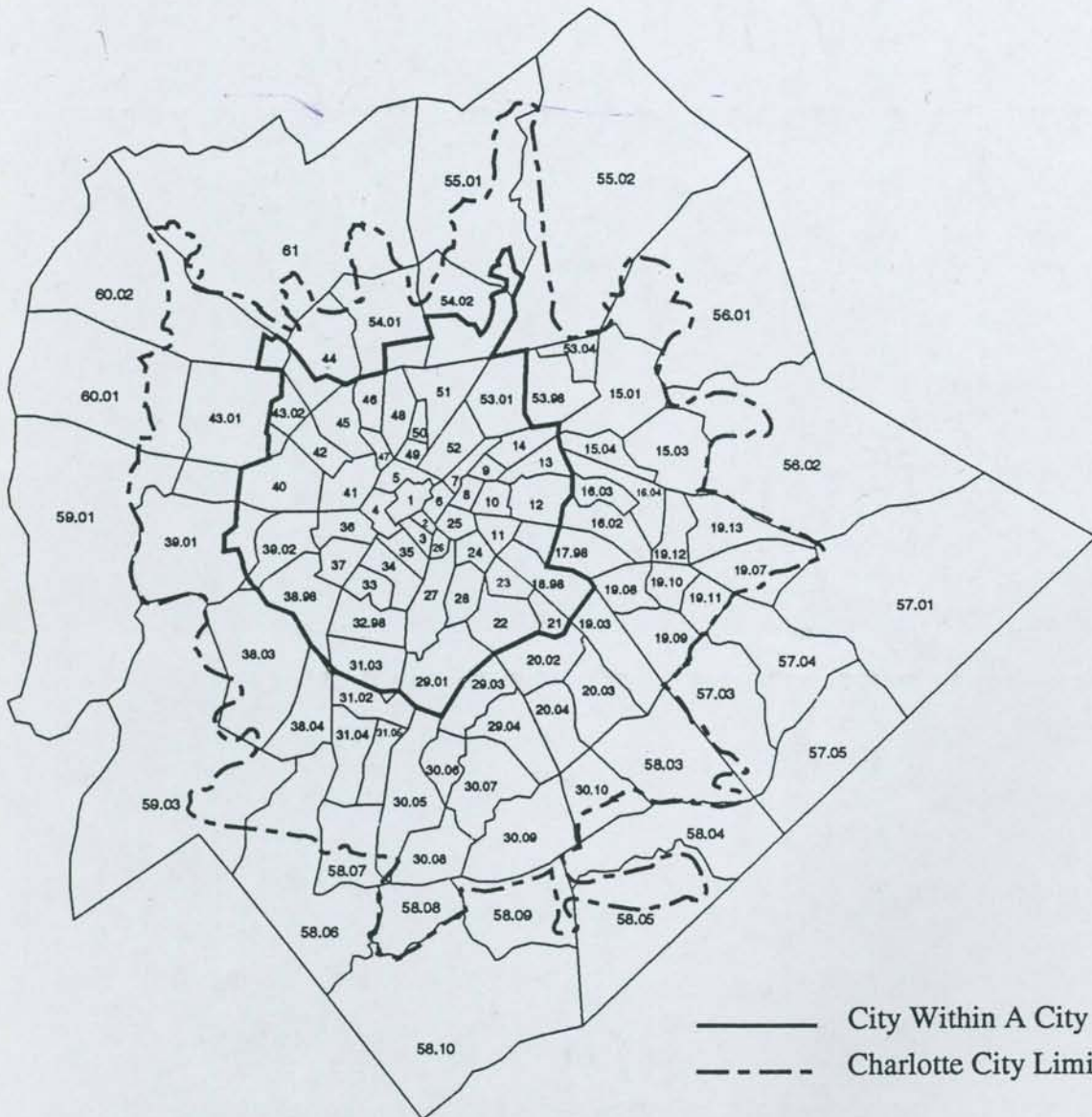


Cheryl Robert

CHARLOTTE HOUSING CHARACTERISTICS AND QUALITY

ECONOMIC DEVELOPMENT
AND PLANNING
URBAN INSTITUTE
UNC CHARLOTTE

*If you lose this
there are no more!*



**CHARLOTTE HOUSING
CHARACTERISTICS AND QUALITY**

prepared for

**CHARLOTTE
COMMUNITY DEVELOPMENT DEPARTMENT**

by

**UNC CHARLOTTE
URBAN INSTITUTE**

FEBRUARY 1994

This report was based on field surveys conducted during the summer of 1993 by UNC Charlotte Graduate Assistants from the Department of Geography and Earth Sciences. The Principal Investigator for this study was Owen Furuseh, Ph.D., professor of Geography at UNC Charlotte. The Project Manager was Cheryl Ramsaur Roberts, M.A., Director of Economic Development and Planning at the UNC Charlotte Urban Institute. The Sample Design was prepared by Nancy Schoeps, Ph.D., Lecturer with the Department of Mathematics, UNC Charlotte.

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February 1994

UNC Charlotte Urban Institute

CHARLOTTE HOUSING
CHARACTERISTICS & QUALITY:
EXECUTIVE SUMMARY

prepared for

CHARLOTTE
COMMUNITY DEVELOPMENT DEPARTMENT

by

UNC CHARLOTTE
URBAN INSTITUTE

FEBRUARY 1994

EXECUTIVE SUMMARY

"Need: 6,800 structures, or 5% of the housing in the City, are substandard..."

Goal: To reduce the number of substandard structures from 5% of the total housing stock to less than 1% by 1997."

Excerpt from *Preservation Goal, Charlotte Housing Policy Plan, 1987*

In the summer of 1993, the Urban Institute of the University of North Carolina at Charlotte undertook a survey of Charlotte's housing conditions for the Community Development Department. This survey was the latest component of a longer term effort to monitor housing conditions and reduce the amount of substandard housing in Charlotte to one percent of the residential structures within the city boundaries.

The primary goals of this project were to assess the condition of the existing housing stock in the city and evaluate the change in housing conditions since 1987. The products of the investigation include:

- *citywide housing quality survey*, reporting the number and location of residential structures with major and minor repair needs;
- *estimates of Charlotte's housing quality*, based upon the housing survey;
- *analysis of changes in housing quality conditions between 1987 and 1993*;
- *evaluation of the impact of the Community Development Department's code enforcement targeting strategy*;
- *assessment of the Department's progress toward meeting the one percent goal*;
and
- *detailed analysis of housing and related data for the "City Within A City" area*.

This summary provides an overview of the major project findings. Specific discussion of individual research findings and conclusions are presented in the main body of this report.

Citywide Housing Quality Estimates

When measured against other American cities, Charlotte's housing stock is in excellent condition. Over 5,000 residential structures were individually evaluated for the 1993 Charlotte Housing Quality Survey.

Using the housing quality survey results, estimates of citywide housing quality were developed. These estimates indicate that 97.7 percent of the residential structures in Charlotte have no significant visible problems. This encompasses 171,319 single family homes and other residential units.

The proportion of blighted housing units, those residential structures requiring major or minor repairs, is estimated to be 2.3 percent of Charlotte's housing stock. This would encompass an estimated 4,033 residential structures.

Changes in Charlotte Housing Quality: 1987-1993

In order to assess recent changes in housing conditions, the 1993 housing quality estimates were compared with the estimates derived from the 1987 and the 1990 housing surveys. This comparison indicates that substantial progress continues to be made toward the goal of eliminating housing blight in Charlotte (Table I).

Citywide, the proportion and number of residential structures estimated to be deteriorated and dilapidated has declined during the past six years. In 1987, the number of blighted residential structures in Charlotte was estimated to be 6,749. By 1990, the total number of blighted housing units was estimated to have declined to 5,545. The 1993 estimates show a 1,512 decrease from 1990 in the total problem structures to 4,033 buildings. Over the past six years, the proportion of problem housing units has dropped by 40 percent.

Table I

**1987, 1990, and 1993 Citywide Housing Quality Estimates
(percentage)**

	1987	1990	1993	% Change 1987-1993
Satisfactory Residential Structures	95.3	96.6	97.7	+2.4
Blighted Residential Structures (structures requiring minor repairs)	4.7	3.4	2.3	-2.4

Source: UNC Charlotte Urban Institute, *Charlotte Housing Condition Survey, 1987, Housing Quality in Charlotte, 1990*, and 1993 Charlotte housing quality survey.

Locational Characteristics of Housing Quality Changes

As expected, the greatest improvement in housing quality occurred in those areas of the city where the largest concentration of problem housing had formerly existed. The magnitude of the improvement was, however, larger than might be expected given the pattern of housing blight.

Viewed in areal terms, 37 census tracts experienced a decreased proportion of blighted housing (i.e., the sum of the percentage of deteriorated and dilapidated housing units) from 1990. These areas were located throughout the city, but were disproportionately concentrated in the North and West sides of Charlotte.

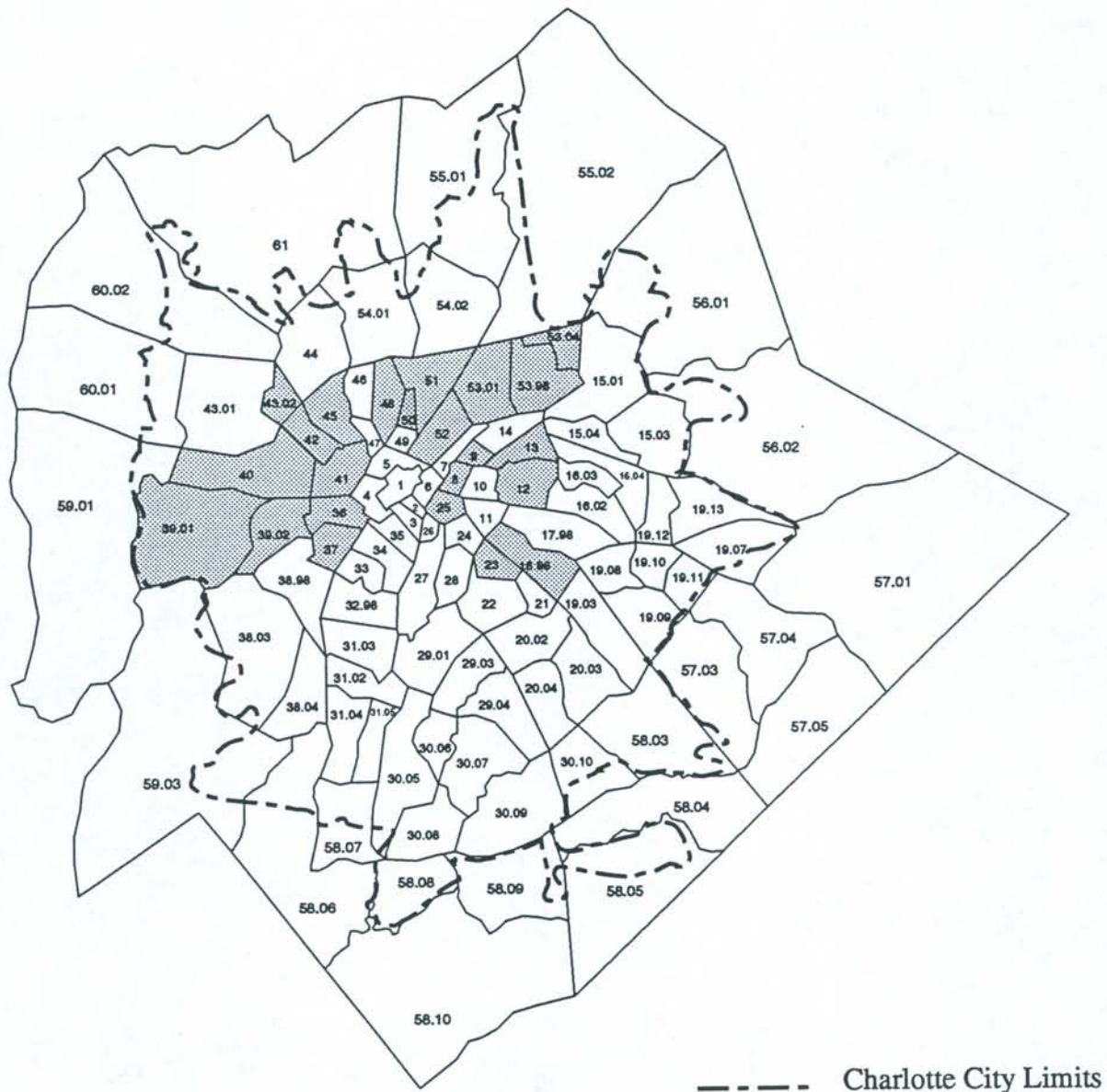
Conversely, the housing survey noted increased amounts of blighted housing in 24 census tracts. In most instances the changes were slight, and may be attributed to sample size. These census tracts tended to be geographically concentrated in the central city and in Northwest and Northeast Charlotte.

Code Enforcement Targeting Strategy

Using the 1990 housing survey findings, 21 census tracts containing the greatest concentrations of deteriorated and dilapidated housing were targeted for increased code enforcement and housing improvement assistance (Figure I). The 1993 housing survey found that most of the targeted census tracts have experienced improved housing conditions. Over 85 percent of the tracts recorded a decline in problem housing. Within these targeted tracts, the number of deteriorated and dilapidated homes is estimated to have declined by 40 percent. Moreover, the level of improvement was most notable in the census tracts that were ranked as having the most serious housing problems by the earlier study.

In 1987, nearly 15 percent of the dwelling units in the targeted areas were classified as either deteriorated or dilapidated. The 1990 survey found that the percentage of blighted housing in these tracts had dropped to 10.5 percent. The 1993 research concluded that the

Figure I. Targeted Census Tracts in 1990



----- Charlotte City Limits

number of substandard housing units in the 1987 targeted tracts dropped further to 6.8 percent.

These positive data reflect well on the targeting strategy. This approach has resulted in a clear-cut improvement in housing conditions in those areas of greatest need in a relatively short period of time. Accordingly, it is recommended that the targeting strategy continue, with only a slight shift in geographical emphasis. The targeted tracts for 1993 are shown in Figure II.

City Within A City

In December 1990, the City Council designated a large area near the geographical center of Charlotte as the "City Within A City." This district is home to nearly four out of every ten Charlotteans.

The "City Within A City" delineates an area with a concentration of social, economic, and neighborhood problems. The purpose for designating this area was to assess the nature of the problems facing Charlotte's inner city and to develop economic development strategies for long-term improvement and revitalization.

Not unexpectedly, the "City Within A City" contains the largest concentration of blighted housing in Charlotte. It is estimated that there are 3,218 blighted residential structures within the district. This constitutes nearly 80 percent of the estimated problem housing stock in the city of Charlotte.

While the geography of housing problems is clear, what is missing are the linkages between housing conditions and the surrounding community. Blighted housing does not occur in a vacuous setting. Social, economic, institutional and other environmental forces work to shape the character and form that housing takes in a given place. Statistical analyses carried out on the "City Within A City" housing data show a strong correlation

between housing quality and neighborhood character. The linkage between poverty, economic disadvantage and crime with substandard housing was validated statistically.

These data provide evidence supporting a comprehensive strategy for community development in the "City Within A City." Housing improvement, economic vitality, and community safety are interrelated issues. Increasing the economic opportunities in inner-city neighborhoods and reducing the threat of crime will create environments that will lead to improvements in housing quality. Housing improvement efforts that fail to recognize and respond to the effect that neighborhood environment plays on housing condition are shortsighted and less effective.

Charlotte Housing Goals

The City of Charlotte's *Housing Policy Plan* set a goal of reducing the proportion of substandard units to one percent of the city's housing stock by 1997. In the past three years, the fraction of deteriorated and dilapidated structures has dropped from 3.4 percent to 2.3 percent. This decline continues the trend begun in 1987. Over the past six years the number of substandard housing structures has been reduced by 40 percent, from 6,749 to 4,033 blighted housing units (Figure III). If the positive trends continue, the Community Development Department will achieve its goal.

The biggest challenge for the Department is dealing with the blighted housing that remains substandard despite past successes. This small core of problem housing will be more difficult to improve. The difficult task ahead is to use the skills and finite resources of the Department to shrink the remaining hard core problem housing.

Figure III. Estimated Changes in Charlotte Housing Quality, 1987-1993

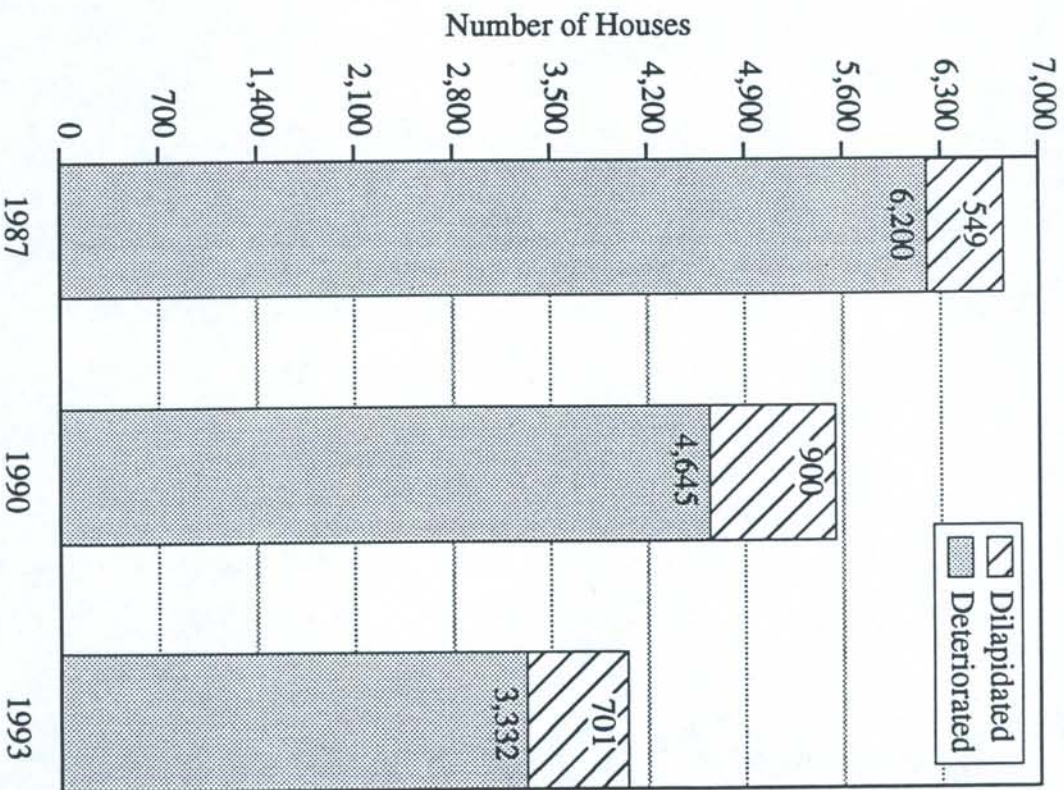
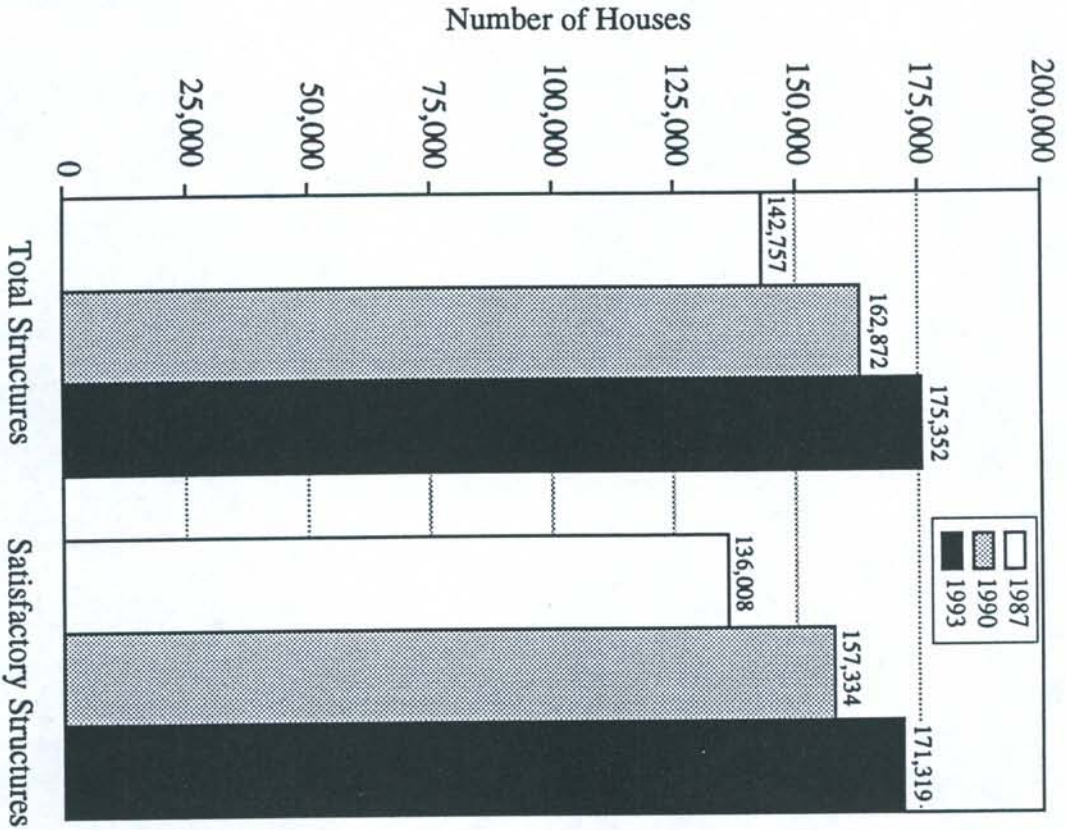


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INTRODUCTION

This report presents the results and analyses drawn from a 1993 survey of housing conditions in Charlotte. The information used in this document was primarily field-based data that were collected during the summer of 1993. Secondary data extracted from the most recent U.S. Census Bureau and U.S. Department of Housing and Urban Development reports were used to provide context and meaning to the survey results.

The 1993 housing quality survey represents an extension and expansion of earlier research by the Urban Institute of the University of North Carolina at Charlotte for the Charlotte Community Development Department. The fundamental objectives of this study are to determine the location of the most deteriorated housing stock in Charlotte and assess the effectiveness of Community Development programs in dealing with deteriorated housing.

In order to meet this research purpose, a number of secondary elements are addressed, including:

- reporting the number and location of residential structures with major and minor repair needs;
- preparing estimates of Charlotte's housing quality, based upon the housing survey;
- analyzing changes in housing quality conditions between 1987 and 1993;
- evaluating the impact of the Community Development Department's existing code of enforcement targeting strategy, including recommendations for modifying this strategy;
- assessing progress toward meeting the one percent goal of the Charlotte Housing Policy Plan; and
- developing detailed analysis of housing and related data for the "City Within A City" area.

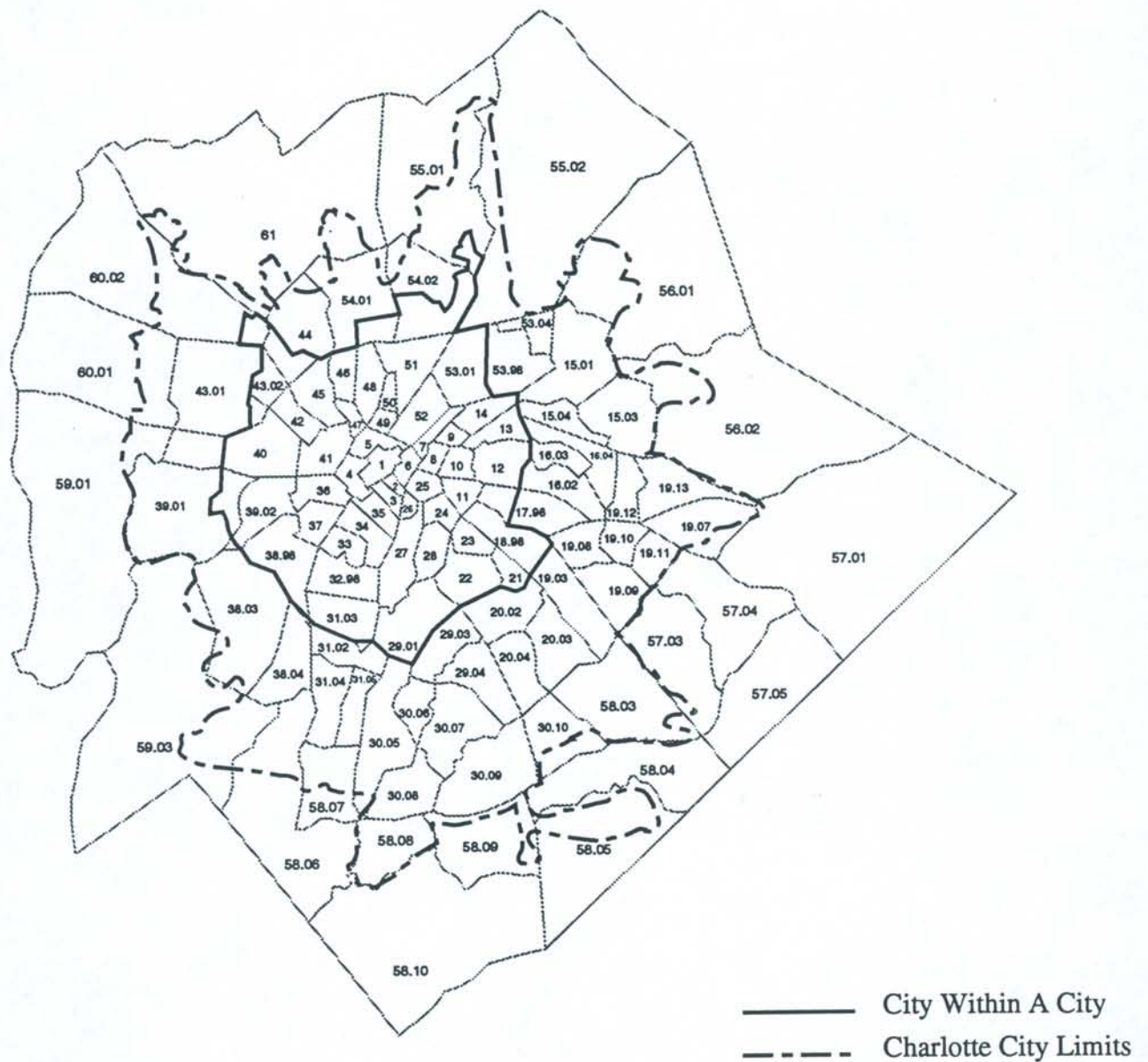
In carrying out the research program, the Urban Institute drew upon its earlier research approach as well as broadening the framework of analysis. The replication of

earlier housing condition survey methodology permits an evaluation of the effectiveness of housing code enforcement targeting strategy and also updates the previous housing quality data. This new information can be used to review and potentially revise housing quality policy.

Additionally, the study focused particular emphasis on the area designated as "City Within A City" (CWAC) as shown in Figure 1. This collection of neighborhoods has been identified by Charlotte City Council for revitalization and renewal. It encompasses 54 whole or partial census tracts and is geographically positioned in the center of Charlotte. The CWAC has a concentration of low-income households and the need for improvements in existing housing stock.

This study uses statistical techniques to examine the linkage between housing characteristics in the CWAC and a variety of social, economic, demographic, and physical characteristics. The results are designed to help identify unique characteristics or patterns within this area and provide a statistical framework on which specific housing improvement strategies can be developed.

Figure 1. Charlotte and "City Within A City" Boundaries



BACKGROUND

Part of the function of the City of Charlotte Community Development Department is to preserve the city's housing stock and broaden the housing opportunities for low- and moderate-income citizens. As a component of the ongoing program to better accomplish its housing mission, the Community Development Department has worked with the UNC Charlotte Urban Institute to develop a longitudinal citywide database on housing characteristics.

This cooperative effort began in 1986 with a citywide sample survey of housing conditions that were the basis of an estimate of the quality of housing stock in Charlotte. This investigation was the first field-based housing quality survey ever undertaken by a municipality in North Carolina. The results and conclusions of this study were contained in the February 1987 report entitled *Charlotte Housing Condition Survey*.

The *Survey* was subsequently used by the Department to establish a statistical database for citywide housing conditions. Using the data contained in this investigation as a baseline, the City of Charlotte's 1987 *Housing Policy Plan* set a goal of reducing the percentage of substandard housing in the community from five percent to less than one percent by 1997. The primary strategies for achieving this goal were structured around code enforcement and rehabilitation activities.

As a primary strategy for achieving the "one percent goal," the Department implemented a *Survey* recommendation to target subareas of the community with the largest number of housing problems. The targeting approach allowed the Community Development Department to focus its resources and programs on those areas of the city and types of housing problems that are most critical. This emphasis is especially important in light of budgetary constraints and the increasingly serious problem of providing adequate housing opportunities for low- and moderate-income groups. ♦

In 1990, the Urban Institute resurveyed Charlotte's housing conditions. The purposes of this study were twofold. First, the survey measured the current condition of residential structures in the city. This permitted an analysis of the changes in housing quality conditions between 1987 and 1990. As a part of this analysis an assessment of the lingering impact that Hurricane Hugo had inflicted on Charlotte's housing was carried out.

A second study purpose was to examine and evaluate the results of the Community Development Department's code enforcement targeting efforts. This program evaluation component involved "fine tuning" the targeting format and assessing the effectiveness of the efforts to implement the one percent housing preservation goal.

The findings and analysis of the 1990 study were presented in *Housing Quality in Charlotte*. The study conclusions were overwhelmingly positive with significant progress made toward the goal of eliminating housing blight in Charlotte. Citywide the proportion of housing classified as satisfactory or meeting housing code standards was estimated to have increased by 1.3 percent. Concurrently, the proportion of deteriorated housing has dropped by 1.4 percent while the percentage of dilapidated housing remained at approximately the same level.

While the 1990 survey showed a majority of the housing problems continued to be concentrated in the 21 census tracts targeted for code enforcement activities in 1987, the most critical improvements in housing quality also occurred in those areas (Figure 2). In 1987, nearly 15 percent of the dwelling units in these areas were classified as either deteriorated or dilapidated. The 1990 survey found that the percentage of deteriorated and dilapidated units in these census tracts had dropped to 10.5 percent. The research concluded that the number of substandard housing units in these 21 census tracts declined by nearly 1,400 structures. Most of the upgrading in housing quality occurred through improvements to existing housing, although there was some removal of problem housing.

Using the 1990 survey results, the targeting strategy was modified slightly. The geographical boundaries of the target code enforcement zone were minimally changed. Six

census tracts were excluded, and a number of tracts were added to the area. This adjustment was in response to housing improvements in the deleted areas and a shifting of resources to the formerly less blighted neighborhoods.

Finally, five months after the catastrophic visit of Hurricane Hugo to Charlotte, the storm continued to impact the city's housing. One percent of the surveyed structures were found to have continuing Hugo-related damage. Based on the sample, it was estimated that 2,012 Charlotte residences continued to exhibit some Hugo damage.

HOUSING QUALITY: A NATIONAL AND LOCAL OVERVIEW

Nationally, the availability of good quality housing for citizens of all income levels continues to be a serious concern. Public and privately funded studies of housing conditions in urban America indicate widespread problems. One recent investigation, for example, estimated that one out of every 13 households, or 7.7 percent of the U.S. population, lives in dilapidated housing units.

Data prepared by the U.S. Census Bureau and U.S. Department of Housing and Urban Development published in the *American Housing Survey for the United States in 1991*, indicates a sizable number of Americans believe that their homes and neighborhoods have housing problems (Table 1). For instance, 7.7 percent of all urban homeowners believed that their residences have moderate or severe structural problems, with 11.1 percent of all Southern urban homeowners identifying a structural problem. When asked their overall opinion of housing and neighborhood conditions using a 1 to 10 scale, 1.2 percent of all respondents ranked their home and community in the bottom quintile. The proportion of low scores increased in urban areas (1.8 percent) and in the South region (1.9 percent).

As a component of its mission, the Community Development Department monitors housing quality conditions for Charlotte. In 1986, the Department estimated that there were 10,000 units of substandard housing in the city with an additional 2,200 residential units falling into the substandard category annually. Through ongoing code enforcement and rehabilitation programs, the department calculated that the amount of substandard housing was declining by approximately 200 units per year.

The 1987 and 1990 surveys of housing quality found that Charlotte's housing problems were less serious than other urban areas. In 1990, the survey data indicated that over one-half of the residential structures surveyed, or 55.8 percent of the sample, had no

Table 1

Resident Assessment of Housing Quality

	Severe Physical Problems	Moderate Physical Problems	Overall Opinion of Residence and Neighborhood (lowest quintile)
Nationwide	3.0%	4.8%	1.2%
Urban Areas	2.9%	4.8%	1.8%
South Region	3.0%	8.1%	1.9%

Source: Data derived from *American Housing Survey for the United States in 1991*, April 1993.

visible structural problems. An additional 39.1 percent had at least one problem but were still evaluated as satisfactory. Taken together, almost 95 percent of the sample was satisfactory. Of the remaining residential structures, most of the structures were in the deteriorated category. Specifically, 4.1 percent was classified as "in need of minor repairs," while only slightly less than one percent was considered dilapidated.

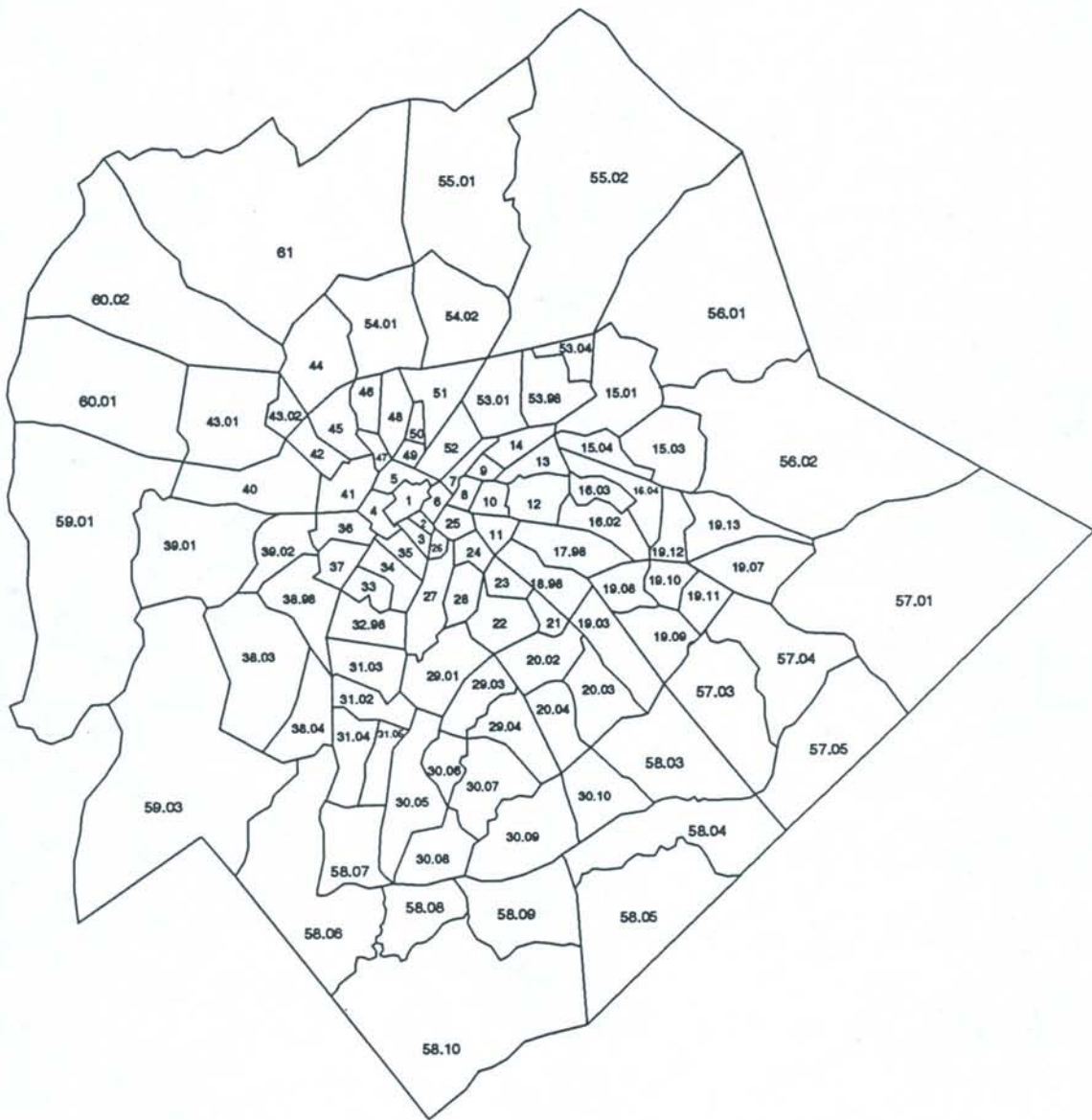
HOUSING SURVEY METHODOLOGY

In order to develop detailed information on citywide housing conditions in an effective and cost-efficient fashion, a sample survey methodology was used. The 1993 Charlotte Housing Survey was carried out using a stratified sample selected from the 175,352 residences within the city boundaries. Using this approach, each of the 102 census tracts in the city was surveyed (Figure 3). The number of homes surveyed, called the sample, was based upon the number of houses in a census tract and the potential risk of problem housing. No tract had fewer than ten dwellings surveyed. A total of 5,020 houses was included in the sample. This represented 2.86 percent of all Charlotte's housing units.

A complete discussion of the sampling design is presented in Appendix A (Sample Design). Additionally, this Appendix contains a listing of the sampling distribution by each census tract.

Following the selection of the sample residences, housing quality information was collected. A windshield survey technique was used to conduct the fieldwork. The project followed widely accepted research techniques, including a standardized survey questionnaire, uniform survey criteria, and quality control procedures. In order to ensure that the information collected in the 1993 survey could be compared with the previous housing quality survey, the 1990 survey questionnaire and survey process were used. A full discussion of the research methods is contained in Appendix B (Housing Survey Methods).

Figure 3. City of Charlotte Census Tracts



HOUSING QUALITY CATEGORIES

In this study, residential structures were classified into one of three groups based upon their visual characteristics. The threefold typology was made following discussions with the Community Development Department and was intended to parallel the standards outlined in the City of Charlotte, *Housing Code*.

Those residential structures with few or no structural problems were considered "satisfactory." Structures where the cost to correct structural problems would be less than 65 percent of the building value were labeled "deteriorated." Structures where the repair cost would exceed 65 percent of the building value were labeled "dilapidated." This classification follows Charlotte's housing code, where "deteriorated" structures may be ordered to be repaired; and "dilapidated" houses may be ordered to be demolished.

The physical soundness of individual housing units was assessed through an evaluation of eight structural attributes (Table 2). These variables included peripheral housing elements, such as chimneys and gutters, as well as basic dwelling elements including roofs, siding, and foundations.

Because of obvious differences in the structural importance of variables, individual attributes were weighted. During the analysis of the survey, higher numeric values were given to the most critical structural attributes, including roofs, foundation, and siding, and lower values were assigned to attributes having a lesser impact on overall housing quality. These included gutters, chimneys, windows, and doors. The weighting formula was devised by the Urban Institute consultants following a review of the literature and discussions with the Community Development Department staff.

For each surveyed structure, the eight attributes were evaluated and classified as either "satisfactory," "needs minor repairs," "needs major repairs," or "not present." The classification of each attribute was based upon a visual inspection of the dwelling. During the compilation and analysis of the survey data, a second weighting was used to

Table 2

Charlotte Housing Condition Survey
Structural Attributes Evaluated

Structural Element	Weighted Value		
	Needs Minor Repairs	Needs Major Repairs	Not Present
Chimney	1	2	0
Roofing	2	4	-
Gutters	1	2	0
Windows	1	3	-
Doors	1	3	-
Siding	2	4	-
Foundation	2	4	-
Front Porch	1	2	0

differentiate between minor and major repairs. Generally, major repairs were assigned numeric values equal to twice the value of minor repairs. In the case of windows and doors, however, the weighting was three times the weighting for minor repairs.

In defining the boundaries between "satisfactory," "deteriorated," and "dilapidated" housing, a numeric formula was used. The formula replicated the procedures used in the previous housing quality surveys (Table 3). Those structures with less than five points were classified as satisfactory. Residential units with five to ten points were labeled deteriorated, and those with greater than ten points were considered dilapidated.

Table 3

Housing Classification Formula

Housing Quality Categories	Survey Points Recorded
Satisfactory Residential Structures (with no visible problems)	0
Satisfactory Residential Structures (with 1 or more visible problems)	1 - 4
Deteriorated Residential Structures (structures requiring minor repairs)	5 - 10
Dilapidated Residential Structures (structures requiring major repairs)	11 - 24

1993 CITYWIDE HOUSING SURVEY RESULTS

The 1993 survey of housing indicates that, when measured against other American cities, Charlotte's housing continues to be excellent, well above national norms. The citywide survey data presented on Table 4 show that nearly one-half (48.6 percent) of the residential structures surveyed, or 2,440 housing units, had no visible structural problems. Slightly fewer surveyed residences (47.4 percent) of the sample had more than one problem but were still evaluated as satisfactory. Taken together, 96 percent of the sample was classified as satisfactory.

Most of the remaining residential structures were classified as deteriorated or "in need of minor repairs." This included 161 housing units or 3.2 percent of the sample. Finally, 41 structures or slightly less than one percent (.82 percent) of the sample were considered dilapidated. Dilapidated structures are those residential buildings "in need of major repairs."

When housing problems are categorized by structural attributes there are large differences in the scale of the problem. Table 5 contains these data. Clearly, the greatest exterior housing problems are caused by deteriorated roofs, siding and windows. The repair needs for all three attributes are especially critical since they directly impact energy consumption and heating costs. Fortunately, in each case, most of the repair needs were characterized as minor rather than major. Conversely, fewer problems were found with doors, foundations, chimneys, and front porches.

Table 4

1993 Housing Condition Survey Findings

Housing Quality Categories	Number of Dwelling Units	Percentage
Satisfactory Residential Structures (with no visible problems)	2,440	48.6%
Satisfactory Residential Structures (with 1 or more visible problems)	2,378	47.4%
Deteriorated Residential Structures (structures requiring minor repairs)	161	3.2%
Dilapidated Residential Structures (structures requiring major repairs)	41	0.8%
Total Residential Structures (2.86% of all residential structures in Charlotte)	5,020	100.0%

Table 5

1993 Housing Condition Survey Results
By Structural Attribute

	Satisfactory (%)	Minor Repair (%)	Major Repair (%)	Not Present (%)
Chimney	47.93	8.67	1.33	42.07
Roof*	82.93	14.73	2.33	0.00
Gutters	62.13	9.30	0.96	27.61
Windows	85.16	13.91	0.93	0.00
Doors	93.42	5.94	0.64	0.00
Siding	85.09	13.40	1.51	0.00
Foundation*	95.79	2.82	1.37	0.00
Front Porch	40.21	8.61	1.76	49.42

*Percentage does not equal 100% due to rounding.

CENSUS TRACT FINDINGS

The housing survey results for individual census tracts are displayed in tabular form on Table 6 and geographically portrayed on the maps in this section. The distribution of deteriorated and dilapidated housing continues to follow the pattern observed in the earlier Charlotte housing surveys. Among the 102 Charlotte census tracts with residential structures, 31 tracts have percentages of deteriorated housing above the citywide mean of 3.2 percent as derived from the housing survey sample (Figure 4). Twenty census tracts were found to have proportions of dilapidated housing exceeding the citywide sample average of .82 percent (Figure 5). When both categories of "problem" housing are aggregated, 12 census tracts exceed the citywide sample averages in both the deteriorated and dilapidated categories (Figure 6).

Although housing quality problems are found in all parts of Charlotte, the greatest concentrations of residential blight remain focused in lower-income neighborhoods. This pattern mirrors the nationwide norm. Geographically, the deteriorated and dilapidated structures identified by the survey are concentrated in neighborhoods in the north and west sections of the city. A review of the two maps reveals a very strong dichotomous distribution of problem housing. South Charlotte has almost no housing problems. East Charlotte has a few isolated census tracts with survey results above the citywide mean, while North and West Charlotte have larger-scale problems.

A second locational aspect of housing quality relates to the age of neighborhoods. Geographers and planners characterize urban neighborhoods as "inner ring" or "outer ring." Inner ring neighborhoods are a city's oldest neighborhoods. They tend to form a circular or donut-shaped ring around the central business district or downtown core area. Outer ring neighborhoods are newer, often suburban districts. Their location is reflective of the cumulative pattern of urban growth. American urban areas tend to grow outward from the core.

Table 6

Housing Condition Survey
Summary Findings

Census Tract	Residential Structures in the City	Sample Size	Satisfactory Structures, No Visible Problems (%)	Satisfactory Structures, 1+ Visible Problems (%)	Deteriorated Structures (%)	Dilapidated Structures (%)
1	628	28	78.57	17.86	0.00	3.57
2	0	0				
3	496	45	35.56	64.44	0.00	0.00
4	410	45	20.00	71.11	8.89	0.00
5	1,296	79	59.49	39.24	0.00	1.27
6	576	42	21.43	71.43	4.76	2.38
7	290	45	26.67	60.00	11.11	2.22
8	1,074	74	44.59	35.14	12.16	8.11
9	834	53	20.75	60.38	13.21	5.66
10	1,218	50	26.00	72.00	2.00	0.00
11	1,529	40	20.00	80.00	0.00	0.00
12	2,297	100	34.00	62.00	3.00	1.00
13	1,868	75	34.67	65.33	0.00	0.00
14	1,048	65	27.69	69.23	1.54	1.54
15.01	3,457	69	65.22	33.33	1.45	0.00
15.03	3,041	50	66.00	34.00	0.00	0.00
15.04	1,739	35	60.00	40.00	0.00	0.00
16.02	3,289	56	73.21	23.21	3.57	0.00
16.03	1,486	37	59.46	37.84	2.70	0.00
16.04	2,855	52	65.38	32.69	1.92	0.00
17.98	4,116	150	58.00	42.00	0.00	0.00
18.98	2,415	100	23.00	74.00	2.00	1.00
19.03	4,028	83	46.99	50.60	2.41	0.00
19.07*	1,371	20	65.00	35.00	0.00	0.00
19.08	2,926	39	76.92	23.08	0.00	0.00
19.09	1,811	24	75.00	25.00	0.00	0.00
19.1	1,906	31	51.61	48.39	0.00	0.00
19.11	1,660	29	62.07	31.03	6.90	0.00

*Designates split tract

Census Tract	Residential Structures in the City	Sample Size	Satisfactory Structures, No Visible Problems (%)	Satisfactory Structures, 1+ Visible Problems (%)	Deteriorated Structures (%)	Dilapidated Structures (%)
19.12	2,458	41	60.98	34.15	2.44	2.44
19.13	2,315	42	71.43	26.19	2.38	0.00
20.02	2,580	34	76.47	23.53	0.00	0.00
20.03	2,255	30	70.00	30.00	0.00	0.00
20.04	2,096	28	67.86	32.14	0.00	0.00
21	1,228	70	37.14	60.00	1.43	1.43
22	1,755	100	66.00	34.00	0.00	0.00
23	1,102	69	27.54	62.32	7.25	2.90
24	1,404	87	40.23	58.62	1.15	0.00
25	732	62	16.13	77.42	6.45	0.00
26	600	55	23.64	63.64	9.09	3.64
27	3,270	60	60.00	40.00	0.00	0.00
28	1,493	85	57.65	42.35	0.00	0.00
29.01	3,046	72	76.39	23.61	0.00	0.00
29.03	1,134	15	80.00	20.00	0.00	0.00
29.04	2,845	38	86.84	13.16	0.00	0.00
30.05	3,269	43	67.44	32.56	0.00	0.00
30.06	1,891	33	75.76	24.24	0.00	0.00
30.07	2,030	35	85.71	14.29	0.00	0.00
30.08	1,647	22	81.82	18.18	0.00	0.00
30.09	2,776	37	64.86	35.14	0.00	0.00
30.1*	1,100	15	86.67	13.33	0.00	0.00
31.02	1,862	45	64.44	35.56	0.00	0.00
31.03	2,128	28	78.57	21.43	0.00	0.00
31.04	3,403	45	55.56	44.44	0.00	0.00
31.05	1,847	40	77.50	22.50	0.00	0.00
32.98	4,122	101	68.32	31.68	0.00	0.00
33	1,641	40	50.00	50.00	0.00	0.00
34	1,773	75	38.67	60.00	1.33	0.00
35	1,052	30	66.67	30.00	3.33	0.00
36	1,610	60	31.67	61.67	6.67	0.00
37	958	60	28.33	65.00	6.67	0.00

*Designates split tract

Census Tract	Residential Structures in the City	Sample Size	Satisfactory Structures, No Visible Problems (%)	Satisfactory Structures, 1+ Visible Problems (%)	Deteriorated Structures (%)	Dilapidated Structures (%)
38.03*	1,643	42	38.10	61.90	0.00	0.00
38.04	2,966	39	43.59	56.41	0.00	0.00
38.98	1,515	80	40.00	57.50	2.50	0.00
39.01	1,094	69	39.13	53.62	7.25	0.00
39.02	1,905	60	31.67	60.00	8.33	0.00
40	2,092	65	47.69	46.15	4.62	1.54
41	1,465	91	24.18	58.24	12.09	5.49
42	1,506	94	25.53	65.96	7.45	1.06
43.01	3,320	60	73.33	23.33	3.33	0.00
43.02	1,878	80	43.75	51.25	5.00	0.00
44*	614	42	54.76	38.10	7.14	0.00
45	1,556	99	19.19	62.63	13.13	5.05
46	1,281	28	42.86	50.00	3.57	3.57
47	572	49	38.78	57.14	4.08	0.00
48	1,797	56	39.29	57.14	3.57	0.00
49	176	20	65.00	30.00	5.00	0.00
50	1,321	99	24.24	58.59	12.12	5.05
51	1,080	65	24.62	70.77	3.08	1.54
52	1,074	67	17.91	77.61	4.48	0.00
53.01	1,182	73	39.73	54.79	5.48	0.00
53.04	2,050	41	48.78	51.22	0.00	0.00
53.98	2,633	70	38.57	60.00	1.43	0.00
54.01*	1,340	50	36.00	60.00	4.00	0.00
54.02	2,031	70	58.57	38.57	2.86	0.00
55.01*	390	30	70.00	26.67	3.33	0.00
55.02*	1,925	40	67.50	30.00	2.50	0.00
56.01	1,458	19	68.42	31.58	0.00	0.00
56.02	57	10	60.00	40.00	0.00	0.00
57.03*	603	10	100.00	0.00	0.00	0.00
57.04*	272	10	100.00	0.00	0.00	0.00
58.03	3,518	47	61.70	38.30	0.00	0.00
58.04*	116	10	90.00	10.00	0.00	0.00
58.05*	736	10	90.00	10.00	0.00	0.00
58.06*	1,429	25	52.00	48.00	0.00	0.00

*Designates split tract

Census Tract	Residential Structures in the City	Sample Size	Satisfactory Structures, No Visible Problems (%)	Satisfactory Structures, 1+ Visible Problems (%)	Deteriorated Structures (%)	Dilapidated Structures (%)
58.07*	2,708	36	91.67	8.33	0.00	0.00
58.08	2,713	36	75.00	25.00	0.00	0.00
58.09*	2,112	18	83.33	16.67	0.00	0.00
59.01*	250	11	18.18	72.73	9.09	0.00
59.03*	1,629	22	63.64	36.36	0.00	0.00
60.01*	1,711	20	75.00	25.00	0.00	0.00
60.02*	1,289	20	75.00	25.00	0.00	0.00
61*	1,259	24	70.83	29.17	0.00	0.00
	175,352	5,020				

*Designates split tract

Figure 4. Census Tracts with a Percentage of Deteriorated Housing Above the City Average

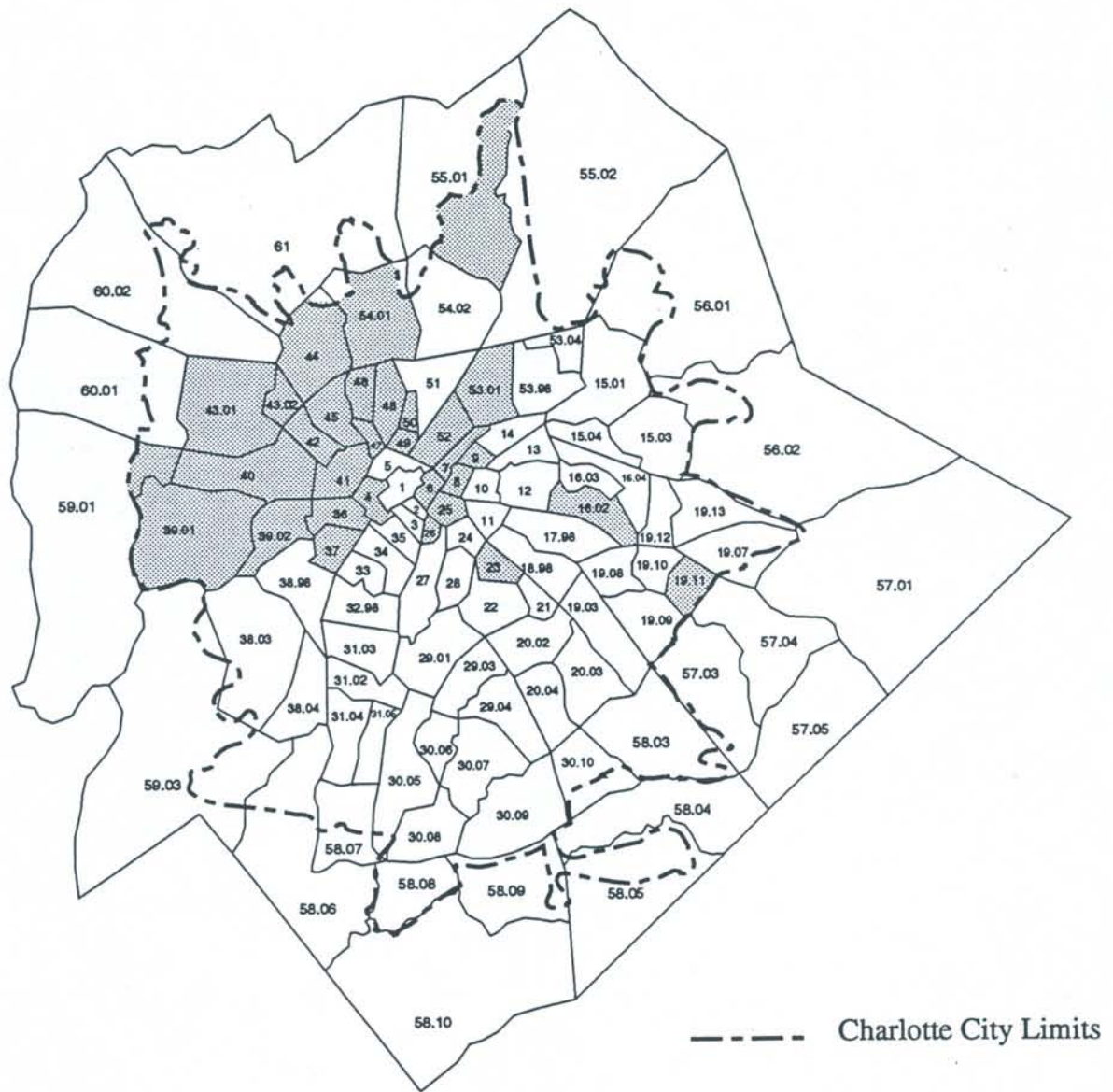


Figure 5. Census Tracts with a Percentage of Dilapidated Housing Above the City Average

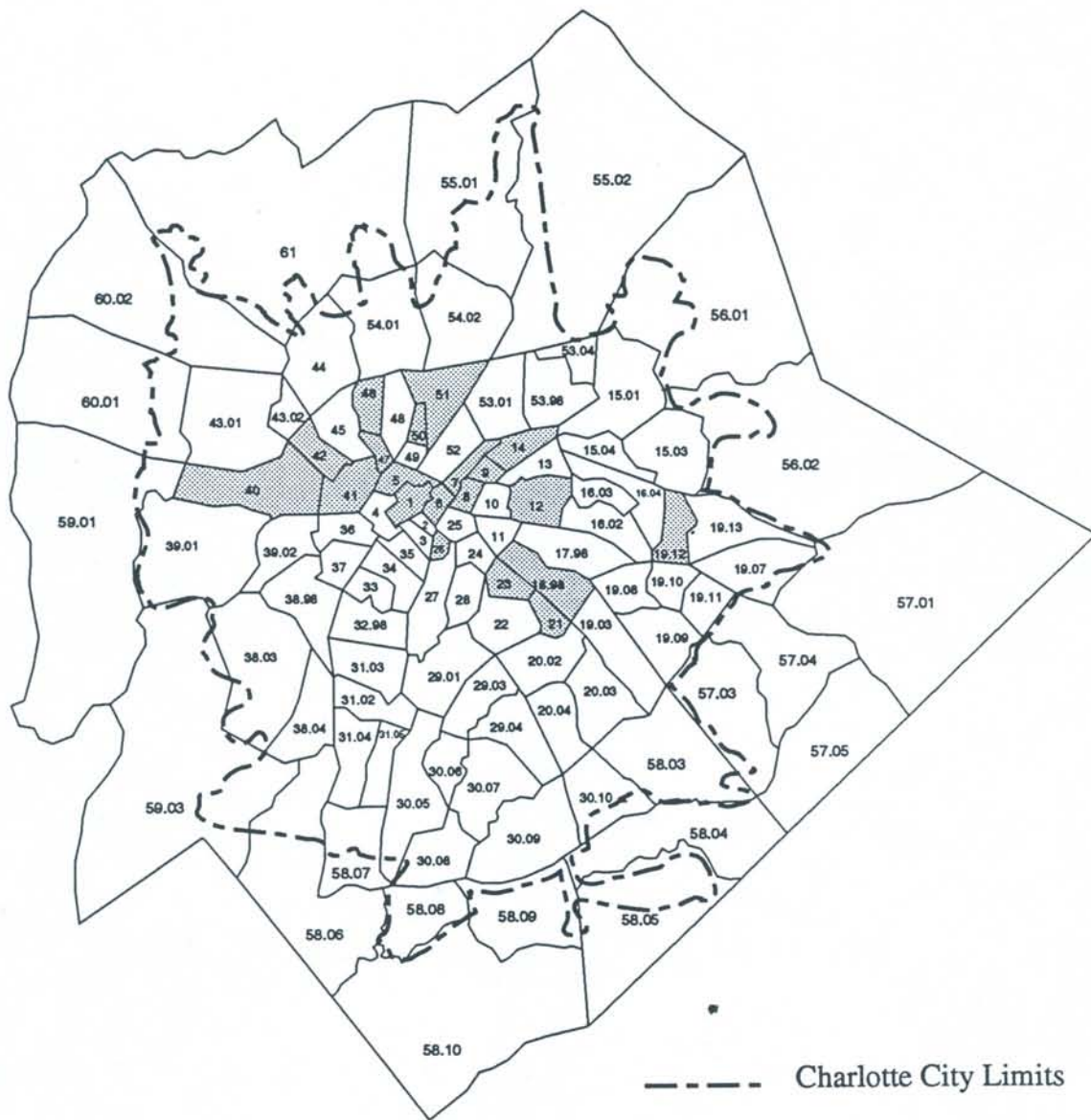


Figure 6. Census Tracts with Percentages of both Deteriorated and Dilapidated Housing Above the City Average



Charlotte's deteriorated and dilapidated housing tends to be spatially concentrated in inner ring neighborhoods, with a decreasing percentage of housing problems as one moves outward from the Central Business District (Uptown) toward outer ring neighborhoods. This pattern complements the geographic orientation noted previously with most inner ring census tracts having a higher than average proportion of deteriorated dwelling units. The one exception to this pattern is selected inner ring neighborhoods to the southeast of Uptown which have a lower than average proportion of problem housing.

1993 CITYWIDE HOUSING QUALITY ESTIMATES

Using the housing survey data, estimates of 1993 citywide housing quality were developed. The estimates were derived by multiplying the survey findings, that is, the percentage of satisfactory, deteriorated, and dilapidated residential units in each census tract, with the total number of dwelling units in each census tract. Subsequently, the total value for each category was summed to produce the citywide estimates for satisfactory, deteriorated, and dilapidated housing.

The citywide estimates are presented on Table 7. Based upon the survey findings, it is calculated that 57.5 percent of the housing units in Charlotte have no visible repair problems. This would translate into 100,827 residential structures. An additional 70,492 dwellings or 40.2 percent of the housing stock were classified as satisfactory, but having one or more visible problems. When these two estimates are combined, it is quite obvious that the overwhelming majority of Charlotte's housing stock is in excellent condition, with slightly more than 97 percent of the residential structures in the city showing no significant visible problems.

Over the remaining residential structures, the proportion of deteriorated housing units is estimated to be 1.9 percent. This would encompass 3,332 buildings. Finally, the citywide percentage of dilapidated housing is estimated to be .4 percent or less than one-half of one percent of Charlotte's housing structures. Included in this most serious problem housing category are an estimated 701 residential structures.

A comparison of these estimates with the survey percentages shows that the actual number of deteriorated and dilapidated housing units throughout the city is less than the proportion of blighted housing counted during the survey. This apparent discrepancy is explained by the concentration of problem housing in inner city census tracts with a smaller number of housing units that were heavily sampled during the housing survey. Conversely,

Table 7

1993 Citywide Estimates of Housing Quality

Housing Quality Categories	Number of Dwelling Units	Percentage
Satisfactory Residential Structures (with no visible problems)	100,827	(57.5%)
Satisfactory Residential Structures (with 1 or more visible problems)	70,492	(40.2%)
Deteriorated Residential Structures (structures requiring minor repairs)	3,332	(1.9%)
Dilapidated Residential Structures (structures requiring major repairs)	701	(.4%)
Total Residential Structures	175,352	(100%)

larger suburban census tracts were not surveyed as heavily. The weighting procedure used in this portion of the report adjusts for the size differences in census tracts, and therefore provides the most accurate assessment of citywide housing quality.

CHARLOTTE'S HOUSING CONDITION: 1987-1993

A comparative review of the current housing condition survey findings with the previous results indicates significant progress is being made toward the goal of eliminating housing blight in Charlotte. During the past six years, the proportion of satisfactory housing stock is estimated to have increased by 2.4 percent. Between 1987 and 1993, the number of blighted housing units dropped from 6,749 to 4,033 (Figure 7).

The improvement in housing quality is particularly noteworthy in light of Charlotte's annexation program. In the course of adding new areas to the city limits, many of the annexed neighborhoods were not constructed to city building standards. Consequently, a number of the annexed areas contain problems.

While the overall citywide findings are impressive, the most critical improvements in housing quality have come in Charlotte's most blighted neighborhoods. In response to recommendations contained in the earlier housing condition surveys, the Community Development Department identified neighborhoods with the greatest concentrations of deteriorated and dilapidated housing and targeted those areas for increased code enforcement and housing improvement assistance. Figures 8 through 13 portray the changes in housing conditions by geographic grouping.

In 1987, the targeted neighborhoods contained 4,862 units of blighted housing. Three years later, the quantity of problematic housing had declined to an estimated 3,435 residential structures in the tracts that had been targeted in 1987. This represented slightly more than ten percent (10.5 percent) of the dwelling units in these areas classified as either deteriorated or dilapidated. The 1993 survey found that the percentage of deteriorated and dilapidated units in these census tracts had dropped significantly to 6.8 percent of the total dwelling units (Figure 14). Based upon the survey findings, it is estimated that the number of substandard housing units declined by nearly 2,658 structures. Most of the upgrading in

Figure 7. Estimated Changes in Charlotte Housing Quality, 1987-1993

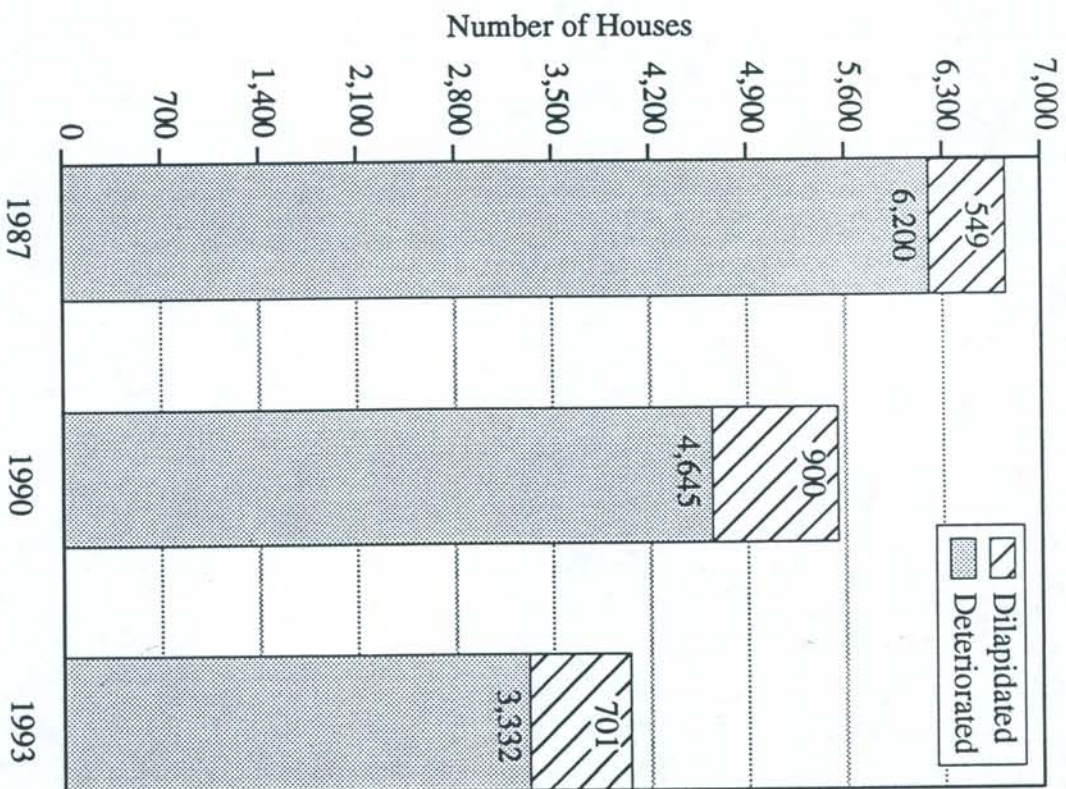
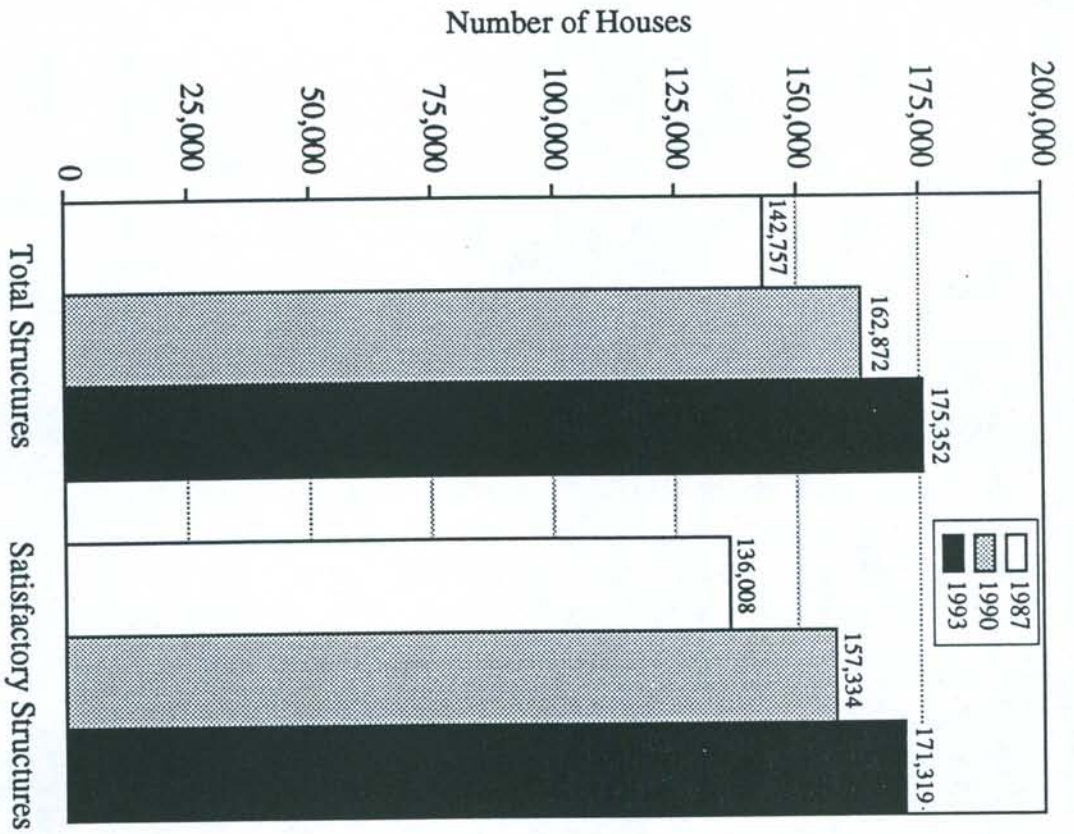


Figure 8. Combined Percentage of Deteriorated and Dilapidated Structures, 1987–1993

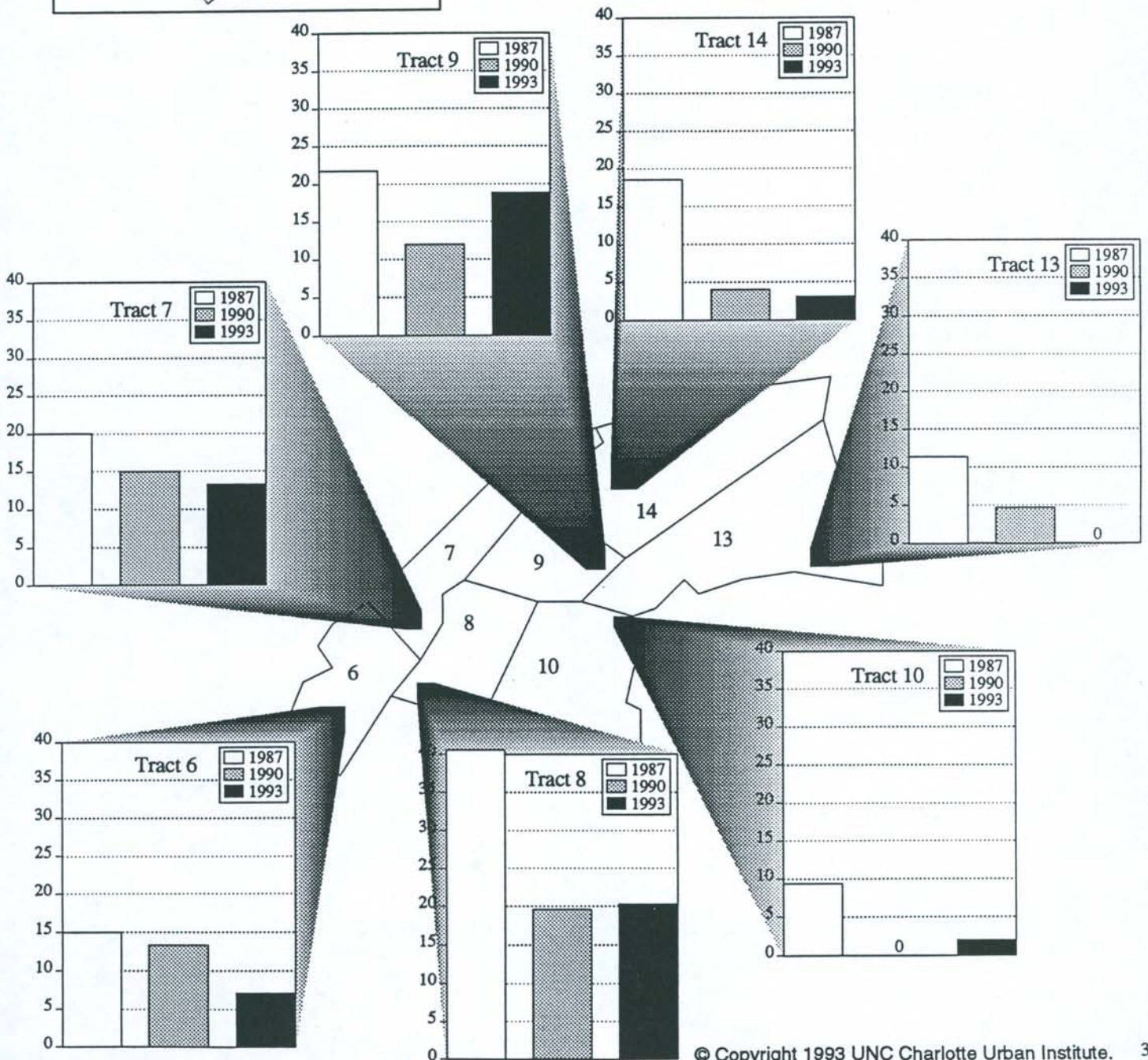
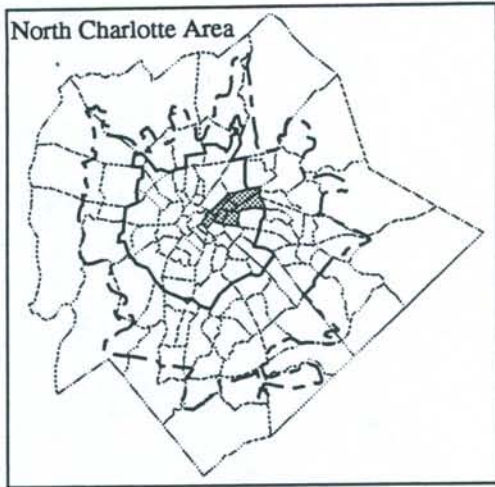


Figure 9. Combined Percentage of Deteriorated and Dilapidated Structures, 1987-1993

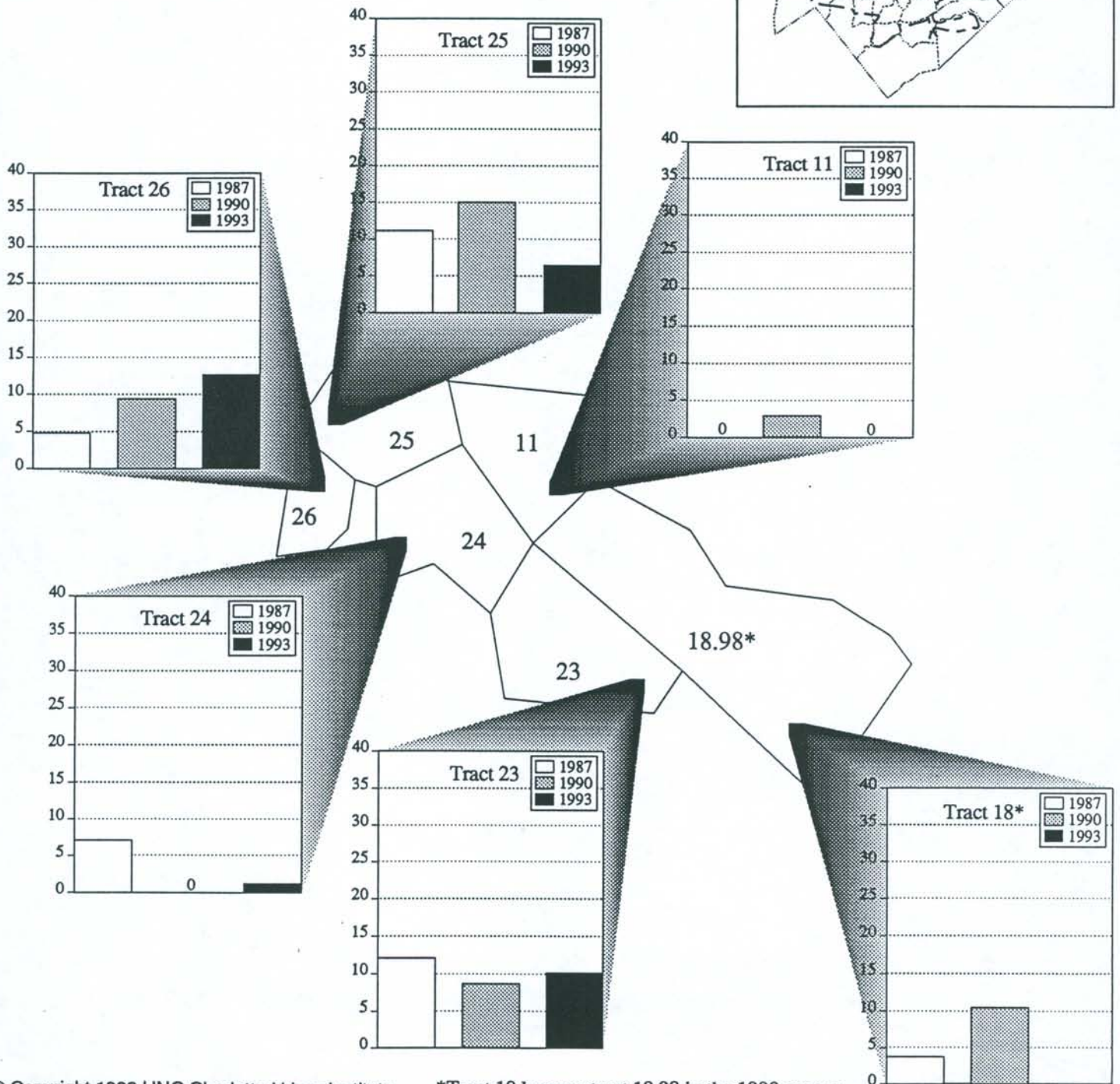
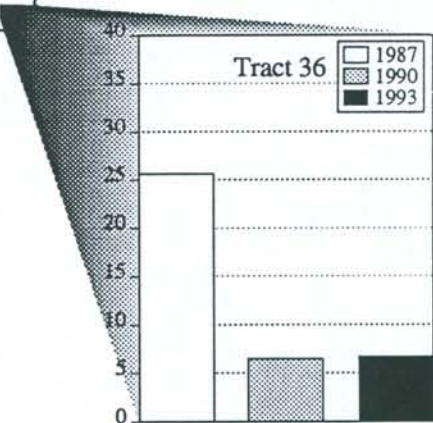
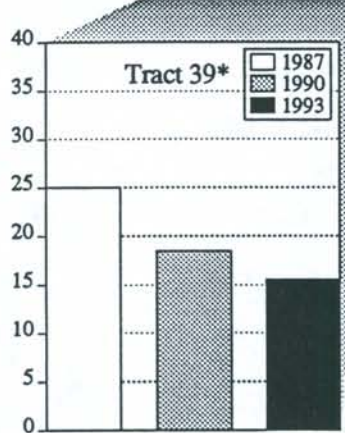
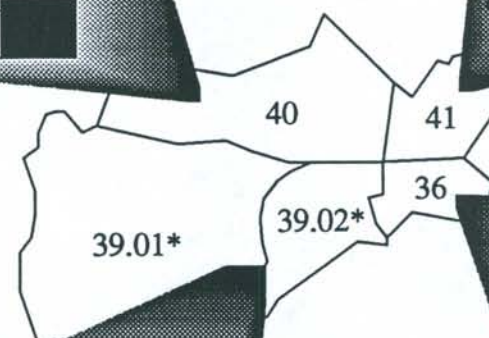
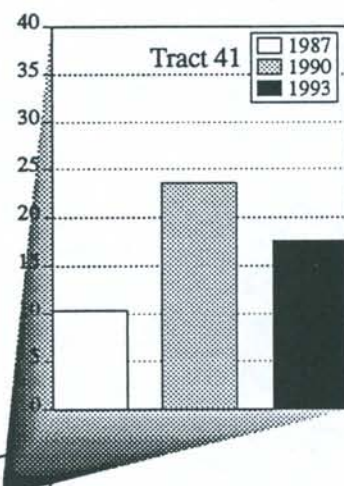
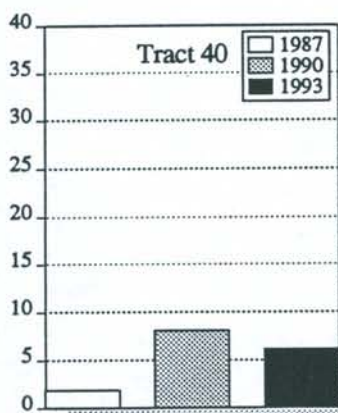
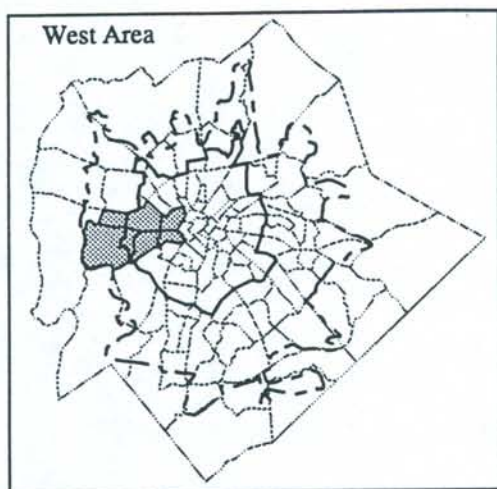


Figure 10. Combined Percentage of Deteriorated and Dilapidated Structures, 1987-1993



*Tract 39 became tracts 39.01 and 39.02 in the 1990 census

Figure 11. Combined Percentage of Deteriorated and Dilapidated Structures, 1987-1993

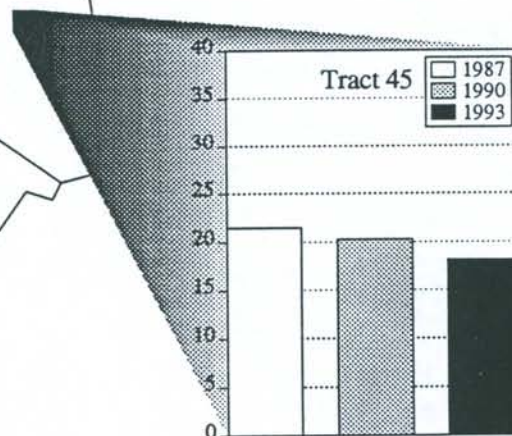
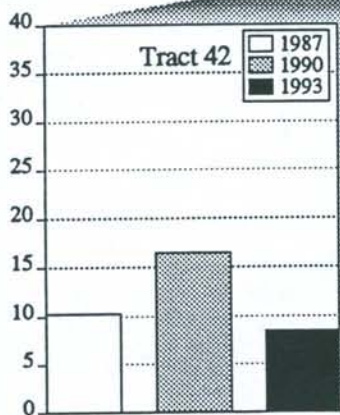
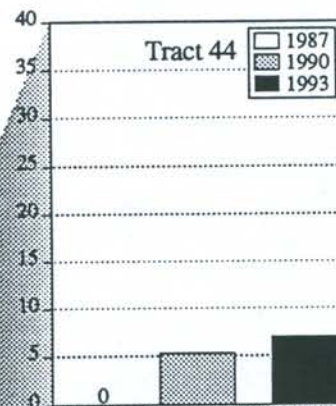
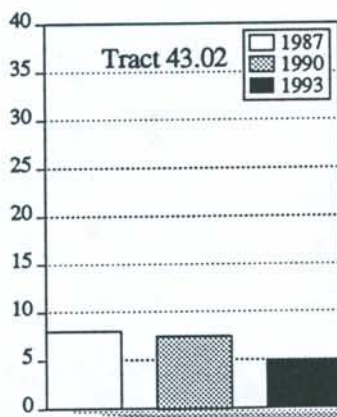
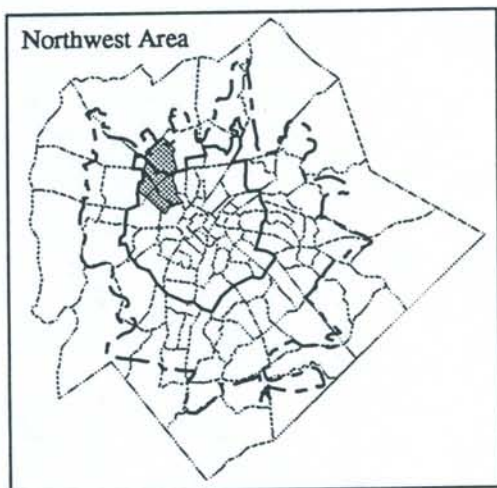


Figure 12. Combined Percentage of Deteriorated and Dilapidated Structures, 1987-1993

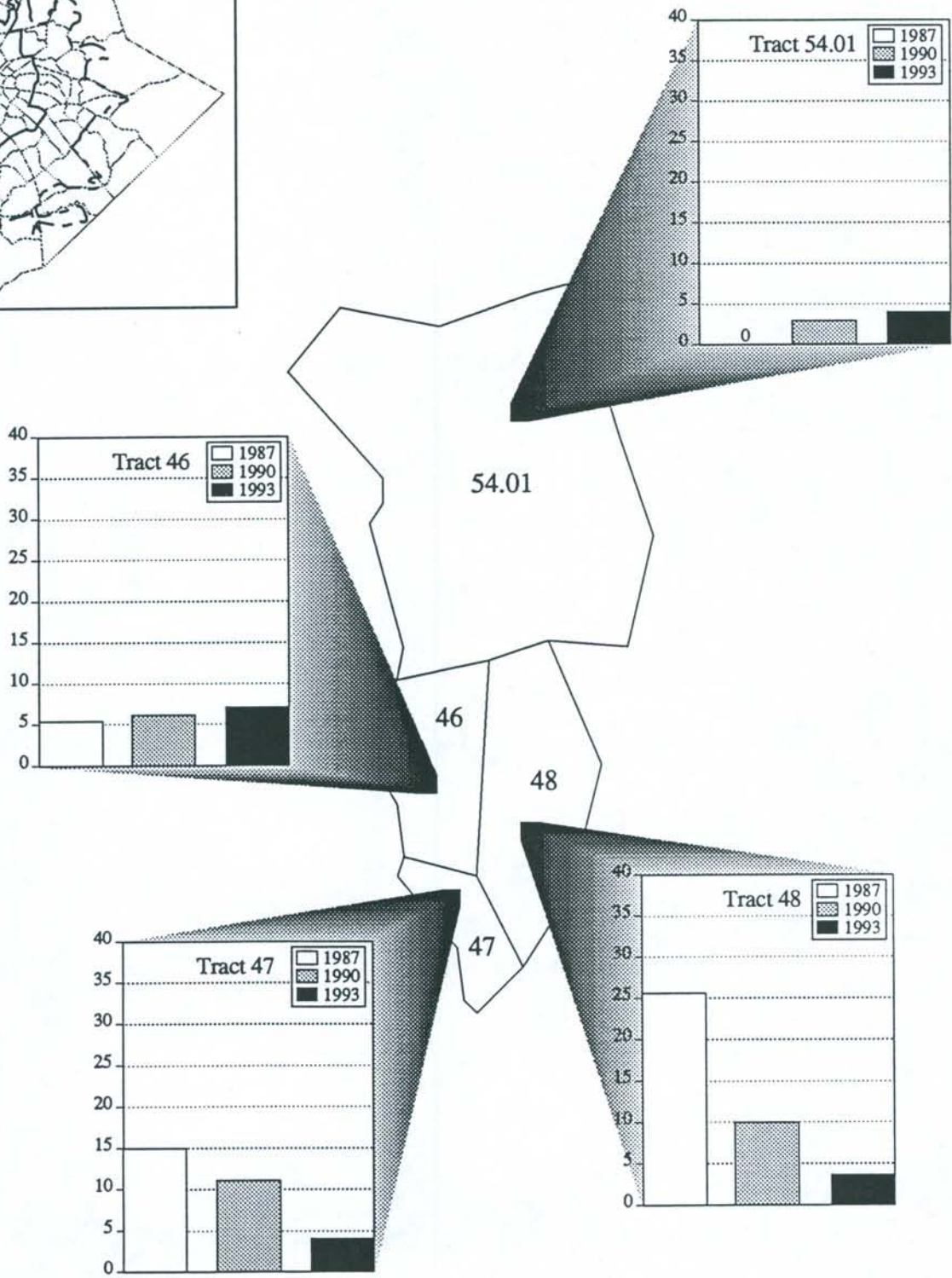
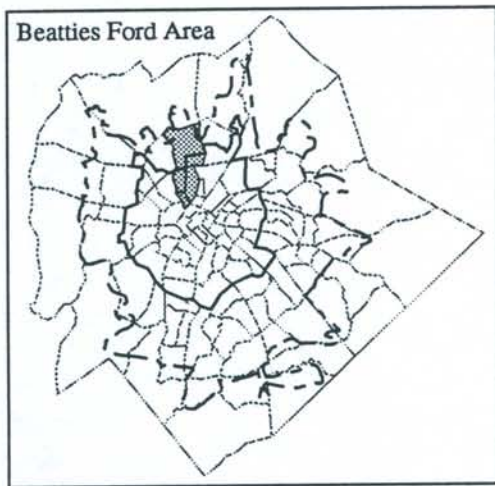


Figure 13. Combined Percentage of Deteriorated and Dilapidated Structures, 1987-1993

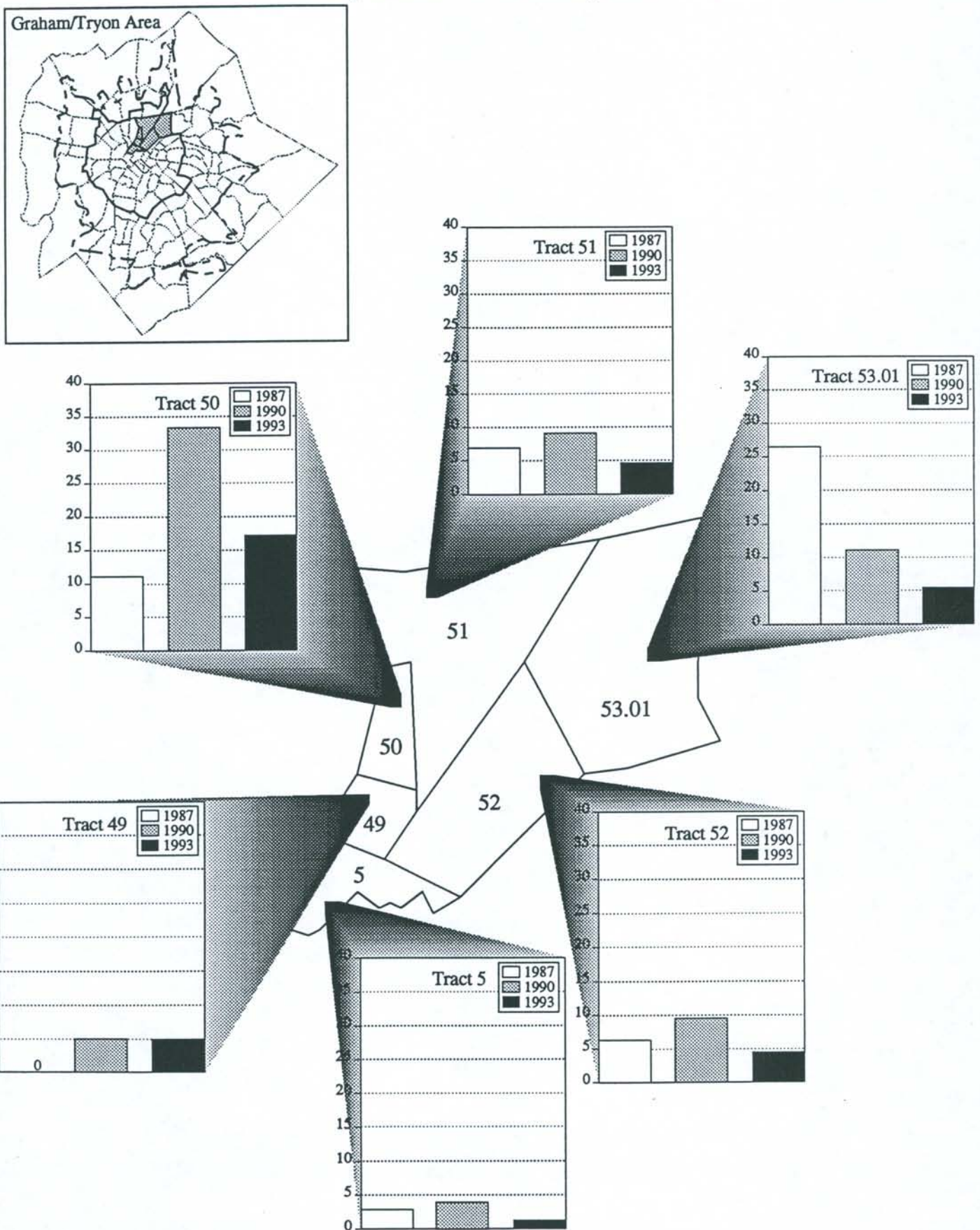
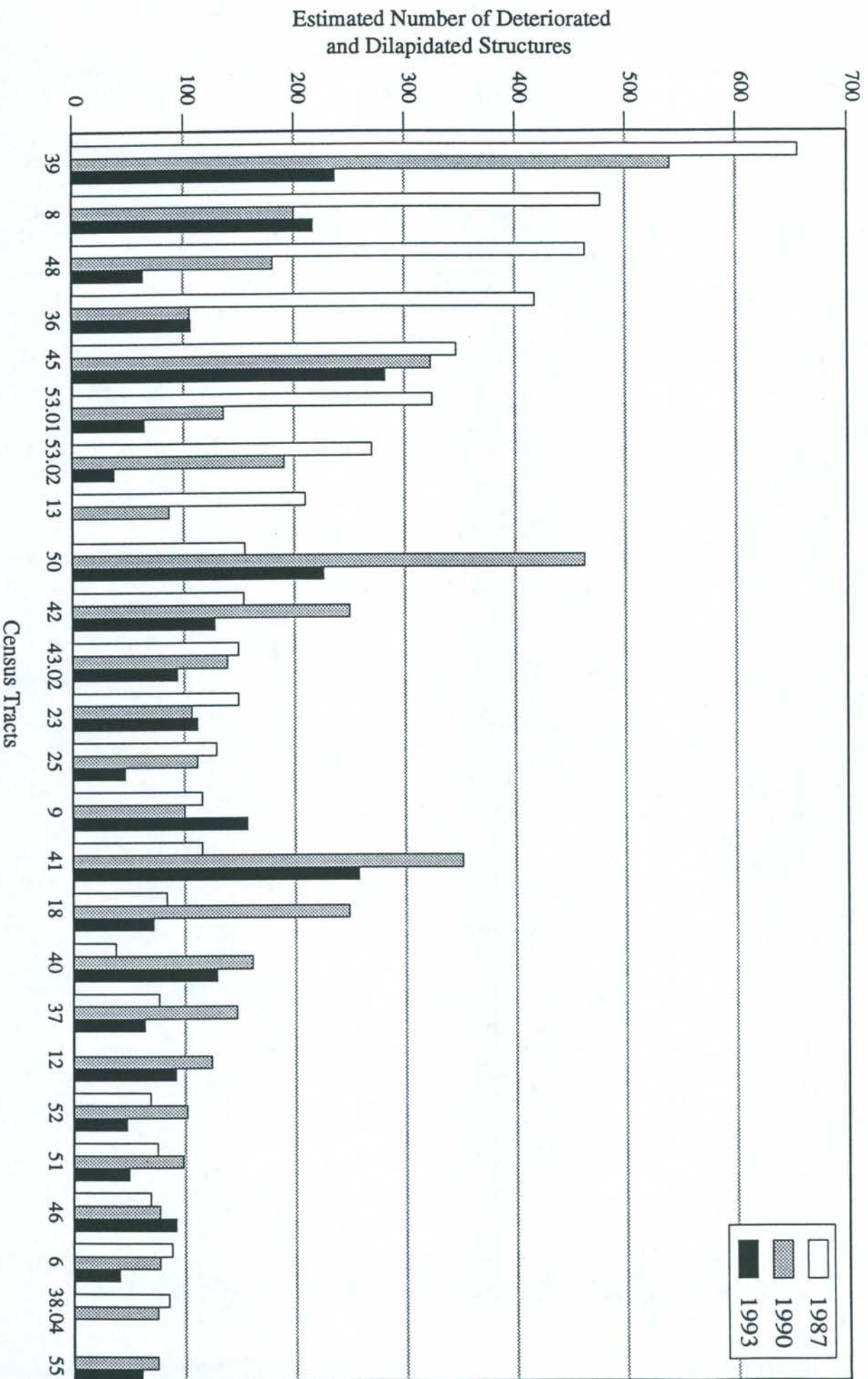


Figure 14. Housing Condition Change in 1990 Targeted Census Tracts



housing quality occurred through improvements to existing housing. The total number of residential structures in the targeted neighborhoods declined by 795 units.

CITY WITHIN A CITY

Introduction

In December 1990, the City Council designated a large area near the geographical center of Charlotte as the "City Within A City" (CWAC) (Figure 15). This area is home to 153,513 Charlotteans, nearly 39 percent of the total population, and contains 66,372 housing units. Statistically, it encompasses 54 census tracts and 172 block groups.

The CWAC delineates an area with a concentration of social, economic, and neighborhood problems. The continued deterioration in the quality of life in this urban core not only damages inner city neighborhoods but also creates larger scale problems affecting the entire city. The purpose of CWAC effort is to assess the nature of the problems facing Charlotte's inner city and to develop economic development strategies for long-term improvement and revitalization.

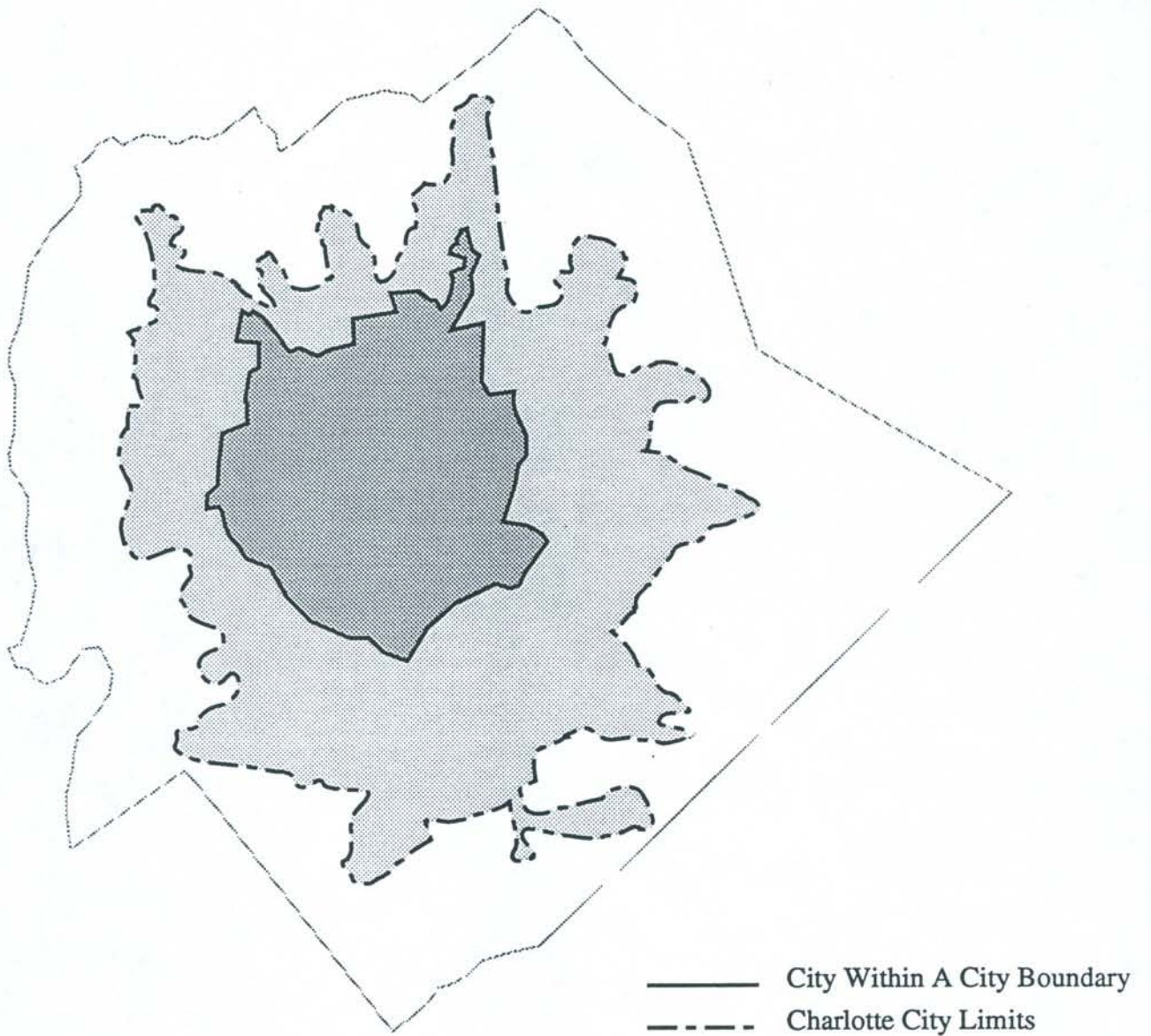
The Community Development Department is playing a leading role in the CWAC activities. The concentrations of large amounts of deteriorated and dilapidated housing and the lack of affordable low and moderate income housing in the CWAC are major concerns in the Department's work.

As a component of this study, housing quality data and related information was prepared for the CWAC and statistical analyses were carried out. These detailed analyses focused on examining the linkage between housing characteristics and a variety of social, economic, and physical conditions in surrounding neighborhoods. The results are presented in this section of the report.

Statistical Background

While the characterization of the "City Within A City" as a troubled, inner city environment provides a general overview of the district, more detailed information in key areas is necessary for greater insight and assessment of housing related issues. Data on

Figure 15. City Limits and “City Within A City” Boundaries



crime, education, income, tenure, housing values, and crowding provide a background for understanding the complexities of the CWAC. The demographic data was extracted from the 1990 Census data and the crime data was obtained from the Charlotte Police Department.

Crime

Although the risk of crime is an issue throughout the city, crime rates in the CWAC are far higher than in other parts of Charlotte. In 1990, the reported offenses per 100 residents were 38.5 in CWAC while it was 10.2 in other areas of the city. When major offenses are considered, the rates vary from 31.0 per 100 residents in the CWAC to 7.9 per 100 in the remaining portion of Charlotte.

Education

Neighborhoods in the CWAC exhibit a wide range of educational attainment. The southeast portion contains a small percentage of persons without a high school degree. However, most neighborhoods exhibit a high percentage of persons without a high school education. In approximately one quarter of the block groups, between 40 to 100 percent of the adult population (i.e., persons 25 years or older) have not received a high school degree. More specifically, in 13 percent of these block groups at least 55 percent of the population are without a high school degree. Compared to the city-wide average of 19 percent without a high school degree a significantly higher proportion of the population living within the "City Within A City" boundaries have lower levels of educational attainment.

Income

Income data can be presented in a variety of ways. One of the most common and useful measures is family income. Family income is defined as total income of family members 15 years of age or older. Out of the 172 block groups in the CWAC slightly more than one quarter (25.6 percent) had average family incomes less than 50 percent of the median family income for Charlotte (\$38,553). This means that over one quarter of the

neighborhoods in "City Within A City" have a median income of less than \$14,000. These low family income areas are interspersed throughout the CWAC. However, there is a strong concentration of low family income areas in the central portions of the area.

Overcrowding

Using the Census Bureau's standards for overcrowding (i.e., one person per room) no block groups within CWAC were found to have average conditions that exceeded the overcrowding measure. However, 23 block groups did have a population density figure ranging from .6 to .9 persons per room. This figure indicates that overcrowding could become an issue in the future.

Tenure

Tenure status is defined as residence in the same structure since 1985. Roughly 25 percent of CWAC neighborhoods exhibit rates of resident tenure that are below the citywide average (45.8 percent). These same areas have experienced a 58 to 99 percent turnover in residents since 1985. The smaller percentage of those qualifying for resident tenure status may contribute to the lack of sense of community in the affected neighborhoods.

Owner-Occupied Housing Values

For the city of Charlotte the median value of an owner-occupied housing unit is approximately \$81,000. In the CWAC, 26 percent of the block groups had owner-occupied housing units valued at less than half of the citywide median value (\$40,500). Of this group, 62 percent of these homes were located in a corridor running from central Charlotte to the northeast quadrant of the area.

Housing Survey Results and Discussion

Not unexpectedly, the "City Within A City" contained a relatively large number of blighted houses compared with other portions of Charlotte. The 54 census tracts included in the CWAC boundaries have an estimated 2,554 deteriorated and 664 dilapidated

residential structures. This constitutes almost 77 percent of the estimated deteriorated housing stock in the city and nearly 92 percent of the dilapidated residential units in the City of Charlotte.

The housing survey findings provide additional evidence and support of the published statistical data presented in the previous section. While some parts of the CWAC have no serious housing problems, large areas have significant problems. Portions of the "City Within A City" are included in the Community Development Department's housing improvement target area. During the past six years substantial improvement in housing conditions has taken place in these neighborhoods.

Statistical Analysis

Background

The previous discussion focused on the aggregate quantities of deteriorated and dilapidated housing in the CWAC area. While the geography of housing problems is clear, what is missing are the linkages between housing conditions and the surrounding community. Obviously, blighted housing does not occur in a vacuous setting. Social, economic, institutional and other environmental forces work to shape the character and form that housing takes in a given place. Nonetheless, it is often difficult to see the connection between housing condition and extended forces because of the complexity of the human environment. Effects can be interrelated, or masked by other factors. What might seem to be an important factor impacting housing quality may be a result of other conditions unrelated to housing.

The tools of statistical analysis are a valuable aid for highlighting the uncertain linkages surrounding housing condition. Statistical analysis permits a scientific examination of the connection between housing quality and external factors. In this instance, it is used to assess the external factors associated with housing quality in one part of Charlotte, the

"City Within A City." SYSTAT, a statistical package for use in the social sciences, was used to facilitate this analysis.

Two statistical techniques were chosen for use, a simple correlation analysis and a stepwise multiple regression model. The simple correlation analysis provides a quantitative measure of association describing the relationship between two factors, called variables. The measure of association, called the correlation coefficient, indicates the degree to which change in one variable is related to change in the other. The higher the coefficient the stronger the relationship. A correlative coefficient of 1.0, for example, would indicate a 100 percent linkage between variables, while a 0 coefficient would show a complete lack of association. The sign of the coefficient (+ or -) indicates the direction of the variation.

In this research, the simple correlation analysis was utilized to identify variables which were significantly linked to housing conditions. It was also used to identify the variables that should be included in the more complex stepwise multiple regression analysis.

Multiple regression analysis is a tool that utilizes the relationships between two or more quantitative variables in order to predict the operation of a dependent variable based upon the operation of a number of independent variables. The independent variables are combined and operate together to explain the largest amount of variation in the dependent variable. In the stepwise version, the model adds and removes independent variables to the formula in order to develop the greatest precision.

There are several important results that may be used to determine the accuracy and strength of the regression model as well as the importance of the individual variables. The two most important are the coefficient of determination, also called R^2 , and the F-test of statistical significance. The R^2 indicates the proportion of the variation in the dependent variable that can be explained by the independent variables used. The higher the R^2 , the more effective the model. Finally, the F-test of significance was used to determine whether or not individual variables are statistically significant.

Variables

The dependent variable in both analyses was housing quality. Two housing variables were constructed. The first variable measured the magnitude of problem housing in each census tract. It was created by adding the percentage of deteriorated and dilapidated housing for each census tract in the "City Within A City" area. The variable is called BLIGHT. The second variable is the mean housing score for each census tract. It is the average housing quality score for all residential structures surveyed in a tract. This variable is called MEAN.

The external factors examined were selected based upon their potential effect on neighborhood housing conditions. They were developed from a variety of information sources, including tax files, census reports, and police records. Thirty-one independent variables were included in the preliminary statistical analysis (Table 8). These are broadly organized into six categories reflecting the types of factors that impact housing form and character. The categories are demographic, housing form, economy, education, population change, and crime.

Simple Correlation Analysis

A reduced form of the simple correlation analysis is presented in a matrix on Table 9. A complete simple correlation data matrix is provided in Appendix D (Correlation Data Matrix). A review of the data shows that the distribution of housing quality, as measured by both the variables BLIGHT and MEAN, is strongly related to many of the independent external variables. In the case of MEAN, the strongest variables are % No Dip (.73), MedHHInc (-.68), % < Poverty (.68), and % WCollar (-.67). A correlation coefficient value of .73 indicates that 73 percent of the variation in housing quality scores is associated with the proportion of adults without high school degrees in a neighborhood (i.e., census tract). In other words, as the percentage of adults without high school diplomas increases, there is a concordant increase in blighted housing. The same interpretation is applied to the other large correlation coefficients. Fifteen of the external variables had correlation

Table 8

Regression Model Variable List

Variable Label	Variable Definition*
Dependent	
BLIGHT	Combined proportions of deteriorated and dilapidated structures in each census tract
MEAN	Average score for all housing surveys completed in each census tract
Independent	
% 0-15	Percent of total population aged 15 and under
% > 64	Percent of total population over age 64
% White	Percent of total population classified as white
% Black	Percent of total population classified as black
Per/HH	Average number of persons per household
Med Rnt	Median contract rent
Med Value	Median housing value
% OwnOc	Percent of owner-occupied housing units
% RntOc	Percent of renter-occupied housing units
% MF	Percent of multi-family housing units
% Occ	Percent of occupied housing units
% 85-92	Percent of housing units built between 1985 and 1992
% 70-84	Percent of housing units built between 1970 and 1984
% 50-69	Percent of housing units built between 1950 and 1969
% Bef 50	Percent of housing units built before 1950
% Unemp	Percent of unemployed workers over 16
% B Collar	Percent of blue collar workers over 16
% W Collar	Percent of white collar workers over 16
Med HH Inc	Median household income
# < Poverty	Number of persons below poverty
% < Poverty	Percent of persons below poverty
% 25+ No Dip	Percent of persons 25 and over with no high school diploma
% 25+ W/Dip	Percent of persons 25 and over with a high school diploma
% W/Col	Percent of persons with some college
% W/Deg	Percent of persons with a four year college degree
% Pop Δ	Percent population change from 1980-1990
% Wh Δ	Percent of white population change from 1980-1990
% Bl Δ	Percent of black population change from 1980-1990
Off/1000	Criminal offenses per 1,000 people
NV/1000	Nonviolent criminal offenses per 1,000 people
VInt/1000	Violent criminal offenses per 1,000 people

*All variables calculated per census tract.

Table 9

Partial Simple Correlation Coefficient Matrix

Independent variables*	MEAN	BLIGHT
V1 % Persons ages 0-15	.41	.48
V2 % Persons over 64	-.16	-.36
V3 % White	-.65	-.53
V4 % Black	.62	.53
V5 Persons per household	.30	.39
V6 Median contract rent	-.63	-.31
V7 Median housing value	-.57	-.43
V8 % Owner-occupied housing units	-.61	-.35
V9 % Renter-occupied housing units	.61	.35
V10 % Multi-family housing units	.26	.09
V11 % Occupied housing units	-.17	-.07
V12 % Housing units built 85-92	-.25	-.21
V13 % Housing units built 70-84	-.30	-.25
V14 % Housing units built 50-69	.04	.18
V15 % Housing units built before 50	.29	.13
V16 % Unemployed persons	.58	.54
V17 % Blue collar workers	.63	.50
V18 % White collar workers	-.67	-.55
V19 Median household income	-.68	-.40
V20 No. persons below poverty	.52	.67
V21 % Persons below poverty	.68	.46
V22 % Persons 25 and over with no diploma	.73	.45
V23 % Persons 25 and over with a diploma	.15	.36
V24 % With some college	-.54	-.32
V25 % With a college degree	-.56	-.50
V26 % Population Δ, 1980-90	-.35	-.21
V27 % White Δ, 1980-90	-.02	-.04
V28 % Black Δ, 1980-90	-.36	-.22
V29 Criminal offenses/1,000 people	.04	-.07
V30 Nonviolent offenses/1,000 people	-.03	-.13
V31 Violent offenses/1,000 people	.36	.26

*All variables calculated per 1990 census tract.

coefficients above .50. These variables were able to account for more than 50 percent of the variation in mean housing scores.

The correlation findings for BLIGHT were quite similar, but slightly weaker. Eight independent variables had correlation coefficients exceeding .50. The strongest association with the distribution of deteriorated and dilapidated housing was with # < Poverty (.67), % WCollar (-.55), % Unemp (.54), % Black (.53) and % White (-.53).

Obviously, many of these independent external variables are interrelated. Accordingly, the most strongly interrelated variables were deleted from the analysis before the multiple regression analysis were carried out.

Taken together, the simple correlation findings show that the pattern of housing quality in the "City Within A City" is related to selected neighborhood characteristics. Communities with the largest number of poor and unemployed households, those with low educational attainment, and those with the largest proportion of blue collar households have the greatest housing problems. Similarly, neighborhoods with lower percentages of home ownership, lower rents, and lower home values have more housing blight. Finally, communities with large African American populations also have higher proportions of housing problems.

These findings should not be interpreted as indicating that housing problems are created by these attributes. Rather, statistical tools such as correlation show association or linkage, not a cause and effect relationship. What these findings demonstrate is that housing blight is linked to urban poor and near poor populations. Accordingly, multi-faceted programs that integrate housing, economic development, and community building are more effective and productive.

Stepwise Multiple Regression Results

The multiple regression analysis was divided into two components. In the first part, 26 independent variables were grouped into six categories. From these groupings, six submodels were developed for the two housing variables, BLIGHT and MEAN. The use

of the submodels was made in order to assess the separate affects that each broad category of independent variables had on housing quality. When the independent variables are combined in the larger stepwise regression model, these differences would be masked or obscured by the operation of the other variables.

In the second part of the analysis, the larger stepwise multiple regression models were developed using all 26 independent variables. Two regression models were calculated, one for each housing variable.

The results of the two submodeling efforts are shown on Tables 10 and 11. A review of the information on these tables shows that regression analysis for MEAN had far more explanatory power than the analysis of BLIGHT. With one exception, the adjusted R^2 values for MEAN range from .700 to .320. This indicates that the submodels were able to account for 70 to 32 percent of the variation in housing quality scores. Among the individual submodels, the housing model is the strongest predictor of housing quality. Only the population submodel was a weak tool ($R^2 = .156$) for explaining the distribution of housing quality.

All of the submodels for BLIGHT were statistically valid predictors of the distribution of deteriorated and dilapidated housing but were far less powerful in their accuracy. The strongest model, the economic submodel, was only able to explain approximately 44 percent ($R^2 = .436$) of the variation in problem housing. The remaining models, excepting population, accounted for 35 to 22 percent of the distribution.

As expected not all of the independent variables were effective predictors of housing quality. Only the variables shown on Tables 10 and 11 were included in their respective models. Each of these factors was statistically significant. A comparison of both sets of submodels reveals a strong commonality among the independent variables. In most cases, the factors that were valuable predictors for explaining housing quality scores played a parallel role for predicting blighted housing. Specifically, racial composition, multi-family housing characteristics, unemployment, collegiate education, population change, and non-

Table 10

Multiple Regression Submodel Results for MEAN

Submodel	Step(s)	Variable(s)	Adjusted R ²	F Value
DEMOGRAPHIC	1	% Black	.378	32.6
HOUSING	3	% Owner Oc % MF % Bef 1950	.700	41.5
ECONOMIC	2	Med HH Inc % Unemp	.532	30.5
EDUCATION	2	% W/Deg % W/Dip	.447	22.1
POPULATION	2	% Pop & % Bl &	.156	5.6
CRIME	2	Vlnt/1000 NV/1000	.320	13.2

Table 11

Multiple Regression Submodel Results for BLIGHT

Submodel	Step(s)	Variable(s)	Adjusted R ²	F Value
DEMOGRAPHIC	1	% Black	.312	23.1
HOUSING	3	% RntOc % MF % 85-92	.348	10.2
ECONOMIC	2	# < Poverty % Unempl	.436	17.2
EDUCATION	1	% W/Deg	.225	16.1
POPULATION	1	% Population Δ	.027	2.4
CRIME	2	Vlnt/1000 NV/1000	.315	13.0

violent and violent crime rates are significant predictor variables in both submodels. Additionally, these findings tended to corroborate the results and conclusions of the earlier simple correlation analysis.

In the final statistical analysis, stepwise multiple regression models were developed using all of the independent variables. The results of these regression models are presented on Tables 12 and 13. Only those variables that were statistically significant were included in the final models. Neither model contained a large number of independent variables. The factors that were not included were not statistically significant.

The results of this analysis mirrored earlier findings in several ways. First, the stepwise regression analysis for MEAN accounted for more variability than the analysis for BLIGHT. With seven variables the R^2 for MEAN was .734. This model was able to explain slightly more than 73 percent of the variation in housing quality. In contrast, the BLIGHT model, with two variables, accounted for 46 percent of the distribution in deteriorated and dilapidated housing.

Additionally, both models contained a number of independent variables that had been significant predictors in the earlier analyses. Of the nine variables in the models, eight were statistically valid in the previous analysis. The reliance on common variables was not unexpected. These particular factors proved to be the strongest and most consistent predictors of housing characteristics in all of the statistical analysis. Their success in explaining housing quality distributions makes them valuable tools for helping identify the external forces that are linked to neighborhood housing conditions.

Discussion

When all of the statistical analyses are considered together, clearly the original presumption, that housing characteristics in the "City Within A City" are related to external neighborhood attributes, has been validated. The linkage between poverty, economic disadvantage, crime and blighted housing conditions was statistically confirmed.

Table 12

Stepwise Multiple Regression Results for MEAN

Step	Variable	R ²	F Value
1	MedHHInc	.461	41.9
2	Per/HH	.557	10.4
3	NV/1000	.660	14.3
4	% Black	.708	7.5
5	% W/Dip	.726	3.1
6	% W/Deg	.753	4.7
7	% POP Δ	.771	3.5

Adjusted R² = .734
Standard Error = .4

Table 13

Stepwise Multiple Regression Results for BLIGHT

Step	Variable	R ²	F Value
1	# < Poverty	.437	31.0
2	% Unemp	.488	3.9

Adjusted R² = .463

Standard Error = .0

The implications for CWAC planners and policy-makers are straightforward. Housing improvements and economic improvements occur in tandem. Increasing the economic opportunities in inner city neighborhoods and reducing the risk and threat of crime will lead to improvements in housing quality. Failure to consider the full range of social and economic issues in a community cripples housing improvement efforts.

TARGETING RECOMMENDATIONS

The 1993 Charlotte housing survey data and analyses show continuing progress toward achievement of the goals of removing blighted housing and improving the community's housing stock. Problem areas remain, but significant accomplishment has been made toward improving housing conditions in Charlotte's worst-housed neighborhoods.

While it would be overly generous to credit all of the housing quality improvements during the past six years to the Community Development Department's targeted enforcement program, there is no doubt that this effort has made a substantial contribution toward meeting housing goals. The 1990 housing quality survey recommended targeting the 21 census tracts with the greatest concentration of blighted housing for increased code enforcement and housing improvement assistance. Over 85 percent of these tracts recorded a decline in deteriorated and dilapidated housing. The number of deteriorated and dilapidated homes is estimated to have been reduced by 36 percent, a drop of 1,231 residential units. More critically, the level of improvement was most notable in the census tracts that were ranked as having the most serious housing problems by the earlier study.

Very little of this decrease is attributable to a shrinkage in housing stock. The total number of residences in the targeted tracts dropped by 329 between 1990 and 1993.

These positive data reflect well on the targeting strategy. This approach has resulted in a clear-cut improvement in housing conditions in those areas of greatest need in a relatively short period of time. Accordingly, it is recommended that the targeting strategy continue, with only a slight shift in geographical emphasis.

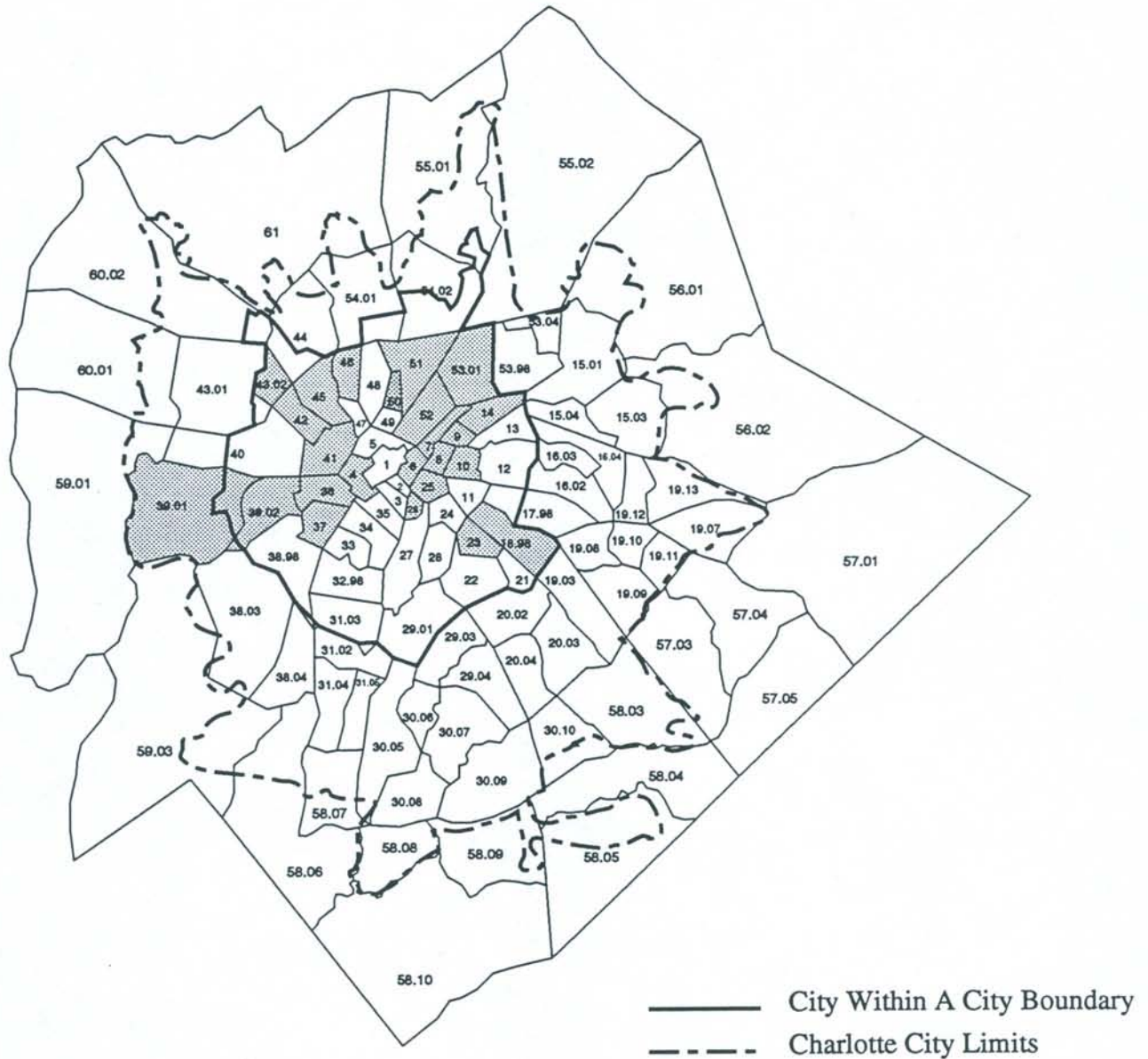
Using the overall quality of housing in a census tract, i.e., the mean score of all surveyed residential structures, as an assessment criterion, the targeted tracts as listed in rank-order on Table 14. There are 24 census tracts identified for targeting. Figure 16 maps the location of these tracts.

Table 14

1993 Targeted Census Tracts with Housing Quality Problems

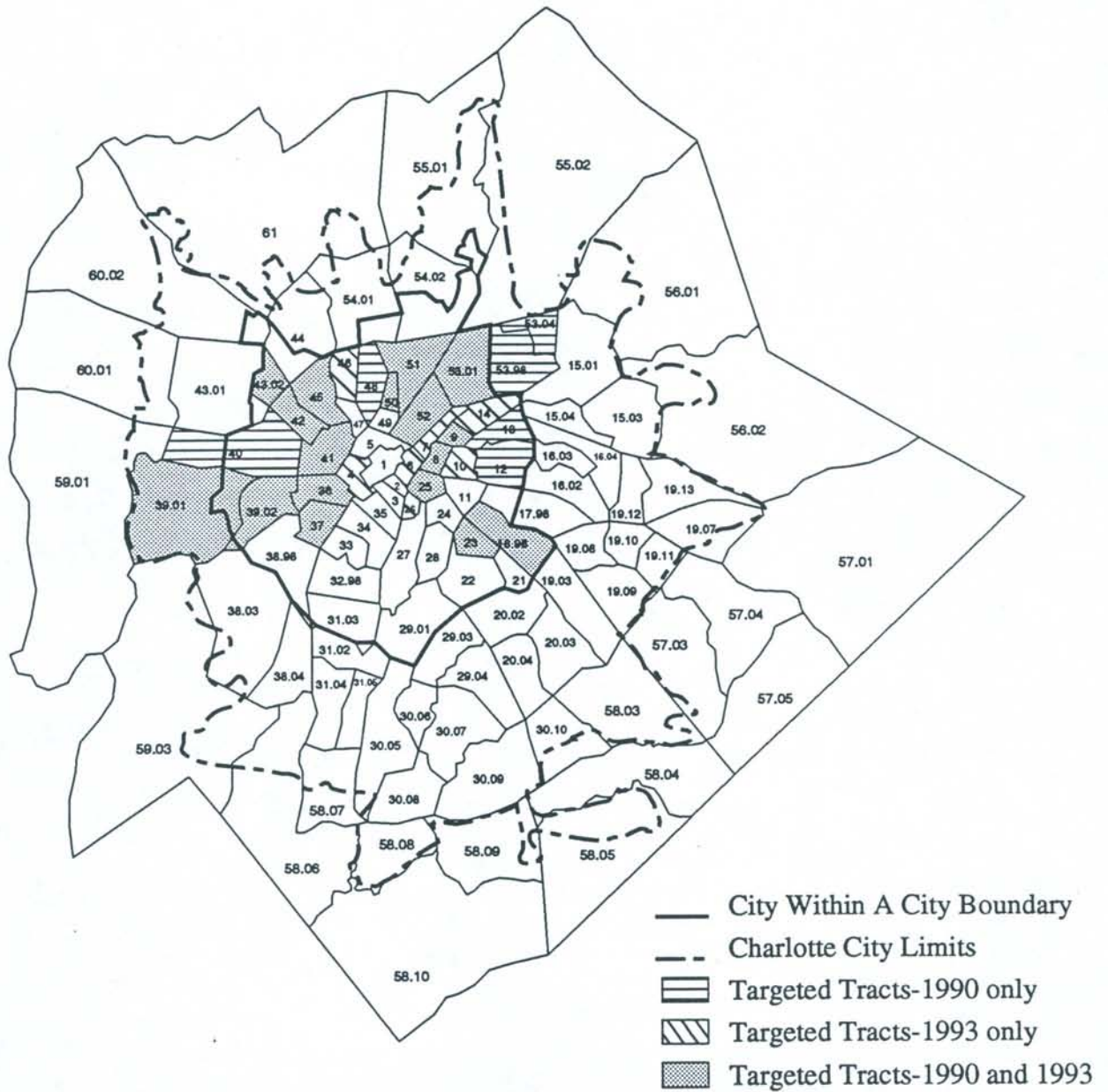
1990 Census Tract Number	Estimates of Deteriorated and Dilapidated Structures	Estimated Number of Deteriorated and Dilapidated Structures	Estimated Percent of Citywide Deteriorated and Dilapidated Structures	Cumulative Percentage of Deteriorated Structures
45	18.18%	283	7.00%	7.00%
41	17.58%	258	6.37%	13.37%
50	17.17%	227	5.61%	18.97%
8	20.27%	218	5.38%	24.36%
39.02	8.33%	159	3.93%	28.28%
9	18.87%	157	3.89%	32.17%
42	8.51%	128	3.17%	35.34%
23	10.14%	112	2.76%	38.11%
36	6.67%	107	2.65%	40.76%
43.02	5.00%	94	2.32%	43.08%
46	7.14%	92	2.26%	45.35%
39.01	7.25%	79	1.96%	47.31%
26	12.73%	76	1.89%	49.20%
18.98	3.00%	72	1.79%	50.99%
53.01	5.48%	65	1.60%	52.59%
37	6.67%	64	1.58%	54.17%
51	4.62%	50	1.23%	55.40%
52	4.48%	48	1.19%	56.59%
25	6.45%	47	1.17%	57.76%
6	7.14%	41	1.02%	58.78%
7	13.33%	39	0.96%	59.73%
4	8.89%	36	0.90%	60.63%
14	3.08%	32	0.80%	61.43%
10	2.00%	24	0.60%	62.03%

Figure 16. Targeted Census Tracts in 1993



Many of the census tracts included in the target area are the same neighborhoods identified in 1990 and/or 1987 (Figure 17). The continued inclusion of these carry-over census tracts should not be interpreted to mean that housing conditions have worsened or remained static, rather it simply reflects the pervasive nature of housing problems in these tracts. Using the survey data, we estimate that these 24 census tracts contain 62.03 percent of the problem residential structures in the city. We recommend that the Community Development staff use the listing to help fine tune the existing targeting strategy.

Figure 17. Targeted Census Tracts in 1990 and 1993



APPENDIX A
SAMPLE DESIGN

RANDOM SAMPLE FOR CITY OF CHARLOTTE 1993 HOUSING STUDY

The procedure for selecting and allocating the sample to estimate the number of substandard housing units in Charlotte is described in the following text. Sampling for two different but connected estimates involved: (1) all housing units in the city and (2) the units in the "City Within A City." A stratified random sampling design was used where census tracts are the strata.

For each of the samples, the factors considered in allocating the sample were:

- (1) an estimate of the proportion of substandard housing in any given tract,
- (2) the proportion of units in the city that are located in that tract, and
- (3) the margin of error allowable.

For determining the estimated proportion to include in the formula and choosing a sample size, the knowledge and experience of the Urban Institute researchers were used. Additionally, a procedure which used previous survey results was employed. The estimated proportions were: 0.5, 0.3, or 0.1. If the previous housing quality surveys showed that the percentage of substandard housing had been over 0.05 or there was little reason to suspect that the proportion of substandard units would not be very high or very low, then 0.5 was the estimated proportion. If the previous studies had estimated the amount of blighted housing was lower than 0.05, then the estimated proportion was set at 0.1. If none of the above conditions occurred, then the estimated proportion was set at 0.3. The number of housing units in each tract was obtained from city tax records.

The following formula gives the total number of observations that would be needed to construct a confidence interval for the proportion of substandard housing units:

$$n = \sum \frac{N_i p_i q_i}{w_i} \frac{1}{N^2 D + \sum N_i p_i q_i}$$

where N_i = number of units in tract i ,

p_i = the proportion of substandard units estimated to be in that tract

$$q_i = 1 - p_i$$

$$w_i = N_i / N$$

N = total number of units (in the city or "City Within A City")

$$D = B^2 / 4 \quad \text{where } B = \text{Bound on Error}$$

The above formula gives the total number of observations needed to estimate the proportion of substandard housing in the city with 95% confidence.

The number of units to be selected randomly from each census tract would then be calculated as follows:

$$n_i = n \left(\frac{N_i \sqrt{p_i q_i}}{\sum N_i \sqrt{p_i q_i}} \right)$$

The selection of the number of units was made using a bound on error of 0.015. This bound on error would then be no more than 2,427 units for the whole city and no more than 974 for the CWAC.

The attached table contains a listing of the census tracts, the number of residential units in that tract, and the number of units that were sampled in each tract. The census tracts in the boundaries of the CWAC are also identified.

The estimation of sample size was first done for the CWAC area and then for the whole city. In both cases the estimation was for a 95% confidence level. The final sample size was then determined by taking the sample size estimated for all of the Charlotte census tracts and adding to it the CWAC estimates. By using this process the "City Within A City" is more heavily sampled. However, the estimates for the whole community and the CWAC are then estimates with a bound on error of 0.015 and at least 95% confidence. In cases where the sample size estimated for a census tract was smaller than 10, at least 10 units were sampled.

Once the sample was selected and the sampling completed, the proportion of substandard housing units in the entire community and the CWAC were calculated using the following formula:

$$p_i = \frac{1}{N} [N_1 \hat{p}_1 + N_2 \hat{p}_2 + \dots + N_L \hat{p}_L]$$

The bound on the error of estimation is:

$$2 \sqrt{\frac{1}{N^2} \sum N_i \left(\frac{N_i - n_i}{N_i} \right) \left(\frac{\hat{p}_i \hat{q}_i}{n_i - 1} \right)}$$

where all symbols are the same as above except for p_i , which is now the actual sample proportion of substandard units in a census tract.

This formula was used first for the CWAC and then for the entire community. For Charlotte the total number of units in the 102 census tracts, N , was 175,352. For the "City Within A City" the total number of units in the 54 census tracts was 66,372.

APPENDIX B
HOUSING SURVEY METHODS

HOUSING SURVEY METHODS

The Charlotte Housing Survey was carried out using a stratified sample selected of 5,020 residences in the 102 census tracts within the city boundaries. The sample was slightly more than 2.8 percent of the total number of housing units i.e., single family houses, duplexes, apartments and condominiums, and mobile homes.

Information was collected by a team of surveyors using the windshield survey method. The windshield approach involves a visual assessment of housing conditions made from a vehicle parked in front of a structure or in some cases made by a surveyor standing in front of a structure. Using a standard survey form and evaluation protocol, the surveyor evaluated each building based upon previously established criteria. Windshield surveys are widely used in community development and planning research to gather land use and housing information which cannot be collected using standard published data sources.

The two surveyors who worked on the project were graduate students from the Department of Geography and Earth Sciences at the University of North Carolina at Charlotte. They completed an extensive oral and visual training session conducted by the staff of the Urban Institute prior to starting their work. Additionally, surveyors were given a pretest of structures to evaluate in order to determine their survey proficiency before participating. These actions permitted the consultants to ensure a strong measure of consistency and reliability from the beginning of the survey.

The housing quality information was collected by means of a standardized survey questionnaire or instrument. In order that the results of the survey might be compared with the previous housing quality survey, the 1993 survey used the same instrument employed in the 1990 and 1987 housing surveys. This survey was developed in conjunction with staff from the Community Development Department. It was designed to measure the structural soundness of individual housing units through an evaluation of eight structural attributes.

These variables included peripheral housing elements, such as chimneys and gutters, as well as basic dwelling elements including roofs, siding, and foundations.

At each residence in the survey, the eight attributes were evaluated and the surveyor classified each as either "satisfactory," "needs minor repairs," "needs major repairs," or "not present." The classification of an attribute was based upon a visual inspection of the dwelling. Surveyors used an evaluation manual, listing criteria and guidelines for assessing the condition of each attribute. This protocol procedure was used to ensure uniformity in the evaluation of housing quality.

As the surveys were completed and returned, Quality Control personnel, composed of Urban Institute staff members, sorted the surveys for completion and comments. As the field work progressed, 20 percent of the surveys were chosen for resurvey by the Quality Control staff. Following the completion of the quality control activities, the surveys were counted and submitted to data entry.

APPENDIX C
CENSUS TRACT AND NEIGHBORHOOD BOUNDARIES

CENSUS TRACT AND NEIGHBORHOOD BOUNDARIES

Census Tract boundaries and neighborhood boundaries are not conterminous. Rarely do the boundaries drawn by statisticians match exactly to community oriented neighborhood limits. The following neighborhood boundaries were derived from the Charlotte-Mecklenburg Neighborhoods Map prepared by the Charlotte-Mecklenburg Planning Commission October 1983, with modifications by the Charlotte Community Development Department.

- | | | | |
|-------|--|-------|--|
| 1 | Downtown
4th Ward | 16.03 | Robinhood Woods
Windsor Park |
| 2 | Downtown | 16.04 | Oak Forest
Shannon Park |
| 3 | Dilworth | 17.98 | Eastway
Sheffield Park
Kilbourne
Chantilly |
| 4 | Downtown
Third Ward | 18.98 | Oakhurst
Amity Gardens |
| 5 | Third Ward
Fourth Ward | 19.03 | Amity Gardens
McClintock Woods
East Mecklenburg
Parkview East
Village Lake |
| 6 | First Ward | 19.07 | Albemarle Road |
| 7 | Optimist Park | 19.08 | Coventry Woods |
| 8 | Belmont | 19.09 | Cedars East
Sharon Forest |
| 9 | Plaza Hills
Villa Heights | 19.10 | Idlewild Farms |
| 10 | Plaza Midwood | 19.11 | Easthaven
Fairfield
Chestnut Lake |
| 11 | Chantilly | 19.12 | Four Seasons |
| 12 | Plaza Midwood
Country Club
Shamrock Gardens | 19.13 | Albemarle Road |
| 13 | Plaza Hills
Shamrock Gardens | 20.02 | Randolph Sardis
Providence Park
Randolph Park
Sherwood Forest |
| 14 | North Charlotte | 20.03 | Stonehaven |
| 15.01 | Northeast Community
Newell
East Brook
Hampshire Hills | 20.04 | Providence Square
Landsdowne
Randolph Sardis |
| 15.03 | Hope Park
Hickory Grove
Grove Park | 21 | Cotswold |
| 15.04 | Oak Forest
Shannon Park
Lake Plaza | 22 | Cotswold
Wendover |
| 16.02 | Eastland
Robinhood Woods
Windsor Park
Kilbourne | | |

23	Grier Heights	Glenkirk Huntingtowne Farms
24	Elizabeth	
25	Elizabeth	32.98 Madison Park Colonial Village Ashbrook
26	Cherry	
27	Myers Park	33 Sedgefield
28	Myers Park	34 Dilworth
29.01	Barclay Downs Parkdale SouthPark Deering Oaks Myers Park	35 Dilworth
29.03	Providence Park	36 Wilmore Westover Hills Revolution Park
29.04	Randolph Park Foxcroft Governor's Square Carmel Providence	37 Southside Park Brookhill
30.05	Heatherstone	38.98 Clanton Park York Road
30.06	Fairmeadows Beverly Woods Olde Georgetown Sharon Hills Mountainbrook	38.03 Yorkmont Yorkwood
30.07	Mountainbrook	38.04 Montclair South Colony Acres
30.08	Kingswood Carmel Shadowlake	39.01 Airport Jackson Homes Morris Field
30.09	Carmel	39.02 Reid Park Pondorosa Wingate Little Rock Boulevard Homes Dalton Village Barringer Woods Pinecrest
30.1	Olde Providence Sardis	40 Ashley Park Westerly Hills
31.02	Spring Valley Glenkirk Montclair	41 Ashley Park Wesley Heights Seversville
31.03	Madison Park	42 Enderly Park
31.04	Starmount Sharon Lakes	43.01 Westchester Toddville Road
31.05	Spring Valley	

43.02	Hoskins/Thomasboro	57.03	Idlewild
44	Hoskins/Thomasboro Oakdale Garden City Firestone	57.04	Mint Hill
45	Oakview Terrace Smallwood Hoskins/Thomasboro Eleanor Heights Lakewood	58.03	Sardis Woods
46	University Park Biddleville Washington Heights	58.04	Hembstead
47	Biddleville	58.05	Providence Plantation
48	Lincoln Heights Oaklawn McCrorey Heights	58.06	Raintree
49	Double Oaks Greenville	58.07	Carmel Commons
50	Double Oaks Greenville	58.08	Sterling
51	Wilson Heights Druid Hills	58.09	
52	Tryon Hills Locke Wood	59.01	Windsong Trail
53.01	Sugaw Creek	59.03	Ramblewood Steele Creek Taragate
53.04	Hidden Valley	60.01	Forest Pawtucket
53.98		60.02	Coulwood Todd Park
54.01	Northwood	61	Oakdale Trinity Park Hyde Park
54.02	Derita Mallard Creek		
55.01	Mallard Creek		
55.02	University City		
56.01	Newell		
56.02			
57.01	Wilgrove/Mint Hill		

APPENDIX D
CORRELATION DATA MATRIX

Correlation Matrix

	Tract90	% 0-15	% > 64	% white	% black	Per/HH	Med Rnt	Med Value	% OwnOc	% RntOc	% MF	% Occ	%85-92	%70-84	%50-69	%bef50	% Unemp	% B Collar	% W Collar	
Tract90	1.00																			
% 0-15	.36	1.00																		
% > 64	-.44	-.74	1.00																	
% white	-.23	-.67	.35	1.00																
% black	.26	.66	-.35	-1.00	1.00															
Per/HH	.45	.89	-.73	-.65	.64	1.00														
Med Rnt	.13	-.30	-.11	.73	-.71	-.24	1.00													
Med Value	-.15	-.45	.34	.65	-.63	-.43	.57	1.00												
% OwnOc	.39	-.13	-.10	.44	-.43	.16	.59	.42	1.00											
% RntOc	-.39	.13	.10	-.44	.43	-.16	-.59	-.42	-1.00	1.00										
% MF	-.48	-.17	.28	-.09	.09	-.46	-.28	-.04	-.87	.87	1.00									
% Occ	.29	.08	-.04	.16	-.14	.07	.25	.09	.39	-.39	-.35	1.00								
%85-92	.10	-.11	.12	.21	-.23	.01	-.04	.03	.24	-.24	-.23	-.03	1.00							
%70-84	-.04	-.07	.16	.02	-.02	-.05	-.04	.03	-.04	.04	.25	-.12	.41	1.00						
%50-69	.35	.32	-.31	-.26	.27	.38	.04	-.31	.14	-.14	-.34	.29	-.24	-.35	1.00					
%bef50	-.25	-.17	.10	.13	-.13	-.25	-.02	.21	-.13	.13	.10	-.13	-.31	-.62	-.48	1.00				
% Unemp	.02	.66	-.44	-.62	.63	.50	-.47	-.41	-.48	.48	.20	-.19	-.19	-.25	.26	.00	1.00			
% B Collar	.19	.66	-.38	-.82	.80	.64	-.71	-.79	-.43	.43	.03	-.17	-.01	-.02	.27	-.14	.53	1.00		
% W Collar	-.17	-.71	.42	.85	-.83	-.66	.72	.78	.48	-.48	-.06	.18	.05	.07	-.29	.12	-.67	-.99	1.00	
Med HH Inc	.18	-.23	-.04	.65	-.63	-.10	.80	.81	.79	-.79	-.48	.32	.09	-.02	-.05	.02	-.48	-.72	-.72	1.00
# < Poverty	.21	.60	-.36	-.64	.65	.43	-.42	-.50	-.47	.47	.20	-.05	-.27	-.20	.35	-.06	.69	.60	-.67	-.67
% < Poverty	-.19	.42	.01	-.67	.67	.18	-.79	-.45	-.79	.79	.55	-.30	-.14	-.03	-.04	.10	.71	.62	-.68	-.68
% 25+ No Dip	-.08	.46	-.05	-.77	.75	.41	-.89	-.68	-.60	.60	.23	-.31	.07	.02	.04	-.02	.55	.86	-.87	-.87
% 25+ w/Dip	.46	.42	-.48	-.47	.48	.45	-.27	-.70	-.09	.09	-.17	.02	-.06	-.07	.44	-.29	.29	.61	-.60	-.60
% W/Col	.18	-.26	-.15	.59	-.58	-.17	.77	.20	.53	-.53	-.31	.36	-.01	.12	.14	-.27	-.53	-.52	-.57	-.57
% W/Deg	-.21	-.56	.33	.77	-.76	-.57	.71	.88	.41	-.41	-.02	.17	-.02	-.02	-.31	.25	-.49	-.92	-.91	-.91
% Pop Δ	.11	.05	-.19	.04	-.03	.18	.12	.06	.21	-.21	-.08	-.06	.42	.61	-.30	-.30	-.26	-.02	.06	.06
% Wh Δ	.19	.09	.00	-.19	.20	.01	-.14	-.07	-.08	.08	.01	.03	.07	-.03	-.02	.02	-.03	.03	-.02	-.02
% Bl Δ	-.02	-.09	.00	.37	-.36	-.11	.34	.53	.28	-.28	-.10	.20	-.04	.01	-.05	.02	-.23	-.37	.38	.38
Off/1000	-.35	-.36	.24	-.07	.07	-.36	-.34	-.05	-.40	.40	.43	-.65	-.03	.08	-.28	.20	-.03	.11	-.10	-.10
NV/1000	-.34	-.44	.29	.01	-.02	-.42	-.28	.00	-.34	.34	.41	-.61	.00	.10	-.29	.19	-.12	.05	-.02	-.02
Vln/1000	-.31	.07	-.04	-.45	.45	-.02	-.56	-.28	-.60	.60	.46	-.72	-.16	-.05	-.16	.22	.42	.40	-.43	-.43
5 to 10	.09	.57	-.33	-.65	.63	.51	-.51	-.48	-.42	.42	.10	-.15	.00	-.11	-.01	.14	.57	.66	-.69	-.69
11 to 24	-.22	.31	-.19	-.44	.44	.22	-.38	-.30	-.41	.41	.21	-.34	-.14	-.22	.01	.23	.56	.36	-.43	-.43
Mean	-.17	.41	-.16	-.65	.62	.30	-.63	-.57	-.61	.61	.26	-.17	-.25	-.30	.04	.29	.58	.63	-.67	-.67
D & D	.18	.48	-.36	-.53	.53	.39	-.31	-.43	-.35	.35	.09	-.07	-.21	-.25	.18	.13	.54	.50	-.55	-.55

Correlation Matrix

	Med HH Inc	#<Poverty	%<Poverty	% 25+ No Dip	% 25+ w/Dip	% W/Col	% W/Deg	% Pop Δ	% Wh Δ	% Bl Δ	Off/1000	NV/1000	VInt/1000	5 to 10	11 to 24	Mean	D & D
Tract90																	
% 0-15																	
% > 64																	
% white																	
% black																	
Per/HH																	
Med Rnt																	
Med Value																	
% OwnOc																	
% RntOc																	
% MF																	
% Occ																	
%85-92																	
%70-84																	
%50-69																	
%bef50																	
% Unemp																	
% B Collar																	
% W Collar																	
Med HH Inc	1.00																
# < Poverty	-.54	1.00															
% < Poverty	-.78	.70	1.00														
% 25+ No Dip	-.83	.53	.79	1.00													
% 25+ w/Dip	-.44	.40	.18	.34	1.00												
% W/Col	.56	-.41	-.77	-.78	-.04	1.00											
% W/Deg	.77	-.56	-.57	-.84	-.76	.44	1.00										
% Pop Δ	.16	-.30	-.30	-.05	-.03	.14	.01	1.00									
% Wh Δ	-.07	.05	.17	.07	.03	-.15	-.04	-.17	1.00								
% Bl Δ	.55	-.28	-.34	-.41	-.26	.25	.41	.13	-.06	1.00							
Off/1000	-.38	-.09	.26	.26	.10	-.37	-.18	.10	.02	-.13	1.00						
NV/1000	-.31	-.17	.18	.19	.07	-.30	-.12	.12	-.01	-.11	.99	1.00					
VInt/1000	-.59	.28	.60	.53	.22	-.61	-.42	.00	.11	-.24	.83	.76	1.00				
5 to 10	-.50	.54	.58	.67	.23	-.50	-.57	-.13	.01	-.30	-.04	-.11	.28	1.00			
11 to 24	-.42	.41	.50	.47	.11	-.46	-.34	-.11	.03	-.19	.18	.10	.52	.65	1.00		
Mean	-.68	.52	.68	.73	.15	-.54	-.56	-.35	-.02	-.36	.04	-.03	.36	.81	.63	1.00	
D & D	-.40	.67	.46	.45	.36	-.32	-.50	-.21	-.04	-.22	-.07	-.13	.26	.81	.73	.67	1.00

REFERENCES

- Bratt, Rachel, Chester Hartman, and Ann Myerson, 1986. *Critical Perspectives on Housing*. Philadelphia: Temple University Press.
- Byrum, Oliver, 1992. *Old Problems in New Times, Urban Strategies for the 1990's*. Chicago: Planners Press, American Planning Association.
- Charlotte City Council. *City Within a City, Mission-Roles-Strategy-Action Steps*. Charlotte: City of Charlotte, December 10, 1990.
- City of Charlotte, 1990. *Housing Quality in Charlotte*. Charlotte: Community Development Department.
- Hartman, Chester, 1983. *America's Housing Crisis, What Is To Be Done*. Boston: Routledge & Kegan Paul.
- Mitchell, Tucker, 1991. "A tale of two Charlottes." *The Leader* (May 3, 1991).
- Urban Institute, 1990. *Housing Quality in Charlotte*. Charlotte: Urban Institute, University of North Carolina at Charlotte.
- Urban Institute, 1987. *Charlotte Housing Condition Survey*. Charlotte: Urban Institute, University of North Carolina at Charlotte.
- U.S. Bureau of the Census, *1990 Census of Population and Housing*, 1992. Washington U.S. Government Printing Office.
- U.S. Bureau of the Census, *1980 Census of Population and Housing*, 1982. Washington U.S. Government Printing Office.
- U.S. Department of Commerce, Bureau of the Census, Department of Housing & Urban Development, *American Housing Survey For the United States in 1991*. Washington, D.C.: U.S. Government Printing Office, 1993.

