

American Housing Survey

**Components of Inventory Change and
Rental Dynamics Analysis:
Kansas City, 2002–2011**

Prepared For:

**U.S. Department of Housing & Urban Development
Office of Policy Development & Research**

Prepared By:

**Frederick J. Eggers & Fouad Moumen
Econometrica, Inc.
Bethesda, MD**

**Contract No. C-CHI-01030
Order No. CHI-T0002
Project No. 1053-002**

May 2015

Table of Contents

Executive Summary	iv
1. Introduction	1
2. Special Issues: Kansas City	2
3. Changes to the Housing Stock: 2002–2011	4
4. Components With Atypical Losses or Additions	6
5. Rental Market Dynamics: 2002–2011	10
6. Summary of Housing Market Changes: Kansas City Metropolitan Area, 2002–2011	12
Appendix A: CINCH and Rental Dynamics Methodology	A-1
Appendix B: CINCH and Rental Dynamics Tables	B-1

List of Tables

Table 1: Disposition of 2002 Kansas City Housing Units in 2011	4
Table 2: Sources for 2011 Kansas City Housing Stock	5
Table 3: Sectors Experiencing Atypical Loss Rates in Kansas City, 2002–2011	7
Table 4: Sectors Experiencing Atypical Rates of Addition in Kansas City, 2002–2011	8
Table 5: Summary of Forward-Looking Rental Dynamics for Kansas City	11
Table 6: Summary of Backward-Looking Rental Dynamics for Kansas City.....	12
Forward-Looking Table A: Housing Characteristics, Kansas City	B-6
Forward-Looking Table B: Unit Quality, Kansas City.....	B-9
Forward-Looking Table C: Occupant Characteristics, Kansas City.....	B-11
Forward-Looking Table D: Income and Housing Cost, Kansas City.....	B-13
Backward-Looking Table A: Housing Characteristics, Kansas City.....	B-15
Backward-Looking Table B: Unit Quality, Kansas City	B-18
Backward-Looking Table C: Occupant Characteristics, Kansas City	B-20
Backward-Looking Table D: Income and Housing Cost, Kansas City	B-22
Forward-Looking Rental Dynamics Table 1: Counts, 2002–2011, Kansas City (All Numbers in Thousands).....	B-24
Forward-Looking Rental Dynamics Table 2: Row Percentages, 2002–2011, Kansas City	B-24
Backward-Looking Rental Dynamics Table 1: Counts, 2002–2011, Kansas City (All Numbers in Thousands).....	B-25
Backward-Looking Rental Dynamics Table 2: Row Percentages, 2002–2011, Kansas City ..	B-25

List of Figures

Figure A-1: How the Housing Inventory Changes	A-1
---	-----

Executive Summary

Components of Inventory Change (CINCH) is a tool used by housing analysts to study how the housing inventory changes over time. One typically thinks of the housing stock as evolving through two mechanisms—the construction of new units and the demolition of old units. While new construction and losses through demolition and natural disasters are the primary means by which the housing stock changes, CINCH shows that there are other important engines of change.

This report describes how the housing stock in the Kansas City metropolitan area changed between 2002 and 2011, with particular emphasis on affordable rental housing. The study uses data from the American Housing Survey, which collected detailed information on housing units in Kansas City and on their occupants in both 2002 and 2011.

In 2002 the Kansas City metropolitan area contained 766,400 housing units, including vacant units. By 2011 the number of housing units had increased to 893,600. Part of this increase was due to a redefinition of the metropolitan area that added four counties. We estimate that the 2011 count of housing units for the metropolitan area as defined in 2002 would be 865,700. This represents an overall increase of 13.0 percent, which translates to an average annual increase of 1.4 percent over the 9-year period.

Between 2002 and 2011, only 9,200 units left the housing stock. Of these, 3,700 are clearly permanent losses—the original unit is gone, and major construction would be required to replace it with a new unit. Another 4,800 are temporary losses—the original unit needs repairs or is being used for other purposes. These units may or may not return to the housing stock. Finally, there were 700 units that left the housing stock either permanently or temporarily for “other” reasons, a category that encompasses a wide variety of situations.

In the period between the 2002 and the 2011 AHS surveys, 122,800 units were added to the housing stock. Ninety-six percent of these additions were newly constructed units. The 2011 AHS did track move-ins of mobile homes in Kansas City, a factor that contributed 700 units. Also, 500 new units were formed from the conversion or merger of 2002 units. We classified 1,900 units as recovered because these units had been in the housing stock at some point but were classified in 2002 as nonresidential (1,300) or uninhabitable (600). Finally, 1,500 units were added in other unclassified ways.

The Kansas City metropolitan area lost 1.2 percent of all 2002 housing units by 2011; additions between 2002 and 2011 represented 13.7 percent of the 2011 housing stock. Losses and additions varied across portions of the Kansas City housing market defined by the characteristics of the unit or its occupants. We observed the following patterns, which were both atypical of the overall housing stock and statistically significant:

- Among units that were vacant in 2002, the loss rate was much higher.
- The loss rate was lower among more recently built units and higher among older units.

- Smaller units (4 rooms) experienced high loss rates, whereas larger units (6 rooms or 3 bedrooms) had lower rates.
- Units that were owner-occupied in 2002 experienced a low loss rate, but units that were renter-occupied had a high loss rate.
- Among 2002 rental units, those with low rents (\$350–\$599) and those occupied by low-income households (\$15,000–\$29,999) had high loss rates.
- Among owner-occupied units, those occupied in 2002 by higher income households (\$50,000–\$99,999) and those with high monthly housing costs (\$800 or more) had very low loss rates.
- Single-family attached units and units in large multifamily buildings (50 or more units) had rates of addition that were much higher than average. The rate of addition among manufactured houses was lower than average.
- Small units (2 or 3 bedrooms) had low rates of addition, while large units (9 or more rooms or 4 or more bedrooms) experienced high rates.
- Units with older (age 65–74) householders in 2011 had a low rate of addition. Units with children in 2011 had a higher-than-average rate, while those without children had a lower-than-average rate.
- Units with Black or Hispanic householders in 2011 had low rates of addition, whereas those with Asian householders had a substantially higher-than-average rate.
- Additions were lower than average among households on public assistance in 2011.
- The rate of addition was similar between renter-occupied units (12.7 percent) and owner-occupied units (14.5 percent). Within both groups, the rate of addition varied with monthly housing costs and household income in 2011.
- Both renter-occupied and owner-occupied units with monthly housing costs of \$1,250 or more had high rates of addition, but the rate of addition among units with lower monthly housing costs was below the average for all occupied units.
- Similarly, the rate of addition varied directly with household income among both renter-occupied and owner-occupied units.

The 2002 rental stock in Kansas City was affordable. Of the 249,300 rental units in 2002, 142,600 were extremely low rent or very low rent units. In addition, 44,900 units were non-market; that is, they were either assisted or offered for no cash rent. These three categories accounted for 75.2 percent of the 2002 rental stock. The three highest rent categories comprised only 2.8 percent of the rental stock. Moves to a less affordable category (sometimes called gentrification) exceeded moves to a more affordable category (sometimes called filtration)—36.3

percent of all 2002 units compared to 8.5 percent. By 2011, 17.5 percent of the rental units in 2002 were no longer in the rental stock. The largest proportion of these losses was due to changes in tenure.

The rental stock in Kansas City was less affordable in 2011 than in 2002. Of the 310,500 rental units in 2011, 121,100 were extremely low rent or very low rent units. In addition, 53,900 units were non-market; that is, they were either assisted or offered for no cash rent. These three categories accounted for 52.5 percent of the 2011 rental stock. The three highest rent categories comprised 7.8 percent of the rental stock. Moves from a more affordable category (sometimes called gentrification) exceeded moves from a less affordable category (sometimes called filtration)—30.1 percent of all 2011 units compared to 7.0 percent. Of the rental units in 2011, 31.0 percent were not rental in 2002. The largest proportion of these gains was due to changes in tenure.

Components of Inventory Change and Rental Dynamics Analysis: Kansas City, 2002–2011

1. Introduction

This report describes how the housing stock in the Kansas City metropolitan area changed between 2002 and 2011, with particular emphasis on affordable rental housing. The study uses data from the American Housing Survey (AHS), which collected detailed information on housing units in Kansas City and on their occupants in both 2002 and 2011.¹

As part of its Components of Inventory Change (CINCH) program, the U.S. Department of Housing and Urban Development (HUD) has funded, for a number of years, similar studies of metropolitan areas to document changes in the American housing stock. These studies have traditionally included an assessment of changes in the rental housing market called rental dynamics. This paper is one of 29 metropolitan CINCH studies based on the information provided by the 2011 AHS.²

CINCH reports present both forward-looking analysis (what happened to the 2002 units by 2011) and backward-looking analysis (where the 2011 units came from in terms of 2002).³ This paper repeats the analysis contained in the most recent CINCH and rental dynamics studies, but its organization differs from that of previous reports.

- Section 2 discusses data and related issues that affect the CINCH and rental dynamics analysis for Kansas City.
- Section 3 explains the changes in the housing stock between 2002 and 2011 in terms of losses to the housing stock through demolitions or the other ways units can leave the housing stock and additions through new construction and other means.
- Section 4 looks at components of the housing stock that experienced losses or additions markedly different from the overall patterns of losses and additions.
- Section 5 breaks the rental housing stock into eight affordability categories and tracks what happened to units in each of those categories between 2002 and 2011.

¹ Since 1973, the U.S. Department of Housing and Urban Development (HUD) and the Census Bureau have conducted an extensive survey of the American housing stock called the American Housing Survey (AHS). The AHS has two components: a national survey that, since 1985, has collected data every 2 years on the entire U.S. housing stock and a metropolitan component that, since 1985, has collected data at various times on the housing stock of 45 metropolitan areas. Both the national and metropolitan components use the same sample of housing units in successive surveys, making it possible to observe changes in units over time. The initial samples have been augmented in later years to account for units added by new construction or other means.

² HUD also funds CINCH studies of survey-to-survey changes in the national stock. At the national level, the Rental Dynamics studies are published separately. For a complete list of all CINCH studies, see <http://www.huduser.org/portal/datasets/cinch.html>.

³ The forward-looking analysis was previously presented to HUD in December 2013. The data needed to produce the backward-looking analysis did not become available until after the allowed period of performance of the contract under which the previous report was completed.

- Section 6 summarizes the changes to the housing stock of the Kansas City metropolitan area between 2002 and 2011.

The paper concludes with two appendices that contain analyses and data found in the body of previous CINCH reports.

- Appendix A explains the CINCH and rental dynamics methodologies.
- Appendix B contains the detailed CINCH and rental dynamics tables found in previous reports.

National economic conditions shaped in important ways the changes observed in this report. The 2002–2011 period encompassed a vigorous expansion (November 2001 to December 2007), included the recent harsh recession (December 2007 to June 2009), and ended with a period of lackluster recovery.

2. Special Issues: Kansas City

Metropolitan areas are composed of counties or townships that are interrelated economically. The Office of Management and Budget periodically adjusts the composition of metropolitan areas as the economic relationships among counties change. In some cases, the AHS retains the metropolitan boundaries in effect when the original metropolitan sample was drawn; in other cases, the AHS will adjust the original sample to correspond to the new definition of the metropolitan area. A change in sample boundaries will affect the interpretation of CINCH analysis and its precision. The absolute sample size available to study changes between surveys determines how reliably the observed changes are measured.

Geography

In 2002 the Kansas City metropolitan area contained 766,400 housing units, including vacant units. By 2011 the number of housing units had increased to 893,600. Part of this increase was due to a redefinition of the metropolitan area that added four counties (Franklin and Linn Counties in Kansas and Bates and Caldwell Counties in Missouri). Using the American Community Survey (2011, 5-year data) at the county level, we estimate that the 2011 count of housing units for the metropolitan area as defined in 2002 would be 865,700. This represents an overall increase of 13.0 percent, which translates to an average annual increase of 1.4 percent over the 9-year period.

The change in the geographical definition of Kansas City affects the interpretation of the information presented in this report. Our analysis applies only to that portion of the metropolitan area that was common to the Kansas City metropolitan area as defined in both 2002 and 2011, but the application to the common area is not precise, as explained in Appendix A.

Sample size

Both CINCH and rental dynamics require that, if a sample unit is in both the 2002 and 2011 housing stock, it must be interviewed in both surveys to be included in the analysis. Other analytical requirements also limit effective sample size. There are 2,306 sample units that were common to the 2002 and 2011 AHS Kansas City surveys and satisfied all the analytical requirements.⁴ Between 2002 and 2011, 48 sample units in the common area meeting the analytical requirements were lost to the stock; thus, the forward-looking analysis is based on a maximum of 2,354 sample units. Between 2002 and 2011, 375 sample units meeting the analytical requirements were added to the AHS survey to represent additions to the stock throughout the metropolitan area as defined in 2011; thus, the backward-looking analysis is based on a maximum of 2,681 sample units. In the forward-looking analysis, the average weight of a sample unit is approximately 326 units; in the backward-looking analysis, the average weight of a sample unit is approximately 333 units.

Data reliability

All CINCH analysis relies on two AHS variables: NOINT (why there was no interview), which, among other things, explains why a unit is temporarily or permanently out of the stock, and REUAD (why unit added), which explains why a sample unit entered the sample. Both variables require some detective work on the part of Census Bureau staff, and the longer the period between surveys, the more difficult the detective work. At the national level, the AHS data are collected every 2 years, so it is relatively easy to determine why a unit has been removed from or added to the sample. In the case of Kansas City, 9 years separate the 2011 sample from the 2002 sample. As a result, explaining the loss or addition of sample units is very challenging. This report is part of a series that compares the housing stock in 2011 to the housing stock of 7 metropolitan areas in 1998, 12 metropolitan areas in 2002, 8 metropolitan areas in 2004, and 2 metropolitan areas in 2009. We compared the pattern of changes across the 29 areas studied in these reports to the changes recorded between 2009 and 2011 at the national level. With respect to losses, the patterns are reasonably similar except for the role played by the movement of mobile homes. Mobile home move-outs are much more important in explaining losses at the national level. At both the national and metropolitan levels, the “other” category accounts for one-fifth to one-quarter of the losses. With respect to additions, new construction accounts for 72 percent of all additions at the national level but 94 percent at the metropolitan level. We suspect that data issues downplay the importance of “means other than new construction” at the metropolitan level.

⁴ The 2002 AHS surveyed 4,830 units in the Kansas City metropolitan area; 2,861 of these units were in the 2011 AHS public use file (PUF). Of the 1,969 sample units no longer in the survey, 243 were legitimate temporary or permanent losses to the housing stock and were considered for the analysis. The remaining 1,726 cases are coded as “sample reduction for the current survey year” with no further explanation.

3. Changes to the Housing Stock: 2002–2011

Losses between 2002 and 2011

One typically thinks of the housing stock evolving through two mechanisms: the construction of new units and the demolition of old units. While new construction and losses through demolition and natural disasters are the primary means by which the housing stock changes, CINCH shows that there are other important engines of change.

Table 1 reports that, between 2002 and 2011, only 9,200 units left the housing stock.⁵ Of these, 3,700 are clearly permanent losses—the original unit is gone, and major construction would be required to replace it with a new unit. Another 4,800 are temporary losses—the original unit needs repairs or is being used for other purposes. These units may or may not return to the housing stock. Finally, there were 700 units that left the housing stock either permanently or temporarily for “other” reasons, a category that encompasses a wide variety of situations.

Table 1: Disposition of 2002 Kansas City Housing Units in 2011⁶

Present in 2002	766,400
2002 units present in 2011	757,200
Units no longer in the stock	9,200
2002 units lost due to conversion/merger	600
2002 house or mobile home moved out	0
2002 units lost through demolition or disaster	3,100
Permanent losses	3,700
2002 units changed to nonresidential use	1,100
2002 units badly damaged or condemned	3,600
Temporary losses	4,800
2002 units lost in other ways	700

Demolitions and natural disasters accounted for 3,100 of the permanent losses, while mergers and conversions contributed another 600 permanent losses. “Conversion” is the terminology used in the AHS for the splitting of a unit into two or more units. The movement of a mobile home or house is considered a permanent loss because a housing unit is the combination of land and capital. While movement preserves the capital, it dissolves the union of capital and land that formed the original unit; therefore, the movement of a mobile home is considered a permanent loss. Unfortunately, the 2011 AHS survey in Kansas City did not track mobile home move-outs, probably because the long time between surveys makes it difficult to determine whether the current mobile home was the same mobile home as in 2002.

Sometimes houses are used for business purposes. Such commercial use or the use of a house for a group home is considered a change to a nonresidential use. Badly damaged units may be repaired, left in an unusable state, or demolished.

⁵ With the caveats noted in Appendix A, this analysis applies to the area common to both the 2002 and 2011 definitions of the metropolitan area.

⁶ Numbers may not add consistently due to rounding. Counts were rounded to the nearest hundred.

Appendix B contains four forward-looking tables that break the overall stock into more than 100 subgroups, such as single-family detached houses or units occupied by Black householders in 2002. For each subgroup, these tables detail how many of the 2002 units in that subgroup are in the same subgroup in 2011, have moved into another subgroup, or have left the stock and how they left the stock. Section 4 looks across the Appendix B forward-looking tables and focuses on those subgroups that lost an unusually high or an unusually low number of units over the 2002–2011 period.

Additions between 2002 and 2011

Table 2, together with the backward-looking Appendix B tables, provides a great deal of information on additions to the housing stock between 2002 and 2011.⁷

Table 2: Sources for 2011 Kansas City Housing Stock⁸

2011 housing stock	893,600
2011 units present in 2002	770,800
Total additions to stock	122,800
Units added by new construction	118,100
House or mobile home moved in	700
Units added by conversion/merger	500
New or reconstructed units	119,300
Units added from nonresidential use	1,300
Units added from temporary losses	600
Recovered units	1,900
Units added in other ways	1,500

In the period between the 2002 and the 2011 AHS surveys, 122,800 units were added to the housing stock. Ninety-six percent of these additions were newly constructed units. The 2011 AHS did track move-ins of mobile homes in Kansas City, a factor that contributed 700 units. Also, 500 new units were formed from the conversion or merger of 2002 units.

We classified 1,900 units as recovered because these units had been in the housing stock at some point but were classified in 2002 as nonresidential (1,300) or uninhabitable (600). Finally, 1,500 units were added in other unclassified ways.

Appendix B contains four backward-looking tables that break the overall stock into more than 100 subgroups. For each subgroup, these tables detail how many of the 2011 units in that subgroup were in the same subgroup in 2011, have moved from another subgroup, or are new additions to the stock. Section 4 looks across the Appendix B backward-looking tables and focuses on those subgroups that gained an unusually high or an unusually low number of units over the 2002–2011 period.

⁷ With the caveats noted in Appendix A, this analysis applies to the area common to both the 2002 and 2011 definitions of the metropolitan area. Inconsistencies between Tables 1 and 2 result from a combination of (1) changes in metropolitan boundaries, (2) changes in control housing counts between censuses, and (3) different weights.

⁸ Numbers may not add consistently due to rounding. Counts were rounded to the nearest hundred.

4. Components With Atypical Losses or Additions

The Kansas City metropolitan area lost 1.2 percent of all 2002 housing units by 2011, but the loss rate varied across sectors of the stock. For example, the occupied housing stock lost 0.9 percent of its units between 2002 and 2011.

We examined all of the components of the 2002 Kansas City housing stock contained in the four forward-looking tables in Appendix B to identify subgroups with unusual loss rates. Forward-Looking Table A reports information on all units in the stock; Table 3 lists subgroups from Table A with loss rates statistically different than the loss rate of the overall stock. Forward-Looking Tables B, C, and D describe important characteristics of occupied units and their residents; Table 3 lists subgroups from those tables with loss rates statistically different than the loss rate of occupied units. We also employed judgment in selecting among components with statistically different loss rates. In general, we looked for subgroups with loss rates less than half or more than double the benchmark rate, but we listed other subgroups if their inclusion illustrated interesting patterns within loss rates. Finally, Table 3 includes the loss rates for four key segments of the housing market—occupied units, vacant units, owner-occupied units, and renter-occupied units—even if their loss rates are not statistically different.

Table 3: Sectors Experiencing Atypical Loss Rates in Kansas City, 2002–2011⁹

Characteristics	Present in 2002	Total lost	Percent lost
<i>Housing stock</i>	766,400	9,200	1.2%
<i>Occupancy status</i>			
Occupied	697,400	6,500	0.9%
Vacant	67,300	2,500	3.8% *
<i>Year built</i>			
2000–2004	45,600	100	0.3% *
1960–1969	111,500	200	0.2% ***
1940–1949	51,000	1,900	3.7% *
1919 or earlier	29,100	1,500	5.3% *
<i>Rooms</i>			
4	106,600	2,900	2.7% *
6	161,500	800	0.5% *
<i>Bedrooms</i>			
3	304,100	1,900	0.6% *
<i>Tenure</i>			
Owner-occupied	487,100	2,200	0.5% *
Renter-occupied	210,300	4,300	2.0% *
<i>Renter monthly housing costs</i>			
\$350 to \$599	65,300	2,600	4.0% **
<i>Renter household income</i>			
\$15,000 to \$29,999	57,000	2,000	3.5% **
<i>Owner monthly housing costs</i>			
\$800 to \$1,249	119,700	400	0.3% *
\$1,250 or more	119,000	400	0.3% *
<i>Owner household income</i>			
\$50,000 to \$99,999	179,900	600	0.3% *

*Statistically different from either all units or all occupied units, as appropriate, at the 10-percent level.

**Statistically different from either all units or all occupied units, as appropriate, at the 5-percent level.

*** Statistically different from either all units or all occupied units, as appropriate, at the 1-percent level.

Table 3 shows the following variation in loss rates across subgroups.

- Among units that were vacant in 2002, the loss rate was much higher.
- The loss rate was lower among more recently built units and higher among older units.
- Smaller units (4 rooms) experienced high loss rates, whereas larger units (6 rooms or 3 bedrooms) had lower rates.
- Units that were owner-occupied in 2002 experienced a low loss rate, but units that were renter-occupied had a high loss rate.

⁹ Two conditions were necessary for a housing sector to appear in Table 3, one mathematical and one judgmental: (1) the difference between the sector's loss rate and the benchmark rate had to have been statistically significant at the 10-percent level, and (2) the difference had to be interesting. Counts are rounded to the nearest hundred.

- Among 2002 rental units, those with low rents (\$350–\$599) and those occupied by low-income households (\$15,000–\$29,999) had high loss rates.
- Among owner-occupied units, those occupied in 2002 by higher income households (\$50,000–\$99,999) and those with high monthly housing costs (\$800 or more) had very low rates.

The 122,800 additions reported in Table 2 represented 13.7 percent of the 2011 housing stock. The rate of addition varied by the characteristics of the housing. Additions represented 13.9 percent of occupied units.

We examined all of the components of the 2002 Kansas City housing stock contained in the four backward-looking tables in Appendix B to identify subgroups with unusual addition rates. Backward-Looking Table A reports information on all units in the stock; Table 4 lists subgroups from Table A with addition rates statistically different than the addition rate of the overall stock. Backward-Looking Tables B, C, and D describe important characteristics of occupied units and their residents; Table 4 lists subgroups from those tables with addition rates statistically different than the addition rate of occupied units. We also employed judgment in selecting among components with statistically different addition rates. In general, we looked for subgroups with addition rates less than half or more than double the benchmark rate, but we listed other subgroups if their inclusion illustrated interesting patterns within addition rates. Finally, Table 4 includes the addition rates for four key segments of the housing market—occupied units, vacant units, owner-occupied units, and renter-occupied units—even if their addition rates are not statistically different.

Table 4: Sectors Experiencing Atypical Rates of Addition in Kansas City, 2002–2011¹⁰

Characteristics	Present in 2011	Total additions	Percent additions
<i>Housing stock</i>	893,600	122,800	13.7%
<i>Occupancy status</i>			
Occupied	793,700	110,200	13.9%
Vacant	96,200	11,800	12.3%
<i>Units in structure</i>			
1, attached	54,300	11,900	21.9%**
50 or more	22,800	5,900	25.8%**
Manufactured/mobile home	18,000	1,000	5.3%*
<i>Rooms</i>			
9	48,500	10,600	21.9%**
10 or more	36,600	8,300	22.6%**
<i>Bedrooms</i>			
2	213,500	21,100	9.9%***
3	353,800	39,900	11.3%**
4 or more	222,300	47,000	21.1%***

¹⁰ Two conditions were necessary for a housing sector to appear in Table 4, one mathematical and one judgmental: (1) the difference between the sector’s addition rate and the benchmark rate had to have been statistically significant at the 10-percent level, and (2) the difference had to be interesting. Counts are rounded to the nearest hundred.

Characteristics	Present in 2011	Total additions	Percent additions
<i>Age of householder</i>			
65 to 74	82,200	6,500	7.9%***
<i>Children in household</i>			
Some	266,800	50,800	19.0%***
None	526,900	59,400	11.3%**
<i>Race and ethnicity</i>			
Black	87,600	7,900	9.0%**
Black Non-Hispanic	86,100	7,200	8.4%***
Asian	19,300	5,000	26.1%**
Hispanic or Latino (any race)	47,400	4,400	9.3%*
<i>Income sources of families and primary individuals</i>			
Public assistance or public welfare	12,300	300	2.7%***
<i>Tenure</i>			
Owner-occupied	532,500	77,000	14.5%
Renter-occupied	261,200	33,200	12.7%
<i>Renter monthly housing costs</i>			
\$350 to \$599	36,700	2,400	6.6%***
\$600 to \$799	68,600	4,800	6.9%***
\$1,250 or more	31,600	10,200	32.3%***
<i>Renter household income</i>			
Less than \$15,000	64,400	5,500	8.6%**
\$15,000 to \$29,999	69,900	5,300	7.6%***
\$50,000 to \$99,999	56,800	12,300	21.6%**
\$100,000 or more	14,500	4,000	27.8%**
<i>Owner monthly housing costs</i>			
Less than \$350	22,700	1,200	5.4%***
\$350 to \$599	83,600	3,500	4.2%***
\$600 to \$799	51,700	2,700	5.3%***
\$800 to \$1,249	126,500	9,200	7.3%***
\$1,250 or more	248,000	60,300	24.3%***
<i>Owner household income</i>			
Less than \$15,000	34,900	1,600	4.5%***
\$15,000 to \$29,999	68,900	3,100	4.5%***
\$30,000 to \$49,999	99,600	8,100	8.1%***
\$100,000 or more	153,000	38,900	25.4%***

*Statistically different from either all units or all occupied units, as appropriate, at the 10-percent level.

**Statistically different from either all units or all occupied units, as appropriate, at the 5-percent level.

*** Statistically different from either all units or all occupied units, as appropriate, at the 1-percent level.

The results reported in Table 4 tell an interesting story about changes in the Kansas City metropolitan area.

- Single-family attached units and units in large multifamily buildings (50 or more units) had rates of addition that were much higher than average. The rate of addition among manufactured houses was lower than average.

- Small units (2 or 3 bedrooms) had low rates of addition, while large units (9 or more rooms or 4 or more bedrooms) experienced high rates.
- Units with older (age 65–74) householders in 2011 had a low rate of addition. Units with children in 2011 had a higher-than-average rate, while those without children had a lower-than-average rate.
- Units with Black or Hispanic householders in 2011 had low rates of addition, whereas those with Asian householders had a substantially higher-than-average rate.
- Additions were lower than average among households on public assistance in 2011.
- The rate of addition was similar between renter-occupied units (12.7 percent) and owner-occupied units (14.5 percent). Within both groups, the rate of addition varied with monthly housing costs and household income in 2011.
- Both renter-occupied and owner-occupied units with monthly housing costs of \$1,250 or more had high rates of addition, but the rate of addition among units with lower monthly housing costs was below the average for all occupied units.
- Similarly, the rate of addition varied directly with household income among both renter-occupied and owner-occupied units.

5. Rental Market Dynamics: 2002–2011

Rental market dynamics focuses on the supply of rental housing and how that supply changes over time. Rental dynamics analysis has many of the features of CINCH analysis. A key step in rental dynamics analysis is to separate the rental stock into classes or strata based on how affordable the units are. This paper uses eight categories:

- Non-market: Either no cash rent or a subsidized rent.
- Extremely low rent: Affordable to renters with incomes less than or equal to 30 percent of local area median income.
- Very low rent: Affordable to renters with incomes greater than 30 percent but less than or equal to 50 percent of local area median income.
- Low rent: Affordable to renters with incomes greater than 50 percent but less than or equal to 60 percent of local area median income.
- Moderate rent: Affordable to renters with incomes greater than 60 percent but less than or equal to 80 percent of local area median income.
- High rent: Affordable to renters with incomes greater than 80 percent but less than or equal to 100 percent of local area median income.

- Very high rent: Affordable to renters with incomes greater than 100 percent but less than or equal to 120 percent of local area median income.
- Extremely high rent: Affordable to renters with incomes greater than 120 percent of local area median income.

For each category, “affordable” is defined as a gross-rent-to-income ratio of 30 percent or less for the higher of the incomes that define the boundaries for that category.¹¹ The categories are defined relative to area median income; therefore, the boundaries of the categories will change as area median income changes.

Table 5 summarizes what happened to the 2002 rental units by how affordable they were in 2002. It is based on Forward-Looking Rental Dynamics Table 1 in Appendix B, which traces in more detail where these units wound up in 2011.

Table 5: Summary of Forward-Looking Rental Dynamics for Kansas City

Affordability categories	2002 rental units	To more affordable categories in 2011	In same affordability category in both years	To less affordable categories in 2011	2002 rental units non-rental in 2011
Non-market	44,900	NA	39.9%	44.8%	15.3%
Extremely low rent	27,700	6.0%	11.9%	57.8%	24.3%
Very low rent	114,900	7.8%	45.6%	30.7%	15.9%
Low rent	39,800	14.9%	30.9%	36.1%	18.1%
Moderate rent	15,100	15.4%	52.4%	15.4%	16.9%
High rent	3,300	39.7%	0.0%	30.8%	29.5%
Very high rent	3,600	26.6%	9.3%	37.1%	27.0%
Extremely high rent	0	NA	NA	NA	NA
Total	249,300	8.5%	37.7%	36.3%	17.5%

The 2002 rental stock in Kansas City was affordable. Of the 249,300 rental units in 2002, 142,600 were extremely low rent or very low rent units. In addition, 44,900 units were non-market; that is, they were either assisted or offered for no cash rent. These three categories accounted for 75.2 percent of the 2002 rental stock. The three highest rent categories comprised only 2.8 percent of the rental stock. Moves to a less affordable category (sometimes called gentrification) exceeded moves to a more affordable category (sometimes called filtration)—36.3 percent of all 2002 units compared to 8.5 percent.

By 2011, 17.5 percent of the 249,300 rental units in 2002 were no longer in the rental stock (43,600 units). The largest proportion of these losses was due to changes in tenure, with 27,200 rental units becoming owner-occupied or vacant for sale in 2011. Another 10,800 units became seasonal units, units occupied by persons with usual residence elsewhere, or units used for migratory workers. Finally, 5,800 rental units were no longer in the housing stock in 2011. Some of these losses were permanent; that is, the units were demolished or destroyed. Some losses were potentially reversible, such as units being used for nonresidential purposes. Forward-

¹¹ Gross rent is equal to rent plus utilities.

Looking Rental Dynamics Table 2 shows how the movement out of the rental stock varied across the affordability categories.

Table 6 summarizes where the 2011 rental units came from, with respect to 2002, by how affordable they were in 2011. It is based on Backward-Looking Rental Dynamics Table 1 in Appendix B, which traces in more detail the origin of these units.

The rental stock in Kansas City was less affordable in 2011 than in 2002. Of the 310,500 rental units in 2011, 121,100 were extremely low rent or very low rent units. In addition, 53,900 units were non-market; that is, they were either assisted or offered for no cash rent. These three categories accounted for 52.5 percent of the 2011 rental stock. The three highest rent categories comprised 7.8 percent of the rental stock. Moves from a more affordable category (sometimes called gentrification) exceeded moves from a less affordable category (sometimes called filtration)—30.1 percent of all 2011 units compared to 7.0 percent.

Table 6: Summary of Backward-Looking Rental Dynamics for Kansas City

Affordability categories	2011 rental units	From more affordable categories in 2002	In same affordability category in both years	From less affordable categories in 2002	2011 rental units non-rental in 2002
Non-market	41,000	NA	45.4%	25.6%	29.0%
Extremely low rent	12,900	14.8%	26.3%	28.0%	30.9%
Very low rent	109,200	23.6%	50.9%	4.6%	20.9%
Low rent	64,200	52.0%	20.3%	2.7%	25.0%
Moderate rent	58,600	40.1%	13.3%	1.2%	45.4%
High rent	16,300	32.9%	0.0%	1.5%	65.6%
Very high rent	2,600	39.1%	13.7%	0.0%	47.2%
Extremely high rent	5,600	45.0%	0.0%	NA	55.0%
Total	310,500	30.1%	31.8%	7.0%	31.0%

Of the 310,500 rental units in 2011, 31.0 percent were not rental in 2002 (96,400 units). The largest proportion of these gains was due to changes in tenure, with 53,300 rental units having been owner-occupied or vacant for sale in 2002. Another 3,800 units had been seasonal units, units occupied by persons with usual residence elsewhere, or units used for migratory workers. Finally, 39,200 rental units had not been in the housing stock in 2002. Of these, 37,100 were added by new construction and 2,100 by other means. Backward-Looking Rental Dynamics Table 2 shows how the movement into the rental stock varied across the affordability categories.

6. Summary of Housing Market Changes: Kansas City Metropolitan Area, 2002–2011

In 2002 the Kansas City metropolitan area contained 766,400 housing units, including vacant units. By 2011 the number of housing units had increased to 893,600. Part of this increase was due to a redefinition of the metropolitan area that added four counties. Using the American Community Survey (2011, 5-year data) at the county level, we estimate that the 2011 count of housing units for the metropolitan area as defined in 2002 would be 865,700. This represents an

overall increase of 13.0 percent, which translates to an average annual increase of 1.4 percent over the 9-year period.

The change in the geographical definition of Kansas City affects the interpretation of the information presented in this report. Our analysis applies only to that portion of the metropolitan area that was common to the Kansas City metropolitan area as defined in both 2002 and 2011.

Between 2002 and 2011, only 9,200 units left the housing stock. Of these, 3,700 are clearly permanent losses—the original unit is gone, and major construction would be required to replace it with a new unit. Another 4,800 are temporary losses—the original unit needs repairs or is being used for other purposes. These units may or may not return to the housing stock. Finally, there were 700 units that left the housing stock either permanently or temporarily for “other” reasons, a category that encompasses a wide variety of situations. Demolitions and natural disasters accounted for 3,100 of the permanent losses, while mergers and conversions contributed another 600 permanent losses. The 2011 AHS survey in Kansas City did not track mobile home move-outs.

In the period between the 2002 and the 2011 AHS surveys, 122,800 units were added to the housing stock. Ninety-six percent of these additions were newly constructed units. The 2011 AHS did track move-ins of mobile homes in Kansas City, a factor that contributed 700 units. Also, 500 new units were formed from the conversion or merger of 2002 units. We classified 1,900 units as recovered because these units had been in the housing stock at some point but were classified in 2002 as nonresidential (1,300) or uninhabitable (600). Finally, 1,500 units were added in other unclassified ways.

The Kansas City metropolitan area lost 1.2 percent of all 2002 housing units by 2011; additions between 2002 and 2011 represented 13.7 percent of the 2011 housing stock. Losses and additions varied across portions of the Kansas City housing market defined by the characteristics of the unit or its occupants. We observed the following patterns, which were both atypical of the overall housing stock and statistically significant:

- Among units that were vacant in 2002, the loss rate was much higher.
- The loss rate was lower among more recently built units and higher among older units.
- Smaller units (4 rooms) experienced high loss rates, whereas larger units (6 rooms or 3 bedrooms) had lower rates.
- Units that were owner-occupied in 2002 experienced a low loss rate, but units that were renter-occupied had a high loss rate.
- Among 2002 rental units, those with low rents (\$350–\$599) and those occupied by low-income households (\$15,000–\$29,999) had high loss rates.

- Among owner-occupied units, those occupied in 2002 by higher income households (\$50,000–\$99,999) and those with high monthly housing costs (\$800 or more) had very low rates.
- Single-family attached units and units in large multifamily buildings (50 or more units) had rates of addition that were much higher than average. The rate of addition among manufactured houses was lower than average.
- Small units (2 or 3 bedrooms) had low rates of addition, while large units (9 or more rooms or 4 or more bedrooms) experienced high rates.
- Units with older (age 65–74) householders in 2011 had low rates of addition. Units with children in 2011 had a higher-than-average rate, while those without children had a lower-than-average rate.
- Units with Black or Hispanic householders in 2011 had a low rate of addition, whereas those with Asian householders had a substantially higher-than-average rate.
- Additions were lower than average among households on public assistance in 2011.
- The rate of addition was similar between renter-occupied units (12.7 percent) and owner-occupied units (14.5 percent). Within both groups, the rate of addition varied with monthly housing costs and household income in 2011.
- Both renter-occupied and owner-occupied units with monthly housing costs of \$1,250 or more had high rates of addition, but the rate of addition among units with lower monthly housing costs was below the average for all occupied units.
- Similarly, the rate of addition varied directly with household income among both renter-occupied and owner-occupied units.

The 2002 rental stock in Kansas City was affordable. Of the 249,300 rental units in 2002, 142,600 were extremely low rent or very low rent units. In addition, 44,900 units were non-market; that is, they were either assisted or offered for no cash rent. These three categories accounted for 75.2 percent of the 2002 rental stock. The three highest rent categories comprised only 2.8 percent of the rental stock. Moves to a less affordable category (sometimes called gentrification) exceeded moves to a more affordable category (sometimes called filtration)—36.3 percent of all 2002 units compared to 8.5 percent. By 2011, 17.5 percent of the 249,300 rental units in 2002 were no longer in the rental stock (43,600 units). The largest proportion of these losses was due to changes in tenure, with 27,200 rental units becoming owner-occupied or vacant for sale in 2011.

The rental stock in Kansas City was less affordable in 2011 than in 2002. Of the 310,500 rental units in 2011, 121,100 were extremely low rent or very low rent units. In addition, 53,900 units were non-market; that is, they were either assisted or offered for no cash rent. These three categories accounted for 52.5 percent of the 2011 rental stock. The three highest rent categories

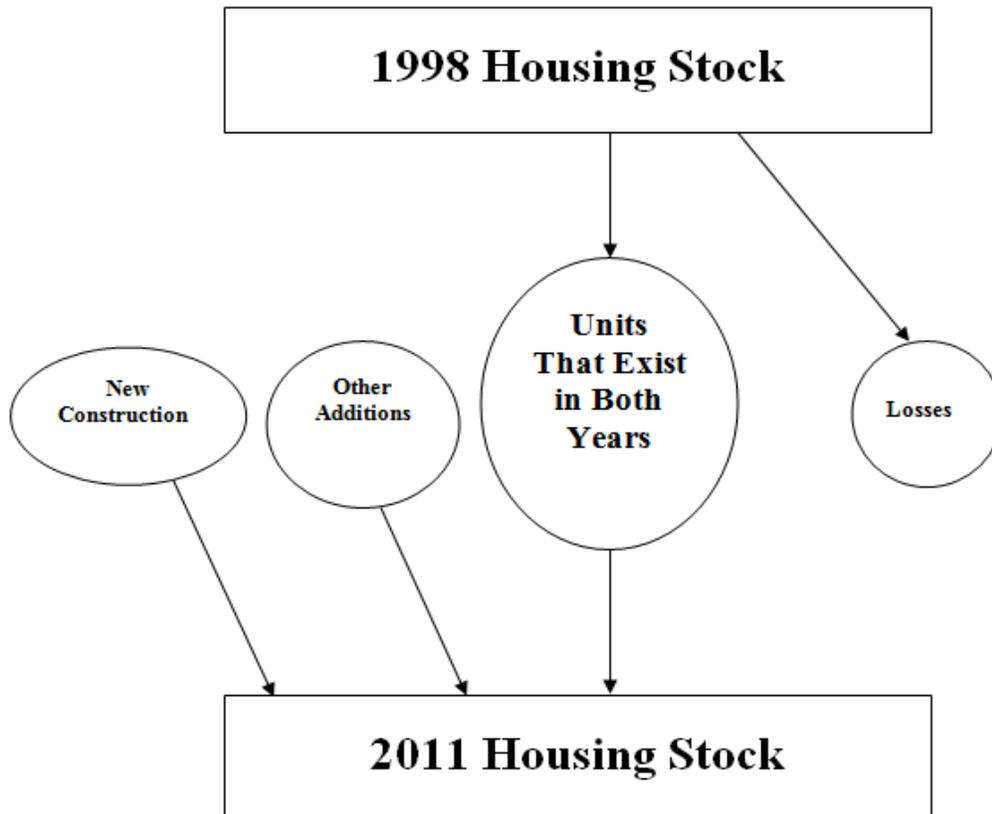
comprised 7.8 percent of the rental stock. Moves from a more affordable category (sometimes called gentrification) exceeded moves from a less affordable category (sometimes called filtration)—30.1 percent of all 2011 units compared to 7.0 percent. Of the 310,500 rental units in 2011, 31.0 percent were not rental in 2002 (96,400 units). The largest proportion of these gains was due to changes in tenure, with 53,300 rental units having been owner-occupied or vacant for sale in 2002.

Appendix A: CINCH and Rental Dynamics Methodology

Overview

Components of Inventory Change (CINCH) is a tool used by housing analysts to study how the housing inventory changes over time. Figure 1 illustrates how the inventory evolves.

Figure A-1: How the Housing Inventory Changes



In the context of Figure A-1, the U.S. Census Bureau provides estimates for both rectangles (the 2002 and 2011 housing stocks) and one oval (units added through new construction between 2002 and 2011). No one estimates the other three ovals: the number of units that belong to both the 2002 and 2011 housing stock, units lost to the housing stock between 2002 and 2011, and other additions to the housing stock between 2002 and 2011.

While losses and other additions are small relative to the overall stock, they encompass important features of how housing markets evolve. Housing units are “clumps” of physical capital associated with specific plots of land, and the housing inventory is the aggregation of these capital-land combinations. New construction creates new clumps, and—like all capital—some “clumps” depreciate and disappear. However, housing units undergo other interesting changes. Losses can be either permanent or temporary. Units destroyed by natural disasters or intentionally demolished are permanent losses. Temporary losses include units that are used for

nonresidential purposes and units that are uninhabitable because of structural defects that can be repaired. Additions can result from restoring units that were uninhabitable or converting nonresidential structures into residential structures.

In addition to determining the size of each oval, housing analysts find information about the characteristics of the units in the different ovals useful. Interesting characteristics include structure type, age of the unit, size of the unit, location by region, location by metropolitan status, tenure, household size and composition, resident income, and resident race and ethnicity.

CINCH analysis has three goals:¹²

- To provide an estimate for all six components of Figure A-1.
- To disaggregate losses and other additions into relevant component parts.
- To characterize the units that survive from one period to the next and the units that are added or lost between periods.

The AHS has four features that make CINCH analysis possible:

- Each unit has weights that can be used to estimate its share of the overall stock.
- The AHS tracks new construction and the various types of losses and other additions.
- The AHS has detailed information about the characteristics of each unit and its occupants.
- The AHS tracks the same unit from one period to the next so that changes in status and characteristics can be observed directly.

Housing analysts and policymakers are particularly interested in what happens to affordable rental housing units. Rental dynamics is a form of CINCH analysis that classifies the rental housing stock by affordability level and tracks the evolution of the rental housing stock by affordability class.

¹² Previous CINCH analyses have distinguished between the “status” of a unit with respect to the housing stock (e.g., existing as a nonresidential structure) and the “characteristics” of the unit or its occupants (e.g., rental vs. owner-occupied, or race of householder). This report uses this same distinction. Also adopting previous CINCH terminology, Appendix A will refer to the more recent AHS survey year, 2011, as the current year and the previous AHS survey year, 2002, as the base year.

Why the analysis needs to be separated into two components

It would be possible to list for every AHS sample unit its status and characteristics in both 2002 and 2011. In some cases, there may be no status, (e.g., not yet constructed in 2002) or no characteristics (e.g., no race of householder for vacant units), but with this understanding such a listing would still be possible. From the listing, one could construct an exact accounting of the movement of units among the various statuses and characteristics between 2002 and 2011.

The exact accounting would apply only to AHS sample observations, roughly a 1-in-500 picture of the housing stock at the metropolitan level. To obtain estimates of the magnitude of actual changes in the housing stock, one needs to apply weights to the sampled units. When weights are applied, the accounting will no longer be exact because units have different weights in different years.¹³ For example, the exact accounting might show that 2,500 sample units that were rental in 2002 became owner-occupied or vacant for sale in 2011. To estimate the number of units in the national housing stock that were rental in 2002 and became owner-occupied in 2011, one would need to apply weights. However, using 2002 weights would produce a different estimate than using 2011 weights. There is no conceptual reason to favor the answer using 2002 weights over the answer using 2011 weights. The choice of weights depends upon how the intended analysis will be used.

For this reason, previous CINCH analyses have distinguished between:

1. *Forward-looking analysis*; that is, starting with the base-year stock (2002) and determining the status and characteristics of *those* units in the current year (2011). The goal is to explain what happened to the units comprising the housing stock in the base year. Forward-looking analysis takes the housing stock as given in the base year and looks at the destination of these units in the current year.
2. *Backward-looking analysis*; that is, starting from the current year (2011) stock and determining the status and characteristics of *those* units in the base year (2002). The goal here is to explain where the units comprising the current year housing stock came from. Backward-looking analysis takes the current-year housing stock as given and looks at the source of these units, either in the base year or in new construction or other additions.

¹³ The Census Bureau assigns both a pure weight (the inverse of the probability of selection) and a final weight to each AHS observation. The final weights are designed to sum up to independent estimates of the total housing stock. The pure weights will vary over observations within a given AHS survey because of stratification in drawing the sample. Generally, pure weights do not vary across survey years. The final weights will differ over observations within a given AHS because the Census Bureau makes adjustments for various factors affecting the sample. The final weights of a given observation will also vary between AHS surveys because of changes in the housing stock.

Why changes in geography boundaries affect CINCH analysis

The analysis in this report applies only to that portion of the metropolitan area that was common to the metropolitan area as defined in both 2002 and 2011, and the application to the common area is not precise for the following reasons:

- For forward-looking analysis (2002 to 2011), we observe only those sample units in the geography common to both 2002 and 2011. Thus the observed changes correctly apply only to the common area. However, the forward-looking weights are based by necessity on the entire 2002 geography. Since the common area is smaller than the 2002 geography, the counts are overestimates for the common area.
- For the backward-looking analysis (2011 from 2002), we observe (a) sample units that were in the common area in 2002 and are still in the stock in 2011, (b) sample units representing additions to the stock throughout the metropolitan area as newly defined, and (c) sample units that represent housing existing in 2002 in the added portion of the metropolitan area. We can eliminate (c) and try to focus the analysis on the common area, but there are two problems. The backward-looking weights are based by necessity on the entire 2011 geography. Since the common area is smaller than the 2011 geography, the counts are overestimates for the common area. Moreover, we cannot determine which newly added sample units in (b) represent the common area and which represent the added portion of the metropolitan area. Therefore, additions are overestimated with respect to the common area.

Appendix B: CINCH and Rental Dynamics Tables

Contents

This appendix contains 12 detailed CINCH and rental dynamics tables that have been featured in previous reports. There are:

- Four forward-looking CINCH tables that track changes to the 2002 housing stock in 2011 by various characteristics of the units or their occupants.
- Four backward-looking CINCH tables that track where the 2011 housing stock originated by various characteristics of the units or their occupants.
- Two forward-looking rental dynamics tables (one with counts and one with percentages) that track by affordability category what happened to the 2002 rental stock by 2011.
- Two backward-looking rental dynamics tables (one with counts and one with percentages) that track by affordability category where the 2011 rental stock came from with respect to 2002.

Appendix B begins with an explanation of how to read the tables.

How to read CINCH tables

Rows and columns serve different purposes in CINCH tables. The rows identify classes of units to be analyzed. The columns trace those units either forward or backward. All counts are rounded to the nearest hundred.

The forward-looking tables report what happened to the 2002 housing stock by 2011. There are three possible dispositions of 2002 units:

- Units that continue to exist in 2011 with the same characteristics (or serving the same market).
- Units that continue to exist in 2011 but with different characteristics (or serving a different market).
- Units that were lost to the stock in 2011.

The backward-looking tables report where the 2011 housing stock came from in reference to 2002. There are three possible sources of 2011 units:

- Units that existed in 2002 with the same characteristics (or serving the same market).

- Units that existed in 2002 but with different characteristics (or serving a different market).
- Units that are additions to the housing stock between 2002 and 2011.

Since the essence of the CINCH analysis is in the columns, we will explain the columns in detail.

Columns Common to Both Forward-Looking and Backward-Looking Tables

The first and last columns contain the row numbers, which are identical for the same tables in the forward-looking and backward-looking sets. Columns A through D set up the analysis and track units that exist in both periods.

- Column A specifies the characteristic that defines the subset of the stock that is being tracked forward or backward in a particular row, for example, occupied units or units built from 1990 through 1994.
- Column B gives the CINCH estimate of the number of units that satisfy two conditions: (a) being part of the housing stock in the relevant year (2002 for the forward-looking tables and 2011 for the backward-looking tables) and (b) satisfying the condition in column A.
- Column C is the CINCH estimate of the number of units from column B that (a) are also part of the housing stock in the other year and (b) continue to belong to the subset defined by column A.
- Column D is the CINCH estimate of the number of units from column B that (a) are also part of the housing stock in the other year but (b) no longer belong to the subset defined by column A. In some cases, the analysis will not allow a unit to change characteristics between the base year and the other year. Examples include type of structure, year built, and number of stories; these characteristics are considered impossible or unlikely to change.

Columns Unique to Forward-Looking Tables

In the forward-looking tables, columns E through J track what happened to units that were lost from 2002 to 2011.

- Column E is the CINCH estimate of the number of units from column B that are not in the 2011 housing stock because they were merged with other units or converted into multiple units.
- Column F is the CINCH estimate of the number of houses or manufactured homes from column B that were moved out during the period. In most cases, these units were relocated rather than destroyed. The AHS considers them “losses” because a housing unit is a combination of land and capital, and a move breaks that specific combination to

create a new combination at a different location. For this reason, manufactured houses that move from one lot to another are treated as both losses and additions.¹⁴

- Column G is the CINCH estimate of the number of units from column B that became nonresidential at the end of the period. For example, a real estate firm, a tax preparation office, a palm reader, or some other business might buy or rent a house to use for business rather than residential purposes.¹⁵
- Column H is the CINCH estimate of the number of units from column B that were demolished or were destroyed by fires or natural disasters by 2011.
- Column I is the CINCH estimate of the number of units from column B that in 2011 were condemned or were no longer usable for housing because of extensive damage.
- Column J is the CINCH estimate of the number of units from column B that were lost by 2011 for other reasons.

The columns form a closed system. Column B counts the number of units tracked; columns C through J account for all the possible outcomes. Therefore, column B minus the sum of columns C through J always equals zero, except for rounding.

Columns Unique to Backward-Looking Tables

In backward-looking tables, columns E through J track where units came from that are part of the housing stock in 2011 but were not part of the 2002 housing stock.

- Column E is the CINCH estimate of the number of units from column B that were created by the merger or conversion of other units.
- Column F estimates the number of houses or mobile homes from column B that were moved in during the period. For many of the metropolitan areas in the 2011 AHS survey, information on movements was not collected.
- Column G is the CINCH estimate of the number of units from column B that had been nonresidential in 2002.
- Column H is the CINCH estimate of the number of units from column B that were newly constructed between 2002 and 2011. Note: Generally, in Backward-Looking Table A, there will be units in column H with year-built data substantially earlier than the survey year. There are three explanations for this apparent inconsistency. (1) With the exception of manufactured houses, presence in column H is determined by information from the

¹⁴ The AHS does not track what happens to a house or mobile home that is moved off of a lot that is part of the AHS sample, and does not inquire about the previous history of a unit that is moved on to a lot that is part of the AHS sample.

¹⁵ If the owner or tenant both lives in a unit and conducts business out of the unit, the AHS considers the unit to be residential. Nonresidential, therefore, means strictly no residential use.

Census Bureau indicating that the unit entered the sample from a listing of new construction; the Census Bureau may be mistaken. (2) Year built is based on information from the respondent; the respondent may be mistaken. (3) An older unit may have undergone substitution renovation that required a new construction permit, but the respondent may have given the original construction date rather than the renovation date. The extent of major renovation occurring in many established neighborhoods throughout the country makes (3) a likely possibility.

- Column I is the CINCH estimate of the number of units from column B that were added by 2011 from units that were structurally unsound in 2002.¹⁶
- Column J is the CINCH estimate of the number of units from column B that were added by 2011 from units that had been temporarily lost to the stock in 2002 for reasons “not classified” or were newly added by “other” means.

In some metropolitan areas, the AHS surveys do not report data for all the rows in the tables in this appendix. The columns for those rows are left blank.

How to read rental dynamics tables

Forward-Looking Rental Dynamics Table 1 details by affordability category how the rental units in the 2002 housing stock relate to the 2011 housing stock. Column A estimates the number of units in each affordability category in 2002. Columns B through L explain where the 2002 rental units fit into the 2011 housing stock.

- If the units are still rental in 2011, they will be counted in columns B through I, depending upon how affordable they are in 2011.
- If the units have become owner-occupied or for vacant for sale, they will be counted in column J.
- Seasonal units, units that are not the primary residence of their occupants, units used for migratory workers, and units that are vacant but not for rent or sale are counted in column K.
- Column L counts 2002 units that are not in the 2011 housing stock; these can be either temporary or permanent losses to the stock.

The sum of columns B through L equals column A, except for rounding.

Forward-Looking Rental Dynamics Table 2 presents the same information as Table 1, but columns B through L are now percentages of column A. Columns B through L sum to 100 percent in each row.

¹⁶ These units had codes that identified them as “occupancy prohibited” or “interior exposed to the elements.”

Backward-Looking Rental Dynamics Table 1 details by affordability category where the rental units in the 2011 housing stock came from with respect to the 2002 housing stock. Column A estimates the number of units in each affordability category in 2011. Columns B through L explain where the 2011 rental units originated.

- If the units were rental in 2002, they will be counted in columns B through I, depending upon how affordable they are in 2002.
- If the units were owner-occupied or for vacant for sale, they will be counted in column J.
- Seasonal units, units that are not the primary residence of their occupants, units used for migratory workers, and units that are vacant but not for rent or sale in 2002 are counted in column K.
- Column L counts rental units that were newly constructed between 2002 and 2011.
- Column M counts rental units that were added to the housing stock after 2002 by other means.

The sum of columns B through M equals column A, except for rounding.

Backward-Looking Rental Dynamics Table 2 presents the same information as Table 1, but columns B through M are now percentages of column A. Columns B through M sum to 100 percent in each row.

These four Rental Dynamics Tables look only at the endpoints of the 9-year period; for example, a unit that is low rent in 2002 and moderate rent in 2011 might have been high rent, owned, or out of the stock at points in between the two surveys. These tables do not track the path of rental units between 2002 and 2011.

Forward-Looking Table A: Housing Characteristics, Kansas City

	A	B	C	D	E	F	G	H	I	J	
Row	Characteristics	Present in 2002	2002 units present in 2011	Change in characteristics	2002 units lost due to conversion/merger	2002 house or mobile home moved out	2002 units changed to nonresidential use	2002 units lost through demolition or disaster	2002 units badly damaged or condemned	2002 units lost in other ways	Row
1	Housing stock	766,400	757,200	0	600	0	1,100	3,100	3,600	700	1
	Occupancy status										
2	Occupied	697,400	617,000	73,900	600	0	600	1,900	3,100	400	2
3	Vacant	67,300	12,900	51,900	0	0	400	1,200	600	300	3
4	Seasonal	1,700	800	800	0	0	200	0	0	0	4
	Units in structure										
5	1, detached	539,800	533,200	0	400	0	500	2,300	3,100	300	5
6	1, attached	99,200	98,700	0	0	0	200	0	200	200	6
7	2 to 4	26,300	25,500	0	200	0	200	200	200	0	7
8	5 to 9	24,400	24,000	0	0	0	200	0	200	0	8
9	10 to 19	29,700	29,300	0	0	0	0	200	0	200	9
10	20 to 49	13,100	12,900	0	0	0	0	200	0	0	10
11	50 or more	13,700	13,500	0	0	0	0	200	0	0	11
12	Manufactured/mobile home	20,200	20,200	0	0	0	0	0	0	0	12

	A	B	C	D	E	F	G	H	I	J	
Row	Characteristics	Present in 2002	2002 units present in 2011	Change in characteristics	2002 units lost due to conversion/merger	2002 house or mobile home moved out	2002 units changed to nonresidential use	2002 units lost through demolition or disaster	2002 units badly damaged or condemned	2002 units lost in other ways	Row
	Year built										
15	2000–2004	45,600	45,500	0	0	0	0	0	0	100	15
16	1995–1999	68,500	68,500	0	0	0	0	0	0	0	16
17	1990–1994	54,300	53,900	0	0	0	0	200	200	0	17
18	1985–1989	74,100	74,100	0	0	0	0	0	0	0	18
19	1980–1984	38,500	38,500	0	0	0	0	0	0	0	19
20	1975–1979	64,300	63,500	0	0	0	200	200	200	200	20
21	1970–1974	73,700	73,300	0	0	0	200	200	0	0	21
22	1960–1969	111,500	111,300	0	0	0	0	0	200	0	22
23	1950–1959	94,600	92,900	0	0	0	0	1,000	800	0	23
24	1940–1949	51,000	49,100	0	200	0	300	800	400	200	24
25	1930–1939	30,100	29,100	0	0	0	400	200	400	0	25
26	1920–1929	31,100	30,000	0	0	0	0	200	1,000	0	26
27	1919 or earlier	29,100	27,600	0	400	0	0	400	600	200	27
	Rooms										
28	1	1,000	300	700	0	0	0	0	0	0	28
29	2	4,300	1,700	2,300	0	0	200	200	0	0	29
30	3	55,400	39,700	15,000	0	0	200	200	400	0	30
31	4	106,600	60,800	42,800	600	0	200	600	1,200	400	31
32	5	173,100	86,300	84,700	0	0	400	1,200	600	0	32
33	6	161,500	78,500	82,300	0	0	0	200	600	0	33
34	7	110,100	44,200	64,400	0	0	0	400	800	300	34
35	8	77,400	29,200	47,800	0	0	0	400	0	0	35
36	9	39,900	12,700	27,000	0	0	200	0	0	0	36
37	10 or more										37

	A	B	C	D	E	F	G	H	I	J	
Row	Characteristics	Present in 2002	2002 units present in 2011	Change in characteristics	2002 units lost due to conversion/merger	2002 house or mobile home moved out	2002 units changed to nonresidential use	2002 units lost through demolition or disaster	2002 units badly damaged or condemned	2002 units lost in other ways	Row
	Bedrooms										
38	None	4,300	2,300	1,700	0	0	200	200	0	0	38
39	1	84,700	70,900	11,600	400	0	200	400	1,000	200	39
40	2	198,200	158,600	36,000	200	0	600	1,500	1,200	200	40
41	3	304,100	250,100	52,100	0	0	200	800	600	300	41
42	4 or more	175,000	137,700	36,200	0	0	0	200	900	0	42
43	Multiunit structures	107,200	105,200	0	200	0	400	800	400	200	43
	Stories in structure										
44	1	8,300	8,300	0	0	0	0	0	0	0	44
45	2	42,500	41,300	0	200	0	200	200	400	200	45
46	3	44,300	43,700	0	0	0	200	400	0	0	46
47	4 to 6	9,400	9,400	0	0	0	0	0	0	0	47
48	7 or more	2,600	2,400	0	0	0	0	200	0	0	48

Forward-Looking Table B: Unit Quality, Kansas City

	A	B	C	D	E	F	G	H	I	J	
Row	Characteristics	Present in 2002	2002 units present in 2011	Change in characteristics	2002 units lost due to conversion/merger	2002 house or mobile home moved out	2002 units changed to nonresidential use	2002 units lost through demolition or disaster	2002 units badly damaged or condemned	2002 units lost in other ways	Row
1	Occupied units	697,400	617,000	73,900	600	0	600	1,900	3,100	400	1
2	With complete kitchen	688,600	606,700	75,700	600	0	600	1,700	2,900	400	2
3	Lacking complete kitchen facilities	8,800	0	8,500	0	0	0	200	200	0	3
4	With complete plumbing	693,500	609,900	77,100	600	0	600	1,900	3,100	400	4
5	Lack some plumbing	3,900	0	3,900	0	0	0	0	0	0	5
6	No hot piped water										6
7	No bathtub/shower										7
8	No flush toilet	300	0	300	0	0	0	0	0	0	8
9	No exclusive use	3,600	0	3,600	0	0	0	0	0	0	9
	Water										
10	Public/private water	693,300	613,100	74,100	600	0	600	1,900	2,700	400	10
11	Well serving 1 to 5 units	3,300	1,300	1,900	0	0	0	0	200	0	11
12	Other water source	800	200	300	0	0	0	0	200	0	12
	Sewer										
13	Public sewer	637,800	555,800	76,500	600	0	400	1,500	2,700	400	13
14	Septic tank/cesspool	59,600	48,500	10,100	0	0	200	400	400	0	14
15	Other										15

	A	B	C	D	E	F	G	H	I	J	
Row	Characteristics	Present in 2002	2002 units present in 2011	Change in characteristics	2002 units lost due to conversion/merger	2002 house or mobile home moved out	2002 units changed to nonresidential use	2002 units lost through demolition or disaster	2002 units badly damaged or condemned	2002 units lost in other ways	Row
16	Severe problems	13,200	0	13,000	0	0	0	0	200	0	16
17	Plumbing	3,900	0	3,900	0	0	0	0	0	0	17
18	Heating	9,000	0	8,800	0	0	0	0	200	0	18
19	Electric	300	0	300	0	0	0	0	0	0	19
20	Upkeep	300	0	300	0	0	0	0	0	0	20
21	Moderate problems	21,200	2,200	18,000	0	0	0	200	800	0	21
22	Plumbing	1,900	0	1,900	0	0	0	0	0	0	22
23	Heating	2,500	300	2,200	0	0	0	0	0	0	23
24	Kitchen	8,800	0	8,500	0	0	0	200	200	0	24
25	Upkeep	8,500	300	7,400	0	0	0	0	800	0	25

Forward-Looking Table C: Occupant Characteristics, Kansas City

	A	B	C	D	E	F	G	H	I	J	
Row	Characteristics	Present in 2002	2002 units present in 2011	Change in characteristics	2002 units lost due to conversion/merger	2002 house or mobile home moved out	2002 units changed to nonresidential use	2002 units lost through demolition or disaster	2002 units badly damaged or condemned	2002 units lost in other ways	Row
1	Occupied units	697,400	617,000	73,900	600	0	600	1,900	3,100	400	1
	Age of householder										
2	Under 65	567,700	436,600	125,700	400	0	400	1,700	2,700	200	2
3	65 to 74	65,500	6,800	58,300	0	0	0	200	200	0	3
4	75 or older	64,200	23,900	39,600	200	0	200	0	200	200	4
	Children in household										
5	Some	252,800	115,100	135,200	200	0	200	900	1,100	0	5
6	None	444,600	308,200	132,400	400	0	400	1,000	1,900	400	6
	Race and ethnicity										
7	White	584,700	487,400	93,100	200	0	600	1,700	1,300	400	7
8	Hispanic	11,700	5,800	5,900	0	0	0	0	0	0	8
9	Non-Hispanic	573,000	463,900	104,900	200	0	600	1,700	1,300	400	9
10	Black	80,100	41,300	37,300	400	0	0	200	900	0	10
11	Hispanic	800	0	600	0	0	0	0	200	0	11
12	Non-Hispanic	79,300	41,000	37,000	400	0	0	200	800	0	12
13	American Indian or Alaska Native alone	3,200	1,300	1,900	0	0	0	0	0	0	13
14	Asian or Pacific Islander	12,400	5,000	7,400	0	0	0	0	0	0	14
16	Other	17,000	0	16,300	0	0	0	0	800	0	16
17	Hispanic or Latino (any race)	27,400	12,100	14,300	0	0	0	0	1,000	0	17

	A	B	C	D	E	F	G	H	I	J	
Row	Characteristics	Present in 2002	2002 units present in 2011	Change in characteristics	2002 units lost due to conversion/merger	2002 house or mobile home moved out	2002 units changed to nonresidential use	2002 units lost through demolition or disaster	2002 units badly damaged or condemned	2002 units lost in other ways	Row
	Income sources of families and primary individuals										
18	Wages and salaries	572,300	401,000	166,300	400	0	200	1,700	2,300	400	18
20	Dividends, interest, or rent	242,300	77,400	163,600	0	0	200	600	400	200	20
21	Public assistance or public welfare	23,300	700	22,400	0	0	0	0	200	0	21

Forward-Looking Table D: Income and Housing Cost, Kansas City

	A	B	C	D	E	F	G	H	I	J	
Row	Characteristics	Present in 2002	2002 units present in 2011	Change in characteristics	2002 units lost due to conversion/merger	2002 house or mobile home moved out	2002 units changed to nonresidential use	2002 units lost through demolition or disaster	2002 units badly damaged or condemned	2002 units lost in other ways	Row
1	Occupied units	697,400	617,000	73,900	600	0	600	1,900	3,100	697,400	1
	Tenure										
2	Owner-occupied	487,100	410,100	74,800	0	0	200	900	1,100	487,100	2
3	Homeownership rate	69.8%								69.80%	3
4	Renter-occupied	210,300	142,500	63,500	600	0	400	1,000	1,900	210,300	4
	Renter monthly housing costs										
5	No cash rent	6,600	1,000	4,800	400	0	0	0	400	6,600	5
6	Less than \$350	25,200	7,300	17,700	0	0	0	200	0	25,200	6
7	\$350 to \$599	65,300	14,100	48,600	200	0	200	800	1,200	65,300	7
8	\$600 to \$799	58,700	15,100	43,200	0	0	200	0	0	58,700	8
9	\$800 to \$1,249	46,100	20,000	25,700	0	0	0	0	400	46,100	9
10	\$1,250 or more	8,500	4,300	4,200	0	0	0	0	0	8,500	10
	Renter household income										
11	Less than \$15,000	54,200	19,200	34,000	200	0	0	200	600	54,200	11
12	\$15,000 to \$29,999	57,000	13,400	41,700	400	0	400	200	1,000	57,000	12
13	\$30,000 to \$49,999	51,300	7,900	42,800	0	0	0	200	0	51,300	13
14	\$50,000 to \$99,999	39,100	8,800	29,500	0	0	0	400	400	39,100	14
15	\$100,000 or more	8,800	1,300	7,500	0	0	0	0	0	8,800	15

	A	B	C	D	E	F	G	H	I	J	
Row	Characteristics	Present in 2002	2002 units present in 2011	Change in characteristics	2002 units lost due to conversion/merger	2002 house or mobile home moved out	2002 units changed to nonresidential use	2002 units lost through demolition or disaster	2002 units badly damaged or condemned	2002 units lost in other ways	Row
	Owner monthly housing costs										
16	Less than \$350	104,500	9,500	94,100	0	0	0	600	400	104,500	16
17	\$350 to \$599	88,400	20,100	67,800	0	0	200	0	200	88,400	17
18	\$600 to \$799	55,500	5,100	50,200	0	0	0	0	200	55,500	18
19	\$800 to \$1,249	119,700	38,100	81,300	0	0	0	200	200	119,700	19
20	\$1,250 or more	119,000	85,100	33,500	0	0	0	200	200	119,000	20
	Owner household income										
21	Less than \$15,000	39,200	5,300	33,600	0	0	0	200	200	39,200	21
22	\$15,000 to \$29,999	71,900	15,300	56,100	0	0	0	400	200	71,900	22
23	\$30,000 to \$49,999	98,400	22,500	75,100	0	0	200	200	400	98,400	23
24	\$50,000 to \$99,999	179,900	63,800	115,600	0	0	0	200	400	179,900	24
25	\$100,000 or more	97,600	44,600	53,000	0	0	0	0	0	97,600	25

Backward-Looking Table A: Housing Characteristics, Kansas City

	A	B	C	D	E	F	G	H	I	J	
Row	2011 characteristics	Present in 2011	2011 units present in 2002	Change in characteristics	2011 units added by conversion/merger	2011 house or mobile home moved in	2011 units added from nonresidential use	2011 units added by new construction	2011 units added from temporary losses in 2002 stock	2011 units added in other ways	Row
1	Housing stock	893,600	770,800	0	500	700	1,300	118,100	600	1,500	1
	Occupancy status										
2	Occupied	793,700	630,300	53,200	200	0	600	108,100	400	1,000	2
3	Vacant	96,200	12,100	72,300	300	700	300	10,100	300	300	3
4	Seasonal	3,700	900	2,100	0	0	500	0	0	300	4
	Units in structure										
5	1, detached	624,000	540,300	0	300	0	1,300	81,300	300	500	5
6	1, attached	54,300	42,400	0	200	0	0	11,600	0	0	6
7	2 to 4	70,500	63,000	0	0	0	0	6,600	400	400	7
8	5 to 9	36,700	33,200	0	0	0	0	3,200	0	300	8
9	10 to 19	47,300	42,000	0	0	0	0	4,900	0	300	9
10	20 to 49	20,200	15,900	0	0	0	0	4,300	0	0	10
11	50 or more	22,800	16,900	0	0	0	0	5,900	0	0	11
12	Manufactured/mobile home	18,000	17,100	0	0	700	0	300	0	0	12

	A	B	C	D	E	F	G	H	I	J	
Row	2011 characteristics	Present in 2011	2011 units present in 2002	Change in characteristics	2011 units added by conversion/merger	2011 house or mobile home moved in	2011 units added from nonresidential use	2011 units added by new construction	2011 units added from temporary losses in 2002 stock	2011 units added in other ways	Row
	Year built										
13	2010–2014	9,600	0	0	200	0	0	9,400	0	0	13
14	2005–2009	68,400	0	0	0	0	0	68,100	0	300	14
15	2000–2004	76,200	43,400	0	0	0	0	32,900	0	0	15
16	1995–1999	75,800	68,800	0	0	0	300	6,700	0	0	16
17	1990–1994	54,800	54,500	0	0	0	0	300	0	0	17
18	1985–1989	76,000	75,300	0	0	0	300	0	400	0	18
19	1980–1984	40,900	40,400	0	300	0	0	0	0	300	19
20	1975–1979	64,200	64,200	0	0	0	0	0	0	0	20
21	1970–1974	75,600	75,200	0	0	0	0	0	0	400	21
22	1960–1969	114,200	113,600	0	0	700	0	0	0	0	22
23	1950–1959	96,300	96,000	0	0	0	0	0	0	300	23
24	1940–1949	50,900	50,000	0	0	0	500	400	0	0	24
25	1930–1939	30,400	29,800	0	0	0	200	0	0	300	25
26	1920–1929	30,800	30,800	0	0	0	0	0	0	0	26
27	1919 or earlier	29,400	28,900	0	0	0	0	300	300	0	27

	A	B	C	D	E	F	G	H	I	J	
Row	2011 characteristics	Present in 2011	2011 units present in 2002	Change in characteristics	2011 units added by conversion/merger	2011 house or mobile home moved in	2011 units added from nonresidential use	2011 units added by new construction	2011 units added from temporary losses in 2002 stock	2011 units added in other ways	Row
	Rooms										
28	1	2,800	300	2,500	0	0	0	0	0	0	28
29	2	6,300	1,700	4,100	0	0	0	400	0	0	29
30	3	73,300	41,600	21,400	0	0	300	9,000	0	1,000	30
31	4	129,200	62,300	49,600	500	700	500	15,300	400	0	31
32	5	181,600	85,900	72,700	0	0	300	22,200	300	300	32
33	6	182,300	79,000	82,700	0	0	0	20,300	0	300	33
34	7	140,600	45,200	78,400	0	0	300	16,700	0	0	34
35	8	92,300	29,900	47,100	0	0	0	15,300	0	0	35
36	9	48,500	13,000	24,900	0	0	0	10,600	0	0	36
37	10 or more	36,600	12,500	15,800	0	0	0	8,300	0	0	37
	Bedrooms										
38	None	6,600	2,500	4,100	0	0	0	0	0	0	38
39	1	97,400	73,900	8,600	0	0	300	13,500	400	700	39
40	2	213,500	163,000	29,500	500	700	500	18,600	300	500	40
41	3	353,800	251,400	62,600	0	0	500	39,000	0	300	41
42	4 or more	222,300	140,600	34,700	0	0	0	47,000	0	0	42
43	Multiunit structures	197,300	171,100	0	0	0	0	24,900	400	1,000	43
	Stories in structure										
44	1	21,200	16,900	0	0	0	0	3,800	400	0	44
45	2	73,600	63,500	0	0	0	0	9,500	0	600	45
46	3	84,600	74,400	0	0	0	0	9,800	0	400	46
47	4 to 6	9,500	7,800	0	0	0	0	1,800	0	0	47
48	7 or more	8,500	8,500	0	0	0	0	0	0	0	48

Backward-Looking Table B: Unit Quality, Kansas City

	A	B	C	D	E	F	G	H	I	J	
Row	2011 characteristics	Present in 2011	2011 units present in 2002	Change in characteristics	2011 units added by conversion/ merger	2011 house or mobile home moved in	2011 units added from nonresidential use	2011 units added by new construction	2011 units added from temporary losses in 2002 stock	2011 units added in other ways	Row
1	Occupied units	793,700	630,300	53,200	200	0	600	108,100	400		1
2	With complete kitchen	788,700	620,100	59,500	200	0	600	107,300	400		2
3	Lacking complete kitchen facilities	5,000	0	3,800	0	0	0	800	0		3
4	With complete plumbing	789,700	622,800	56,600	200	0	600	108,100	400		4
5	Lack some plumbing	4,000	0	4,000	0	0	0	0	0		5
6	No hot piped water	300	0	300	0	0	0	0	0		6
7	No bathtub/shower										7
8	No flush toilet										8
9	No exclusive use	3,700	0	3,700	0	0	0	0	0		9
	Water										
10	Public/private water	790,900	626,600	54,700	200	0	600	107,400	400		10
11	Well serving 1 to 5 units	2,600	1,300	600	0	0	0	700	0		11
12	Other water source	200	200	0	0	0	0	0	0		12
	Sewer										
13	Public sewer	727,500	568,000	57,700	200	0	600	99,600	400		13
14	Septic tank/cesspool	66,200	48,600	9,100	0	0	0	8,400	0		14
15	Other										15

	A	B	C	D	E	F	G	H	I	J	
Row	2011 characteristics	Present in 2011	2011 units present in 2002	Change in characteristics	2011 units added by conversion/merger	2011 house or mobile home moved in	2011 units added from nonresidential use	2011 units added by new construction	2011 units added from temporary losses in 2002 stock	2011 units added in other ways	Row
16	Severe problems	7,700	0	7,700	0	0	0	0	0		16
17	Plumbing	4,000	0	4,000	0	0	0	0	0		17
18	Heating	3,300	0	3,300	0	0	0	0	0		18
19	Electric										19
20	Upkeep	300	0	300	0	0	0	0	0		20
21	Moderate problems	14,400	1,800	10,800	0	0	0	1,500	0		21
22	Plumbing	1,000	0	1,000	0	0	0	0	0		22
23	Heating	300	300	0	0	0	0	0	0		23
24	Kitchen	5,000	0	3,800	0	0	0	800	0		24
25	Upkeep	8,800	300	7,700	0	0	0	700	0		25

Backward-Looking Table C: Occupant Characteristics, Kansas City

	A	B	C	D	E	F	G	H	I	J	
Row	2011 characteristics	Present in 2011	2011 units present in 2002	Change in characteristics	2011 units added by conversion/merger	2011 house or mobile home moved in	2011 units added from nonresidential use	2011 units added by new construction	2011 units added from temporary losses in 2002 stock	2011 units added in other ways	Row
1	Occupied units	793,700	630,300	53,200	200	0	600	108,100	400	1,000	1
	Age of householder										
2	Under 65	631,500	444,800	92,500	200	0	0	92,700	400	1,000	2
3	65 to 74	82,200	6,900	68,800	0	0	300	6,200	0	0	3
4	75 or older	79,900	24,900	45,600	0	0	300	9,100	0	0	4
	Children in household										
5	Some	266,800	116,800	99,200	200	0	0	50,300	0	300	5
6	None	526,900	314,900	152,600	0	0	600	57,800	400	700	6
	Race and ethnicity										
7	White	667,200	495,500	75,200	200	0	600	94,700	0	1,000	7
8	Hispanic	39,300	5,900	29,600	0	0	0	3,500	0	300	8
9	Non-Hispanic	627,900	471,500	63,700	200	0	600	91,300	0	700	9
10	Black	87,600	42,000	37,700	0	0	0	7,500	400	0	10
11	Hispanic	1,500	0	800	0	0	0	700	0	0	11
12	Non-Hispanic	86,100	41,800	37,100	0	0	0	6,800	400	0	12
13	American Indian or Alaska Native alone	7,100	1,300	4,900	0	0	0	800	0	0	13
14	Asian or Pacific Islander	19,700	5,300	9,400	0	0	0	5,000	0	0	14
16	Other	12,200	12,200	0	0	0	0	0	0	0	16
17	Hispanic or Latino (any race)	47,400	12,100	30,900	0	0	0	4,100	0	300	17

	A	B	C	D	E	F	G	H	I	J	
Row	2011 characteristics	Present in 2011	2011 units present in 2002	Change in characteristics	2011 units added by conversion/merger	2011 house or mobile home moved in	2011 units added from nonresidential use	2011 units added by new construction	2011 units added from temporary losses in 2002 stock	2011 units added in other ways	Row
	Income sources of families and primary individuals										
18	Wages and salaries	586,700	409,100	86,600	200	0	300	89,100	400	1,000	18
20	Dividends, interest, or rent	208,800	79,600	92,600	0	0	300	36,300	0	0	20
21	Public assistance or public welfare	12,300	700	11,200	0	0	0	300	0	0	21

Backward-Looking Table D: Income and Housing Cost, Kansas City

	A	B	C	D	E	F	G	H	I	J	
Row	2011 characteristics	Present in 2011	2011 units present in 2002	Change in characteristics	2011 units added by conversion/ merger	2011 house or mobile home moved in	2011 units added from nonresidential use	2011 units added by new construction	2011 units added from temporary losses in 2002 stock	2011 units added in other ways	Row
1	Occupied units	793,700	630,300	53,200	200	0	600	108,100	400	1,000	1
	Tenure										
2	Owner-occupied	532,500	414,700	40,800	0	0	600	76,100	0	300	2
3	Homeownership rate	67.1%									3
4	Renter-occupied	261,200	149,200	78,800	200	0	0	31,900	400	700	4
	Renter monthly housing costs										
5	No cash rent	8,300	1,000	7,200	0	0	0	0	0	0	5
6	Less than \$350	17,000	7,600	7,000	0	0	0	2,300	0	0	6
7	\$350 to \$599	36,700	14,600	19,600	0	0	0	2,000	400	0	7
8	\$600 to \$799	68,600	16,400	47,500	0	0	0	4,100	0	700	8
9	\$800 to \$1,249	99,000	21,000	64,500	0	0	0	13,500	0	0	9
10	\$1,250 or more	31,600	4,500	16,900	200	0	0	10,000	0	0	10
	Renter household income										
11	Less than \$15,000	64,400	20,000	38,900	0	0	0	4,800	400	300	11
12	\$15,000 to \$29,999	69,900	14,300	50,300	0	0	0	5,300	0	0	12
13	\$30,000 to \$49,999	55,600	8,100	41,400	200	0	0	5,900	0	0	13
14	\$50,000 to \$99,999	56,800	8,800	35,700	0	0	0	11,900	0	400	14
15	\$100,000 or more	14,500	1,400	9,100	0	0	0	4,000	0	0	15

	A	B	C	D	E	F	G	H	I	J	
Row	2011 characteristics	Present in 2011	2011 units present in 2002	Change in characteristics	2011 units added by conversion/merger	2011 house or mobile home moved in	2011 units added from nonresidential use	2011 units added by new construction	2011 units added from temporary losses in 2002 stock	2011 units added in other ways	Row
	Owner monthly housing costs										
16	Less than \$350	22,700	9,300	12,200	0	0	300	900	0	0	16
17	\$350 to \$599	83,600	20,200	59,900	0	0	0	3,200	0	300	17
18	\$600 to \$799	51,700	5,200	43,700	0	0	0	2,700	0	0	18
19	\$800 to \$1,249	126,500	38,300	79,100	0	0	0	9,200	0	0	19
20	\$1,250 or more	248,000	87,400	100,300	0	0	300	60,100	0	0	20
	Owner household income										
21	Less than \$15,000	34,900	4,500	28,900	0	0	0	1,600	0	0	21
22	\$15,000 to \$29,999	68,900	14,600	51,200	0	0	0	2,800	0	300	22
23	\$30,000 to \$49,999	99,600	22,900	68,700	0	0	300	7,800	0	0	23
24	\$50,000 to \$99,999	176,000	64,700	85,900	0	0	300	25,100	0	0	24
25	\$100,000 or more	153,000	45,800	68,400	0	0	0	38,900	0	0	25

Forward-Looking Rental Dynamics Table 1: Counts, 2002–2011, Kansas City

Affordability categories	A Total in 2002	B Non-market in 2011	C Extremely low rent in 2011	D Very low rent in 2011	E Low rent in 2011	F Moderate rent in 2011	G High rent in 2011	H Very high rent in 2011	I Extremely high rent in 2011	J Owner- occupied in 2011	K Seasonal or related vacant in 2011	L Lost to stock in 2011
Non-market	44,900	17,900	1,700	11,600	4,200	1,300	600	0	700	3,200	2,000	1,700
Extremely low rent	27,700	1,700	3,300	13,100	1,300	1,300	300	0	0	3,300	2,300	1,200
Very low rent	114,900	7,000	2,000	52,400	26,700	6,900	1,700	0	0	11,400	4,300	2,500
Low rent	39,800	1,300	1,300	3,300	12,300	13,400	700	300	0	6,000	1,000	200
Moderate rent	15,100	0	0	1,300	1,000	7,900	2,300	0	0	1,700	700	200
High rent	3,300	0	0	300	300	700	0	700	300	1,000	0	0
Very high rent	3,600	0	300	0	300	0	300	300	1,300	600	300	0
Extremely high rent	0	0	0	0	0	0	0	0	0	0	0	0
Total	249,300	27,900	8,600	82,000	46,100	31,500	5,900	1,300	2,300	27,200	10,600	5,800

Forward-Looking Rental Dynamics Table 2: Row Percentages, 2002–2011, Kansas City

Affordability categories	A Total in 2002	B Non-market in 2011	C Extremely low rent in 2011	D Very low rent in 2011	E Low rent in 2011	F Moderate rent in 2011	G High rent in 2011	H Very high rent in 2011	I Extremely high rent in 2011	J Owner- occupied in 2011	K Seasonal or related vacant in 2011	L Lost to stock in 2011
Non-market	44,900	39.9%	3.7%	25.8%	9.4%	2.9%	1.4%	0.0%	1.5%	7.0%	4.4%	3.9%
Extremely low rent	27,700	6.0%	11.9%	47.2%	4.8%	4.7%	1.2%	0.0%	0.0%	11.7%	8.4%	4.2%
Very low rent	114,900	6.1%	1.7%	45.6%	23.3%	6.0%	1.4%	0.0%	0.0%	10.0%	3.8%	2.2%
Low rent	39,800	3.3%	3.3%	8.3%	30.9%	33.7%	1.6%	0.8%	0.0%	15.1%	2.6%	0.5%
Moderate rent	15,100	0.0%	0.0%	8.7%	6.7%	52.4%	15.4%	0.0%	0.0%	11.0%	4.5%	1.4%
High rent	3,300	0.0%	0.0%	10.3%	9.7%	19.6%	0.0%	20.5%	10.3%	29.5%	0.0%	0.0%
Very high rent	3,600	0.0%	8.9%	0.0%	8.9%	0.0%	8.9%	9.3%	37.1%	17.7%	9.3%	0.0%
Extremely high rent	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	249,300	11.2%	3.4%	32.9%	18.5%	12.6%	2.4%	0.5%	0.9%	10.9%	4.3%	2.3%

Backward-Looking Rental Dynamics Table 1: Counts, 2002–2011, Kansas City

Affordability categories	A Total in 2011	B Non-market in 2002	C Extremely low rent in 2002	D Very low rent in 2002	E Low rent in 2002	F Moderate rent in 2002	G High rent in 2002	H Very high rent in 2002	I Extremely high rent in 2002	J Owner-occupied in 2002	K Seasonal or related vacant in 2002	L New construction	M Added in other ways
Non-market	41,000	18,600	1,600	7,600	1,300	0	0	0	0	8,700	0	2,800	400
Extremely low rent	12,900	1,900	3,400	2,000	1,400	0	0	200	0	1,300	400	2,200	0
Very low rent	109,200	12,000	13,800	55,500	3,600	1,100	400	0	0	16,900	1,600	3,500	800
Low rent	64,200	4,300	1,500	27,500	13,100	1,000	300	400	0	8,600	1,100	5,500	700
Moderate rent	58,600	1,400	1,500	7,000	13,700	7,800	700	0	0	12,400	300	13,800	0
High rent	16,300	500	300	1,600	600	2,400	0	200	0	4,700	300	5,400	200
Very high rent	2,600	0	0	0	200	0	800	400	0	200	0	1,000	0
Extremely high rent	5,600	800	0	0	0	0	300	1,400	0	300	0	2,800	0
Total	310,500	39,400	22,200	101,300	33,700	12,300	2,500	2,700	0	53,300	3,800	37,100	2,100

Backward-Looking Rental Dynamics Table 2: Row Percentages, 2002–2011, Kansas City

Affordability categories	A Total in 2011	B Non-market in 2002	C Extremely low rent in 2002	D Very low rent in 2002	E Low rent in 2002	F Moderate rent in 2002	G High rent in 2002	H Very high rent in 2002	I Extremely high rent in 2002	J Owner-occupied in 2002	K Seasonal or related vacant in 2002	L New construction	M Added in other ways
Non-market	41,000	45.4%	4.0%	18.5%	3.1%	0.0%	0.0%	0.0%	0.0%	21.2%	0.0%	6.9%	0.9%
Extremely low rent	12,900	14.8%	26.3%	15.7%	10.6%	0.0%	0.0%	1.8%	0.0%	10.3%	3.3%	17.4%	0.0%
Very low rent	109,200	11.0%	12.7%	50.9%	3.3%	1.0%	0.3%	0.0%	0.0%	15.5%	1.5%	3.2%	0.8%
Low rent	64,200	6.7%	2.4%	42.9%	20.3%	1.5%	0.5%	0.7%	0.0%	13.5%	1.8%	8.6%	1.1%
Moderate rent	58,600	2.3%	2.5%	12.0%	23.3%	13.3%	1.2%	0.0%	0.0%	21.2%	0.5%	23.6%	0.0%
High rent	16,300	2.9%	2.1%	9.7%	3.6%	14.7%	0.0%	1.5%	0.0%	29.1%	2.0%	33.3%	1.3%
Very high rent	2,600	0.0%	0.0%	0.0%	9.2%	0.0%	29.9%	13.7%	0.0%	9.2%	0.0%	38.0%	0.0%
Extremely high rent	5,600	13.6%	0.0%	0.0%	0.0%	0.0%	6.0%	25.4%	0.0%	5.7%	0.0%	49.3%	0.0%
Total	310,500	12.7%	7.1%	32.6%	10.9%	4.0%	0.8%	0.9%	0.0%	17.2%	1.2%	12.0%	0.7%