building permit fee waiver program for non-profit groups to encourage their involvement in rehabilitation housing for low-income persons. The City of Portland depends on the appeal process to address any major impediments to rehabilitation instead of creating special districts. The city has adopted local ordinances, called city titles, to supplement the state mandated codes.

Another example of what administrators consider as innovation occurred in Carbondale, Illinois. About two and one-half years ago the city implemented a mandatory rental inspection program. Within the city limits, over seventy-two percent of the housing stock consists of rental dwellings. The city passed a local ordinance modeled after the HUD minimum property standards to administrator this mandatory program

Summary

The pilot test provided researchers with very positive potential for project results. Recommendations and changes made as a result of the pilot test were: adjusting the length of survey by deleting two questions and reformatting the questionnaire, recognizing the importance of telephone contact for this sampling group, and developing steps to create a reliable sample data base. With these few changes the pilot test data was retained for inclusion in the data from the complete survey of code administrators.



Appendix B

Survey Administration



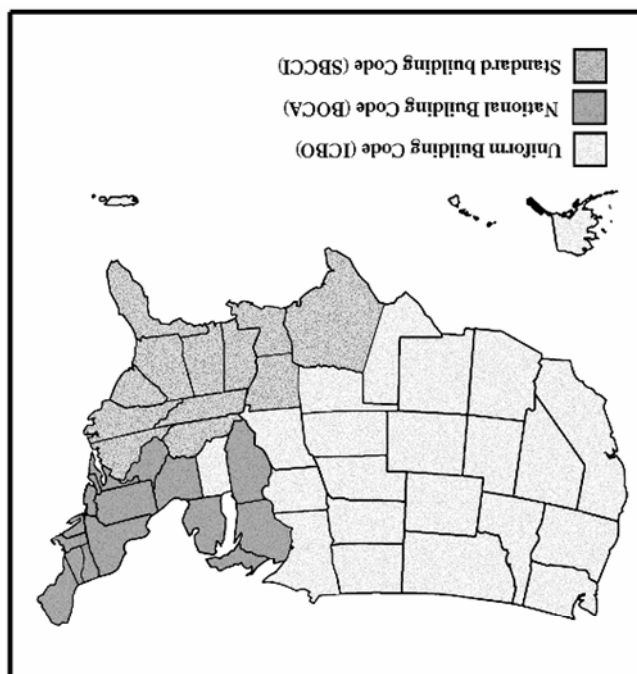
Appendix B: Survey Administration

The survey administration process began with selecting the sampling for the study while waiting for OMB clearance. Once OMB clearance was received there was a period of preparation of the final questionnaires. A primary activity of the survey administration was the distribution of the questionnaires and follow-up materials. The survey administration process was completed with the reception of returned questionnaires and their entry into data files for subsequent analysis. This chapter will review each of these steps in the survey administration.

Sampling

The first step in the administration of the survey was to identify and select the sample. The target universe consists of those organizations and individuals involved in the enforcement of the rehabilitation provisions of the building code. The organizations directly involved were the local code enforcement agencies of municipalities and counties. The individuals directly involved were the administrators, plan reviewers, and field inspectors of those agencies. However, as the pilot study indicated, direct sampling of these administrators, plan reviewers, and site inspectors was not possible since no listing of these individuals exists. The sampling began by selecting places where the code enforcement agencies would be studied.

A multi-stage, stratified sampling process was used. This process divided the United States into five strata, then randomly selected places within each strata. The five strata represented the three model code agencies, the two states with their own written building codes (New York and Wisconsin), and the municipalities with their own building codes (Chicago, Fort Lauderdale, Miami, and New York). The states were separated into code regions based upon information from the *National Symposium on the Status of Building Regulations for Housing Rehabilitation*. Figure 49 is reproduced from that report. It shows Texas as the only state influenced by two model code organizations, being predominately SBC with UBC in a small portion of the northwest part of the state. Texas was considered an SBC state. Because comparisons were to be made between code regions, equal samples were



targeted for the three model code regions. The samples of New York and Wisconsin were kept proportionate to the sample sizes for other states, in order to avoid biasing the national sample. Some states mandate the use of a specific model code, e.g. UBC in Oregon, however communities in these states were sampled and analyzed based upon the model code that they used. Each of the four municipalities were included. Resources allowed for a total sample of 500.

In the first stage a sample of places was drawn. To obtain a nationally representative sample, the 1990 U.S. Bureau of the Census listing of places greater than 10,000 persons was used as a sampling frame. The largest place in each state was initially selected. The Census data was grouped by model code region. Approximately 150 places were randomly sampled for each model code region, with each state being sampled proportionately, but with a minimum of two sampled places.

Sample of Code Administrators

Following the selection of places to include in the sample, the code enforcement agencies for these places were identified. The initial information was taken from *Carroll's Municipal Directory, Elected and Appointed Officials* and *Carroll's County Directory, Elected and Appointed Officials*. The pilot test had indicated that data from this reference might be incomplete, or inaccurate. To ensure the quality of the sample, each identified agency was telephoned to confirm the information necessary for questionnaire distribution: agency name, administrator's name and title, and agency mailing address. Although this step had not been anticipated in the original Research Design it became obvious it was necessary while doing the pilot test, this verification provided a sample list with very few errors. Only one administrator questionnaire was returned because of incorrect mailing information.

Some places on the population list were not municipalities, but were a Census Designated Place (CDP). CDP's comprise densely settled areas that are identifiable by name, but are not legally incorporated. Their boundaries, which usually coincide with visible features or the boundary of an adjacent incorporated place, have no legal status, nor do these areas have officials elected to serve traditional municipal functions. Attempts were made to find the municipal or county agency responsible for code enforcement in that place. If this could not be determined from reference materials, or telephone calls to an adjacent municipality, then the CDP was replaced. These replacements were with randomly selected county governments with code enforcement agencies.

Secondary Samples

Code Enforcement Agency Staff: While the primary sample for this study was the code enforcement agency administrators, two others were developed: code enforcement agency staff and rehabilitation professionals. The objective of these two samples was to provide additional perspectives on rehabilitation code enforcement that could be compared to the perspectives of the code administrators.

The sample of code enforcement agency staff required the cooperation of code enforcement agency administrators. Telephone calls were made to the administrators in the larger communities. After explaining the project, administrators were asked if they would provide the names, titles, and addresses of up to fifteen staff in their agency. Specifically, individuals that conduct plumbing, building, mechanical, and electrical inspections. The request emphasized that the inspectors' participation would be voluntary, and responses would be kept confidential. This request was confirmed by mail when necessary.

Attempts to obtain the sample of code enforcement agency staff were stopped on April 10, in order to allow time for data collection. At that time a total of 210 names of staff had been obtained from twenty communities.

Rehabilitation Professionals Sample: Individuals involved in the construction industry must meet the provisions of the building code as they design and construction rehabilitation projects. This represents another secondary group that can be contrasted to the code administrators.

As already stated, for purpose of this study rehabilitation professionals are defined as architects, contractors, and developers. Two sources were used to sample this group. First, the American Institute of Architects annually publish a listing of architectural firms, *ProFile*. This was used as the sampling frame to randomly select architects for each state. Architects located in the sampled areas were selected. A sample of five architects was sought for each place, but this was not always possible. The range of sampled architects in a single community was one to six.

Two other groups were included in the rehabilitation professional sample: construction firms and non-profit developers. The 1997 edition of *PhoneDisc* CD-ROM was used as the sampling frame for each of these. Construction firms were selected by using appropriate SIC codes, e.g., 152139: remodeling and repair contractors, and searching the *PhoneDisc* directory. Listings that did not contain a complete mailing address were removed from the list. Also removed were firms that would not directly be effected by the rehabilitation provisions of the

building code, e.g., painting contractors. Two to five firms were randomly selected from the

reduced list for the largest community in each state.

The non-profit developers were all Habitat for Humanity (HFH) chapters. *PhoneDisc* was used to identify the Habitat for Humanity chapters in each state. Those listings without a mailing address were removed from the list. Up to eight HFH chapters were randomly selected for each state (in some cases this was simply taking all of the chapters in a state, since there were a limited number.)

Summary of Samples

Table 16 provides a summary of the samples for this study. It shows the distribution of samples for the primary group, code administrators, and the two secondary groups, code agency staff and rehabilitation professionals by the five strata.

Table 16: Summary of Study Samples

Strata	N of Places	N of Administrators	N of Agency Staff	N of Rehabilitation Professionals
BOCA	149	150	89	180
SBCCI	144	145	29	170
UBC	152	154	49	231
States	49	53	28	65
Municipalities	4	4	15	18
Total	498	506	210	664

Preparation

Once OMB clearance was obtained the final preparations for questionnaire distribution were made. The pilot test results were reviewed and two questions were eliminated from the draft questionnaires. Nine distinct questionnaires were formatted and printed with either BOCA, SBC or UBC sections: three code administrator questionnaires; three agency staff questionnaires; three rehabilitation professional questionnaires. To help distinguish between the different versions' variations in the questionnaire different colored covers were used. This helped to prevent incorrect versions of the questionnaire being distributed.

Distribution of Survey Instruments

The first distribution focused on code enforcement administrators. Each sampled administrator was sent a cover letter requesting participation in the study, a copy of the questionnaire, and postage-paid reply envelope. Questionnaires were mailed to 507 code enforcement administrators on March 7, 1997. The second distribution focused on rehabilitation professionals and was mailed on March 23, 1997. The third distribution was to the sample of code enforcement agency staff. On April 14-15, 165 questionnaires were mailed directly to agency staff. On April 21 another 45 questionnaires were mailed to code administrators who agreed to distribute them to their staff.

Follow-up Procedures

The research design proposed at least two follow-up contacts to ensure a high rate of return. In addition, the research design proposed that if the return rate from the code administrators was unexpectedly low (less than 50%) selected respondents would be contacted by phone. The pilot test revealed that telephone contact was very successful in obtaining returns from the code administrators. The follow-up procedures were adjusted to incorporate this very important finding.

Two reminder letters were sent to the code enforcement administrators on March 24 and April 22. As a result of each of the letters, there were additional responses. Figure 50 shows the distribution of returns over time. The follow-up letters also resulted in phone calls from various communities primarily to request that questionnaires be resent as they had not received the first mailing. Some calls also addressed questions about the survey, expressed general interest about its purpose, and requested a copy of the results. (A list of twenty communities requesting a copy of the results and findings has been kept and a summary will be sent to them.) By the time the process was completed, there were 20 questionnaires faxed, over 150 phone calls, over 150

second mailings.

The third follow-up strategy was direct telephoning of code administrators to request their assistance. The non-responding code administrators were reviewed. The two largest communities in each state were selected and attempts were made to contact them by telephone. These calls were made during May and early June.

A follow-up reminder letter was sent to rehabilitation professionals that had not returned their surveys. The letters were sent April 24, 1997. As a result of the letters, there were several phone calls from various communities requesting that another copy of the survey be sent. Thirty-four additional mailings were mailed, and seven others were faxed, in April and early May.

On May 22, 1997 a second complete package was sent to a random sample of the non-responding rehabilitation professionals.

Follow-up of the questionnaires to staff of code enforcement agencies consisted of follow-up letter, mailed May 20th. Following this letter, telephone enquiries were received seeking to confirm the confidentiality of the study and/or request an additional questionnaire be mailed or faxed for response.

Returns

A summary of the final return rates, pilot test participants comments, findings and recommendations are presented. Table 17 represents the return rates for the three subsets of questionnaires sent: code enforcement administrators, field inspectors, and rehabilitation professionals.

However, Figure 1 (see Chapter 2) shows that the responding administrators maintained a level of geographic diversity. The respondents also represented the population diversity of the original sample. New York, Los Angeles, and Chicago are the largest communities in the original sample. Since they responded to the survey they raise the average population of responding communities. Eliminating these three communities from the average population of responding communities results in finding that the mean value of the responding places and non-responding places were not statistically different ($p=0.45$).

Information obtained during the study indicated possible reasons for the response rate being lower than in the pilot test. First, at least one community experienced a nationally reported disaster, during the data collection period (Fargo, N.D.). Other communities may have also experienced floods, wind storms, etc., of a smaller scope. Second, Spring is a time when construction activity is increasing in many parts of the country. Several code administrators told us that the seasonal rush kept them from responding as quickly as they wanted. Third, another survey of code administrators was occurring at the same time.

Table 17: Return Rates

	Number Selected	Undeliverable	Refusals	Responses	Return Rate	
					Gross	Net
Code Enforcement Administrator	506	1	5	223	.441	.442
Agency Staff	210	0	0	63	.295	.295
Rehabilitation Professionals	664	63	7	44	.068	.07

Processing of Returns

Questionnaires were returned over a period of three months. As they were, the sampled individuals were removed from subsequent follow-up mailings and telephone calls. In addition, the date of their receipt and postmark were noted, although a large proportion did not have a legible postmark. Eighty-six administrator questionnaires had postmarks. From the difference between these postmark and return dates we were able to determine that the transit time ranged from 3 days to 15 days. The mean return transit time was 6.34 days, the median was 6.0 days.

The *Questionnaire Programming Language* (QPL) computer software was used to create a data entry program for each of the three questionnaires. These programs helped to reduce data entry error by restricting the range of accepted input. QPL was also used to create syntax files for *Statistical Package for the Social Sciences* (SPSS). These syntax files contain variable definition and labeling information. The data file created by QPL was then used as input for the SPSS syntax files. This created the data files that were analyzed. Prior to analysis, all of the data was reviewed for error. Corrections were made when the response on a questionnaire did not match the SPSS data file entry.

The data entry process was concurrent with the last half of the time period when questionnaire returns were being received. The data verification extended briefly after all returns had been received.



Appendix C

Survey Instrument



Appendix C: Survey Instrument

The questionnaire for this study was formatted as an 8 1/2 inch by 11 inch booklet. The cover page showed graphic images related to rehabilitation construction, the title of the survey, the address of the Building Research Council (BRC), and the OMB Clearance information. Copies of the original questionnaire can be obtained from BRC while supplies last.

The following are the questions that building code administrators were asked in the March 1997 National Survey. These questions are presented in the same sequence and format as the questionnaire, however the addition of descriptive statistics for most questions has lengthened the listing of questions from seven pages in the questionnaire booklet to more than twice that length here.

The descriptive statistics shown for each question are generally the percent of responses and the number of administrators responding to that question. In a few cases the average response is a more appropriate descriptor. That is also shown with the number responding to the question. When averages are given, they are often followed by an italic indication of the unit of measure, e.g. *months* or *times*.



Resources of your Building Code Enforcement Agency

Please estimate the personnel resources available to your building code enforcement agency. Then estimate the percent of plan review and site inspection that is contracted out.

<i>Current Number of Staff (percent for part-time and split assignments)</i>	Full-Time Average	Part-Time Average	% of Activity Contracted? Average
Total staff , including clerical, etc.?	31.30N=215	2.34 N=86	
Staff in plan review for rehabilitation construction?	5.17 N=187	2.26 N=35	35.21% N=38
Staff in site inspection for rehabilitation construction?	11.44N=187	3.74 N=38	43.09% N=23

Estimate the Activity within your Agency During Calendar Year 1996

# of all projects reviewed average	# of rehab projects reviewed average	\$ Value of all projects reviewed average	\$ Value of rehab projects reviewed average
3,250.75 N=187	1,483.95 N=167	\$546,943,169 N=173	\$39,753,053 N=151

Estimate what percentage of building rehabilitation projects in your jurisdiction involve (average values):

Detached Single Family	Attached Single Family	Multifamily	Commercial	Industrial	Institutional	
44.40 N=180	15.55 N=111	14.87 N=139	24.57 N=175	11.74 N=124	9.61 N=102	N=64

What was the most frequent change of occupancy condition in your building rehabilitation projects? (Check one) **N=198**

55.6 Residential to commercial

13.1 Commercial to residential

7.1 Industrial to commercial

24.2 Other (Specify) ___

Do the rehabilitation provisions of your building code clearly indicate when building enforcement officials may exercise discretion?

28.9 Always 37.2 Usually 26.1 Sometimes 7.8 Never

N=218

Code Enforcement History in Your Community

Which edition of the following model codes have been adopted (in whole or in part) by your jurisdiction?

National Building Code (BOCA)	19 <u>92.76</u>	N=51
Uniform Building Code (ICBO)	19 <u>93.65</u>	N=98

CABO 1 and 2 family Dwelling Code	<u>19 93.09</u>	N=64
Standard Building Code (SBCCI)	<u>19 93.75</u>	N=36
State Code is mandated?	<u>Yes</u>	N=90
None Adopted	<u>Yes</u>	N=1
Other code adopted (Specify)_____		N=62

Has your jurisdiction adopted any of the model code provisions for construction in existing buildings?		N=226
<u>15.5</u> State Mandated	<u>15.9</u> BOCA, Chap. 34	
<u>24.3</u> UBC, Chap. 34	<u>1.3</u> UCBC	
<u>10.2</u> SBC, Chap. 34	<u>0.9</u> SEBC	
<u>17.2</u> Other (Specify)_____		
<u>14.6</u> None		

Do you use any of the following for guidance when reviewing construction in existing buildings, even though not formally adopted? (Check all that apply)

(% YES)

8.0 HUD Rehabilitation Guidelines **226** 19.4 BOCA **227** 0.9 SEBC **226**
23.5 UBC **226** 15.5 UCBC **226** 11.9 SBC **226**
24.0 Other (Specify) **225** _____
30.2 None **225**

What time cycle does your jurisdiction follow **in amending the building code?** N=223

22.0 Jurisdiction does not have the authority to amend (State Code)
3.1 Yearly
55.2 Three year cycle
4.9 Six year cycle
14.8 Other (Specify) _____

When was the last amendment to your building code enacted? **19** 94.78 N=212

When was the last amendment enacted that related to construction in existing buildings? N=193
19 94.58

In your jurisdiction, are previously enacted editions of the model code ever used to establish compliance criteria for construction in existing buildings? N=209
59.3 Yes 40.7 No

Do rehabilitation provisions of your building code apply to 1 and 2 family dwellings? N=215
87.9 Yes 12.1 No

The Review Process: Pre-application Review

Does your agency conduct a pre-application review of potential rehabilitation projects, **prior to the review of construction documents?** N=207

13.5 Yes, mandatory 63.8 Yes, voluntary 22.7 No

<i>If there is a pre-application review</i>	<i>Always</i>	<i>Usually</i>	<i>Sometimes</i>	<i>Never</i>	
Is an architect or engineer (design professional) typically involved in a pre-application review?	11.1	41.1	42.6	5.3	N=190
Does this include negotiation to establish the reasonable code requirements for the project?	13.3	33.0	34.0	19.7	N=188
Are on-site inspections made as a part of this process?	15.2	22.5	51.3	11.0	N=191
<i>If there is a pre-application review</i>	<i>Always</i>	<i>Usually</i>	<i>Sometimes</i>	<i>Never</i>	
Are on-site measurements of structure recorded?	8.6	7.5	54.5	29.4	N=187
Are on-site observations made to determine life safety features?	25.4	32.3	36.0	6.3	N=189
Is the decision ever made that a					N=18

building permit will not be required?	3.2	0.5	66.5	29.8	8
Detected hazards are reported to other enforcement agencies?	37.9	21.6	33.2	7.4	N=190
Does the information from the review become incorporated into the application?	36.8	38.9	19.5	4.7	N=190
The pre-application review is a valuable process?	40.2	48.7	10.1	1.1	N=189

Are **building permits** always required for rehabilitation construction? (check all appropriate) N=224

31.7 Yes, always

3.1 No, not when the work is only the restoration of materials or components

33.9 No, not when the work involves only the repair or replacement of trim, finishes, doors, etc.

3.6 No, as long as load bearing members and doors and windows are not eliminated

27.7 Other (Specify) _____

Are **construction documents** always required for obtaining a permit for rehabilitation construction? N=224

38.8 Yes, always

8.9 No, not when the work is only the restoration of materials or components

21.9 No, not when the work involves only the repair or replacement of trim, finishes, doors, etc.

4.5 No, as long as load bearing members and doors and windows are not eliminated

25.9 Other (Specify) _____

The Review Process: Determining Which Code Provisions Apply

Regardless of whether construction occurs, when there is a change of use or occupancy classification in an existing building, the entire building must meet the code requirements of new construction for that use?

N=225

35.1 Yes, always

35.1 Yes, if the new use is more hazardous

16.9 No

12.9 Other (Specify) _____

In a project that involves existing buildings, if alterations, repairs, or additions made within a specific time period are in excess of a specific % of the building value, does your code require that the entire building must comply with new construction requirements?

N=220

45.0 No

16.4 No, the code does not require this, but it is a useful *rule-of-thumb*

38.2 Yes, If yes, What is the specific %? 51.53

N=83

What is the specific time period?

N=44

12.36 months (0.5 Other)

<i>If an existing structure has an increase in unseparated floor area beyond a fire wall or number of stories, . . .</i>	This is a Code Requirement	This is a Rule of Thumb	Specify the minimum Sq. Ft. to trigger	No
The entire structure shall conform with new construction requirements for egress.	61.9 N=223	6.0 N=217	N=3	19.3 N=223
The entire structure shall conform with new construction requirements for light & ventilation.	43.7 N=222	9.2 N=217	N=3	32.4 N=222

The entire structure shall conform with new construction requirements for height and area.	61.7 N=222	3.7 N=217	N=3	22.1 N=222
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The Review Process: On-Site Inspections

Estimate the typical number of inspections made by your code enforcement agency during the course of an average building rehabilitation project. **N=196**
8.66 times

Which inspections must occur during construction in an existing building?(% YES)

<u>95.5</u> Structural 220	<u>95.0</u> Electrical 221	<u>88.6</u> Fire Safety 220
<u>96.4</u> Plumbing/Mechanical 221	<u>51.2</u> Energy 217	<u>83.2</u> Accessibility 220
<u>46.0</u> Elevator 213	<u>36.8</u> Hazardous Materials 212	
<u>85.2</u> Other (Specify) 27		

Estimate the typical number of inspectors working for the state and local government that visit a site during the course of a building rehabilitation project? **N=200**
3.69 inspectors

When demolition reveals unexpected conditions or materials, can inspectors make on-site approval of changes in the required rehabilitation work? 58.6 Yes 41.4 No **N=210**

Do inspectors perform unannounced inspections at construction sites? 73.4 Yes 26.6 No **N=222**

Does your code enforcement agency have detailed field manuals for the use of on-site inspectors? **N=220**
10.5 Yes, and their use is required 31.4 Yes, for reference 57.7 No (0.5 Other)

Code Specific Questions: BOCA

Chapter 34 of the National Building Code deals with existing structures and rehabilitation. This chapter offers two options for compliance: the standard method in Sections 3403.0 to 3407.0, and an alternative method in Section 3408.0. In the rehabilitation projects you work with, approximately what percentage of projects use the standard method, and what percentage of projects use the alternative method in 3408.0?
Standard Method 76.83 % **N=30** Alternative Method 23.17 % **N=30**

Which method do you think provides the most flexibility to the builder in reaching code compliance for rehabilitation? Standard Method 43.2 Alternative Method 56.8 **N=37**

Provided that you use Section 3408.0, do you find the section easy to use? **N=34**
Easy 17.6 11.8 44.1 14.7 11.8 Difficult

Do the builders and developers you work with find Section 3408.0 easy to use? **N=34**
Easy 8.8 5.9 29.4 23.5 32.4 Difficult

If you use 3408.0, do you use it for: **N=34**
17.6 Change of occupancy
2.9 Additions
11.8 Alteration
67.7 Other

Do you allow the score of a BOCA 3408 evaluation to be the *floor* for building safety in an existing building, even if this results in some variation among buildings? **N=34**
76.5 Yes 23.5 No

Code Specific Questions: UBC and UCBC Code Specific Questions: UBC and UCBC Code Specific Questions: UBC and UCBC Code Specific Questions: UBC and UCBC

Section 3401 of the 1994 **Uniform Building Code** (Section 104.(c) of the 1991 code) establishes the nonconforming rights of an existing building:

SECTION 3401 - GENERAL

Buildings in existence at the time of the adoption of this code may have their existing use or occupancy continued, if such occupancy was legal at the time of the adoption of this code, provided such continued use is not dangerous to life.

In adopting the UBC did you amend or modify this section? **N=76**

15.8 Yes, (Describe) _____
84.2 No

The **1994 Uniform Code for Building Conservation (UCBC)** states that its purpose is "to encourage the continued use or reuse of legally existing buildings and structures."

Does the provisions of the **UCBC** achieve this purpose? **N=54**
Very adequate 11.1 44.4 35.2 5.6 3.7 Very inadequate

Do you find the 1994 **UCBC** easy to use? **N=54**
Easy 16.7 35.2 40.7 5.6 1.9 Difficult

Do the builders and developers you work with find the **UCBC** easy to use? **N=47**
Easy 6.4 14.9 48.9 19.1 10.6 Difficult

Code Specific Questions: SBCCI and SEBC Code Specific Questions: SBCCI and SEBC Code Specific Questions: SBCCI and SEBC Code Specific Questions: SBCCI and SEBC

In Section 101.4.1 on Continued Use, the **Standard Buildings Code** establishes the nonconforming rights of an existing buildings:

Existing buildings may continue their existing use, provided such buildings are maintained in a safe and sanitary condition and such use was legal at the time of adoption of this code.

In adopting the **Standard Building Code**, did you amend this section to clarify its meaning? **N=43**
16.3 Yes, Specify how? _____
83.7 No

The purpose of the **Standard Existing Building Code** is to encourage the continued use or reuse of existing buildings and structures. Section 101.5 in the Code offers that alterations, repairs or rehabilitation work *may* be made to any existing building requiring the building to comply with all the requirements of the Building, Plumbing, Mechanical, Gas and Electrical Codes for new construction that were provided in the Code. Also it allows the building official to determine the extent to which the remainder of the building shall be made to conform to the requirements of the Code for existing construction.

Does this provision make review of rehabilitation easier compared to other approaches (e.g., the "25-50%

rule")? N=41
Easy 19.5 24.4 29.3 7.3 19.5 *Difficult*

Do you find the **Standard Existing Building Code** and its appendix for rehabilitation guidelines easy to use? N=39
Easy 25.6 20.5 38.5 7.7 7.7 *Difficult*

Do the builders and developers you work with find the **Standard Existing Building Code** and its appendix for rehabilitation guidelines easy to use? N=38
Easy 13.2 7.9 36.8 23.7 18.4 *Difficult*

The Review Process: Structural Assessment of Buildings
The Review Process: Structural Assessment of Buildings
The Review Process: Structural Assessment of Buildings
The Review Process: Structural Assessment of Buildings

For structural assessment of the building, how often do you use the HUD *Guideline for Structural Assessment*? N=220
Never 90.5 4.5 3.2 1.8 0.0 *Always*

When you assess structural systems in existing buildings, do you consider the following loads?(% YES)
87.6 Dead loads, N=225 57.3 Snow loads, N=225
83.1 Wind loads, N=225 40.6 Earthquake/seismic, N=224
29.6 Other (Specify) N=213 _____

Should engineered plans or special approval be required for replacement of existing materials with like materials? N=214
Never 9.3 16.8 41.6 15.4 16.8 *Always*

The Review Process: Fire and Life Safety
The Review Process: Fire and Life Safety
The Review Process: Fire and Life Safety
The Review Process: Fire and Life Safety

For construction in existing buildings, what is the minimum fire separation rating (1 hour, 2 hour, etc.) required for:
a) corridor walls in a multi-unit building 1.11 *hours* N=205
b) wall between units in a multi-unit building 1.12 *hours* N=202
c) interior stairway enclosures 1.41 *hours* N=201

Do you accept lesser fire separation ratings in existing buildings if other fire protection measures (such as alarms, sprinklers, smoke barriers, etc.) are in place? N=208
62.5 *Yes* 37.5 *No*
If yes, Please explain _____

Do you accept existing lathe and plaster construction in existing buildings as satisfying a one hour enclosure requirement if all penetrations and openings are sealed or properly protected? N=202
81.2 *Yes* 18.8 *No*

Are fire escapes acceptable for meeting egress requirements in existing structures? N=208
51.0 *existing fire escapes* 5.8 *new fire escapes* 26.4 *no, neither* (16.8 *other*)

In the rehabilitation of dwelling units are smoke detectors required to be wired into the electrical system?
39.0 *Always* 25.2 *Usually* 26.1 *Sometimes* 9.6 *Never* N=218

In the rehabilitation of multi-story dwelling units are vertical fire stops required between floors? **N=217**
57.6 Always 27.2 Usually 13.8 Sometimes 1.4 Never

Would you accept other fire protection measures (e.g., alarms, sprinklers, smoke barriers, etc.) in exchange for -	No	Yes	if yes, Please explain	
an increase in maximum travel distance to an exit	32.4	67.6		N=213
an increase in the length of dead end corridors	75.1	24.9		N=217
less than the minimum number of exits	92.6	7.4		N=217

In existing construction, is a minimum fire separation of one hour required between units of a multi-family dwelling? **N=211**
54.5 Always 25.1 Usually 15.6 Sometimes 4.7 Never

Maximum dead end corridor permitted in existing buildings without sprinklers will be: **N=194**
24.64 feet

In the rehabilitation of an existing building, would you allow existing handrails to remain, if they were at a height lower than specified in the new construction code? **N=203**
60.6 Yes 39.4 No

The Review Process: Electrical Codes
The Review Process: Electrical Codes
The Review Process: Electrical Codes
The Review Process: Electrical Codes

<i>In a residential rehabilitation project</i>	Always	Usually	Sometimes	Never	
Without modification to the room's electric circuits, do you permit existing ungrounded branch circuits to remain?	14.1	52.6	21.9	11.5	N=192
Will all branch circuits in a building be required to be upgraded to current code requirements?	9.9	17.2	62.0	10.9	N=192
Will ground-fault circuit-interrupter (GFCI) protection be required for bathrooms, kitchens, and outdoor outlets?	69.2	17.2	12.6	1.0	N=198
If the existing electric service is undersized for a new structure, would you ever allow the service to remain without an upgrade, <i>if</i> detailed calculation of existing loads and anticipated new loads showed adequacy?	8.9	35.4	29.7	26.0	N=192

Will a dwelling's service be required to be upgraded to 100 amperes?	24.9	29.0	41.5	4.7	N=193	
Will you ever allow fewer receptacle outlets per room than required by the current code for new structures?	2.0	17.3	40.8	39.8		N=196
If part of a dwelling unit is remodeled, or an addition built, will all of the unit's electrical system be required to meet current code requirements?	20.6	6.7	52.6	20.		N=194

The Review Process: Plumbing Codes

Do you permit the addition of new fixtures to plumbing and waste systems without requiring the existing plumbing system meet current code requirements for new structures? **N=215**

5.1 Always 39.5 Usually 42.8 Sometimes 12.6 Never

Will additions or modifications to an existing plumbing system require the entirety of the existing plumbing system be upgraded to meet current code requirements for new structures? **N=216**

2.3 Always 7.4 Usually 75.0 Sometimes 15.3 Never

Will replacement or addition of one bathroom in a dwelling unit necessitate bringing existing plumbing for the remainder of the dwelling unit to current code requirements? **N=217**

2.3 Always 6.5 Usually 55.3 Sometimes 35.9 Never

How does your agency handle an existing building containing unvented waste lines? **N=213**

43.2 Proper venting must be provided in the area affected by the rehabilitation construction, the rest is left alone

23.9 Proper venting must be provided throughout the existing building

29.1 Additional venting is required, but in a manner that minimizes the impact on the building

3.8 Other

Will a dwelling unit's natural gas system ever be required to be upgraded to current code requirements?

N=194

83.0 Yes 17.0 No

The Review Process: Separate Codes

Has your municipality adopted NFPA 101? 46.4 Yes 53.6 No **N=192**

If yes, Which agency enforces NFPA 101? _____ **N=92**

Does your jurisdiction have separate ordinances to address:	Circle <i>yes</i> or <i>no</i> as appropriate		Administered by which agency
	<i>Yes</i>	<i>No</i>	
Property Maintenance	<u>79.6</u>	<u>20.4</u>	

N=211

Fire Prevention	Yes 89.4	No 10.6		N=207
Health	Yes 79.9	No 20.1		N=199
Radon Hazard	Yes 21.0	No 79.0		N=186
Lead Hazard	Yes 37.0	No 63.0		N=189
Asbestos	Yes 44.7	No 55.3		N=188
Extreme Wind	Yes 31.6	No 68.4		N=187
Earthquake	Yes 25.3	No 74.7		N=194
Historic Preservation	Yes 68.7	No 31.3		N=201
Accessibility	Yes 64.5	No 35.5		N=203

When construction occurs in an existing building, do the requirements of hazard and retroactive codes need to be met ? N=207
3.9 Not at all 69.9 Only within the construction area 21.3 Throughout the existing building
(5.3 Other)

Will the existing portions of an un-insulated or under-insulated building be required to be insulated to current energy code requirements? N=197
21.8 Yes 78.2 No

Standard Operating Procedures

Standard Operating Procedures Standard Operating Procedures Standard

Operating Procedures Standard Operating Procedures What measures
must be taken when a proposed renovation structure is found to contain

a) Lead-based Paint?	abatement <u>50.0</u>	removal <u>32.4</u>	other <u>17.6</u>	N=170
b) Lead Water Distribution Pipes?	abatement <u>34.5</u>	removal <u>49.1</u>	other <u>16.4</u>	N=165
c) Asbestos?	abatement <u>51.3</u>	removal <u>32.0</u>	other <u>16.8</u>	N=197
d) Radon?	abatement <u>47.7</u>	removal <u>20.3</u>	other <u>32.0</u>	N=128
e) Termite and Other Pest Damage?	abatement <u>58.3</u>	removal <u>30.7</u>	other <u>10.9</u>	N=192

<i>In a rehabilitation project</i>	Yes	No	
When a building has been boarded up or red tagged by the Building Department, is a pre-inspection required prior to issuance of the building permit?	67.3	32.7	N=217

Does your agency offer evening (i. e. after 6:00 PM local time) or weekend office hours?	15.3	84.7	N=222
<i>If yes, please circle evening, weekend, or both</i>	18.2	6.1	N=33
Does your agency ever issue partial permits when there is not sufficient information to determine the total scope of a project's rehabilitation work?	70.2	29.8	N=225
Are the total permit fees for a project involving partial permits greater than the fees for a Full Permit?	34.6	65.4	N=15
<i>If yes, by how much more?</i>			N=219
<i>In a rehabilitation project</i>	<i>Yes</i>	<i>No</i>	
Do inspector's in your jurisdiction have the ability to write a ticket against violators of the building code?	62.9	37.1	N=224
<i>If no, Does this inhibit code enforcement?</i>	44.3	55.7	N=79
Do you have a set of compliance alternatives to suggest to owners/contractors when reviewing rehabilitation construction?	34.2	65.8	N=219
Does your code enforcement agency have sufficient resources for training?	66.8	33.2	N=220
Does your agency employ any methods to measure the consistency between different site-inspectors' assessments?	51.4	48.6	N=220
Does your jurisdiction use the regulation of building rehabilitation as a means to provide the community with	<i>Yes</i>	<i>No</i>	
Increased safety?	91.0	9.0	N=223
Increased urban revitalization?	67.1	32.9	N=213
Increased affordable housing?	59.7	40.3	N=211
<i>In a rehabilitation project</i>	<i>Yes</i>	<i>No</i>	
Does your agency have a record-keeping system that keeps track of the discretionary decisions of site inspectors ?	56.5	43.5	N=223
Does your agency have a record-keeping system that keeps track of the discretionary decisions of plan reviewers ?	58.8	41.2	N=221
<i>In a rehabilitation project</i>	<i>Yes</i>	<i>No</i>	
To your knowledge, have records of discretionary	24.9	75.1	N=221

decisions ever been used in a legal setting to support the degree and reasonableness of code enforcement discretion?			
In the last year, has your agency distributed information about the rehabilitation process to design professionals, contractors, developers, or private owners?	45.5	54.5	N=222
In the last year, has your agency conducted or sponsored any workshops to inform design professionals, contractors, developers, or private owners about rehabilitation requirements?	20.2	79.8	N=223
When contacted by an interested party, does your agency have prepared materials to explain the permit process for rehabilitation projects?	63.4	36.6	N=224

Does your agency ever issue Conditional Permits to allow for selected demolition needed to determine the condition or adequacy of existing materials? **N=220**

7.7 Always 18.2 Usually 42.7 Sometimes 31.4 Never

Does your agency ever seek prosecution by the city attorney as a means of enforcement? **N=223**

9.0 Always 15.2 Usually 71.7 Sometimes 4.0 Never

Generally, what would be the minimum cost of the review and inspection process for a **new construction** of a detached house which was approximately 2000 square feet in size and had no special characteristics?

\$ 894.00 **N=195**

Generally, what would be the minimum cost of the review and inspection process for a **rehabilitation** construction of a detached house which was approximately 2000 square feet in size and had no special characteristics? \$ 511.00 **N=157**

Does your agency allow standards to be modified when strict enforcement would create a hardship at no or little gain to life safety? (check all that apply) **N=157**

27.6 In all cases, but at the discretion of the plan reviewer

3.7 For contractors with good records, at inspectors' discretion

3.7 For contractors with good records, but requires higher administrative approval

29.4 Only after formal appeal to the Board of Appeals

22.9 No, code standards are not modified in this jurisdiction

12.7 Other)

The physical value of an existing building involved in a rehabilitation project is? **N=200**

17.5 Its replacement value, prior to rehabilitation

16.5 Its replacement value, subsequent to rehabilitation

52.5 Its assessed value

13.5 Other (Specify)

What activities are not considered as a part of replacement costs? (check as needed)(% YES)

52.2 Painting **205** 77.4 Landscaping **208** 26.7 Required mitigation **206**

41.4 Decorative trim **203** ___ None ___ Other (Specify) **12**

Liability Liability Liability Liability Liability

While performing your duties in reviewing rehabilitation construction projects, do you ever come upon

situations where you believe you could be held liable? **N=220**
7.3 Always 8.2 Usually 65.0 Sometimes 19.5 Never

Have you ever been involved in a situation where you were accused of negligence? **N=217**
0.0 Always 0.0 Usually 19.4 Sometimes 80.6 Never

Would you hesitate to approve an innovative compliance alternative because of fear of liability? **N=215**
3.7 Always 8.4 Usually 54.9 Sometimes 33.0 Never

Does your city have the legal ability to grant immunity to building rehabilitation code administrators and inspectors from liability due to negligence? **N=199**
52.3 Yes 47.7 No

Are you immune from personal liability for inspections? **N=196**
69.9 Yes 30.1 No

for failure to inspect? **N=193**
52.8 Yes 47.2 No

for failure to enforce discovered violations? **N=193**
39.4 Yes 60.6 No

for issuance or denial of permits? **N=193**
66.8 Yes 33.2 No

Appeal of Code Enforcement Decisions **Appeal of Code Enforcement Decisions** **Appeal of Code Enforcement Decisions** **Appeal of Code Enforcement Decisions**

Does your jurisdiction have a Board of Appeals, specifically for cases involving construction in existing buildings? **N=222**
57.5 Yes 42.3 No

Does your Board of Appeals contain members:
with construction experience in rehabilitation construction? **N=195**
79.0 Yes 21.0 No

with engineering experience in rehabilitation construction? **N=191**
69.1 Yes 30.9 No

Approximately what % of new construction projects result in an appeal to the Board of Appeals? **N=191**
2.23 %

Approximately what % of rehabilitation construction projects result in an appeal to the Board of Appeals? **N=192**
3.38 %

<i>In a rehabilitation project</i>	<i>Always</i>	<i>Usually</i>	<i>Sometimes</i>	<i>Never</i>	
Are supervisors readily available to assist code enforcement personnel to make difficult on-site decisions?	61.5	29.8	6.0	2.8	N=218
Does your agency provide appropriate training for code enforcement officials when they first start the job?	50.7	33.3	11.0	5.0	N=219
Does your agency provide annual training (continuing education) for code enforcement officials?	66.5	16.3	12.7	4.5	N=221

Does the fire marshal or inspector conduct residential fire safety inspections?	19.4	17.6	36.6	26.4	N=216
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Intergovernmental Cooperation

Does the building code in your jurisdiction require that buildings, vacant for lengthy periods of time, be upgraded to comply with current code requirements prior to occupancy? **N=217**

28.6 Yes 71.4 No

If yes, What is the length of vacancy? **N=54**

10.48 months

Are buildings that are considered historic, or in an historic district, subject to special building code provisions that are different from other rehabilitation construction? **N=209**

72.7 Yes 27.3 No

Does your jurisdiction make special provisions in the building code, or in the enforcement of the code, to stimulate rehabilitation construction

in Enterprise Zones? **N=202**

16.3 Yes 83.7 No

during Disaster recovery? **N=201**

29.4 Yes 70.6 No

to stimulate neighborhood improvement? **N=208**

24.0 Yes 76.0 No

Other (Describe) _____ **N=28**

Your Own Opinions Your Own Opinions Your Own Opinions Your Own Opinions Your Own Opinions

The HUD 1980 *Rehabilitation Guidelines* contain extensive information about code enforcement construction in existing buildings. How useful have you found this? **N=221**

62.4 I am not aware of this 31.7 I am aware of it, but don't use it

2.3 I have used it, but it is not useful 3.6 I have used it and find it useful

Have the building codes in your jurisdiction become more flexible by moving from prescriptive requirements to performance requirements? **N=209**

N=209

43.5 Yes

22.5 No, there has not been an increase in flexibility

34.0 No, the code is essentially prescriptive

How useful are each of the following in reviewing rehabilitation construction?

Discretion in accepting alternate materials: **N=207**

Very useful 39.6 23.7 23.7 6.3 6.8 Not at all useful

Discretion in accepting alternate methods of construction: **N=209**

Very useful 34.9 25.8 26.3 4.8 8.1 Not at all useful

Discretion in accepting alternate designs for rehabilitation: **N=210**

Very useful 30.5 26.2 29.5 6.7 7.1 Not at all useful

Have you looked for streamlined approaches that eliminate duplicative or unnecessary tasks within the process of reviewing rehabilitation construction (delegating responsibility to homeowners, contractors, lenders, etc.) while maintaining essential controls? **N=212**

76.4 No 23.6 Yes If yes, What are they? _____ **N=46**

Please mark the line which best shows how you feel about each statement.

	<i>Always</i>		<i>Never</i>	
Compliance with building codes causes the unnecessary destruction of aesthetically and architecturally important building features in existing buildings.	<u>0.9</u>	<u>4.5</u>	<u>24.0</u>	<u>46.6</u> <u>24.0</u>
				N=221
The HUD 1980 <i>Rehabilitation Guidelines</i> provide useful methods of on-site tests for existing materials and systems present in older structure	<u>0.8</u>	<u>9.1</u>	<u>40.5</u>	<u>21.5</u> <u>28.1</u>
				N=121
Compliance with building codes requires the replacement of perfectly serviceable older materials with their modern counterparts.	<u>0.5</u>	<u>4.1</u>	<u>33.8</u>	<u>42.9</u> <u>18.7</u>
				N=219
Current building code compliance increases the cost of rehabilitation and preservation projects without a proportionate increase in building performance.	<u>1.4</u>	<u>13.4</u>	<u>23.6</u>	<u>46.8</u> <u>14.8</u>
				N=216
The cost of the appeal process limit the number of small projects that are appealed.	<u>2.4</u>	<u>12.0</u>	<u>14.4</u>	<u>21.1</u> <u>50.2</u>
				N=209
	<i>Strongly agree</i>		<i>Strongly disagree</i>	
Current building codes are geared toward new construction projects rather than rehabilitation.	<u>25.8</u>	<u>35.1</u>	<u>20.9</u>	<u>10.2</u> <u>8.0</u>
				N=225
Current code requirements have improved building performance.	<u>49.6</u>	<u>35.7</u>	<u>12.5</u>	<u>1.3</u> <u>0.9</u>
				N=224
Building code provisions should be developed at the local level and specific to that area.	<u>6.2</u>	<u>15.6</u>	<u>18.7</u>	<u>27.6</u> <u>32.0</u>
				N=225
Requirements that make buildings accessible to the mobility impaired have				lim
				ited the
				amount of
				building
				rehabilitatio
				n in your
				jurisdiction.
			 <u>7.7</u>
				<u>18.</u>
				<u>5</u>
				<u>27.</u>
				<u>0</u>
				<u>24.</u>
				<u>3</u> <u>22.5</u>
				N=222
Requirements that improve the seismic characteristics of buildings have				lim
				ited the
				amount of
				building
				rehabilitatio
				n in your

jurisdiction.
 2.5
8.0
18.
1
24.
1 47.2
N=199

Requirements that limit the damage to buildings from high winds have

lim
 ited the
 amount of
 building
 rehabilitatio
 n in your
 jurisdiction.
 1.4
5.5
16.
1
27.
6 49.3
N=217

It is good that existing buildings are improved to meet current standards

for
 safety.....

.48.9
32.
4
13.
8 3.1
1.8
N=225

Code requirements for rehabilitation should be uniform across the nation. 32.3 22.0 22.0 10.8 13.0
N=223

Respondent Demographics Respondent Demographics Respondent Demographics Respondent Demographics Respondent Demographics

What is your educational background? **N=221**
9.5 High School Graduate 10.4 Attended a 4-year college 12.7 Technical School Graduate
36.7 College graduate 14.0 Junior College Graduate 16.7 Graduate School

Please indicate the number of years that you have been employed in each of the following:
 General Construction; 15.07 years **147** Electrical Construction; 13.12 years **32**
 Plumbing Construction; 14.51 years **35** HVAC Construction; 12.03 years **29**
 Architectural Design; 12.90 years **40** Engineering Design; 10.80 years **30**
 Code Enforcement Plan Review; 10.91 years **162**
 Code Enforcement, Site Inspection; 11.26 years **167**
 Code Enforcement, Administration; 11.44 years **197**

What is your current position (job title)?

Estimate what proportion of your work week is typically spent in the following activities.

Code Enforcement, Plan Review; 20.23 % **219** Code Enforcement, Site Inspection; 17.90 % **219**

Code Enforcement , Administration; 55.47 % **221**

How long ago was your most recent training for enforcing the rehabilitation provision of the building code?

10.69 months

N=156

What was the topic of your most recent training?

What is your gender?

N=220

93.2 Male 6.8 Female

What is your age?

N=213

48.69 years young

Final Comments Final Comments Final Comments Final Comments Final Comments

If you believe that your agency has innovative approaches to code enforcement that encourages building rehabilitation, we would appreciate your telling us about this.

What are the usual reasons that building rehabilitation projects fail to proceed in your jurisdiction?

Finally, if you have any comments about rehabilitation codes or their enforcement we would appreciate your writing them in the space below.

Thank You!

Appendix D

Means of Significant Differences Between Codes

Appendix D: Means of Significant Differences Between Codes

There were sufficient responses from administrators within the three model code regions to conduct a search for differences in response by model code region. The data was partitioned by model code region, and the averages (for appropriately scaled variables) were compared by one-way analysis of variance. When this showed statistically significant differences, two post-hoc tests were used, Benterroni and Dunnett T3, to determine which pairs were significantly different. These are briefly described in the “Difference” column of Table 9. However, Table 9 does not provide the actual mean values for the groups on the total. Those values are provided here.

Appendix E

Administrator Open-Ended Comments

Appendix E: Administrator Open-Ended Comments

Chapter 4 discusses the kinds of responses that administrators made to three open-ended questions. Administrators were asked to describe:

Innovative approaches to code enforcement that encourages building rehabilitation
Usual reasons that building rehabilitation projects fail to proceed
General comments about rehabilitation code enforcement practices

This appendix contains the descriptions that we received. They are generally stated exactly as on the questionnaire.

Innovative Approaches to Code Enforcement

- Our rehab coordinator is working with many homeowners and developers to help rehab many of the city's neighborhoods. We have a rehab program for our community. You may contact Steven at XXX/XXX-XXXX. Also, Joanaquin works with the rehab program. He can be reached at XXX/XXX-XXXX.
 - We have a housing rehabilitation loan program that works very closely with the Building Department to promote housing rehabilitation. The rehab staff depend closely on the code administration practices of the Building Department concerning rehab code questions.
 - We have a Resale Inspection Program which maintains our housing and department stock and greatly increases the percentage of permits obtained for repairs, TI's, etc. We do not have any bad housing in this city. The commercial buildings, which are relatively few, are modern and in good shape.
 - We are receptive to new and/or different approaches to problem solving.
 - Mandated within State historic code for qualified buildings and sites. Rehab usually involves large additions on existing homes.
 - In certain districts, the redevelopment agency contributes economically to preliminary design and sometimes seismic upgrades.
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- Express plan check for residential remodel
Express plan check for residential addition
Express plan check for commercial tenant improvements
Combination inspections for residential projects
One-stop permit center
Customer friendly handouts/guidelines
 - Low interest loans are available to qualified property owners to encourage housing rehabilitation in targeted areas.
 - Owners of sub-standard housing are billed for the cost of enforcement if they do not cooperate.
First-time home buyers program available.
Rehabilitation loans available at low interest rates
 - We have taken steps to do on-the-spot turnaround permits for exact change-outs of driveways, air conditioning units, hot water heaters, fences, burglar alarms, service changes electrical, single-family irrigation, wells, single-family re-roofs.
 - Working with people and obtaining input from owners and contractors. Also pre-bid conferences with architects, engineers, and homeowners. We have an excellent rapport with all the above. We also provide same day inspections as well as emergency inspections during construction.
 - This department assists designers and owners from preliminary courtesy reviews through plan review and permit for rehabilitation projects. Always available to advise designers, owners, and contractors.
 - No innovative approaches at this time. Only typical approaches.
 - We have Federal and State monies and programs to help rehabilitate buildings within our jurisdiction.
 - Reduced lot sizes for affordable subdivisions.
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Same-day permits for most residential remodeling and new single-family homes.
Permit center with building, zoning, and fire staff.

- I meet with people involved before job starts to plan steps to follow.
- Adoption and use of UCBC.
- We have consolidated our Plan Review and Code Enforcement into one location with one director and set of goals.
- We examine, study, and review rehabilitation projects for the most efficient and cost effective approach and look to the benefits for the owners and users and income.
- I believe the city of Portland has an outstanding record on rehabilitation of buildings. As you know the city of Portland, Maine, is a city with a great number of older buildings that have been brought back from dangerous buildings, to full occupancy and tax-paying property. This is done by working with the owners, developers, and professional architectural and engineering services. Common sense.
- During a recent disaster (tornado) we established an on site availability of inspectors for immediate response. We streamlined our permit process to allow for one-hour permit issuance. We also have enterprise zones encouraging rehabilitation.
- Our community has grants and loans available for rehab, especially residential. We have recently worked on special legislation to rehab 300+ residential units in older condo projects and an additional 300+ patio home units. These projects would not have come forward without city involvement to clear ownership issues and low-interest assessments.
- "Limited service and repair permits" offer user friendly approach to small projects. Code modification requests to enable designer to meet the intent of the code with engineered alternative. "Forging our comprehensive urban strategy" is currently establishing our city's long-range plan and rehabilitation is included in this plan. (Limited service and repair permits allow certification of the licensed contractor for limited scope work.)

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- We use an occupancy permit inspection system that triggers a property maintenance code inspection of every dwelling unit and commercial unit prior to a change of occupant. These inspections lead to a significant amount of building rehab; and indirectly by maintaining property values, lead to building additions and upgrading of components rather than moving to newer or larger buildings in other communities.
 - We set up a team to evaluate on a case-by-case basis.
 - As the Chief Administrator of our Enforcement Agency, I encourage variations to the code from my sub-code officials for an easier construction project for contractors and building owners, and, at the same time, getting alternatives to strict compliance which still maintain the health, safety, and welfare of building occupants.
 - A pre-inspection program with property owners that helps them identify the cost associated with different potential uses of vacant structures so that they may tailor their tenant market effort. Building department existing structures program that can help identify target areas for tax incentives and mobilize resources to combat building deterioration including but not limited to volunteer organized assistance and financial assistance in limited circumstances.
 - We are in the dark ages.
 - This is a community of 24,000, generally I have a freehand at making and enforcing policy. We try to get our customers involved in decision making, instead of a hardline approach. I try to be open minded.
 - This department has 10 FTE's which includes three clerical people. We have multiple certified inspectors, plan reviewers, which cover 5,000 square miles and have 10 cities where we enforce the State UBC codes. We presently are 100% self-sufficient from revenues from permit fees. As each new code is adopted and new legislation is passed it becomes harder to update--rehabilitate--the older buildings.
 - Local history of property, facade renovation drawings; main street rehab grants.

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- Our agency requires substandard houses being renovated to have bathrooms installed and their electricity and plumbing upgraded. Although these requirements may not encourage renovation, they do ensure that substandard houses are brought up to an acceptable level for future generations.
 - Future land-use map. Positive attitude of entire staff. Reasonable latitude given to inspectors to get compliance with the intent of the codes.
 - In 1996 we implemented minimum building standards which require, if a structure is determined to be more than 50% of its appraised value, then the structure must be rehabilitated as if it was considered new construction (i.e., square footage, masonry requirements, plumbing, electrical, landscape, etc.).
 - In addition to a formal appeal process, the division established an informal advisory committee which reviews requests for modifications. The division devotes considerable resources towards code training for designers, project owners, contractors from the private sector.
 - Not yet.
 - We participate in a state program involving setting up development zones in our older areas, which allows state tax credits for buying and rehab buildings within it. Also hiring people, sales tax on materials, etc.

Reasons for Rehabilitation Failure

- Length of construction season short
Money
- Money, money, money, or no market
- We have very little rehab work here.
- Owners are unwilling to invest in depressed neighborhoods due to lack of return on investment. Owners are many times absentee.

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- Financial reasons.
 - The cost, lots of substandard structures built without permits.
 - ADA handicap upgrade requirements.
 - Newer community, very little rehab activity.
 - Funding.
 - The costs of working around the existing structure exceeds the cost of complete demolition and reconstruction.
 - Lack of adequate funding available to the owner or project does not have sufficient return or investment cost to make the project feasible.
 - Cost.
 - Cost of construction-specifically accessibility requirements for disabled.
 - No comments
 - No comments
 - Cost/benefits do not make economic sense.
 - Funding.
 - Cost of public improvements as required by public works when a project evaluation exceeds \$30,000.
 - Lack of funds (resources).
 - Owners resistance to spending on rehabilitation.

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- Declining real estate values.
 - Due to age and condition of buildings involved.
 - Not many older buildings/mostly residential construction.
Commercial/industrial buildings are fairly new.
 - Funding.
 - Cost.
 - Lack of financing, lack of zoning approval.
 - Owners lack of financial ability to renovate or remodel.
 - Owners lack of participation and/or limited equity on property towards loans.
 - Developer.
 - Economic of which restrictions are a part.
 - Structural damage if extensive by termites or water damage or fire.
Engineering fixes are sometimes too costly.
 - We encourage rehab of existing buildings and have excellent results by working with people.
 - This is a relatively new city, although funds have been set aside for these improvements.
 - Lack of proper information to contractors.
 - Local development review board requirements.

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- Construction costs are too high.
 - Renovation costs.
 - Absentee ownership in buildings too far deteriorated for repair.
 - Buildings are not old enough.
 - Total cost of the product.
 - Flood plain requirements.
 - Actually costs of renovations exceeds value of building.
 - Not aware of any. Most building rehab within our municipality involves commercial remodeling to retail stores and tenant spaces. Bloomingdale has over 550 retail businesses within its jurisdiction boundaries. Most rehab are done for cosmetic reasons.
 - Noncompliance with building or zoning codes.
 - Cost and lack of marketable product, zoning issues.
 - Until recently (1996) when ordinances provided for minimum maintenance standards through rules of enforcement, we were limited to the powers of gentle persuasion. We may now issue citations for failure to correct an unsafe or unhealthy condition.
 - Money-project financing is not secured.
 - Economic feasibility.
 - Cost.
 - There is a healthy rental climate that sometimes slows the need for rehab because the

rental income streams are healthy.

- Lack of planning as far as contractors scheduling of inspections by different agencies (i.e., health department, Washington suburban sanitary commission, department of environmental resources, and community standards division).
- We have a very good record of rehabilitation of our buildings. In the past 15 years that I have been here as Chief of Inspections, I've only seen one or two proposed projects fail and that was money. Usually they pay too much for the property to start with.
- Lack of sufficient funding, underestimating cost, and overestimating abilities.
- Improper knowledge of owner/occupant about code requirements, begin job without benefit of inspection department help, not doing proper structural work, and running out of funds prior to completion.
- Cost.
- Staffing.
- We are an older community and remodel and rehab is a way of life. We have not had projects go forward. However, we have had to use special assessment procedures, grants, low-cost loans, etc., to stimulate.
- The lack of financial resources.
- Lack of public support for old buildings. It seems that the logic is, "newer is better."
- Financing due to high cost of rehab of older structures.
- Abatement of lead and asbestos cost. Applicability of use, operating costs for buildings with antiquated or inefficient equipment, access to knowledgeable lenders and insurance carriers.
- Lack of economic feasibility due to too high a purchase price. Also some novice

developers do not have an adequate line of credit to allow for the cost of the rehab and find they cannot complete the project.

- Too much red tape, (fire department).
- Lack of funding and low income depressed areas.
- They rarely fail. Usually then, it is low income families who cannot afford to prepare/remodel. The other main reason for failure is change in use, when someone goes into a warehouse, for example, and wants to convert it into a restaurant.
- Please note our department is not solely responsible for residential inspections for this area. Therefore, we answer this for our department only.
- Lack of return on investment.
- Lack of handicapped access is the single most common problem.
- Costs are the number one deterrent, next to not receiving a zoning appeal for the use group.
- They proceed, but sometimes at a greater cost, because of New Jersey's administrative code for existing buildings.
- Rent control and funding.
- Lack of funding from public and private sources.
- The age of the building, compliance with prescriptive codes, demographics change that cause building constructed for a particular purpose to need to be put to use for which they were not designed, and appreciation tax consideration of owner.
- Arch. Lack of knowledge of Article 34.
- Funding.

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- Not much demand, no concern about dilapidated structures.
 - State and local procedures, required professional information needed for permits, (architecture, engineers, etc.).
 - Money.
 - Money.
 - Seismic, disability reg.
 - New construction commercial area viewed as more lucrative.
 - Many developers rely too heavy on the architect for the overall design. They eliminate or cut out the engineers at the early stages of a project. While the architect is essential, many large rehabilitation projects require the design expertise of the engineers, HVAC, electrical, structural.
 - Zoning restrictions that prohibit additions or change of use.
 - Economics.
 - Lack of available financing, lack of perceived market response to the project.
 - Cost of rehab, labor and maintenance.
 - Lack of economic assistance from area resources.
 - Not cost effective.
 - Less headaches to build new structure. Jurisdiction is 75 percent new buildings since 1970. Older buildings, over 30 years, generally are too small to be adequate for needs of owner in a fast growing community. New buildings can be less expensive in the long run.

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- Money, codes, zoning reqs.
 - I do not have any knowledge of projects failing to proceed.
 - Overly restrictive rules.
 - Cost of project, building nonconformity with the zoning ordinance which does have the 50 percent cost ceiling provision in it. Extreme noncompliance with current building codes, and not able to comply with ADA requirements.
 - Excessive costs relative to code requirements, often related to accessibility requirements.
 - Cost.
 - Very few older buildings.
 - Cost to rehab exceeds new/mostly labor related.
 - ADA accessibility, adequate parking, and rehabilitation costs versus new construction costs.
 - Accessibility requirements-ADA UBC, cost of rehab often exceeds cost of new construction.

Comments About Rehabilitation Codes or Their Enforcement

- We do not have a specific rehab code other than what is prescribed in the 1994 UBC.
- Currently, the various codes offer the code official with enough guidance in making judgement calls on rehabilitation projects. The order of priority of importance in dealing with this issue are: 1) life safety, 2) fire safety, 3) structural performance.
- I really don't have any other than remodels and additions which are done to the UBC which is modified and adopted by the state and becomes the California state building code.

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- You need to differentiate between building, housing, code enforcement, and state departments. This form is too general and does not separate code requirements from state law and other requirements as enforced by other agencies.
 - Please send a copy of HUD rehab guidelines.
 - Please include us in the results of your sampling.
 - Within the uniform code series I have found the UCBC and UHC (Housing) the most useful and best fitting codes for alterations to existing buildings.
 - I believe the life safety requirements of existing codes should be enforced at all costs and strong enforcement on-site for the same is essential. Energy codes, accessibility codes, and other non-life safety issues are not as high a priority and in some instances should be sacrificed to obtain life safety measures if necessary.
 - In city of San Jose, we have used uniform building codes since 1920's with a great deal of success.
 - Federal agencies should not be involved in building codes. Local agencies are best equipped to handle all aspects of construction.
 - We are not supplied with rehabilitation codes and how they are to be enforced.
 - I believe the best approach is to have minimum requirements for training and expertise of the building official and then allow his judgement in determining requirements and alternatives with coordination of the fire official.
 - I would like to see the UCBC worked on more to help clarify and provide more code oriented language. This will require greater input from building officials and structural engineers.
 - SFCB (DADE addition) is geared almost exclusively to new single family construction. Product approval requirements are very stringent-factors combine to retard rather than encourage renovation of existing structures.

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- Would recommend a national code.
 - We do not have a historical district at this time.
 - The building code in this jurisdiction does not recognize a separate rehabilitation code. All construction is governed by the same building code which has provision for existing structures.
 - We have a relatively new city and most of our projects are new residential and commercial. Rehabilitation projects are far and few between as a rule.
 - We do very little rehab in this county. The majority of the older buildings are in the city of McDouough which we do not administer. The limits of our rehab construction are generally conversion of older homes to office use (about one per year). The majority of our buildings are less than 25 years old.
 - The trend towards performance codes is an ever increasing improvement in code enforcement.
 - We are in the process of adopting the 1996 BOCA National Building Code with amendments. It is hopeful that if any rehab projects along your line of questioning should arise, the updated building code will cover all areas of concern.
 - The approach that has worked for us is set the minimum standards for all buildings (these are bare minimums for safety and health), when rehab occurs-the part being altered should meet new code requirements-the rest should meet the minimum. Code officials must justify their minimum (existing building) in terms of fundamental life safety, health, and not consumer protection or convenience.
 - Rehabilitation regulation should be based primarily on minimum standards for healthy and safe living conditions.
 - In older communities, rehab codes need to be more flexible so these communities can compete with younger growing communities.

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- Hartford County is mostly new construction.
 - Rehabilitation, plan review, and inspection is a multi-agency responsibility. Under your category plumbing code, that function is performed by an agency known as Washington Suburban Sanitary Commission, and inspected by their staff. Under your category standard operating procedures, that function is performed by the Health Department. Plan reviews require Maryland-National Capitol Park and Planning Commission, Department of Public Works and Transportation, Health Department, and the Department of Environmental Resources.
 - I feel we have enough codes, just enforce. The ones we have may be amended if needed.
 - Some of the new ADA requirements for bathrooms are ridiculous especially requiring extra bathrooms beyond minimum number required to be accessible.
 - Good rehab projects occur using major model codes based on performance criteria with knowledgeable code officials who understand the spirit and intent of the code and are not afraid to utilize the flexibility they offer. HUD would be well to embrace the model codes and work with them to continue improving them. Codes are best written by local officials on a national basis with input from all affected industry, government officials, as is done by model code producers. HUD has been invited to participate, but its participation has been limited at best to date. Single model code being developed by ICC would greatly benefit from HUD support and input.
 - I feel codes and enforcement need to be uniform throughout the country. Uniformity of standards for construction that are not arbitrary or discretionary are most fair to builders and consumer. Codes need to be written so they are easily understood.
 - I'm interested in the replacement window or sash issue. If you have any information regarding how different jurisdictions approach this issue, I would like to read that information. See an attached card for mailing information. Thank you. It seems to be replacement windows or sash in existing buildings.

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- Tough to strike a balance between life/safety and financial constraints. We like to think common sense and reasonableness are as effective as a written document-if not more so.
 - The HUD Rehab Guidelines should be redone and published as four series of reference standards that meet building code criteria for reference standards so that they can be referenced by the building code. The current guidelines are not user friendly and have no standing because they are not referenced in the building code. Unless this process is started soon, such standards will not be available in time for inclusion in the ICC Building Code which will be put in final form in early 1999.
 - Total 100 percent compliance of older buildings will cause them to be greater safety hazards by being vacant.
 - Several areas were left blank since you asked not to refer to code books, etc. As we rely heavily on our codes before making decisions, some questions were hard to answer from memory.
 - Unnecessary cost should be curtailed; but not for the provision of life safety.
 - The state of New Jersey is in the process of writing a rehab code for existing structures. The administrative code (N.J.A.C. 5:23) is tough on existing construction. Existing construction, very cost prohibitive and often there are hardships to comply strictly with the code. It will be a welcome change for code enforcement, and the construction industry and building owners.
 - Rehab codes tend not give enough credit to automatic sprinkler systems. Many existing structures could be rehabilitated with a minimum of reconstruction if codes would allow automatic sprinklers as trade offs to separations, enclosures, etc., and only if those systems are monitored in a manner approved by local fire officials.
 - Rehabilitation codes should be tempered towards increasing safety of deteriorating structures while maintaining flexibility for contractors. More specific codes should be enacted.

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- There needs to be uniformity in the national codes and uniformity in the application of these codes from community to community and region to region. In the same manner that manufactures yearly are afforded a standard such as furnaces and other gas appliances were afforded by the federal trade commission and the NAECA. This was done in response to local and state appliances efficiency regulations that had made the national marketing of appliances about impossible due to differing requirements between these codes. Nothing short of a national model code will make any long term difference in how anything is done.
 - I work hard to get one adopted, but did not succeed. Slum lords lobbied council to defeat it.
 - Common sense goes a long way, new ideas are the answer, investigate and proceed using good judgement.
 - Douglas County's policy is to help rehab existing nonconforming buildings-we work with local and state fire marshals to see the best possible solution to solve many code requirements. New seismic requirements have been a major factor for new rehabilitation projects.
 - The model code groups working with the private and academic sectors through a consensus process are doing a good job of creating standardized codes and enforcement practices for building services agencies. However the programs developed by the federal government for the construction industry nationally have been of relatively short duration with limited benefits. HUD programs have typically been unsuccessful because of the stringent building requirements necessary for grant financing.
 - We look at it as recycling on a large scale.
 - I would like a copy of the HUD Guidelines referred to in this survey. The colony is 20 years old, relatively young by city standards. We require change of residential tenants. Rehabilitation takes place on a minor but daily scale.

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- Please notify me of any upcoming additions.
 - Historic district has been good for our city. Rehabilitation tends to be putting a round tag in a square hole. Too many owners are emotionally attached; ... reasonable life safety issues are not properly considered by such owners. A new national rehab code would be valuable, but there are so many standards that have evolved over the years, it may not be too practical to develop such a new standard. Rehab projects require a great deal of time and expertise, administered on a case by case basis. When properly done, they are generally worth the struggle and otherwise they are not.
 - I feel that a person needs to use common sense when involved with a rehabilitation project. I'm talking about the people enforcing the codes.
 - Most communities do not have a specific rehab code other than for historical buildings. Building code is generally applied to all structures. Wisconsin has a uniform building code that applies to all one and two family homes constructed after May 1, 1980. Dwellings prior to that date must meet a local code; many communities have adopted the uniform code for existing buildings.
 - We would like copies of the HUD Rehabilitation Guidelines.