Development and Analysis of the National Low-Income Housing Tax Credit Database

Prepared for
U.S. Department of Housing and Urban Development
Office of Policy Development and Research

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July 1996

ACKNOWLEDGEMENTS

This study required the collection of data on Low Income Housing Tax Credit (LIHTC) properties from state allocating agencies. The authors would like to thank the state-level program staff who provided information on their properties for their assistance in this research. We would also like to thank staff of the U.S. General Accounting Office who assisted us in completing the database for several states.

FOREWORD

The Low-Income Housing Tax Credit (LIHTC) is the most important resource for creating affordable housing in the United States today. The LIHTC provides State housing agencies with the equivalent of more than $3 billion in annual budget authority that they can use to leverage a vast amount of capital to respond to locally identified rental housing needs.

Under contract to HUD, Abt Associates has collected data on virtually all LIHTC projects placed in service from 1992 through 1994 and on most LIHTC projects placed in service in 1990 and 1991. The completed database contains information on almost 10,000 projects and more than 330,000 housing units.

This report uses the database to provide previously unavailable information about LIHTC projects. For example, an average of 1,300 projects and 56,000 units are placed in service annually and average project size has increased from 37 units in 1992 to 45 units in 1994. More significantly, policy analysts and researchers can use these data to construct reliable samples for more-detailed studies of the LIHTC. For example, the database contains addresses and other information needed to locate projects. It also contains variables that are useful for stratifying samples, such as project size and whether the project was newly constructed or rehabilitated.

Encouraging more analysis of the LIHTC was the major motivation behind the creation of this database. Since its inception, the LIHTC has made possible the creation of several hundred thousand affordable housing units in communities across the country. In order to understand the variety of needs this housing serves, we must look across the diversity of State experience with the program. But, given the decentralized nature of the LIHTC program, in which 54 State and local housing finance agencies independently allocate tax credits, no comprehensive source of information is available to those wishing to answer questions such as who resides in tax-credit projects, where they come from, and how their rents compare to their incomes. A good sampling frame provides analysts with the necessary starting point to design studies that can produce reliable conclusions.

This research is part of a large-scale effort on the part of HUD's Office of Policy Development and Research (PD&R) to "democratize data"; that is, to enable the entire research and policy community to participate in the analysis of Federal programs by first creating costly databases such as this one and then by making them available to the community. The Department thanks the State agencies whose cooperation made the LIHTC database possible.

HUD has made this database available to the general public over the Internet at HUD's World Wide Web Homepage (http://www.huduser.org/lihtc). HUD will periodically update the database and will sponsor Small Grant competitions to encourage high-quality research into important policy questions about the LIHTC and other housing and community development programs.

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SECTION 1
INTRODUCTION

This report documents the results of a HUD-sponsored effort to collect basic information about projects that use the Low Income Housing Tax Credit (LIHTC) and presents an analysis of the characteristics and locations of tax credit projects based on data collected for the study. The report is organized into five sections. Section 1 provides a brief overview of the Tax Credit program and reviews the objectives of the HUD LIHTC study. Section 2 reviews the data collection effort and discusses the completeness and quality of the data. Section 3 presents information based on the project-level data collected from the states. Section 4 presents an analysis of project locations for a subset of properties for which geographic data could be obtained. Finally, Section 5 summarizes key findings and discusses how the HUD LIHTC Database might be used in future research.

1.1 OVERVIEW OF THE LIHTC

The Low Income Housing Tax Credit (LIHTC) was created by the Tax Reform Act of 1986. The act eliminated a variety of tax provisions which had favored rental housing and replaced them with a program of credits for the production of rental housing targeted to lower income households. Under the LIHTC program, the states were authorized to issue federal tax credits for the acquisition, rehabilitation, or new construction of affordable rental housing. The credits can be used by property owners to offset taxes on other income, and are generally sold to outside investors to raise initial development funds for a project. To qualify for credits a project must have a specific proportion of its units set aside for lower income households and the rents on these units are limited to 30 percent of qualifying income.[1] The amount of the credit that can be provided for a project is a function of development cost (excluding land), the proportion of units that is set aside, and the credit rate (which varies based on development method and whether other federal subsidies are used). Credits are provided for a period of 10 years.[2]

[1] Owners may elect to set aside at least 20 percent of the units for households at or below 50 percent of area median income or at least 40 percent for households with incomes below 60 percent of area median. Rents in qualifying units are limited to 30 percent of the elected 50 or 60 percent of income.

[2] The credit percentages are adjusted monthly, but fall in the neighborhood of 4 percent or 9 percent of qualifying basis. In general, credits are intended to provide a discounted stream of benefits equal to either 30 percent (for the 4 percent credit) or 70 percent (for the 9 percent credit) of the property's qualifying basis. The 4 percent credit is used for the acquisition of an existing building or for federally subsidized new construction or rehab. The 9 percent credit is used for non-federally subsidized rehab or construction.

Congress initially authorized state agencies to allocate roughly $9 billion in credits over three years: 1987, 1988, and 1989.[3] Subsequent legislation modified the credit, both to make technical corrections to the original act and to make substantive changes in the program.[4] For example, the commitment period (during which qualifying units must be rented to low-income households) was extended from 15 years to 30 years.[5] States were also required to ensure that no more credit was allocated to a project than was necessary for financial viability. The credit was also made a permanent part of the Federal tax code (Section 42), providing the states with roughly $315 million in new allocation authority each year.

Since 1987—the first year of the credit program—the LIHTC has become the principal mechanism for supporting the production of new and rehabilitated rental housing for low-income households. However, information on the number of units actually developed is difficult to assemble. Given the decentralized nature of the program, there is no single federal source of information on tax credit production.[6] Most of the data about the program that has been available thus far has been compiled by the National Council of State Housing Agencies (NCSHA), an association of state housing finance agencies, the entities responsible for allocating tax credits in most states. However, NCSHA data often suffer from incomplete reporting and key data are not consistently available for all years.

Exhibit 1-1 presents available NCSHA data on tax credit production for 1987 through 1992. As shown, the annual amount of the available credit has ranged from $313 million in the first credit year to $488 million in 1992. The amount of available credit includes an annual per capita allocation ($1.25 per person), as well as unused credits that have been returned, credits that have been carried over from the previous year, and credits from a national pool (which was created to reallocate any credit authority that remained unused by the states at the end of the carry-forward year).

Dollar allocations to specific projects have ranged from $63 million in the program's start-up year to $337 million in 1992. The low ratio of allocations to available credits in 1990 was due largely to delay in the passage of a tax bill in that year and the resulting delay in credit availability until the last quarter of the year. It should be noted that the dollar allocations represent only the first year of credits assigned to the projects. Credits are taken over a 10 year

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[3] Assumes approximately $300 million in per capita allocation authority in each year, with annual credits taken for 10 years.

[4] See Technical and Miscellaneous Revenue Act of 1988, Omnibus Budget Reconciliation Act of 1989, and Omnibus Reconciliation Act of 1990.

[5] The Omnibus Reconciliation Act of 1989 extended the commitment period from 15 to 30 years. However, project owners are allowed to sell or convert the project to conventional market housing if they apply to the state tax credit allocation agency and the agency is unable to find a buyer (presumably a non-profit) willing to maintain the project as low-income for the balance of the 30 year period. If no such buyer is found, tenants are protected with rental assistance for up to three years.

[6] States are required to report on tax credit projects to the IRS. However, these data are not available for analysis due to the confidentiality of tax-related submissions.

Exhibit 1-1
Tax Credit Allocations and Production
1987-1992

	Credit Dollars		Allocated Units		Placed in Service Units	
	Available (in Millions)	Allocated (in Millions)	Total Units	Low-Income Units	Total Units	Low-Income Units
1987	$313	$63	38,164	34,491	NA	NA
1988	$311	$210	94,856	81,406	NA	NA
1989	$314	$307	133,702	126,200	NA	NA
1990	$371	$213	77,925[a]	74,029	NA	NA
1991	$497	$400	117,863[a]	111,970	NA	NA
1992	$488	$337	96,105[a]	91,300	NA	NA
Total 1987-1992	NA	$1,530	558,615	519,481	331,409[b]	314,625[b]
Average 1987-1992	NA	$255	93,103	86,580	55,235	52,438

Sources: Dollar allocations and allocated units from: National Council of State Housing Agencies (NCSHA), *Reference Manual, Making the Most of the Low-Income Housing Tax Credit*, Summer 1994. Data on placed in service units from: NCSHA, *State HFA Factbook, 1992 NCSHA Annual Survey Results*, 1994.

Notes: Data do not include units with tax-exempt bond financing.
[a] Missing data estimated based on average ratio of low income to total units of .95.
[b] Missing data estimated for 7 states.

period. Thus, the total amount committed from the Treasury is 10 times the amount allocated—or $3 to $4 billion per year in recent years.

Not all projects that receive initial tax credit allocations are actually completed and placed into service. (A property must receive a certificate of occupancy and be "placed in service" in order to obtain its "final allocation" and begin receiving credits.) The NCSHA data presented in Exhibit 1-1 show that over the 1987 to 1992 period, projects with approximately 559,000 total units received allocations, for an average of about 93,000 total units allocated per year. The vast majority of these units (519,000, or about 87,000 per year) were low-income units which qualify for the credit.

By contrast, only about 331,000 units (55,000 per year) were placed in service during this period—meaning that the units were completed and occupied in accordance with program rules. Some of the difference between units receiving allocations and units placed in service is accounted for by time lags—project developers have two years from the initial allocation to complete the buildings and place them in service. NCSHA data show, for example, that of all units placed in service in 1992, about 22 percent came from 1992 allocations, 49 percent came from 1991 allocations, and 29 percent came from 1990 allocations.[7] Thus, the drop-out rate for tax credit projects is somewhat lower than the roughly 40 percent implied by the figures in Exhibit 1-1. Nevertheless, the current study confirms average annual LIHTC production levels in the mid 50,000s, with just under 60,000 units placed in service in 1993 and roughly 58,000 placed in service in 1994.

1.2 OBJECTIVES OF THE RESEARCH

The current research was initiated by HUD in the spring of 1994. The study was intended to fill basic information gaps about the use of the credit and the projects supported by it. Although HUD is not formally responsible for the allocation or use of the credit, the department has monitored and analyzed the credit since its inception because of the important role of the LIHTC in providing for the housing needs of the poor, and because the credit operates in conjunction with, and in the context of, ongoing HUD programs.[8] HUD sponsored an initial evaluation of projects developed during the first two tax credit years and also contracted with NCSHA to produce a project-level data base covering the first three years of program implementation.[9]

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[7] National Council of State Housing Agencies, *State HFA Factbook, 1992 NCSHA Annual Survey Results*, 1994.

[8] The LIHTC is administered by the IRS, Department of Treasury. HUD is responsible for establishing guidelines on "subsidy layering" in LIHTC projects that use HUD subsidies, in order to assure that they receive only the minimum allocation needed for financial feasibility. HUD also has responsibility for designating qualified census tracts and difficult development areas in which additional credits are provided as an incentive to locate in these areas.

[9] Because most allocating agencies are NCSHA members, HUD contracted with this organization to gather project-level data. The database was operational for the first three credit years (1987, 1988, 1989) and was used as the sample frame for HUD's initial tax credit evaluation which was completed in 1991.

Since that time, NCSHA has continued to collect some aggregate data on tax credit production from its members. However, project-level data—particularly data on placed-in-service projects—has been difficult for policy analysts and other researchers to obtain. As a result, few data are available about the basic characteristics of the projects currently being subsidized in terms of size, unit types, and location. Furthermore, more in-depth studies of the LIHTC (focusing on financial aspects of the program or the characteristics of tenants) cannot be done because a reliable sample of LIHTC projects cannot be constructed.

Given this, the primary purpose of the research was to create a national database of tax credit projects that could be used to create a sampling frame for future studies. HUD proposed to make the database publicly available so that both government and private researchers could use the data to improve knowledge about the tax credit program. A second purpose of the research was to use the LIHTC database to provide basic descriptive data about projects developed thus far, and, in particular, to conduct an initial analysis of the locations of tax credit projects. HUD wanted to learn the extent to which projects were located in different types of areas (for example, central cities versus suburbs and non-metro locations) and also to examine the extent to which incentives to locate properties in specific types of areas (those with the most difficult development environments) had been successful. Finally, HUD sought information on the characteristics of the neighborhoods where LIHTC properties were actually located.

The remainder of this report documents the process of data collection, identifies some major gaps in the data collected, and presents the results of the descriptive and locational analyses outlined above.

SECTION 2
DATA COLLECTION AND DATABASE CREATION

This section describes the data collection activities undertaken for this study, including gathering data from state agencies, cleaning, and verifying the data. The section also provides an overview of the contents of the LIHTC database and assesses the quality and completeness of the information obtained from the state Tax Credit agencies.

2.1 DATA COLLECTION STRATEGY

The Low Income Housing Tax Credit program is administered by 54 primarily state-level agencies which are responsible for developing LIHTC allocation plans, selecting projects to receive tax credit allocations, determining the amount of credit to be provided, verifying completion and costs, and monitoring projects for on-going compliance with LIHTC requirements. Given the decentralized nature of the program, there is no available source of information about tax credit properties other than the allocating agencies themselves.[10]

As a part of this research, Abt Associates conducted an extensive reconnaissance and pilot data collection effort with selected state agencies designed to identify the easiest and least burdensome methods of collecting data on LIHTC projects. Key aspects of the initial review included: 1) identifying the data elements that were commonly and readily available to the agencies; 2) exploring the nature of state data systems (whether automated or not, types of systems); 3) determining the most advantageous time of year for data collection (in order to avoid high activity periods for states or IRS reporting periods); and 4) determining whether data availability varied for projects placed in service during the first three tax credit years (1987-1989) as opposed to more recent projects. As a part of the reconnaissance, we also met with officials from the National Council of State Housing Agencies (NCSHA), which is an association of state housing finance agencies, most of which are responsible for allocating the tax credit in their states.

The results of these consultations were reflected in the data collection plan for the study.

- The list of items to be requested about tax credit projects was winnowed to a bare minimum. In particular, we dropped items that might require a search of the project files and focused on items that states already collected for each property in order to complete IRS Form 8609. Exhibit 2-1 lists the information requested by this study. As shown, data elements are limited to the name and address of

[1] States are required to report to the IRS using Form 8609. Part 1 of this form includes basic information about projects and signals that a property has been placed in service and its owners are eligible to receive tax credits. Information from this form could not be made available by IRS (despite the absence of any individual taxpayer data) due to the confidentiality of all federal tax-related submissions. However, we were advised by IRS staff that states were free to provide the form or the corresponding data to this study.

Exhibit 2-1
LIHTC Data Requested from Tax Credit Agencies

- Project Name and Address
- Owner/Owner's Representative (Name, Company, Address, Telephone)
- Number of Total Units
- Number of Low Income Units
- Number of Units by Bedroom Size
- Year Placed in Service
- Year Allocated
- Project Type (New Construction, Rehab, Existing)
- Credit Percentage (9%, 4%, Both)
- Non-Profit Sponsor (Yes/No)
- Basis Increase in Difficult Development Area or Qualified Tract (Yes/No)
- Use of Tax-Exempt Bonds (Yes/No)
- Use of FmHA Section 515 (Yes/No)

the project, owner name and contact information, information on project size, allocation and placed-in-service years, and six additional items about the project (construction type, credit percentage, non-profit sponsorship, location in a difficult development area, and use of tax exempt bonds or Farmers Home Section 515 financing).[2] Other than the contact information, variables were selected primarily for their usefulness as stratifiers in the construction of future LIHTC samples. A copy of the data collection form and instructions used in the study is provided as Appendix A.

- The reconnaissance and initial contacts with pilot states suggested that many states might choose to provide the data in electronic form from their existing computer data systems. The data collection materials were expanded to include instructions for providing data in a variety of different computerized formats.

- A key element of the data collection strategy was flexibility. States were encouraged to provide the data in the form that was easiest for them. This could include 1) completing a one-page form for each project, 2) providing computerized data, or 3) providing one or more listings which could be used by the study staff to compile the data across projects. We were also prepared to visit a small number of agencies where staff demands or other situations precluded state agency staff from assembling the data for us.

- Finally, we adopted two key recommendations of NCSHA. The first was to delay the start of data collection until early February 1995 (so that states could complete IRS reporting during January). Second, NCSHA staff believed that records on projects allocated in the first three tax credit years might be difficult for states to retrieve and that the quality of data for early projects would be poor (due to the absence of any state monitoring requirement during this period). In light of this, we limited the data collection to projects placed in service in 1990 through 1994 (but encouraged states to provide data on all years if this were possible).

It should be noted that the LIHTC database is envisioned as an on-going research resource. States were advised that data for early projects (1987-1989) would be collected by HUD at some point in the future.[3] We also informed states that HUD would be requesting updates containing the same basic information on each year's group of newly placed-in-service projects.

[2] Farmers Home programs have been folded into the Rural Housing Service of the U.S.D.A. are no longer known as "FmHA." This report uses the FmHA nomenclature since this is how the program was known throughout the period of the study.

[3] A number of states indicated that they were just beginning the process of computerizing their project records (beginning, usually, with the most recent projects). It was hoped that data for early projects would be entered by the time of the second request.

To test the basic data collection strategy, information was collected from five pilot states between October and December 1994. The lessons of the pilot were reflected in the instructions and procedures developed for the full scale data collection.

2.2 RESULTS OF DATA COLLECTION

Data collection for the LIHTC study began on February 2, 1995 when data collection requests were mailed to the allocating agencies. The requests allowed two months for states to assemble the data, setting a due date of March 31, 1995. We also immediately initiated a round of calls to answer any questions states might have about the data collection activity and to confirm their participation in the study.

2.2.1 State Agency Response to the Data Request

The initial response to the data request was disappointing. A number of state agencies did not want to participate in the study in any form, and, although many other states agreed to provide the requested data, agency representatives made it clear that the data collection was not a top priority for them and that they would not be able to meet the two month schedule outlined in our request. In fact, as of the original March 31 due date, only 13 states (including the 5 pilot states) had provided any data on placed-in-service projects, 8 states had sent lists of allocated projects (not placements-in-service), 8 agencies had refused to participate, and 25 agencies had agreed to provide data at some point in the future—though few of them would commit to a specific date.

In light of this response, the study team began a prolonged and exhaustive effort to obtain data from states that had agreed to provide it, to convince refusing states to participate, and to build the database using the best data that could be obtained. For states that were willing to provide the data but could not spare the staff time to compile it, study staff were made available to travel to state offices to collect data directly from the files. All non-responding states with sizable production were offered a site visit, however only three states availed themselves of this option. Study staff also worked individually with representatives in each state to identify existing data sources and records that could help minimize the burden on the states. This often led to "negotiating away" descriptive variables that were more difficult for the state to retrieve in order to obtain the modest set of identifiers and dates that were at the core of the database.

As a result of the slow pace of state data submission, the data collection period for the study had to be extended substantially. Overall, the data collection period was stretched from an original two months to a total of 11 months, during which time we continued to work with the agencies to obtain the data. Finally, with HUD's concurrence, we announced the termination of the state-level data collection effort on November 30, 1995. At that point, at least some project-level data had been collected from all but seven of the 54 allocating agencies. (As will be described below, we were later able to obtain permission from these states to use similar data submitted by them to the U.S. General Accounting Office.)

2.2.2 Nature of State Data Provided and Reasons for Non-Response

The information provided by the state tax credit agencies was usually submitted in a non-computerized format. Although some agencies (12) provided spreadsheets or other computerized data files, the vast majority submitted project information on paper. Of these, 11 used the one-page form provided for the data collection, and the remainder provided the data in the form of one or more listings. Such listings could include a mixture of existing data (such as an allocation list) and additional lists or printouts intended to cover other variables included in the data request. Ideally, the information was linked by project ID number, but often only by project name or address (which sometimes varied from list to list). In some sites, we were only able to persuade the agency to annotate an existing listing—such as to indicate which projects on an allocation list were actually placed in service.

The fact that few states generated data specifically for this study raises concerns about data quality. For example, listings often included entries for a desired variable (for example, an indicator for use of FmHA financing) but it was unclear whether absence of the entry could always be interpreted as a "no," or whether in some cases the data were simply missing. There were many areas for interpretation in the creation of the initial data files, and, as a result, a detailed data verification step needed to be incorporated into the database creation process. The use of existing lists also meant that we were often limited in the variables that were available. Obtaining complete data in many states was sacrificed to obtaining any project-level data at all.

State agency representatives often told us that there were no available listings of placed-in-service projects or that none could be generated using agency data systems. This may have been a disguised refusal on the part of some states, since presumably states would need to maintain some form of listing or database on properties receiving credits to perform compliance activities for tax credit properties. IRS regulations, published September 1992, provide three options for project compliance monitoring including, on an annual basis: a) review of owner certifications and rent records for at least 50 percent of all projects, b) inspection by the agency of at least 20 percent of all projects, or c) review of rent data for 100 percent of all projects and review of annual certifications and rent records in 20 percent of the projects.[4] A listing or database would be needed simply to achieve the sampling fractions specified in the regulations. Updated contact data would also be needed for compliance monitoring, particularly if project sites were to be visited.[5]

The rationales offered by some states for declining to provide the data were also troubling. States where the primary concern was the staff time needed to assemble the data were

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[4] 57 *Federal Register* 40121, September 2, 1992.

[5] In its recommended compliance monitoring standards for members, NCSHA has gone beyond the IRS regulations (which did not mandate site visits). The NCSHA standards suggest that allocating agencies "should perform site visits to each Tax Credit project within one year of its completion and at least once every three years thereafter." See NCSHA News Release, June 7, 1993 and "Standards for State Tax Credit Administration Adopted by the National Council of State Housing Agencies, reprinted in NCSHA, *Making the Most of the Low Income Housing Tax Credit, Reference Manual*, Summer 1994.

in almost all cases offered a site visit. Other steps, as described above, were taken to minimize any burden that HUD's request might place on state-agency personnel. A number of states initially refused to respond to the request on the grounds that data on tax credit projects are confidential. However, some of these same agencies were willing to provide allocation listings. Most states maintain such listings, usually showing project address, owner contact information, and a few basic data items such a number of units and dollar amount of the allocation. These are routinely made available in response to public information requests (often provided for a fee) and are the source of information about projects and developers used for marketing purposes in the development industry. It is difficult to explain why these agencies felt that the identification of which projects had actually been completed crossed the bounds of confidentiality. Finally, some state agency representatives expressed the view that HUD had no business collecting information on tax credit projects.

Despite the difficulties encountered in some states, many agencies provided the requested information willingly, if somewhat more slowly than hoped. It is important to recognize the burden that data collection efforts of this type can place on the agencies involved, and it is hoped that the development of a publicly-available database will ultimately reduce the burden on states by providing researchers and policymakers with a single, consistent source of information on properties receiving LIHTC subsidies.

2.2.3 Data Cleaning, Verification, and Augmentation

The nature of the data provided by some of the states required the development of an intensive data cleaning and verification procedure. Data were first entered into a state-level database, after which basic statistics and crosstabs were generated, the results of several internal consistency checks were produced, and a complete listing of the entire database was generated. Any obvious errors were corrected (using the original source documents provided by the states), and the verification programs were then rerun. The verification output, along with a letter outlining any assumptions used to create the database and highlighting inconsistencies or problems observed in the data, was provided to the states for review. In about half of the cases, state agencies responded with new or corrected information (although not all problems could be resolved). The remainder of the states did not respond to the verification request.[6]

As noted earlier, a total of 47 agencies had provided data as of November 1995, while seven agencies (New York, New Jersey, Utah, Arkansas, Iowa, Idaho, and Wyoming) had refused to participate in the study. During the last months of the data collection effort, the U.S. Government Accounting Office (GAO) began a separate data collection on tax credit properties as a part of a Congressionally-initiated audit. The GAO request was very similar to the request for this study, including basic data (such as project address, placed in service year, numbers of units, credit amount, and several financing items) for the years 1992, 1993, and 1994. Like

[6] All agencies were offered a copy of the final, cleaned database in a format of their choosing.

HUD, GAO intended to use the data to build a sampling frame for more in-depth project-level audits, as well as for descriptive purposes in its program analysis.

In order to complete the database for this study, each of the non-responding states was contacted by GAO in early 1996 and permission was obtained for us to use the project-level data already provided by the states to GAO. In addition, we obtained permission from the state agencies involved to use the GAO data for two additional states that had provided incomplete data for 1994. The result is a substantially complete project-level database for the years 1992-1994, with partial coverage for the period 1987-1991.

2.2.4 Data Coverage and Quality

Exhibit 2-2 shows the overall coverage of the database in terms of years and key variables, by state. State reporting for a given year is indicated by a "1". A "1" for a specific variable indicates that the data were generally available (i.e., present for most of the state's projects, particularly in the 1992-1994 period); however, the item could still be missing for some properties.

Overall, the data collection effort produced information on 9,785 projects and 339,190 units placed in service between 1987 and 1994.[7] As shown, the database includes properties for virtually all agencies for the years 1992, 1993, and 1994. However, coverage drops off substantially for earlier years, with 87 percent of the agencies reporting on projects placed in service in 1991 and 85 percent reporting on projects completed in 1990.[8] Coverage for 1987 to 1989 (the years for which states had the option of reporting) is quite spotty (covering only about 60 percent of the agencies).[9]

Coverage by variable is also shown in Exhibit 2-2. As indicated, the database generally includes project addresses for all states, at least during the 1992-1994 period. It should be noted, however, that address data were not always complete and did not always permit us to obtain a precise geographic fix on the property.[10]

Most states were also able to provide information on the project's owner/owner's agent, including an address and often a phone number. However, to the extent that data were taken from lists compiled at the time of initial allocation, the information may be quite dated.

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[7] Note that the unit figures exclude 453 projects where number of units was missing.

[8] The data request covered all projects placed in service between 1990 and 1994, including projects that received a carryover allocation in 1989 (the first year this was available). A number of states did not report on these carryover properties.

[9] In a number of states we have no information on placed-in-service year for projects in the 1987-1991 range. The table indicates the years covered by the data, even though we cannot associate individual projects with a specific year.

[10] As described in Section 4, about 22 percent of the units could not be matched to their Census tract using the address data provided. Failure to obtain a match can be due to incomplete addresses and problems with suffixes (such, as place, lane, road, etc.) as well as to "wrong" addresses.

Exhibit 2-2
Coverage of LIHTC Database by Year and Variable

	State	Total Projects	Total Units	Coverage by Year Placed in Service								Coverage by Variable												
				1987	1988	1989	1990	1991	1992	1993	1994	ADDRESS	CONTACT INFO	CONTACT PHONE	TOTAL UNITS	L.I. UNITS	BEDRM DIST.	PIS YEAR	ALLOC YEAR	TYPE	CREDIT %	NON PROFIT	BASIS	T.E. BOND	FmHA LOAN
1	Alabama HFA	262	5,391	1	1	1	1	1	1	1	1	1	1	1	1	1		1	1						
2	Alaska HFC	11	397	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3	Arizona DoC	49	3,482				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4	Arkansas DFA	70	3,737						1	1	1	1			1	1		1				1		1	
5	California TCAC	275	17,854				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6	Chicago	90	6,869	1	1	1	1	1	1			1	1	1	1	1		1	1						
7	Colorado HFA	61	3,234				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8	Connecticut HFA	68	2,876	1	1	1	1	1	1	1	1	1	1	1	1	1		1	1	1		1		1	1
9	DC DHCD	8	1,156	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
10	Delaware SHA	23	1,305				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
11	Florida HFA	157	14,841				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
12	Georgia HFA	230	10,998				1	1	1	1	1	1	1		1	1		1	1	1		1	1	1	1
13	Hawaii	13	651		1	1	1	1	1	1	1	1	1	1	1	1		1	1					1	1
14	Idaho HA	72	2,688	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1					1	1
15	Illinois HDA	346	5,412	1	1	1	1	1	1	1	1	1	1		1	1				1					
16	Indiana HFA	106	3,920						1	1	1	1	1	1	1	1	1	1	1	1		1		1	1
17	Iowa FA	90	2,933						1	1	1	1			1	1		1				1			
18	Kansas DoCH	139	6,663	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
19	Kentucky HC	213	3,756				1	1	1	1	1	1	1	1	1	1		1	1						
20	Louisiana HFA	257	11,252	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
21	Maine SHA	101	2,865	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
22	Maryland CDA	204	9,813	1	1	1	1	1	1	1	1	1	1	1	1			1	1						
23	Massachusetts EOCD	177	13,850	1	1	1	1	1	1	1	1	1	1	1	1	1		1	1	1				1	1
24	Michigan SHDA	285	12,653				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
25	Minnesota HFA	213	6,656	1	1	1	1	1	1	1	1	1	1	1	1	1		1	1	1				1	1
26	Mississippi HC	125	4,925					1	1	1	1	1	1	1	1	1	1	1	1	1	1		1	1	1
27	Missouri HDC	869	12,567	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		1		1	1
28	Montana BoH	41	528	1	1	1	1	1	1	1	1	1			1	1		1	1	1	1	1		1	1
29	Nebraska IFA	166	3,824	1	1	1	1	1	1	1	1	1	1		1	1		1	1	1		1		1	
30	Nevada HD	48	2,339	1	1	1	1	1	1	1	1	1	1		1	1		1	1	1		1			1
31	New Hampshire HFA	30	195	1	1	1	1	1	1	1	1	1	1		1	1		1	1						
32	New Jersey HMFA	69	4,196						1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	
33	New Mexico SHD	103	2,785	1	1	1	1	1	1	1	1	1	1	1	1	1		1	1			1	1	1	1
34	New York DHCR	177	5,293						1	1	1	1			1	1		1				1		1	
35	North Carolina HFA	603	8,153			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
36	North Dakota HFA	39	1,132				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
37	Ohio HFA	470	17,193			1	1	1	1	1	1	1	1		1	1		1	1	1	1	1		1	1
38	Oklahoma HFA	173	8,367	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
39	Oregon HCSD	201	7,245	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			1
40	Pennsylvania HFA	803	13,837	1	1	1	1	1	1	1	1	1	1	1	1	1		1	1	1	1	1	1		1
41	Puerto Rico HFC	54	3,957	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
42	Rhode Island HMFC	42	1,817	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
43	South Carolina SHFDA	110	3,591				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
44	South Dakota HDA	96	2,321	1	1	1	1	1	1	1	1	1	1	1	1	1		1	1	1				1	
45	Tennessee HDA	423	8,658	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
46	Texas DHCA	695	35,589	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		1	1		1
47	Utah HFA	46	1,850						1	1	1	1			1	1		1				1		1	
48	Vermont HFA	33	1,346				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
49	Virgin Islands HFA	7	158	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
50	Virginia DHCD	196	10,878	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
51	Washington SHFC	214	8,541	1	1	1	1	1	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1
52	West Virginia HDF	69	1,624				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
53	Wisconsin HEDA	360	10,951	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
54	Wyoming CDA	3	78						1	1	1	1			1	1		1				1		1	
All	Total	9,785	339,190	31	32	34	46	47	54	53	53	54	48	42	54	53	27	53	48	40	30	41	28	42	39

(1) Excludes 453 projects with missing unit data. (2) For variable coverage, “1” indicates the variable is present for most cases, or at a minimum for projects placed in service between 1992 and 1994.

Although we requested the most recent information on owner contacts, states do not appear to maintain automated files with this type of information.

Among the project descriptive variables, information on number of units or number of low-income units was provided in state data submissions in almost all cases. By contrast, about half the agencies were unable to provide any information on bedroom sizes; many agencies told us that these data were not easily accessible, and as a result, we dropped this item from the request where necessary. Allocation year was available from the vast majority of the state data submissions, and most states were able to provide information on development type (new construction or rehab), whether the sponsor was a non-profit organization, and whether FmHA financing was used. Finally, the variables least likely to be provided by the states were the credit percentage used (4%, 9%, or both) and whether the project received an increase in its basis as a result of being located in a difficult development area or qualified census tract (see Section 4 for additional information on these issues.)

Exhibit 2-3 provides additional data on variable coverage—this time for the 3,987 projects in the three "complete" years of 1992, 1993, and 1994. The exhibit indicates the percentage of projects and units missing the variable in each year.

Overall, the data collected in the LIHTC database represent the best data that state agencies were able to supply as of 1995. Nevertheless, there are a number of important caveats to keep in mind regarding the database and the analysis presented in the subsequent sections. In particular:

- Because few states compiled data specifically for our data request, source documents included a variety of different listings and printouts that often had to be matched to complete the database. In using these lists, we attempted to verify any assumptions used with agency representatives; however, only about half of the agencies responded to these verification requests.

- For the same reason, variable coverage is not complete—that is, we were limited to the items states already had compiled (although for different purposes). There is some concern that characteristics such as "use of FmHA" financing may be understated if the notation indicating use of FmHA was not consistently entered by state agency staff.

- Comparison of the data provided by the states to HUD and the data provided to GAO showed that in many states, the projects listed are not identical. Overall, states provided information to GAO on about 8 percent more projects than they identified to HUD; conversely, about 5 percent of the projects contained in the HUD database do not appear in the GAO listings.[11] These differences can only be resolved with additional state cooperation.

[11] Overall production levels as indicated in the two databases are similar. Based on GAO data, the states averaged about 63,000 units placed in service annually over the three year period (compared to an average of about 56,000 units in the HUD database). This confirms a substantial "drop-out" rate from the roughly 100,000 units which receive allocations in a typical year.

Exhibit 2-3
LIHTC Database: Data Availability by Variable
1992-1994

N = 3,987 Projects

Variable	Percent of Projects with Missing Data	Percent of Units with Missing Data
Project Address[1]	1.1%	1.4%
Owner Contact Data[2]	18.5%	18.3%
Total Units	0.2%	0.2%
Low Income Units	1.6%	3.1%
Distribution by Bedrooms	53.4%	58.4%
Allocation Year	12.5%	14.4%
Construction Type (new/rehab)	26.7%	28.7%
Credit Percentage	47.8%	48.4%
Non-Profit Sponsorship	26.9%	23.8%
Increase in Basis	49.7%	46.8%
Use of Tax Exempt Bonds	23.6%	24.3%
Use of FmHA Section 515	25.5%	27.1%

[1] Indicates only that some location was provided. Address may not be a complete street address.
[2] Indicates presence of a mailing address.

- Finally, there are fairly high rates of missing data for a few variables, for example bedroom sizes (58 percent) and credit percentage (48 percent). Although missing variables are concentrated in particular states, we have no reason to suspect that these variables do not provide good representative statistics for LIHTC projects nationally.

Despite these limitations, the HUD LIHTC database offers substantially complete coverage of LIHTC projects developed in the three most recent tax credit years and provides previously unavailable information about the project locations and characteristics. Overall, the database provides the first project-level picture of LIHTC production since HUD's initial evaluation of the program during its first two years of operation (1987 and 1988).

SECTION 3
CHARACTERISTICS OF TAX CREDIT PROJECTS

This section presents information on the characteristics of LIHTC projects, based on information obtained from the state allocating agencies. Information is presented for 3,987 projects and 168,046 units placed in service between 1992 and 1994—the years for which the most complete data are available.[1] Data for this time period were obtained for all tax credit allocating agencies, except the City of Chicago.

3.1 BASIC PROPERTY CHARACTERISTICS

Exhibit 3-1 presents information on the characteristics of LIHTC properties by placed-in-service year. As shown, production was fairly stable over the three program years, averaging about 1,300 projects and 56,000 units placed in service annually. Placed-in-service projects are those that have received a certificate of occupancy and for which the state has submitted an IRS Form 8609 indicating that the property owner is eligible to claim low-income housing tax credits.[2]

The average LIHTC project during this period contained 42 units. Average size increases over the three analysis years and is considerably larger than the average project size of 28 units found in HUD's early study of 1987 and 1988 LIHTC production.[3] Still, tax credit projects are for the most part rather small: over three quarters of the properties had 50 units or fewer, and about a third had 20 units or fewer.

Of the units produced, the vast majority were qualifying units—that is, units reserved for low-income use, whose rents are restricted, and for which low-income tax credits can be claimed. Overall, the ratio of low income to total units was .98, again with very little variation by year. The distribution of qualifying ratios shows that the vast majority of projects are composed almost entirely of low-income units. Only a very small proportion of the properties have lower qualifying ratios, reflecting the minimum elections set by the program (i.e., a minimum of 40 percent of the units at 60 percent of median income or 20 percent of the units at 40 percent of median.)

[1] The dataset excludes 20 properties for which no information on the number of units was available.

[2] To facilitate multi-building and multi-phased projects, IRS reporting is on a building-by-building basis. In this study, we use the LIHTC *project* as a unit of analysis. A project would include multi-building properties and multi-phased projects that were part of a single financing package.

[3] Evaluation of the Low-Income Housing Tax Credit, Final Report, 1991, prepared by ICF, Inc.

Exhibit 3-1
Characteristics of LIHTC Projects
1992-1994[1] [2]

Placed-in-Service Year	1992	1993	1994	All Projects 1992-1994
Number of projects	1,349	1,348	1,290	3,987
Number of units	49,931	59,825	58,290	168,046
Average Project size	37.1	44.4	45.4	42.2
Distribution by Project Size				
0-10 Units	30.0%	19.4%	16.2%	21.9%
11-20 Units	14.6	16.1	12.4	14.4
21-50 Units	36.5	40.6	46.9	41.3
51-99 Units	11.2	12.9	13.8	12.6
100+ Units	7.7	11.1	10.7	9.8
Average Ratio of Qualifying to Total Units	97.5%	97.7%	98.2%	97.8%
Distribution by Qualifying Ratio				
0 - 20%	0.6%	0.2%	0.1%	0.3%
21- 40%	1.3	1.0	0.8	1.0
41- 60%	0.9	1.4	1.1	1.1
61- 80%	1.6	1.6	1.3	1.5
81- 90%	1.7	1.3	1.4	1.5
91- 95%	0.7	1.0	0.7	0.7
96- 100%	93.3	93.6	94.6	93.8
Average Number of Bedrooms	1.6	1.7	1.6	1.7
Distribution of Units by Bedroom Count				
0 Bedroom	6.9%	3.8%	5.8%	5.5%
1 Bedroom	38.7	39.2	41.9	39.8
2 Bedrooms	38.8	39.8	36.7	38.5
3 Bedrooms	14.5	15.6	14.3	14.8
4+ Bedrooms	1.1	1.6	1.3	1.3

[1] The analysis dataset includes 3,987 projects and 168,046 units placed in service between 1992 and 1994. These data cover all tax credit allocating agencies except the City of Chicago. The dataset excludes 20 properties where no information on the number of units was available.

[2] The database contains high rates of missing data for the following variables (in terms of units): bedroom sizes (58.4%), construction type (28.7%), credit percentage (48.4%), non-profit sponsorship (23.8%), use of tax exempt bonds (24.3%), and use of Section 515 (27.1%). When data are presented as a cross-tabulation of two variables, the percentage of missing data may increase.

The last panel of Exhibit 3-1 presents information on the size of the LIHTC units, based on number of bedrooms. As shown, the average unit had 1.7 bedrooms. Over the three year period, the majority of the units contained either 1 or 2 bedrooms (78.3 percent), 14.8 percent contained 3 bedrooms, and only 1.3 percent contained 4 or more bedrooms; efficiencies accounted for 5.5 percent of the units produced.

Exhibit 3-2 presents additional information on the characteristics of the LIHTC projects and units, beginning with the type of construction used. LIHTC projects are classified into four different production types: new construction, rehabilitation, a combination of new construction and rehabilitation (for multi-building projects), or existing (i.e., acquisition only). As shown, LIHTC projects from 1992 to 1994 were predominately new construction, accounting for over 60 percent of the units produced. Rehabilitation of an existing structure was used in 38 percent of the units, and a combination of rehabilitation and new construction was used in only a very small fraction of the units. (The data also indicate that four properties involved acquisition without any rehab, which was permitted only during the first three program years. However, of the projects identified in the data set as using this option, only one was allocated during this period.)

In establishing the tax credit program, Congress required that 10 percent of each state's LIHTC dollar allocation be set-aside for projects with non-profit sponsors. During the first two years of the program, data collected by HUD indicated that about 9 percent of all tax credit units were developed by a non-profit organization.[4] Information presented in Exhibit 3-2 indicates higher levels of non-profit sponsorship in recent years and increasing proportions in each of the years for which data are available. As shown, the percentage of units with non-profit sponsors rose from 18 percent in 1992, to 24 percent in 1993, to 27 percent in 1994, for a total of 23 percent across the three years.

LIHTC projects can use a variety of other sources of subsidized financing in order to develop the property. These may include local sources, such as CDBG or HOME funds, or federally-subsidized sources, such as the proceeds of tax-exempt bonds issued by states or Section 515 loans provided by the Farmers Home Administration (FmHA).[5] In addition, tenant-based subsidies (such as vouchers or certificates) may be used in LIHTC properties.

[4] Evaluation of the Low-Income Housing Tax Credit, Final Report, 1991, prepared by ICF, Inc.

[5] During the early years of the program, Section 8 Moderate Rehabilitation Program subsidies were also used in conjunction with tax credits. However, legislation passed in 1989 prohibited the use of this subsidy source in LIHTC projects. HUD data from 1987 and 1988 show that Mod Rehab units accounted for between 7 and 14 percent of the production during these years.

Exhibit 3-2
Additional Property Characteristics
1992-1994[1] [2]

Year Placed in Service	1992		1993		1994		All Projects 1992-1994	
	Projects	Units	Projects	Units	Projects	Units	Projects	Units
Construction Type								
Existing	0.3%	0.2%	0.1%	0.3%	0.0%	0.0%	0.1%	0.2%
New	66.7	63.0	62.5	58.2	69.3	61.4	65.9	60.7
Rehab	32.5	35.6	36.5	40.0	30.0	37.7	33.2	37.9
Both New/Rehab	0.6	1.2	0.9	1.4	0.6	0.9	0.7	1.2
Percent Non Profit	16.2%	18.4%	21.7%	23.8%	23.2%	26.7%	20.3%	23.2%
Percent with FmHA Section 515	33.8%	29.8%	32.7%	22.0%	37.4%	25.8%	34.5%	25.7%
Percent Bond-Financed	3.3%	10.6%	1.6%	3.6%	3.4%	6.6%	2.7%	6.7%
Credit Percentage Used								32.3%
4 Percent	36.4%	38.4%	33.5%	25.2%	42.2%	34.6%	36.9%	56.1
9 Percent	52.0	52.1	52.3	60.2	49.9	55.2	51.5	11.6
Both	11.6	9.6	14.2	14.6	7.9	10.2	11.5	

[1] The analysis dataset includes 3,987 projects and 168,046 units placed in service between 1992 and 1994. These data cover all tax credit allocating agencies except the City of Chicago. The dataset excludes 20 properties where no information on the number of units was available.

[2] The database contains high rates of missing data for the following variables (in terms of units): bedroom sizes (58.4%), construction type (28.7%), credit percentage (48.4%), non-profit sponsorship (23.8%), use of tax exempt bonds (24.3%), and use of Section 515 (27.1%). When data are presented as a cross-tabulation of two variables, the percentage of missing data may increase.

In developing the design for this study, it was originally hoped that information on the presence or absence of ***any type*** of additional subsidy could be collected. For example, we know that during the first two tax credit years, only between 17 and 24 percent of the units were developed without some form of additional subsidy. Information on subsidy combinations would also be useful for sample stratification in future studies and for understanding how the use of additional subsidies contributes to production in different housing markets or types of locations. Unfortunately, the reconnaissance and initial consultations for this study suggested that collection of these data would be both difficult for the states (which would most likely need to review individual project files to collect the data) and prone to error and misinterpretation. As a result, financing and subsidy data were limited to two of the more common sources: use of tax-exempt bonds (which are issued by the same agencies that allocate the credit) and use of FmHA Section 515 loans (which imply a different regulatory regime and different compliance monitoring rules).

Exhibit 3-2 presents information on the use of these two financing options. Overall, FmHA loans were used in approximately 35 percent of the projects and 26 percent of the units. (This proportion is virtually unchanged from the first two credit years, and varies only modestly over the three analysis years.) In contrast, a much smaller proportion of developments used tax-exempt bonds—3 percent of all projects and 7 percent of all units. This proportion may well understate the share of properties that use tax-exempt bonds due to the way records are kept by the states. Because bond projects are not subject to the allocation caps of the LIHTC, in many state agencies information on these projects is kept separately from other tax credit projects. Our data request was specific in its coverage of all LIHTC projects including those with tax-exempt bonds, but we could not verify the inclusion of such projects in all cases.

The final characteristic presented in Exhibit 3-2 is the credit percentage that was used by LIHTC projects. As described in Section 1, the credit percentages vary from month to month, but are approximately 4 and 9 percent. The 4 percent credit is used for the acquisition of properties, and for rehab or new construction when other federal financing is used. The 9 percent credit is used for non-federally financed rehab or construction. As shown, the majority of units (56 percent) used the 9 percent credit, while 32 percent received the 4 percent credit. Only about 12 percent reported using both credits (for example, acquisition at 4 percent with unsubsidized rehab at 9 percent).

Exhibit 3-3 presents more detail on this issue, providing a breakdown of credit percentage based on construction type and financing. Interestingly, the shares represented by new and rehab units is very similar for the 4 and 9 percent credits. Rehab units showing use of the 9 percent credit only could involve previously owned properties where no acquisition credit was claimed; alternatively, states may have reported only the credit percentage applicable to the rehab portion of the project. The units using both types of credit are predominantly acquisition/rehab or mixed projects. Exhibit 3-3 also shows that most of the units for which data are reported reflect the basic structure of the LIHTC program, that is, the majority of projects using the four percent credit are federally-financed (bond or FmHA). There are a few inconsistent cases, however, including some instances of bond or FmHA projects receiving the 9 percent credit, verified as accurate by the state agency that provided the data.

Exhibit 3-3
Characteristics by Credit Percentage
1992-1994[1] [2]

	Projects			Units		
	4%	9%	Both	4%	9%	Both
Construction Type						
Existing	0.3%	0.0%	0.4%	0.2%	0.0%	0.1%
New	77.9	72.5	1.3	73.4	74.9	1.2
Rehab	21.8	26.8	94.6	26.4	23.9	91.6
Both New/Rehab	0.0	0.8	3.8	0.0	1.2	7.1
Percent with FmHA Section 515	87.2%	0.6%	0.4%	75.6%	0.3%	0.5%
Percent Bond-Financed	7.2%	0.2%	2.6%	18.3%	0.6%	2.1%

[1] The analysis dataset includes 3,987 projects and 168,046 units placed in service between 1992 and 1994. These data cover all tax credit allocating agencies except the City of Chicago. The dataset excludes 20 properties where no information on the number of units was available.

[2] The database contains high rates of missing data for the following variables (in terms of units): bedroom sizes (58.4%), construction type (28.7%), credit percentage (48.4%), non-profit sponsorship (23.8%), use of tax exempt bonds (24.3%), and use of Section 515 (27.1%). When data are presented as a cross-tabulation of two variables, the percentage of missing data may increase.

We also examined key project characteristics for several specific groups of properties including non-profit projects, FmHA projects, and bond financed projects. As shown in Exhibit 3-4, bond financed projects have the largest project size with an average of 102 units per project. In contrast, FmHA projects had an average project size of 31 units. With respect to construction type, both non-profit and bond financed projects showed a roughly equal split between new construction and rehab; however, the FmHA projects were predominately new construction (83 percent of the units). The average qualifying ratio for both non-profit and FmHA projects was reflective of the average of all units, approximately 98 percent. Bond financed projects, however, showed a much lower average ratio of qualifying units—only 64 percent.

Finally, we examined the length of time it took for an allocated project to become placed in service. Per LIHTC regulations, projects should be placed in service within two years of the allocation. Exhibit 3-5 shows, for each placed-in-service year, the percentage of units that were completed from different allocation years. Not surprisingly, relatively few units are placed-in-service in the same year as they received their allocation; rather, most projects take up to two years to complete. However, there are some units where the interval between allocation and placement-in-service was over 3 years. These units may reflect projects with multiple buildings (in our data collection instructions we requested the earliest allocation date and the latest placed in service date for such projects). There is also a very small percentage of units where states reported an allocation date that was subsequent to the unit's being placed in service.

3.2 CHANGES IN CHARACTERISTICS OVER TIME

Unfortunately, the LIHTC database is not very useful for examining longer term trends in tax credit production. Although virtually all allocating agencies are included in the 1992 to 1994 database, coverage by state drops off sharply for earlier years. For example, usable data are available for only 35 states in 1990 and 1991. The figure drops to 22 states for the 1987 to 1989 period. Review of information for various subsets of states suggests that the projects included are not representative and that the data are not usable for trend analysis. For this reason, we have reported in this section—wherever possible—comparative data taken from HUD's early study of 1987 and 1988 tax credit production. These comparisons are summarized in Exhibit 3-6.

Exhibit 3-4
Characteristics of Specific Project Types
1992-1994[1] [2]

	Non-Profit (N=29,790)	Bond Financed (N=8,568)	FmHA (N=31,544)
Average Project size	50	102	31
Distribution by Project Size			
	1.7%	0.3%	1.1%
0-10 Units	4.5	1.2	9.3
11-20 Units	28.3	5.4	75.1
21-50 Units	27.6	18.3	10.1
51-99 Units	37.9	74.9	4.4
100+ Units			
Construction Type			
Existing	0.0%	0.0%	0.2%
New	54.1	52.6	83.2
Rehab	43.3	47.4	16.6
Both New/Rehab	2.6	0.0	0.0
Average Ratio of Qualifying to Total Units	98.1%	63.7%	99.1%

[1] The analysis dataset includes 3,987 projects and 168,046 units placed in service between 1992 and 1994. These data cover all tax credit allocating agencies except the City of Chicago. The dataset excludes 20 properties where no information on the number of units was available.

[2] The database contains high rates of missing data for the following variables (in terms of units): bedroom sizes (58.4%), construction type (28.7%), credit percentage (48.4%), non-profit sponsorship (23.8%), use of tax exempt bonds (24.3%), and use of Section 515 (27.1%). When data are presented as a cross-tabulation of two variables, the percentage of missing data may increase.

Exhibit 3-5
Percent of Units Placed in Service from Different Allocation Years
1992-1994

Year Placed in Service	Percent Allocated From				
	1990 or Earlier	1991	1992	1993	1994
1994	0.2%	4.8%	42.0%	40.3%	12.7%
1993	5.0%	48.1%	35.8%	10.8%	0.3%
1992	29.3%	51.1%	17.4%	2.1%	0.0%

[1] The analysis dataset includes 3,987 projects and 168,046 units placed in service between 1992 and 1994. These data cover all tax credit allocating agencies except the City of Chicago. The dataset excludes 20 properties where no information on the number of units was available.

[2] The database contains high rates of missing data for the following variables (in terms of units): bedroom sizes (58.4%), construction type (28.7%), credit percentage (48.4%), non-profit sponsorship (23.8%), use of tax exempt bonds (24.3%), and use of Section 515 (27.1%). When data are presented as a cross-tabulation of two variables, the percentage of missing data may increase.

Exhibit 3-6
Characteristics of LIHTC Properties: 1988 as Compared to 1992-1994[1]

Year Placed in Service	1988	1992-1994
Number of Projects	2,744	3,987
Number of Units	77,351	168,046
Average Project Size	28	42
Distribution by Project Size		
0-10 Units	49.4%	21.9%
11-50 Units	36.7	55.7
50-99 Units	7.7	12.6
100+ Units	6.2	9.8
Percentage of Projects with Qualifying Ratio Greater than .90	94%	95%
Distribution of Units by Bedroom Count		
0 Bedroom	8.1%	5.5%
1 Bedroom	37.0	39.8
2 Bedrooms	41.6	38.5
3 Bedrooms	12.2	14.8
4+ Bedrooms	1.1	1.3
Distribution of Units by Construction Type		
Existing	13.0%	0.2%
New	46.1	60.7
Rehab	39.9	37.9
Both New/Rehab	1.0	1.2
Percentage of Units with Non-Profit Sponsor	9%	23%
Percentage of Units with FmHA Section 515 Financing	25.2	25.7

[1] Data for 1988 from Evaluation of the Low-Income Housing Tax Credit, Final Report, 1991, prepared by ICF, Inc.

SECTION 4
LOCATION OF TAX CREDIT PROJECTS

An important objective of the current study is to provide information on the locations of tax credit projects. Up to this time, no consistent source of data has been available on regional patterns of LIHTC development, the extent to which properties are located in central city versus other types of locations, or the types of neighborhoods in which LIHTC projects are developed. In addition, legislation passed in 1989 provided incentives to developers to locate projects in low-income areas and in certain underserved markets (where development costs were high and incomes were low). No analysis of the effectiveness of these incentives has been undertaken.

In order to address these issues, projects in the LIHTC database were geocoded—that is, linked with their census tract—based on the address information provided by the state agencies. This section presents the results of analyses using the geocoded data for projects placed in service between 1992 and 1994. It begins with an overview of general project locations, followed by a discussion of incentives to locate in Difficult Development Areas or Qualified Census Tracts. The final section examines project locations in terms of the characteristics of the neighborhoods in which the LIHTC units are found.

4.1 GENERAL PROJECT LOCATIONS

Geocoding was performed for the entire LIHTC database using both HUD's Conquest geographical information system and the services of an outside vendor.[1] Overall, addresses provided by the states were successfully match with Census tract for 78 percent of the units in the database. For units placed in service between 1992 and 1994—the years for which complete data are available—the success rate was somewhat lower, about 74 percent. Regionally, the success rate for geocoding in the 1992-1994 analysis dataset ranged from 70 percent in the Northeast to 82 percent in the West.[2]

Because of the regional differences in geocoding rates, it was important to establish the extent of any regional biases in the geocoded subset. Exhibit 4-1 compares the regional distribution of all LIHTC projects to the distribution for geocoded projects. Because the geocoded properties represent the great majority of the population, and because the distribution of geocoded cases so closely matches the total population, we can feel confident that the geocoded data provide a reasonable basis for the descriptive analyses that follow.

[1] Conquest is a proprietary GIS package to which HUD subscribes.

[2]There are many reasons that may explain a difference in the rates of geocoding success, such as numerous non-specific rural addresses in the South and the lack of complete addresses in many large urban areas in the North.

Exhibit 4-1

Regional Distribution of LIHTC Properties[1] 1992-1994

Region	All LIHTC Projects		Geocoded Projects	
	Projects (N=3,958)	Units (N=166,685)	Projects (N=2,837)	Units (N=122,694)
Northeast	13.7%	12.9%	13.3%	12.2%
Midwest	32.5	27.0	33.7	26.6
South	39.1	41.6	36.3	40.4
West	14.7	18.7	16.7	20.8

[1] The dataset used in this analysis excludes 20 properties where no information on the number of units was available. In addition, 29 properties in the Virgin Islands and Puerto Rico are excluded.

Exhibit 4-2 presents the regional distribution of LIHTC production across the three analysis years, 1992, 1993, and 1994. (Note that regional distributions are based on all projects placed in service, not solely the geocoded projects.) As discussed in Section 2, LIHTC production was fairly stable across these years. Total production was 3,958 projects and 166,685 units.

As shown in Exhibit 4-2, the greatest share of LIHTC projects was located in the South. Overall, the South accounted for 39 percent of all projects, the Midwest accounted for the next highest share (33 percent), and the Northeast and the West each accounted for about 14 percent. The regional distribution of LIHTC projects is reasonably stable across years. When viewed from the perspective of units, the production shares accounted for by the South (42 percent) and the West (19 percent) are somewhat increased, while the share attributable to the Midwest (27 percent) is reduced, and the Northeast stays the same (13 percent).

Exhibit 4-3 presents information on project characteristics by region. As shown, average project size ranges from 35 units in the Midwest to 53 units in the West, with an overall average of 42 units per project. Across all regions, the average ratio of qualifying units to total units was quite high, over 95 percent in each case.

Information on bedroom counts was missing for over half of the LIHTC properties for which data were collected. In addition, missing data were concentrated in one region (the Northeast), meaning that information on unit sizes should be used with some caution. Nevertheless, the figures in Exhibit 4-3 suggest a fairly uniform pattern of overall development, with virtually no variation in the average number of bedrooms per unit. The distributions by bedroom size show the prominence of one and two bedroom apartments in tax credit production, accounting for 40 and 39 percent of the units, respectively. Units suitable for larger families (those with three or more bedrooms) accounted for about 16 percent, and studio/efficiencies accounted for 6 percent. The pattern of unit sizes was similar across the Northeast, Midwest, and South, but differed substantially in the West, which had much higher shares of efficiencies as well as of larger units.

Other information in Exhibit 4-3 includes non-profit sponsorship, construction type, credit percentage, and use of FmHA financing. As indicated, the proportion of units with non-profit sponsors is highest in the West, at 42 percent, while the South had the lowest proportion at only 13 percent. Non-profit sponsors in the Northeast and the Midwest accounted for 28 and 21 percent of the units respectively.

Regional differences were also evident in construction types. While new construction units dominated the program (at 60 percent overall), they ranged from about 40 percent in the Northeast to over 80 percent in the West. Rehab units accounted for the majority of the production in the Northeast (58 percent), almost half in the South, and under a third in the Midwest and West. A small fraction of the projects in each region combined new construction with rehab. Not surprisingly, the use of rurally-oriented FmHA financing differed across regions, with the units in the South more than twice as likely to use this loan source as units in

Exhibit 4-2

Regional Distribution of LIHTC Projects and Units[1] 1992-1994

	1992		1993		1994		All Projects 92-94	
	Projects N=1,339	Units N=49,379	Projects N=1,336	Units N=59,177	Projects N=1,283	Units N=58,129	Projects N=3,958	Units N=167,685
Distribution by Region								
Northeast	11.6%	10.4%	15.6%	15.0%	13.9%	12.9%	13.7%	12.9%
Midwest	34.7	26.2	34.9	30.5	27.6	23.6	32.5	26.8
South	41.2	44.4	35.1	38.2	41.0	42.6	39.1	41.6
West	12.5	19.0	14.4	16.3	17.4	20.8	14.7	18.7

[1] The dataset used in this analysis excludes 20 properties where no information on the number of units was available. In addition, 29 properties in the Virgin Islands and Puerto Rico are excluded.

Exhibit 4-3
Characteristics of LIHTC Projects by Region[1]
1992-1994

	Northeast (N=21,525)	Midwest (N=44,708)	South (N=69,291)	West (N=31,161)	Total (N=166,685)
Average Project Size (Units)	39.7	34.7	44.8	53.4	42.1
Average Percentage of Qualifying Units	95.7%	97.4%	99.1%	97.0%	97.8%
Average Number of Bedrooms per Unit[2]	1.6	1.7	1.6	1.7	1.7
Distribution of Units by Number of Bedrooms					
Studio/Efficiency	3.5%	1.5%	3.2%	15.6%	5.6%
1 Bedroom	42.9	43.4	44.8	28.0	40.5
2 Bedrooms	43.5	40.9	39.4	33.1	38.5
3 Bedrooms	8.9	13.3	11.6	20.3	13.9
4 Bedrooms	1.1	0.8	0.9	2.9	1.3
Percentage of Units with Non-Profit Sponsor[3]	27.7%	20.7%	13.0%	41.6%	23.3%
Distribution of Units by Construction Type[4]					
New Construction	39.5%	68.3%	53.9%	82.5%	60.4%
Rehab	57.5	31.4	45.5	16.2	38.2
Both New/Rehab	3.0	0.3	1.2	1.3	1.2
Existing	0.0	0.1	0.4	0.0	0.2
Distribution by Credit Percentage[5]					
4 Percent	23.0%	31.1%	40.9%	19.8%	31.5%
9 Percent	55.9	55.2	47.0	76.6	57.0
Both	21.2	13.8	12.2	3.7	11.5
Percent of Units with FmHA Financing[6]	15.3%	22.7%	32.8%	14.1%	25.1%

[1] The dataset used in this analysis is excludes 20 properties where no information on the number of units was available and 29 properties in the Virgin Islands and Puerto Rico.

[2] Percent of units missing data: Total (53%), Northeast (87%), Midwest (53%), South (43%), West (52%).

[3] Percent of units missing data: Total (24%), Northeast (16%), Midwest (32%), South (27%), West (9%).

[4] Percent of units missing data: Total (29%), Northeast (35%), Midwest (31%), South (23%), West (34%).

[5] Percent of units missing data: Total (49%), Northeast (54%), Midwest (60%), South (48%), West (33%).

[6] Percent of units missing data: Total (27%), Northeast (46%), Midwest (34%), South (19%); West (25%).

the Northeast and West. This may also account for above average use of the 4 percent credit in the South (indicating federal financing) and below average use in the Northeast and West.

Exhibit 4-4 shows the distribution of LIHTC production across metropolitan and non-metropolitan areas over the analysis years. Note that the data are limited to the 2,834 projects and 122,606 units that were successfully geocoded. As shown, 54 percent of these units were located in central cities of MSAs, 26 percent were located in metropolitan areas outside the central city, and 19 percent were located in non-metro areas. There was not much variation across years. The data indicate that LIHTC units are more likely than other types of rental housing to be located in central cities; American Housing Survey data for 1993 showed that 45 percent of all rental units were located in central cities, 38 percent were located in suburbs, and 17 percent were located in non-metro areas.

Exhibit 4-5 presents information on project characteristics by type of location. Here some key differences emerge. As shown, projects located in suburban areas are the largest, with 54 units on average, compared to 48 units for central city projects, and only 28 units for non-metro projects. The ratio of low income to total units is high, however, regardless of location.

Information on bedroom sizes suggests modest variation, with projects located in non- metro areas showing the lowest average of bedrooms per unit. The distributions by bedroom size confirm a much higher proportion of one bedroom units for non-metro projects and correspondingly fewer units with two bedrooms or larger. This may be due to FmHA Section 515 projects which often serve elderly populations.

Non-profits were involved in about a quarter of LIHTC production overall, sponsoring about the same share of units in the central city (30 percent) as in the suburbs (29 percent), but a substantially lower proportion in non-metro areas (8 percent). Differences were also quite evident with regard to construction type. In particular, non metro areas were the most likely to have units that were newly constructed (77 percent), while central city properties were the least likely (42 percent) to involve new construction. Finally, as expected, FmHA loans are used primarily in non-metropolitan areas (69 percent), and least often in central cities (3 percent).[3] The much higher use of the 4 percent credit in non-metro units is presumably associated with this federal financing source.

[3] The urban/rural designation as used by the Census Bureau cuts across Metro/non-metro designations such that it is possible to have rural areas in MSAs. It is unclear whether the projects identified as being located in a central city are in error.

Exhibit 4-4
Distribution of LIHTC Projects and Units by Location Type[1]
1992-1994

	1992		1993		1994		All Projects 1992-1994	
	Projects N=1,020	**Units N=37,919**	**Projects N=984**	**Units N=45,067**	**Projects N=830**	**Units N=39,620**	**Projects N=2,834**	**Units N=122,606**
Distribution by Type of Location								
Central City	49.2%	53.6%	51.6%	56.1%	46.0%	53.2%	49.1%	54.4%
Metro (suburb)	19.9	24.2	21.3	27.0	22.0	26.8	21.0	26.1
Non-metro	30.9	22.1	27.1	16.9	32.0	20.0	29.9	19.5

[1] The dataset used in this analysis includes only geocoded projects. The dataset excludes 25 projects with missing unit or Census data.

Exhibit 4-5
Characteristics of LIHTC Projects by Type of Location[1]
1992-1994

	Metro Area Central City (N=66,692)	Metro Area Non-Central City (N=31,962)	Non Metro (N=23,952)	Total (N=122,606)
Average Project Size	48.4	53.7	28.2	43.3
Average Percentage of Qualifying Units	97.2%	96.1%	98.6%	97.4%
Average Number of Bedrooms[2]	1.7	1.7	1.5	1.6
Distribution of Units by Number of Bedrooms				
Studio/Efficiency	9.8%	3.0%	2.2%	6.4%
1 Bedroom	32.7	39.5	58.2	40.0
2 Bedrooms	41.3	39.8	31.0	38.7
3 Bedrooms	14.3	16.3	8.2	13.5
4 Bedrooms	1.8	1.3	0.4	1.3
Percent of Units with Non-profit Sponsor[3]	30.4%	28.9%	7.9%	25.7%
Distribution of Units by Construction Type[4]				
New Construction	42.1%	63.5%	76.9%	54.9%
Rehab	55.2	35.9	23.1	43.6
Both New/Rehab	2.3	0.5	0.0	1.3
Existing	0.4	0.1	0.0	0.2
Distribution by Credit Percentage[5]				
4 Percent	11.2%	29.4%	72.9%	29.3%
9 Percent	70.1	60.3	22.9	57.5
Both	18.8	10.3	4.2	13.2
Percent of Units with FmHA Financing[6]	2.7%	19.0%	69.4%	20.6%

[1] The dataset used in this analysis includes only geocoded projects. The dataset excludes 25 projects with missing unit or Census data.

[2] Percent of units missing data: Total (52%), central city (52%), metro (55%), non-metro (50%).

[3] Percent of units missing data: Total (24%), central city (25%), metro (23%), non-metro (26%).

[4] Percent of units missing data: Total (27%), central city (29%), metro (23%), non-metro (26%).

[5] Percent of units missing data: Total (48%), central city (53%), metro (38%), non-metro (46%).

[6] Percent of units missing data: Total (26%), central city (28%), metro (26%), non-metro (22%).

4.2 Incentives to Locate in Difficult Development Areas and Qualified Census Tracts

As part of the Omnibus Reconciliation Act of 1989, Congress added provisions to the LIHTC program designed to increase production of LIHTC units in hard to serve areas. Specifically, the act permits projects located in designated areas to claim a higher eligible basis (130 percent of the ordinary basis) for the purposes of calculating the amount of the credit that can be provided. HUD published the first lists of designated "Difficult Development Areas" (DDAs) and "Qualified Census Tracts" (QTs) in August 1990. DDAs include metropolitan areas and non-metropolitan counties where construction, land and utility costs are high relative to incomes; QTs include any tract where at least 50 percent of the households have incomes less than 60 percent of the Area Median Gross Income (AMGI)[4]. DDA and QT designations were effective for buildings placed in service in 1990.

Exhibit 4-6 presents the distribution of LIHTC production across DDAs and QTs. The data are based on DDA and QT designations applicable to projects allocated after April 1, 1993. (Automated data for the earlier rounds of designations were not available.) Across all years, 16 percent of all units were located in DDAs and 27 percent were located in QTs, for a total of 37 percent in designated areas.[5] These proportions are fairly constant over the three analysis years. While an important objective of the research was to examine the extent to which these incentives may have increased the share of units falling into these areas as a result of the 1989 legislation, the smaller number of states reporting for years prior to 1990 precludes analysis of this issue.

Exhibit 4-7 presents information on selected project characteristics for properties located inside and outside designated areas. As shown, there are only modest differences in project size or the percentage of qualifying units across DDAs, QTs, and non-designated areas. By contrast, the proportion of units with non-profit sponsors is more than double in DDAs and QTs than the proportion outside these areas. Difficult Development Areas contain a preponderance of new construction units, while units located in QTs are overwhelmingly rehab. Use of the 4 percent credit, as an indicator of subsidized financing, is higher in DDAs than QTs, but about the same as in non-designated areas. Finally, the share of FmHA units is far lower in QTs than in DDAs or non-qualifying areas.

4.3 Characteristics of LIHTC Neighborhoods

This section focuses on the characteristics of the neighborhoods in which LIHTC projects are located, in particular the extent to which they are developed in low-income areas, minority

[4] The combined population of metropolitan DDAs cannot exceed 20 percent of the total U.S. metropolitan population. Similarly, the combined population of non-metropolitan DDAs cannot exceed 20 percent of the total U.S. non-metropolitan population. The combined population of QTs in a metropolitan area cannot exceed 20 percent of that metropolitan area's population. The combined population of QTs in the non-metropolitan parts of a state cannot exceed 20 percent of that state's non-metropolitan population.

[5] 138 projects (7,301 units) were located in an area that was both a DDA and a QT.

Exhibit 4-6
Distribution of LIHTC Projects and Units by Location in Difficult Development Areas or Qualified Census Tracts[1]
1992-1994

	1992		1993		1994		All Projects 1992-1994	
	Projects (N=1,020)	**Units (N=37,919)**	**Projects (N=984)**	**Units (N=45,067)**	**Projects (N=830)**	**Units (N=39,620)**	**Project (N=2,834)**	**Units (N=122,606)**
Percent in DDAs	12.0%	16.5%	15.1%	14.4%	16.5%	17.5%	14.4%	16.0%
Percent in QTs	27.21%	25.5%	27.03%	27.19%	27.0%	27.7%	27.1%	26.8%
In DDA or QT[2]	35.5%	38.0%	37.6%	36.4%	36.8%	36.6%	36.6%	36.9%

[1] The dataset used in this analysis includes only geocoded projects. The dataset excludes 25 projects with missing unit or Census data.

[2] 138 projects (7,301 units) are located in an area which is both a DDA and a QT.

Exhibit 4-7
Characteristics by Location in DDAs and QTs[1]
1992-1994

	In DDAs[2] (N=19,735)	In QT (N=25,580)	Outside a DDA or QT (N=77,291)	Total (N=122,606)
Average Project Size	48.3	40.7	43.0	43.3
Average Percentage of Qualifying Units	96.6%	97.0%	99.0%	98.2%
Average Number of Bedrooms[3]	1.7	1.5	1.6	1.6
Percentage of Units with Non-profit Sponsor[4]	41.6	39.2	17.2	25.7
Distribution of Units by Construction Type[5]				
New Construction	78.4%	29.4%	58.0%	54.8%
Rehab	20.8	67.7	40.7	43.6
Both New/Rehab	0.8	2.9	1.0	1.3
Existing	0.0	0.0	0.3	0.2
Distribution by Credit Percentage[6]				
4 %	36.3%	14.9%	32.3%	29.3
9 %	61.6	57.7	56.3	57.5
Both	2.1	27.5	11.5	13.2
Percentage of Units with FmHA Financing[7]	21.4%	5.7%	24.7%	20.6%

[1] The dataset used in this analysis includes only geocoded projects. The dataset excludes 25 projects with missing unit or Census data.

[2] Includes 138 projects (7,301 units) located in an area that was both a DDA and a QT.

[3] Percent of units missing data: Total (52%), DDA (54%), QT (59%), outside DDA/QT (49%).

[4] Percent of units missing data: Total (25%), DDA (19%), QT (28%), outside a DDA/QT (24%).

[5] Percent of units missing data: Total (27%), DDA (37%), QT (27%), outside a DDA/QT (24%).

[6] Percent of units missing data: Total (48%), DDAs (44%), QTs (47%), outside a DDA/QT (49%).

[7] Percent of units missing data: Total (26%), DDA (26%), QT (32%), outside a DDA/QT (23%).

Exhibit 4-8 presents information on the extent to which LIHTC units are located in lower income areas. The first panel of the exhibit shows the distribution of units by the ratio of tract median income to the HUD-published area median. As shown, the vast majority of units (87 percent) are located in neighborhoods where the tract median is below the median for the area as a whole. However, about 13 percent of units are located in tracts with high incomes relative to the area, including some with an average income more than twice the area median.

The second panel of Exhibit 4-8 uses the LIHTC cutoff (60 percent of median) as a indicator of neighborhood income. The exhibit shows the proportion of units located in tracts with varying shares of households that meet the qualification for occupancy in a tax credit unit. Overall, just over one-third of the tax credit units were located in neighborhoods where 51 percent or more of the households had incomes that would qualify them for LIHTC occupancy. We also examined the distribution using 80 percent of median as the cutoff—the definition of "low-income" used in most HUD programs. As shown, about 65 percent of the units are in tracts where a majority of households would be considered "low-income." This is the same measure that is used in the CDBG program to classify "low-income neighborhoods" under that program's low-income benefit requirements.

Finally, the bottom panel of Exhibit 4-8 considers the extent to which LIHTC units are located in areas of concentrated poverty. The figures are based on the proportion of households with incomes below the 1989 poverty threshold of $12,674. Note that this measure does not take local variations in income into account. However, the measure has been used in recent years to classify low-poverty tracts for programs aimed at increasing economic mobility among assisted families. For example, the Moving to Opportunity (MTO) program requires families to live in a tract where the poverty rate is no greater than 10 percent.

Based on the geocoded LIHTC data, only about 12 percent of the LIHTC units would meet the MTO criterion. However, the vast majority of the units are in areas of relatively low poverty concentrations. Using a poverty rate of 30 percent as a cutoff, 62 percent of the units are in non-concentrated areas. On the other end of the scale, about 13 percent of the units are located in places where half or more of the households are poor.

Additional demographic indicators are presented in Exhibit 4-9. As shown, about half of the units (55 percent) were in areas with under 30 percent minority population. At the same time, 33 percent were in neighborhoods where over half of the population were minority.[1] Over three quarters of the units were in neighborhoods with fairly low proportions of female-headed families (under 20 percent), although a small percentage of the units were in neighborhoods with very high concentrations of this household type.

Finally, the exhibit presents information on LIHTC neighborhoods in terms of ownership and rent levels. As shown, homeownership rates in LIHTC neighborhoods are surprisingly high. Overall, 56 percent of the units were located in predominantly owner-occupied tracts. In order to measure relative rent levels, we compared tract median contract rent with the median for the

[1] We also compared the minority composition of each LIHTC tract with that for the MSA or county in which it was located. Overall, 45 percent of the projects were in tracts where the percent minority was roughly the same (+/- 10 percent) as that of the MSA or county. About 39 percent of the units were in tracts with a higher minority percentage than the MSA or county, while 15 percent were located in tracts with a lower percentage.

areas, and areas with high poverty concentrations. It should be noted at the outset that there is no set of "correct" neighborhood characteristics. Projects developed in poor inner-city neighborhoods may be well-located to serve their intended population. Conversely, projects located in more affluent or suburban areas may offer lower income households the opportunity to improve their neighborhood surroundings. A project's neighborhood, for the purpose of this analysis, is the census tract in which it is located.

Exhibit 4-8 presents information on the extent to which LIHTC units are located in lower income areas. The first panel of the exhibit shows the distribution of units by the ratio of tract median income to the HUD-published area median. As shown, the vast majority of units (87 percent) are located in neighborhoods where the tract median is below the median for the area as a whole. However, about 13 percent of units are located in tracts with high incomes relative to the area, including some with an average income more than twice the area median.

The second panel of Exhibit 4-8 uses the LIHTC cutoff (60 percent of median) as a indicator of neighborhood income. The exhibit shows the proportion of units located in tracts with varying shares of households that meet the qualification for occupancy in a tax credit unit. Overall, just over one-third of the tax credit units were located in neighborhoods where 51 percent or more of the households had incomes that would qualify them for LIHTC occupancy. We also examined the distribution using 80 percent of median as the cutoff—the definition of "low-income" used in most HUD programs. As shown, about 65 percent of the units are in tracts where a majority of households would be considered "low-income." This is the same measure that is used in the CDBG program to classify "low-income neighborhoods" under that program's low-income benefit requirements.

Finally, the bottom panel of Exhibit 4-8 considers the extent to which LIHTC units are located in areas of concentrated poverty. The figures are based on the proportion of households with incomes below the 1989 poverty threshold of $12,674. Note that this measure does not take local variations in income into account. However, the measure has been used in recent years to classify low-poverty tracts for programs aimed at increasing economic mobility among assisted families. For example, the Moving to Opportunity (MTO) program requires families to live in a tract where the poverty rate is no greater than 10 percent.

Based on the geocoded LIHTC data, only about 12 percent of the LIHTC units would meet the MTO criterion. However, the vast majority of the units are in areas of relatively low poverty concentrations. Using a poverty rate of 30 percent as a cutoff, 62 percent of the units are in non-concentrated areas. On the other end of the scale, about 13 percent of the units are located in places where half or more of the households are poor.

Additional demographic indicators are presented in Exhibit 4-9. As shown, about half of the units (55 percent) were in areas with under 30 percent minority population. At the same time, 33 percent were in neighborhoods where over half of the population were minority.[6] Over three quarters of the units were in neighborhoods with fairly low proportions of female-headed

[6] We also compared the minority composition of each LIHTC tract with that for the MSA or county in which it was located. Overall, 45 percent of the projects were in tracts where the percent minority was roughly the same (+/- 10 percent) as that of the MSA or county. About 39 percent of the units were in tracts with a higher minority percentage than the MSA or county, while 15 percent were located in tracts with a lower percentage.

Exhibit 4-8
Location of LIHTC Units by Neighborhood Income
1992-1994

Neighborhood Characteristic	Percent of Units (N=122,606)
Median Income as Percent of HUD Area Median	
0-10%	0.0%
11-20%	2.3
21-30%	8.2
31-40%	6.5
41-50%	8.8
51-60%	11.9
61-70%	11.4
71-80%	14.6
81-90%	13.3
91-100%	10.3
Over 100%	12.7
Percent of Households with Incomes Under 60 Percent of Median (LIHTC Qualifying)	
0-10%	1.3%
11-20%	6.1
21-30%	15.1
31-40%	23.1
41-50%	17.5
51-60%	14.0
61-70%	10.3
71-80%	7.0
81-90%	4.4
91-100%	1.1
Percent of Households with Incomes Under 80 Percent of Median (Low-Income Households)	
0-10%	0.3%
11-20%	1.6
21-30%	4.8
31-40%	9.7
41-50%	18.6
51-60%	21.4
61-70%	15.5
71-80%	14.0
81-90%	9.5
91-100%	4.3
Percent of Households in Poverty (Under $12,674 Annual Income)	
0-10%	
11-20%	11.8%
21-30%	25.2
31-40%	24.6
41-50%	16.0
51-60%	9.3
61-70%	6.5
71-80%	4.1
81-90%	2.0
91-100%	0.3
	0.1

Exhibit 4-9
Location by of LIHTC Units by Other Neighborhood Characteristics
1992-1994

Neighborhood Characteristic	Percent of Units (N=122,606)
Percent Minority Population	
0-10%	30.8
11-20%	14.2
21-30%	9.8
31-40%	6.5
41-50%	5.3
51-60%	5.8
61-70%	5.0
71-80%	3.9
81-90%	5.7
91-100%	13.1
Percent Female-Headed Households	
0-10%	39.0
11-20%	38.6
21-30%	11.6
31-40%	7.1
41-50%	3.2
51-60%	0.3
61-70%	0.1
71-80%	0.0
81-90%	0.0
91-100%	0.0
Percent Owner Occupied	
0-10%	12.5
11-20%	7.9
21-30%	5.8
31-40%	8.3
41-50%	9.3
51-60%	13.2
61-70%	16.6
71-80%	17.1
81-90%	8.3
91-100%	1.1
Tract Median Contract Rent as a Percentage of the MSA or County Median	
0-10%	0.0%
11-20%	0.0
21-30%	0.1
31-40%	1.5
41-50%	3.3
51-60%	5.5
61-70%	6.5
71-80%	10.9
81-90%	13.3
91-100%	19.2
101-125%	31.9
126-150%	5.8
150-200%	1.5
Over 200%	0.4

families (under 20 percent), although a small percentage of the units were in neighborhoods with very high concentrations of this household type.

Finally, the exhibit presents information on LIHTC neighborhoods in terms of ownership and rent levels. As shown, homeownership rates in LIHTC neighborhoods are surprisingly high. Overall, 56 percent of the units were located in predominantly owner-occupied tracts. In order to measure relative rent levels, we compared tract median contract rent with the median for the MSA or county in which the tract is located. Roughly 60 percent of the LIHTC units are in tracts where the median contract rent is lower than the MSA or county median. Of the remaining 40 percent, most fall between 100 and 125 percent of the area medians.[33]

Exhibit 4-10 summarizes this information, showing the proportions of LIHTC units that are located in tracts that are predominantly low-income (based on 80 percent of median), have high poverty concentrations (over 30 percent), are predominantly minority, have high rates of female-headed households, are predominantly renter-occupied, and where rent levels are below the area median. To provide a better understanding of how neighborhood conditions vary across different geographical groupings, the table presents these measures for each of the three types of locations discussed earlier in this section—central cities, suburbs, and non-metro areas.

As shown, 74 percent of units in central cities are in neighborhoods where the majority of households are low-income, compared to about half of the units located in suburban areas and about 60 percent of the units which are in non-metropolitan areas. Overall, 65 percent of tax credit units are located in these low-income tracts. (By way of context, about 29 percent of all U.S Census tracts contained over 50 percent low-income households in 1990.)

In terms of poverty levels, 39 percent of the LIHTC units are in neighborhoods of concentrated poverty (over 30 percent poor households), however, this figure rises to nearly 50 percent for central city and non-metro units, as compared to about 13 percent for suburban units. National data shows that only 12 percent of all census tracts exceed 30 percent poor households.

Minority concentration also varies across location types, with 48 percent of all units in central cities located in neighborhoods with high minority populations (over 50 percent), compared to 20 percent of suburban units and 11 percent of non-metro units. Overall, 34 percent of LIHTC units are located in tracts with over 50 percent minority population; only about 18 percent of all U.S. tracts have this characteristic. When relative minority concentrations are examined, that is LIHTC tracts are classified based on whether the proportion minority is higher or lower than for the MSAs or counties in which they are located, central city units are much more likely than suburban or non-metro units to be located in tracts with relatively high minority shares.

Not surprisingly, the proportion of units in neighborhoods with a large share of female-headed households was higher for central city projects than for the other types. Among all

[7] The public use LIHTC database does not include MSA and county census variables. This was done to conserve space. These variables were chosen because they are easier to obtain than tract data or HUD data included in the database.

Exhibit 4-10
LIHTC Locations by Neighborhood Characteristics and Location Type
1992-1994

Neighborhood Characteristic	Type of Location			
	Central City (N=66,692)	Metro (N=31,962)	Non-metro (N=23,952))	All (N=122,606)
Tracts with Over 50 Percent Low-Income Households (< 80% Median)	73.9%	48.3%	60.5%	64.7%
Tracts with Over 30 Percent Poor Households (< Poverty Line)	48.1%	13.4%	45.3%	38.5%
Tracts with Over 50 Percent Minority Population	48.0%	19.7%	11.4%	33.5%
Tracts where Percent Minority Exceeds MSA or County Percentage by 10 percent	58.2%	20.9%	11.4%	39.3%
Tracts with Over 20 Percent Female-Headed Households	33.6%	9.2%	8.8%	22.4%
Tracts with Over 50 Percent Owner Occupied Units	36.1%	72.2%	91.3%	56.3%
Tracts with Median Contract Rent at or Below the MSA or County Median	70.6%	49.5%	43.8%	59.9%

LIHTC units, 22 percent were located in tracts with over 20 percent female headed households (compared to 5 percent of all U.S. tracts with this characteristic). Central city units were more often located in predominately renter-occupied neighborhoods, while suburban and non-metro units were for the most part located in owner-occupied areas. (Overall, however, 56 percent of LIHTC units were located in predominantly owner-occupied tracts, compared to 76 percent of tracts nationally that meet this criterion.) Finally, when tract rent levels are compared to the MSA or county medians, central city units are more likely (71 percent) to be located in low-rent tracts than either suburban (50 percent) or non-metro (44 percent) units. Overall, 60 percent of the units were located in tracts where median rents were lower than the area median.

Exhibit 4-11 presents information on neighborhood characteristics for three types of LIHTC projects: those with non-profit sponsors, those using FmHA financing, and those financed with tax-exempt bonds. As shown, over 70 percent of all non-profit units were located in low-income neighborhoods. This exceeds the proportion for FmHA units (which at 66 percent was close to the sample average) and greatly exceeds the share of bond-financed units located in low-income neighborhoods (55 percent). The proportion of units in high poverty neighborhoods (over 30 percent poor) was 46 percent for non-profits, 47 percent for FmHA units, and 34 percent for bond-financed units.

With respect to other demographics, the neighborhoods where non-profit sponsored units and bond-financed units are located appear to be fairly similar, but are quite distinct from areas where FmHA units are located. While 43 percent of non-profit units and 39 percent of bond-financed units are found in neighborhoods with a high concentration of minorities, fewer than 20 percent of FmHA financed units are located in this type of neighborhood. FmHA-financed units are also less likely to be in neighborhoods high proportions of female-headed households or many renter-occupied units. Overall, non-profit units tend to be distinguished by the extent to which they are located in low-income areas, areas of high minority concentration (relative to the area as a whole) and by their location in tracts with below-average rent levels. These data tend to confirm the idea that non-profits locate their projects in the more difficult neighborhoods.

Exhibit 4-11
LIHTC Locations by Project Type
1992-1994

Neighborhood Characteristic	Type of Project		
	Non-Profit Sponsor (N=23,774)	**FmHA (N=18,759)**	**Bond Financed (N=7,116)**
Tracts with Over 50 Percent Low-Income Households (< 80% Median)	70.2%	65.8%	54.8%
Tracts with Over 30 Percent Poor Households (< Poverty Line)	46.2%	46.6%	34.4%
Tracts with Over 50 Percent Minority Population	42.6%	18.7%	38.8%
Tracts where Percent Minority Exceeds MSA or County Percentage by 10%	53.5%	17.4%	41.4%
Tracts with Over 20 Percent Female-Headed Households	22.8%	10.5%	20 .7%
Tracts with Over 50 Percent Owner Occupied Units	38.8%	93.7%	53.7%
Tracts with Median Contract Rent at or Below the MSA or County Median	72.2%	57.8%	53.1%

SECTION 5
CONCLUSION

A primary objective of this study was to create a database of LIHTC properties that have been placed in service and are currently providing housing to low-income households. Given the decentralized nature of the LIHTC program, there is no existing national source of information on the characteristics or locations of these properties. Therefore, the study relied on state tax credit allocating agencies to provide a few basic items of data about each of the properties in their inventories.

Collection of data on tax credit projects proved to be more difficult than anticipated. Despite these hurdles, the final database contains virtually complete coverage of LIHTC projects for the 1992-1994 period, along with data for roughly half of the states for the years 1987-1991. Although some variables suffer from problems of missing data, the database contains a wealth of previously unavailable information about the LIHTC inventory and provides the first project-level picture of LIHTC production since HUD's initial evaluation of the LIHTC program in 1987-1988.

Based on these data, tax credit production has averaged about 56,000 units annually in recent years. However, the average number of units produced (placed in service) each year is only about 60 percent of the number of units that receive tax credit allocations. It not known why these initially allocated units drop out of the program, whether these units are built at all (i.e., as non-tax credit developments), and if they are built, whether they serve low-income households or some other population.

Tax credit projects are generally structured to maximize use of the credit. The average ratio of low-income (qualifying) units to total units is 98 percent. Recently completed tax credit properties average 42 units total, up from the early years of the program when the average project size was 28 units. LIHTC units are split roughly 60/40 in favor of new construction. Not surprisingly, non-metropolitan units are overwhelmingly new construction, while central city units are most likely to involve rehab.

Overall, about 26 percent of all tax credit units are financed with Rural Housing Service (formerly FmHA) Section 515 subsidies. (Most of these units are new construction units and most are located in non-metropolitan areas.) Only about 6 percent of the units reported using tax exempt bond-financing. Finally, about 23 percent of the units were developed by non-profit sponsors, a substantial increase from the early years of the tax credit program when only about 9 percent of the units involved a non-profit sponsor.

In terms of general locations, tax credit units show some concentration in central city and non-metro areas relative to suburban locations. Overall, 54 percent of LIHTC units were located in central cities, 26 percent were located in suburban (non-central city) metro areas, and 19 percent were located in non-metro areas. Comparative figures for all rental housing (from the

1989 American Housing Survey) are 47 percent in central cities, 39 percent in suburbs, and 14 percent in non-metro areas.

A substantial share of recently developed properties (37 percent) are located in Difficult Development Areas or Qualified Census Tracts—designations intended to identify tracts with the most challenging development conditions (low incomes and high construction costs) and relatively high concentrations of low-income households. Since 1990, the LIHTC program has offered incentives (in the form of a higher eligible basis) for properties located in these areas.

More generally, the study looked at the characteristics of the tracts in which LIHTC properties are located. Overall, we found that about 65 percent of the units are located in low-income neighborhoods (defined as tracts where 51 percent or more of the households have incomes below 80 percent of median). Over a third (38 percent) were in areas of concentrated poverty (over 30 percent poor households), and about 40 percent were in neighborhoods with high minority concentrations relative to the MSA or county in which they were located. Homeowership rates in LIHTC neighborhood are high, on average, with 56 percent of the units located in predominantly owner-occupied neighborhoods. Not surprisingly, the lowest homeownership rates were associated with central city projects. In terms of rent levels, most LIHTC units (60 percent) are located in tracts where median rents are lower than MSA or county medians (again, central city units are more frequently located in these low-rent tracts).

Finally, we examined the characteristics of locations and neighborhood characteristics of selected property types including FmHA and bond-financed projects and projects with non-profit sponsors. Overall, the data lend some support for the notion that non-profit sponsors in particular tend to locate projects in the most difficult neighborhood environments.

The descriptive and locational analyses presented in this report are only a starting point for more in-depth work using the HUD LIHTC database. The primary purpose of the study was to collect basic identifying data at the property level (including addresses and owner contact information) in order to provide a sampling frame for future analyses of the LIHTC program. The locational analysis presented here provided a logical starting place for using the small number of data items collected from the states, but it is hoped that the database will serve as the basis for a wide array of sample-based studies and analyses in the future.

Such studies might include analyses of how LIHTC properties are financed, the use of tenant-based and other subsidies in LIHTC projects, possible differences between non-profit and for profit properties, and the characteristics of tenants living in LIHTC units. Information on the tenant populations served would, in particular, provide a complement to the neighborhood data already collected, allowing for some analysis of issues of concentration and mobility. Tenant income levels are also of interest given that the program pegs rents to an area affordability standard (e.g., 30 percent of 60 percent of median) but allows individual rent-to-income ratios to vary. Finally, additional research might focus on units that receive initial tax credit allocations but are not placed in service under the LIHTC, i.e., whether these units are ultimately built, and, if so, what populations they serve and what financing sources they use.

APPENDIX A

LIHTC DATA COLLECTION FORM

LIHTC DATA FORM

To be completed for each project placed in service

State: _____ State Project Number: _____

Project Name: _____

Project Street Address:
(See instructions on reverse)

_____
(NUMBER) (STREET)

_____
(CITY) (STATE) (ZIP)

Owner/Owner's Representative:

_____
(FIRST NAME LAST NAME)

_____
(COMPANY NAME)

_____
(NUMBER) (STREET)

_____
(CITY) (STATE) (ZIP)

_____
( ) (AREA CODE AND TELEPHONE NUMBER)

Total Number of Units: ___ , ___ ___ ___

Number of *Low-Income* Units: ___ , ___ ___ ___

Total Number of Units *by Size*:

0BR	1BR	2BR	3BR	4+BR
_____	_____	_____	_____	_____

Year Project Placed In Service: 19 ___ ___

Year Project Received Allocation or Bond Issued: 19 ___ ___

Type *(check all that apply)*:

- ☐ New Construction
- ☐ Rehab (with or without acquisition)
- ☐ Existing (for 1987-89 allocations only)

Credit Percentage *(check one)*:

- ☐ 9% (70% present value)
- ☐ 4% (30% present value)
- ☐ Both

	Yes	No
Does project have a non-profit sponsor?	☐	☐
Basis increased due to location in qualified tract or difficult development area?	☐	☐
Does project use tax-exempt bonds?	☐	☐
Does project use Farmers Home Section 515 loans?	☐	☐

INSTRUCTIONS FOR LIHTC DATA FORM

State: Enter the Postal Service two character abbreviation for your state.

State Identifying Number: Enter the number or code that your agency uses to identify properties. This should be an identifier that will permit future identification of this project.

Project Name: Enter the name of the project, if one exists. Example: Westside Terrace Apartments. Do not enter a partnership name (e.g., Venture Limited II).

Project Address: Enter the complete street address of the property, including city, state, and zip code. Do not enter a P.O. box or multiple addresses (e.g., 52-58 Garden Street). If the project consists of more than one building with different street addresses, enter only **one** address, using the address for the building with the greatest number of units.

Owner/Owner's Representative: Enter the name, company name, address, and phone number of the owner or the owner's contact person. This will often be a representative of the general partner. This information will be used for future mail or telephone contacts regarding the development. As such, we need the name of an individual and/or company and a current address and phone number. Please do not enter a partnership name. Do not provide information for the managing agent, as this is easily outdated.

Total Number of Units in Project: Enter the total number of units in this project, summing across buildings if needed.

Number of Low Income Units: Enter the number of units in the development (summing across buildings if necessary) that were qualified to receive Low Income Housing Tax Credits at the time the buildings were placed in service.

Number of Units by Size : Enter the number of units in the development (summing across buildings if necessary) that have 0, 1, 2, 3 or 4 or more bedrooms.

Year Placed In Service: Enter the last 2 digits of the year the project was placed in service. If this is a multiple building project, with more than one placed in service date, enter the most recent date. Placement in service date is available from IRS Form 8609.

Year Project Received Allocation: Enter the last 2 digits of the initial allocation year for the project. Allocation date is available from IRS Form 8609. If the project received multiple allocations, use the earliest allocation year. If the project received tax exempt bonds and does not have an allocation date, enter the year in which the bonds were issued.

Type (New Construction or Rehab): Enter the production type for which the project is receiving tax credits, i.e., a newly constructed project and/or one involving rehabilitation. For projects allocated in 1987-1989 only, an additional type -- acquisition only -- is also possible. If the project involves both New Construction and Rehab, check both boxes. (Construction type can be inferred from IRS Form 8609, Item 6. If box a or b is checked, the building is new construction. If box c and d or e is checked, the building is acquisition/rehab. If box c only is checked, the building is acquisition-only.)

Credit Percentage: This item indicates the type of credit provided: 9% credit (70% present value) or 4% (30 % present value). Maximum applicable credit percentage allowable is available from IRS Form 8609, Item 2. The entry on the 8609 is an exact percentage for the project and may include several decimal places (e.g., 8.89% or 4.2%). Please check the closest percentage -- either 9 or 4 percent. The box marked "Both" should be checked where acquisition is covered at 4% and rehab at 9%.

Does project have a non-profit sponsor? Check yes if the project sponsor is a 501(C)(3) non profit entity. Use the same criteria as those for determining projects to be included in the 10 percent non-profit set aside.

Increased Basis Due to Location in a Qualified Census Tract or Difficult Development Area. Check yes if the project actually received increased basis due to its location in a qualified census tract or difficult development area. Increased basis can be determined from IRS Form 8609, Item 3b. (Note: projects may be located in a qualified tract without receiving the increase.)

Does project use tax exempt bonds? Check yes if financing was provided through tax exempt bonds. Use of tax exempt bonds can be determined from IRS Form 8609, Item 4, which shows the percentage of the basis financed from this source.

Does project use Farmers Home Section 515 loans? Check yes, if the project was financed with a Farmers Home Section 515 direct loan.

APPENDIX B
DESCRIPTION OF THE LIHTC DATABASE

APPENDIX B
DESCRIPTION OF THE LIHTC DATABASE

The LIHTC Database contains records for 9,785 projects and 339,190 units placed in service between 1987 and 1994. Coverage for the 1992-1994 period is virtually complete, including projects from all LIHTC allocating agencies except for the City of Chicago.

Project Data: All project data was collected from the state allocating agencies. Data were either provided in electronic form, provided on the LIHTC data collection form, or compiled by Abt Associates staff from listings or other documents provided by the states. In three cases, data were collected directly from agency files by members of the study team.

Geographic Indicators: Project street addresses were used to match properties with their census tract (as well as other geographic indicators such as MSA code, where present). All projects were initially run through HUD's Conquest geographical information system, using the systems "non-interactive" mode.[1] The success rate from this first step was approximately 60 percent of all projects. All remaining non-matches were then sent to a private vendor for geocoding, using different software and more updated geographic files. This step resulted in a census tract identification for about 44 percent of the properties which had not been matched by Conquest. Finally, projects that had not been successfully matched in steps one or two, were rerun through the Conquest system, this time using the system's interactive mode, which prompts the user to make adjustments such as changing the spelling of the street name). The success rate for this step was quite low, however, only about 8 percent. Overall, 76 percent of the properties in the database (and 78 percent of the units) were successfully geocoded. The geocoding rate for properties placed-in-service between 1992 and 1994 was somewhat lower—about 72 percent for projects and 74 percent for LIHTC units.

Location Data: For those projects that were successfully geocoded, geographic indicators were used to develop information on project locations, for example, whether the property was located in a MSA or non-metro area (as of the 1990 census), and, for projects in MSAs, whether the project was located in a central city of the MSA. HUD data files and listings were also used to identify projects located in areas that had been designated by HUD as "difficult development areas" in 1993. The criteria for this designation are legislatively determined and are intended to capture areas with below average incomes and relatively high development costs.

[1] Conquest is a proprietary GIS package which can be used both to identify geographic location based on street address and to attach Census or other demographic variables for the location.

Census and Other Income and Rent Data: The Conquest system was also used to attach tract-level Census variables to each project record. Key Census data included tract-level information on incomes, housing units, and various population characteristics. Using these data, along with HUD data on 1990 Section 8 Income Limits and 1990 Fair Market Rents, we then created a series of analysis variables, that relate incomes and rents to area-wide limits. Finally, selected variables for MSAs (such as racial/ethnic composition) were used in the same way.

A complete listing of all database variables is provided below.

Low-Income Housing Tax Credit Database Data Dictionary

Variable Name	Variable Definition	Variable Type[a]	Length	Decimal Places	Record Line[b]	Begin Column	End Column	Value Labels
HUD_ID	Unique Project Identifier for the Database	A	6		1	1	6	
PROJECT	Project name	A	30		1	7	36	
PROJ_ADD	Project street address	A	30		1	37	66	
PROJ_CTY	Project city	A	30		1	67	96	
PROJ_ST	Project state	A	2		1	97	98	
PROJ_ZIP	Project zip	A	10		1	99	108	
STATE_ID	State defined Project ID	A	15		1	109	123	
CONTACT	Owner or owner's contact	A	20		2	1	20	
COMPANY	Name of contact company	A	40		2	21	60	
CO_ADD	Contact's business address	A	30		2	61	90	
CO_CTY	Contact's city	A	30		2	91	120	
CO_ST	Contact's state	A	2		2	121	122	
CO_ZIP	Contact's zip	A	10		2	123	132	
CO_TEL	Contact's telephone	A	13		2	133	145	
LATITUDE	Latitude: Degrees Decimal	N	9	6	3	1	9	
LONGITUD	Longitude: Negative Degrees Decimal -- GIS Mapping Convention	N	11	6	3	10	20	
REG	Region	N	1		3	21	21	1=Northeast 2=Midwest 3=South 4=West
MSA	MSA Number	N	4		3	22	25	
PLACE	Census Place Code	N	5		3	26	30	
TRACT_ID	Unique Census Tract ID: State FIPS Code, County Code, Tract	A	12		3	31	42	
STATE	State FIPS Code	N	2		3	43	44	
COUNTY	County Code	N	3		3	45	47	
TRACT	Census Tract Number	N	7	2	3	48	54	
N_UNITS	Total number of units	N	4		3	55	58	
LI_UNITS	Total number of low income units	N	4		3	59	62	
N_0BR	Number of efficiencies	N	4		3	63	66	
N_1BR	Number of 1 bedroom units	N	4		3	67	70	
N_2BR	Number of 2 bedroom units	N	4		3	71	74	
N_3BR	Number of 3 bedroom units	N	4		3	75	78	
N_4BR	Number of 4 bedroom units	N	4		3	79	82	
YR_PIS	Year placed in service	A	2		3	83	84	
YR_ALLOC	Allocation year	A	2		3	85	86	
NON_PROF	Is there a non-profit sponsor?	N	1		3	87	87	1=Yes 2=No
BASIS	Was there an increase in eligible basis?	N	1		3	88	88	1=Yes 2=No
BOND	Was a tax exempt bond received?	N	1		3	89	89	1=Yes 2=No
FMHA_515	Were FmHA loans used?	N	1		3	90	90	1=Yes 2=No
TYPE	Type of construction	N	1		3	91	91	1=New construction 2=Acquisition/Rehab 3=Both new constr. and A/R 4=Existing
CREDIT	Type of credit percentage	N	1		3	92	92	1=4 percent 2=9 percent 3=Both 4 and 9 percent
A_UNITS	Replace missing total units with low income units	N	4		3	93	96	
AREA90	Tract area in square miles	N	8	1	4	1	8	
POP90	Tract total population 1990	N	8		4	9	16	
HH90	Total number of households in tract 1990	N	8		4	17	24	
POPDEN90	Tract population density (population per square mile)	N	8	1	4	25	32	
XHH65OVR	Tract percent of households with head of household 65 and over	N	8	1	4	33	40	
MEDHOMEV	Median housing value (tract)	N	8		4	41	48	
MEDRENT9	Median contract rent (tract)	N	8		4	49	56	
HU90	Tract total housing units	N	8		4	57	64	
PER_NHB	Tract percent non-Hispanic Black	N	5	2	4	65	69	
PER_NHW	Tract percent non-Hispanic White	N	5	2	4	70	74	
PER_NHA	Tract percent non-Hispanic Asian	N	5	2	4	75	79	
PER_NHI	Tract percent non-Hispanic American Indian	N	5	2	4	80	84	
PER_NHO	Tract Percent non-Hispanic Other Race	N	5	2	4	85	89	
PER_HSP	Tract Percent Hispanic, All Races	N	5	2	4	90	94	
PER_MIN	Tract Percent minority	N	5	2	4	95	99	
PER_FEM	Tract percent female-headed households	N	5	2	4	100	104	
PER_OWN	Tract percent of owner occupied units	N	5	2	4	105	109	
LOW	80% of Section 8 area median income	N	8		4	110	117	

Low-Income Housing Tax Credit Database Data Dictionary

Variable Name	Variable Definition	Variable Type[a]	Length	Decimal Places	Record Line[b]	Begin Column	End Column	Value Labels
VERY_LOW	50% of Section 8 area median income	N	8		4	118	125	
MEDIAN	Section 8 median income	N	8		4	126	133	
UNDER80	Tract percent of households under 80% of Section 8 median income	N	5	2	4	134	138	
UNDER50	Tract percent of households under 50% of Section 8 median income	N	5	2	4	139	143	
UNDER60	Tract percent of households under 60% of Section 8 median income	N	5	2	4	144	148	
UNDERPOV	Tract percent of households under the national poverty line	N	5	2	4	149	153	
MEDHHI90	Median household income (tract)	N	8		4	154	161	
METRO	Is the tract metro or non- metro?	N	1		4	162	162	1=Metro/Non-Central City 2=Metro/Central City 3=Non-Metro 4=Not Geocoded
DDA	Is the tract in a difficult development area?	N	1		4	163	163	0=Not in DDA 1=In Metro DDA 2=In Non-Metro DDA
QT	Is the tract in a qualified census tract?	N	1		4	164	164	1=In a qualified tract 2=Not in a qualified tract
DDAQTB	Is the tract in a difficult development area or a qualified	N	1		4	165	165	0=Not in DDA or QT 1=In DDA 2=In QT
MEDIAN_P	Tract Median income as a percent of Section 8 area median	N	5	2	4	166	170	
FMR_0BR	Fair market rent for 0-bedroom unit	N	4		4	171	174	
FMR_1BR	Fair market rent for 1 bedroom unit	N	4		4	175	178	
FMR_2BR	Fair market rent for 2 bedroom unit	N	4		4	179	182	
FMR_3BR	Fair market rent for 3 bedroom unit	N	4		4	183	186	
FMR_4BR	Fair market rent for 4 bedroom unit	N	4		4	187	190	

NOTES:
[a] A=Alphanumeric, contains characters and numbers; N=Numeric, contains numbers including decimal points and negative signs.
[b] Each project record has 4 lines. The variables in each line reside in the columns indicated.