

**American Housing Survey**

**Components of Inventory Change and  
Rental Dynamics Analysis:  
St. Louis, 2004–2011**

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## ***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 St. Louis metropolitan area changed between 2004 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 St. Louis and on their occupants in both 2004 and 2011.

In 2004 the St. Louis metropolitan area contained 1,139,700 housing units, including vacant units. By 2011 the number of housing units had increased to 1,248,100. Part of this increase was due to a redefinition of the metropolitan area that added five counties. We estimate that the 2011 count of housing units for the metropolitan area as defined in 2004 would be 1,196,100. This represents an overall increase of 5.0 percent, which translates to an average annual increase of only 0.7 percent over the 7-year period.

Between 2004 and 2011, 10,200 units left the housing stock. Of these, 4,600 are clearly permanent losses—the original unit is gone, and major construction would be required to replace it with a new unit. Another 1,400 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 4,200 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 4,400 of the permanent losses, while mobile home move-outs contributed another 200 permanent losses. There were no losses attributed to mergers or conversion.

In the period between the 2004 and the 2011 AHS surveys, 123,600 units were added to the housing stock. Ninety percent of these additions were newly constructed units. Mobile home move-ins added 1,400 units, and another 1,600 units were formed from the conversion or merger of 2004 units. We classified 4,100 units as recovered because these units had been in the housing stock at some point but were classified in 2004 as nonresidential (1,600) or uninhabitable (2,500). Finally, 4,800 units were added in other unclassified ways.

The St. Louis metropolitan area lost 0.9 percent of all 2004 housing units by 2011; new additions represented 9.9 percent of the 2011 housing stock. The loss rate and the rate of addition varied by the characteristics of the housing.

- In 2004, the St. Louis metropolitan area had only 5,100 units classified as seasonal or usual resident elsewhere. Almost 20 percent of these units were lost by 2011.
- Loss rates were low among more recently built units (1985–1994) and larger units (8 rooms or 4 or more bedrooms).

- Loss rates were lower than average among owner-occupied units in 2004 that had high monthly housing costs (\$800 or more) or were occupied by households earning \$100,000 or more.
- Size and structure type mattered with respect to additions. Large units (8 or 10 or more rooms or 4 or more bedrooms) had higher-than-average rates of addition; 2-bedroom units had a lower-than-average rate of addition. Single-family attached units and units in large multifamily buildings (20–49 units or 4–6 stories) had high rates, while manufactured homes had a low rate.
- Among units with moderate physical problems in 2011, additions are underrepresented.
- Units occupied in 2011 by households with householders 75 years or older or that receive public assistance also had low rates of addition.
- The rate of addition was low among units that were renter-occupied in 2011 and, among rental units, particularly low for those occupied by households earning less than \$15,000 and those with low monthly housing costs (\$350–\$799).
- The rate of addition among units that were owner-occupied in 2011 was slightly higher than that of all occupied units but not statistically different. However, among owner-occupied units, addition rates clearly varied by monthly housing costs and household income in 2011. Those units with low housing costs (less than \$800) or occupied by lower income owners (less than \$30,000) had lower rates of addition, while those with high housing costs (\$1,250 or more) and those occupied by high-income owners (\$50,000 or more) had higher-than-average rates of addition.

The 2004 rental stock in St. Louis was affordable. Of the 326,000 rental units in 2004, 203,900 were extremely low rent or very low rent units. In addition, 59,400 units were non-market; that is, they were either assisted or offered for no cash rent. These three categories accounted for 80.8 percent of the 2004 rental stock. The three highest rent categories comprised only 3.5 percent of the rental stock. Moves to a less affordable category (sometimes called gentrification) exceeded moves to a more affordable category (sometimes called filtration)—43.8 percent of all 2004 units compared to 10.9 percent. By 2011, 13.7 percent of the rental units in 2004 were no longer in the rental stock. The largest proportion of these losses was due to changes in tenure.

The rental stock in St. Louis was less affordable in 2011 than in 2004. Of the 368,700 rental units in 2011, 142,500 were extremely low rent or very low rent units. In addition, 50,500 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 4.9 percent of the rental stock. Moves from a more affordable category in 2004 (sometimes called gentrification) exceeded moves from a less affordable category (sometimes called filtration)—35.6 percent of all 2011 units compared to 9.1 percent. Of the rental units in 2011, 30.1 percent were not rental in 2004. The largest proportion of these gains was due to changes in tenure.

# Components of Inventory Change and Rental Dynamics Analysis: St. Louis, 2004–2011

## 1. Introduction

This report describes how the housing stock in the St. Louis metropolitan area changed between 2004 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 St. Louis and on their occupants in both 2004 and 2011.<sup>1</sup>

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.<sup>2</sup>

CINCH reports present both forward-looking analysis (what happened to the 2004 units by 2011) and backward-looking analysis (where the 2011 units came from in terms of 2004).<sup>3</sup> 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 St. Louis.
- Section 3 explains the changes in the housing stock between 2004 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 2004 and 2011.

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<sup>1</sup> 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.

<sup>2</sup> 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>.

<sup>3</sup> 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 St. Louis metropolitan area between 2004 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 2004–2011 period began during 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: St. Louis***

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 2004 the St. Louis metropolitan area contained 1,139,700 housing units, including vacant units. By 2011 the number of housing units had increased to 1,248,100. Part of this increase was due to a redefinition of the metropolitan area that added five counties (Bond, Calhoun, and Macoupin counties in Illinois and Crawford and Washington 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 2004 would be 1,196,100. This represents an overall increase of 5.0 percent, which translates to an average annual increase of only 0.7 percent over the 7-year period.

The change in the geographical definition of St. Louis 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 St. Louis metropolitan area as defined in both 2004 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 2004 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 1,979 sample units that were common to the 2004 and 2011 AHS St. Louis surveys and satisfied all the analytical requirements.<sup>4</sup> Between 2004 and 2011, 34 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 2,013 sample units. Between 2004 and 2011, 206 sample units meeting the analytical requirements were added to the AHS 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 2,185 sample units. In the forward-looking analysis, the average weight of a sample unit is approximately 566 units; in the backward-looking analysis, the average weight of a sample unit is approximately 571 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 St. Louis, 7 years separate the 2011 sample from the 2004 sample. As a result, explaining the loss or addition of sample units is 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.

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<sup>4</sup> The 2004 AHS surveyed 4,741 units in the St. Louis metropolitan area; 2,452 of these units were in the 2011 AHS public use file (PUF). Of the 2,289 sample units no longer in the survey, 320 were legitimate temporary or permanent losses to the housing stock and were considered for the analysis. The remaining 1,969 cases are coded as “sample reduction for the current survey year” with no further explanation.



### 3. Changes to the Housing Stock: 2004–2011

#### Losses between 2004 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 2004 and 2011, 10,200 units left the housing stock.<sup>5</sup> Of these, 4,600 are clearly permanent losses—the original unit is gone, and major construction would be required to replace it with a new unit. Another 1,400 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 4,200 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 2004 St. Louis Housing Units in 2011<sup>6</sup>**

Present in 2004	1,139,700
2004 units present in 2011	1,129,500
<b>Units no longer in the stock</b>	<b>10,200</b>
2004 units lost due to conversion/merger	0
2004 house or mobile home moved out	200
2004 units lost through demolition or disaster	4,400
<b>Permanent losses</b>	<b>4,600</b>
2004 units changed to nonresidential use	700
2004 units badly damaged or condemned	800
<b>Temporary losses</b>	<b>1,400</b>
<b>2004 units lost in other ways</b>	<b>4,200</b>

Demolitions and natural disasters accounted for 4,400 of the permanent losses, while mergers and mobile home move-outs contributed another 200 permanent losses. 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. There were no losses attributed to mergers or conversion. “Conversion” is the terminology used in the AHS for the splitting of a unit into two or more units.

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.

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

<sup>5</sup> With the caveats noted in Appendix A, this analysis applies to the area common to both the 2004 and 2011 definitions of the metropolitan area.

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

2004. For each subgroup, these tables detail how many of the 2004 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 2004–2011 period.

## Additions between 2004 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 2004 and 2011.<sup>7</sup>

**Table 2: Sources for 2011 St. Louis Housing Stock<sup>8</sup>**

2011 housing stock	1,248,000
2011 units present in 2004	1,124,400
<b>Total additions to stock</b>	<b>123,600</b>
Units added by new construction	111,700
House or mobile home moved in	1,400
Units added by conversion/merger	1,600
<b>New or reconstructed units</b>	<b>114,700</b>
Units added from nonresidential use	1,600
Units added from temporary losses	2,500
<b>Recovered units</b>	<b>4,100</b>
<b>Units added in other ways</b>	<b>4,800</b>

In the period between the 2004 and the 2011 AHS surveys, 123,600 units were added to the housing stock. Ninety percent of these additions were newly constructed units. Mobile home move-ins added 1,400 units, and another 1,600 units were formed from the conversion or merger of 2004 units.

We classified 4,100 units as recovered because these units had been in the housing stock at some point but were classified in 2004 as nonresidential (1,600) or uninhabitable (2,500). Finally, 4,800 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 2004–2011 period.

<sup>7</sup> With the caveats noted in Appendix A, this analysis applies to the area common to both the 2004 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.

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

#### **4. Components With Atypical Losses or Additions**

The St. Louis metropolitan area lost 0.9 percent of all 2004 housing units by 2011, but the loss rate varied across sectors of the stock. For example, the occupied housing stock lost 0.7 percent of its units between 2004 and 2011.

We examined all of the components of the 2004 St. Louis 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 St. Louis, 2004–2011<sup>9</sup>**

Characteristics	Present in 2004	Total lost	Percent lost
<i>Housing stock</i>	1,139,700	10,200	0.9%
<i>Occupancy status</i>			
Occupied	1,029,400	7,100	0.7%
Vacant	105,200	2,200	2.1%
Seasonal	5,100	900	18.6%*
<i>Year built</i>			
1990–1994	71,700	100	0.2%*
1985–1989	100,500	200	0.2%*
<i>Rooms</i>			
8	118,900	300	0.2%*
<i>Bedrooms</i>			
4 or more	258,800	500	0.2%**
<i>Race and ethnicity</i>			
American Indian or Alaska Native alone	1,200	700	58.4%*
<i>Tenure</i>			
Owner-occupied	750,400	3,400	0.5%
Renter-occupied	279,000	3,800	1.4%
<i>Owner monthly housing costs</i>			
\$800 to \$1,249	186,600	300	0.2%*
\$1,250 or more	182,900	300	0.2%*
<i>Owner household income</i>			
\$100,000 or more	171,200	300	0.2%*

\*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.

Only a few segments of the 2004 St. Louis housing market met the criteria for Table 3.<sup>10</sup>

- In 2004, the St. Louis metropolitan area had only 5,100 units classified as seasonal or usual resident elsewhere. Almost 20 percent of these units were lost by 2011.
- Loss rates were low among more recently built units (1985–1994) and larger units (8 rooms or 4 or more bedrooms).
- Loss rates were lower than average among owner-occupied units in 2004 that had high monthly housing costs (\$800 or more) or were occupied by households earning \$100,000 or more.

<sup>9</sup> 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.

<sup>10</sup> This is mainly the result of our ability to track only 34 sample units that were lost to the stock. Some of the losses recorded in Table 3 are based on only one or two sample units.

The 123,600 additions reported in Table 2 represented 9.9 percent of the 2011 housing stock. The rate of addition varied by the characteristics of the housing. Additions represented 9.5 percent of occupied units.

We examined all of the components of the 2004 St. Louis 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 St. Louis, 2004–2011<sup>11</sup>**

Characteristics	Present in 2011	Total additions	Percent additions
<i>Housing stock</i>	1,248,000	123,572	9.9%
<i>Occupancy status</i>			
Occupied	1,115,200	106,004	9.5%
Vacant	127,200	16,244	12.8%
<i>Units in structure</i>			
1, attached	43,367	8,839	20.4% **
20 to 49	22,155	6,778	30.6% ***
Manufactured/mobile home or trailer	47,936	1,819	3.8% **
<i>Rooms</i>			
8	139,688	19,778	14.2% *
10 or more	41,375	8,386	20.3% **
<i>Bedrooms</i>			
2	308,930	22,799	7.4% *
4 or more	284,790	41,251	14.5% ***
<i>Stories in structure (multifamily units)</i>			
1	24,612	584	2.4% ***
4 to 6	11,271	4,058	36.0% **
<i>Water</i>			
Well serving 1 to 5 units	79,941	3,015	3.8% ***
Moderate problems	29,102	584	2.0% ***
<i>Age of householder</i>		0	
75 or older	106,324	4,132	3.9% ***

<sup>11</sup> 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>Income sources of families and primary individuals</i>			
Public assistance or public welfare	52,082	2,252	4.3%**
<i>Tenure</i>			
Owner-occupied	804,400	83,657	10.4%
Renter-occupied	310,800	22,348	7.2%*
<i>Renter monthly housing costs</i>			
\$350 to \$599	56,171	2,988	5.3%*
\$600 to \$799	88,940	4,575	5.1%**
<i>Renter household income</i>			
Less than \$15,000	82,363	4,316	5.2%**
<i>Owner monthly housing costs</i>			
Less than \$350	52,148	599	1.1%***
\$350 to \$599	133,050	4,109	3.1%***
\$600 to \$799	74,945	2,396	3.2%***
\$1,250 or more	350,229	59,076	16.9%***
<i>Owner household income</i>			
Less than \$15,000	58,662	1,713	2.9%***
\$15,000 to \$29,999	110,304	2,911	2.6%***
\$50,000 to \$99,999	270,398	33,186	12.3%*
\$100,000 or more	233,571	34,852	14.9%***

\*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 identify some interesting patterns in how various segments of the St. Louis housing market grew between 2004 and 2011.

- Size and structure type mattered. Large units (8 or 10 or more rooms or 4 or more bedrooms) had higher-than-average rates of addition; 2-bedroom units had a lower-than-average rate of addition. Single-family attached units and units in large multifamily buildings (20–49 units or 4–6 stories) had high rates, while manufactured homes had a low rate.
- Among units with moderate physical problems in 2011, additions are underrepresented.
- Units occupied in 2011 by households with householders 75 years or older or that receive public assistance also had low rates of addition.
- The rate of addition was low among units that were renter-occupied in 2011 and, among rental units, particularly low for those occupied by households earning less than \$15,000 and those with low monthly housing costs (\$350–\$799).
- The rate of addition among units that were owner-occupied in 2011 was slightly higher than that of all occupied units but not statistically different. However, among owner-occupied units, addition rates clearly varied by monthly housing costs and household income in 2011. Those units with low housing costs (less than \$800) or occupied by

lower income owners (less than \$30,000) had lower rates of addition, while those with high housing costs (\$1,250 or more) and those occupied by high-income owners (\$50,000 or more) had higher-than-average rates of addition.

## **5. Rental Market Dynamics: 2004–2011**

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.<sup>12</sup> 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 2004 rental units by how affordable they were in 2004. 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.

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<sup>12</sup> Gross rent is equal to rent plus utilities.

**Table 5: Summary of Forward-Looking Rental Dynamics for St. Louis**

Affordability categories	2004 rental units	To more affordable categories in 2011	In same affordability category in both years	To less affordable categories in 2011	2004 rental units non-rental in 2011
Non-market	59,400	NA	32.1%	53.5%	14.4%
Extremely low rent	47,700	12.0%	9.6%	59.8%	18.6%
Very low rent	156,200	8.6%	42.3%	39.1%	10.0%
Low rent	42,100	16.6%	17.8%	46.3%	19.2%
Moderate rent	9,100	31.8%	34.9%	20.3%	13.1%
High rent	2,600	57.4%	0.0%	0.0%	42.6%
Very high rent	4,400	87.6%	0.0%	0.0%	12.4%
Extremely high rent	4,500	26.6%	62.6%	NA	10.8%
Total	326,000	10.9%	31.6%	43.8%	13.7%

The 2004 rental stock in St. Louis was affordable. Of the 326,000 rental units in 2004, 203,900 were extremely low rent or very low rent units. In addition, 59,400 units were non-market; that is, they were either assisted or offered for no cash rent. These three categories accounted for 80.8 percent of the 2004 rental stock. The three highest rent categories comprised only 3.5 percent of the rental stock. Moves to a less affordable category (sometimes called gentrification) exceeded moves to a more affordable category (sometimes called filtration)—43.8 percent of all 2004 units compared to 10.9 percent.

By 2011, 13.7 percent of the 326,000 rental units in 2004 were no longer in the rental stock (44,400 units). The largest proportion of these losses was due to changes in tenure, with 28,900 rental units becoming owner-occupied or vacant for sale in 2011. Another 11,800 units became seasonal units, units occupied by persons with usual residence elsewhere, or units used for migratory workers. Finally, 3,700 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-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 2004, 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 St. Louis was less affordable in 2011 than in 2004. Of the 368,700 rental units in 2011, 142,500 were extremely low rent or very low rent units. In addition, 50,500 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 4.9 percent of the rental stock. Moves from a more affordable category (sometimes called gentrification) exceeded moves from a less affordable category (sometimes called filtration)—35.6 percent of all 2011 units compared to 9.1 percent.



**Table 6: Summary of Backward-Looking Rental Dynamics for St. Louis**

Affordability categories	2011 rental units	From more affordable categories in 2004	In same affordability category in both years	From less affordable categories in 2004	2011 rental units non-rental in 2004
Non-market	50,500	NA	34.8%	31.2%	33.9%
Extremely low rent	18,700	26.7%	22.5%	29.9%	20.9%
Very low rent	123,800	22.7%	47.8%	6.4%	23.1%
Low rent	84,700	61.3%	7.7%	1.5%	29.5%
Moderate rent	73,200	58.0%	3.8%	1.8%	36.5%
High rent	9,900	28.8%	0.0%	18.2%	53.0%
Very high rent	3,400	0.0%	0.0%	0.0%	100.0%
Extremely high rent	4,600	23.4%	51.5%	NA	25.1%
Total	368,700	35.6%	25.1%	9.1%	30.1%

Of the 368,700 rental units in 2011, 30.1 percent were not rental in 2004 (111,100 units). The largest proportion of these gains was due to changes in tenure, with 71,300 rental units having been owner-occupied or vacant for sale in 2004. Another 10,100 units had been seasonal units, units occupied by persons with usual residence elsewhere, or units used for migratory workers. Finally, 29,800 rental units had not been in the housing stock in 2004, 24,000 were newly constructed, and 5,800 were added by means other than new construction. 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: St. Louis Metropolitan Area, 2004–2011**

In 2004 the St. Louis metropolitan area contained 1,139,700 housing units, including vacant units. By 2011 the number of housing units had increased to 1,248,100. Part of this increase was due to a redefinition of the metropolitan area that added five counties. We estimate that the 2011 count of housing units for the metropolitan area as defined in 2004 would be 1,196,100. This represents an overall increase of 5.0 percent, which translates to an average annual increase of only 0.7 percent over the 7-year period.

The change in the geographical definition of St. Louis 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 St. Louis metropolitan area as defined in both 2004 and 2011.

Between 2004 and 2011, 10,200 units left the housing stock. Of these, 4,600 are clearly permanent losses—the original unit is gone, and major construction would be required to replace it with a new unit. Another 1,400 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 4,200 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 4,400 of the permanent losses, while mobile home move-outs contributed another 200 permanent losses. There were no losses attributed to mergers or conversion.

In the period between the 2004 and the 2011 AHS surveys, 123,600 units were added to the housing stock. Ninety percent of these additions were newly constructed units. Mobile home move-ins added 1,400 units, and another 1,600 units were formed from the conversion or merger of 2004 units. We classified 4,100 units as recovered because these units had been in the housing stock at some point but were classified in 2004 as nonresidential (1,600) or uninhabitable (2,500). Finally, 4,800 units were added in other unclassified ways.

The St. Louis metropolitan area lost 0.9 percent of all 2004 housing units by 2011; new additions represented 9.9 percent of the 2011 housing stock. The loss rate and the rate of addition varied by the characteristics of the housing.

- In 2004, the St. Louis metropolitan area had only 5,100 units classified as seasonal or usual resident elsewhere. Almost 20 percent of these units were lost by 2011.
- Loss rates were low among more recently built units (1985–1994) and larger units (8 rooms or 4 or more bedrooms).
- Loss rates were lower than average among owner-occupied units in 2004 that had high monthly housing costs (\$800 or more) or were occupied by households earning \$100,000 or more.
- Size and structure type mattered with respect to additions. Large units (8 or 10 or more rooms or 4 or more bedrooms) had higher-than-average rates of addition; 2-bedroom units had a lower-than-average rate of addition. Single-family attached units and units in large multifamily buildings (20–49 units or 4–6 stories) had high rates, while manufactured homes had a low rate.
- Among units with moderate physical problems in 2011, additions are underrepresented.
- Units occupied in 2011 by households with householders 75 years or older or that receive public assistance also had low rates of addition.
- The rate of addition was low among units that were renter-occupied in 2011 and, among rental units, particularly low for those occupied by households earning less than \$15,000 and those with low monthly housing costs (\$350–\$799).
- The rate of addition among units that were owner-occupied in 2011 was slightly higher than that of all occupied units but not statistically different. However, among owner-occupied units, addition rates clearly varied by monthly housing costs and household income in 2011. Those units with low housing costs (less than \$800) or occupied by lower income owners (less than \$30,000) had lower rates of addition, while those with high housing costs (\$1,250 or more) and those occupied by high-income owners (\$50,000 or more) had higher-than-average rates of addition.

The 2004 rental stock in St. Louis was affordable. Of the 326,000 rental units in 2004, 203,900 were extremely low rent or very low rent units. In addition, 59,400 units were non-market; that is, they were either assisted or offered for no cash rent. These three categories accounted for 80.8 percent of the 2004 rental stock. The three highest rent categories comprised only 3.5 percent of the rental stock. Moves to a less affordable category (sometimes called gentrification) exceeded moves to a more affordable category (sometimes called filtration)—43.8 percent of all 2004 units compared to 10.9 percent. By 2011, 13.7 percent of the 326,000 rental units in 2004 were no longer in the rental stock (44,400 units). The largest proportion of these losses was due to changes in tenure, with 28,900 rental units becoming owner-occupied or vacant for sale in 2011.

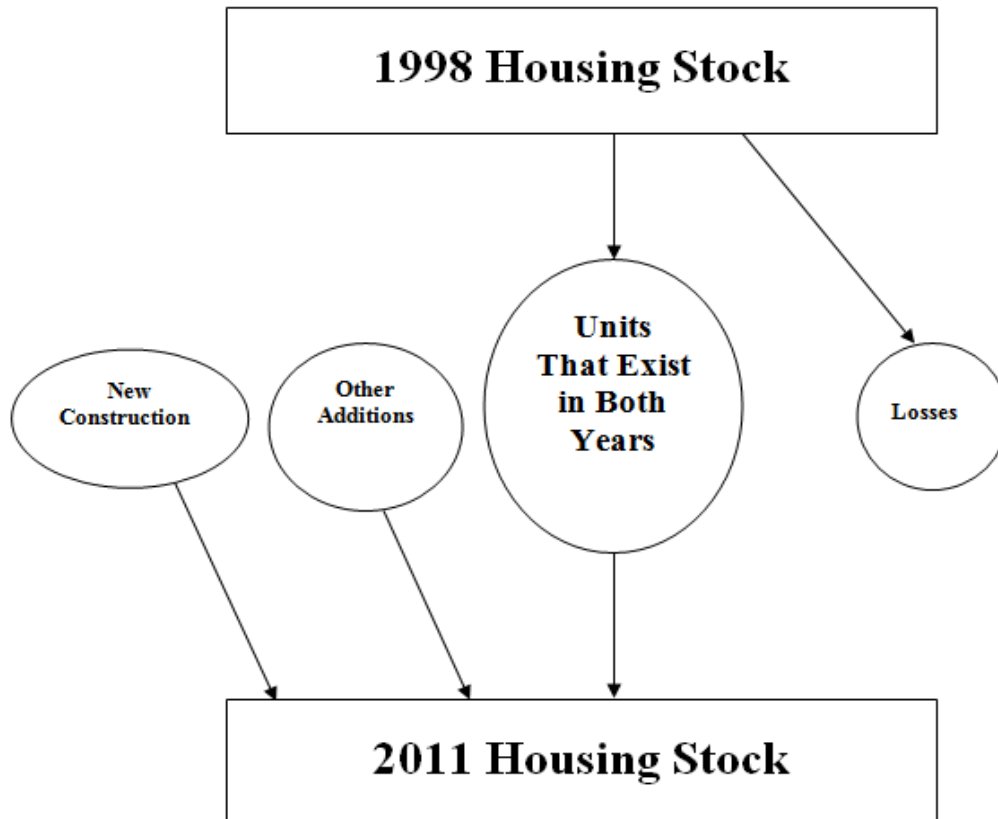
The rental stock in St. Louis was less affordable in 2011 than in 2004. Of the 368,700 rental units in 2011, 142,500 were extremely low rent or very low rent units. In addition, 50,500 units were non-market; that is, they were either assisted or offered for no cash rent. These three categories accounted for 52.5 percent of the 2011 rental stock. The three highest rent categories comprised 4.9 percent of the rental stock. Moves from a more affordable category in 2004 (sometimes called gentrification) exceeded moves from a less affordable category (sometimes called filtration)—35.6 percent of all 2011 units compared to 9.1 percent. Of the 368,700 rental units in 2011, 30.1 percent were not rental in 2004 (111,100 units). The largest proportion of these gains was due to changes in tenure, with 71,300 rental units having been owner-occupied or vacant for sale in 2004.

## 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 2004 and 2011 housing stocks) and one oval (units added through new construction between 2004 and 2011). No one estimates the other three ovals: the number of units that belong to both the 2004 and 2011 housing stock, units lost to the housing stock between 2004 and 2011, and other additions to the housing stock between 2004 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:<sup>13</sup>

- 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.

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<sup>13</sup> 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, 2004, 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 2004 and 2011. In some cases, there may be no status, (e.g., not yet constructed in 2004) 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 2004 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.<sup>14</sup> For example, the exact accounting might show that 2,500 sample units that were rental in 2004 became owner-occupied or vacant for sale in 2011. To estimate the number of units in the national housing stock that were rental in 2004 and became owner-occupied in 2011, one would need to apply weights. However, using 2004 weights would produce a different estimate than using 2011 weights. There is no conceptual reason to favor the answer using 2004 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 (2004) 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 (2004). 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.

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<sup>14</sup> 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 2004 and 2011, and the application to the common area is not precise for the following reasons:

- For forward-looking analysis (2004 to 2011), we observe only those sample units in the geography common to both 2004 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 2004 geography. Since the common area is smaller than the 2004 geography, the counts are overestimates for the common area.
- For the backward-looking analysis (2011 from 2004), we observe (a) sample units that were in the common area in 2004 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 2004 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 2004 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 2004 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 2004.

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 2004 housing stock by 2011. There are three possible dispositions of 2004 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 2004. There are three possible sources of 2011 units:

- Units that existed in 2004 with the same characteristics (or serving the same market).



- Units that existed in 2004 but with different characteristics (or serving a different market).
- Units that are additions to the housing stock between 2004 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 (2004 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 2004 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.<sup>15</sup>

- 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.<sup>16</sup>
- 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 2004 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 2004.
- Column H is the CINCH estimate of the number of units from column B that were newly constructed between 2004 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

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<sup>15</sup> 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.

<sup>16</sup> 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 2004.<sup>17</sup>
- 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 2004 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 2004 housing stock relate to the 2011 housing stock. Column A estimates the number of units in each affordability category in 2004. Columns B through L explain where the 2004 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 2004 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.

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<sup>17</sup> 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 2004 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 2004, they will be counted in columns B through I, depending upon how affordable they are in 2004.
- 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 2004 are counted in column K.
- Column L counts rental units that were newly constructed between 2004 and 2011.
- Column M counts rental units that were added to the housing stock after 2004 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 7-year period; for example, a unit that is low rent in 2004 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 2004 and 2011.

**Forward-Looking Table A: Housing Characteristics, St. Louis**

	A	B	C	D	E	F	G	H	I	J	
Row	Characteristics	Present in 2004	2004 units present in 2011	Change in characteristics	2004 units lost due to conversion/merger	2004 house or mobile home moved out	2004 units changed to nonresidential use	2004 units lost through demolition or disaster	2004 units badly damaged or condemned	2004 units lost in other ways	Row
1	Housing stock	1,139,700	1,129,500	0	0	200	700	4,400	800	4,200	1
	Occupancy status										
2	Occupied	1,029,400	923,200	99,100	0	0	700	3,500	800	2,200	2
3	Vacant	105,200	15,900	87,200	0	0	0	700	0	1,400	3
4	Seasonal	5,100	700	3,400	0	200	0	200	0	600	4
	Units in structure										
5	1, detached	770,300	764,400	0	0	200	300	2,700	400	2,300	5
6	1, attached	51,200	50,800	0	0	0	0	0	0	300	6
7	2 to 4	120,500	119,000	0	0	0	400	0	400	800	7
8	5 to 9	58,400	57,700	0	0	0	0	700	0	0	8
9	10 to 19	50,700	49,600	0	0	0	0	300	0	700	9
10	20 to 49	23,000	23,000	0	0	0	0	0	0	0	10
11	50 or more	14,500	14,500	0	0	0	0	0	0	0	11
12	Manufactured/mobile home	51,200	50,500	0	0	0	0	700	0	0	12

Row	A Characteristics	B Present in 2004	C 2004 units present in 2011	D Change in characteristics	E 2004 units lost due to conversion/ merger	F 2004 house or mobile home moved out	G 2004 units changed to nonresidential use	H 2004 units lost through demolition or disaster	I 2004 units badly damaged or condemned	J 2004 units lost in other ways	Row
	Year built										
15	2000–2004	88,600	88,300	0	0	0	0	300	0	0	15
16	1995–1999	70,000	69,100	0	0	0	0	700	0	300	16
17	1990–1994	71,700	71,600	0	0	0	0	0	100	0	17
18	1985–1989	100,500	100,300	0	0	0	0	0	0	200	18
19	1980–1984	70,600	70,300	0	0	0	0	0	0	300	19
20	1975–1979	97,000	97,000	0	0	0	0	0	0	0	20
21	1970–1974	94,300	93,700	0	0	0	0	300	0	400	21
22	1960–1969	195,700	193,500	0	0	0	400	0	400	1,500	22
23	1950–1959	127,400	125,800	0	0	200	300	500	0	600	23
24	1940–1949	63,800	62,500	0	0	0	0	1,100	0	200	24
25	1930–1939	34,800	34,400	0	0	0	0	400	0	0	25
26	1920–1929	62,600	61,300	0	0	0	0	700	300	300	26
27	1919 or earlier	62,700	61,700	0	0	0	0	500	0	500	27
	Rooms										
28	1										28
29	2	600	0	600	0	0	0	0	0	0	29
30	3	85,300	63,100	20,800	0	200	0	200	400	600	30
31	4	210,100	129,100	78,900	0	0	0	1,000	0	1,200	31
32	5	251,400	129,400	117,500	0	0	0	2,200	300	2,100	32
33	6	193,700	81,400	111,300	0	0	400	300	100	200	33
34	7	183,000	68,900	113,300	0	0	300	500	0	0	34
35	8	118,900	45,100	73,500	0	0	0	300	0	0	35
36	9	56,200	13,000	43,100	0	0	0	0	0	200	36
37	10 or more	40,400	11,500	29,000	0	0	0	0	0	0	37

	A	B	C	D	E	F	G	H	I	J	
Row	Characteristics	Present in 2004	2004 units present in 2011	Change in characteristics	2004 units lost due to conversion/ merger	2004 house or mobile home moved out	2004 units changed to nonresidential use	2004 units lost through demolition or disaster	2004 units badly damaged or condemned	2004 units lost in other ways	Row
	Bedrooms										
38	None	2,400	0	2,400	0	0	0	0	0	0	38
39	1	111,900	93,900	16,600	0	0	0	0	400	1,000	39
40	2	310,500	242,500	64,400	0	200	0	2,100	0	1,400	40
41	3	456,100	370,800	80,500	0	0	700	2,100	400	1,600	41
42	4 or more	258,800	188,700	69,600	0	0	0	300	0	200	42
43	Multiunit structures	267,100	263,800	0	0	0	400	1,000	400	1,500	43
	Stories in structure										
44	1	22,400	22,400	0	0	0	0	0	0	0	44
45	2	137,800	135,500	0	0	0	0	700	400	1,200	45
46	3	92,100	91,000	0	0	0	400	300	0	300	46
47	4 to 6	11,600	11,600	0	0	0	0	0	0	0	47
48	7 or more	3,300	3,300	0	0	0	0	0	0	0	48

**Forward-Looking Table B: Unit Quality, St. Louis**

	A	B	C	D	E	F	G	H	I	J	
Row	Characteristics	Present in 2004	2004 units present in 2011	Change in characteristics	2004 units lost due to conversion/merger	2004 house or mobile home moved out	2004 units changed to nonresidential use	2004 units lost through demolition or disaster	2004 units badly damaged or condemned	2004 units lost in other ways	Row
1	Occupied units	1,029,400	923,200	99,100	0	0	700	3,500	800	2,200	1
2	With complete kitchen	1,019,600	906,100	106,400	0	0	700	3,500	800	2,200	2
3	Lacking complete kitchen facilities	9,800	0	9,800	0	0	0	0	0	0	3
4	With complete plumbing	1,024,200	912,600	104,500	0	0	700	3,500	800	2,200	4
5	Lack some plumbing	5,200	0	5,200	0	0	0	0	0	0	5
6	No hot piped water										6
7	No bathtub/shower										7
8	No flush toilet										8
9	No exclusive use	5,200	0	5,200	0	0	0	0	0	0	9
	Water										
10	Public/private water	953,300	849,400	97,200	0	0	700	3,200	800	1,900	10
11	Well serving 1 to 5 units	74,100	66,600	7,000	0	0	0	300	0	300	11
12	Other water source	2,100	1,000	1,000	0	0	0	0	0	0	12
	Sewer										
13	Public sewer	898,400	794,300	97,500	0	0	700	3,200	800	1,900	13
14	Septic tank/cesspool	131,000	101,500	28,900	0	0	0	300	0	300	14
15	Other										15



	A	B	C	D	E	F	G	H	I	J	
Row	Characteristics	Present in 2004	2004 units present in 2011	Change in characteristics	2004 units lost due to conversion/merger	2004 house or mobile home moved out	2004 units changed to nonresidential use	2004 units lost through demolition or disaster	2004 units badly damaged or condemned	2004 units lost in other ways	Row
16	Severe problems	12,100	0	11,800	0	0	0	0	0	400	16
17	Plumbing	5,200	0	5,200	0	0	0	0	0	0	17
18	Heating	5,800	0	5,500	0	0	0	0	0	400	18
19	Electric	500	0	500	0	0	0	0	0	0	19
20	Upkeep	500	0	500	0	0	0	0	0	0	20
21	Moderate problems	18,700	0	18,100	0	0	0	600	0	0	21
22	Plumbing	1,300	0	1,300	0	0	0	0	0	0	22
23	Heating	300	0	0	0	0	0	300	0	0	23
24	Kitchen	9,800	0	9,800	0	0	0	0	0	0	24
25	Upkeep	9,300	0	9,000	0	0	0	300	0	0	25

**Forward-Looking Table C: Occupant Characteristics, St. Louis**

	A	B	C	D	E	F	G	H	I	J	
Row	Characteristics	Present in 2004	2004 units present in 2011	Change in characteristics	2004 units lost due to conversion/merger	2004 house or mobile home moved out	2004 units changed to nonresidential use	2004 units lost through demolition or disaster	2004 units badly damaged or condemned	2004 units lost in other ways	Row
1	Occupied units	1,029,400	923,200	99,100	0	0	700	3,500	800	2,200	1
	Age of householder										
2	Under 65	822,900	653,500	162,900	0	0	700	3,000	700	2,200	2
3	65 to 74	103,200	23,000	79,600	0	0	0	500	100	0	3
4	75 or older	103,300	41,600	61,600	0	0	0	0	0	0	4
	Children in household										
5	Some	361,700	167,100	192,400	0	0	0	1,100	300	700	5
6	None	667,700	483,500	179,200	0	0	700	2,400	500	1,500	6
	Race and ethnicity										
7	White alone	878,100	745,700	128,000	0	0	700	2,200	400	1,200	7
8	Hispanic	25,300	12,400	12,800	0	0	0	0	0	0	8
9	Non-Hispanic	852,800	717,900	130,500	0	0	700	2,200	400	1,200	9
10	Black alone	117,500	78,600	37,100	0	0	0	600	400	800	10
11	Hispanic	2,800	0	2,800	0	0	0	0	0	0	11
12	Non-Hispanic	114,700	76,500	36,500	0	0	0	600	400	800	12
13	American Indian or Alaska Native alone	1,200	500	0	0	0	0	700	0	0	13
14	Asian alone	19,200	10,600	8,600	0	0	0	0	0	0	14
15	Pacific Islander alone										15
16	Two or more races	13,400	4,200	9,000	0	0	0	0	0	300	16
17	Hispanic or Latino (any race)	31,100	13,500	17,600	0	0	0	0	0	0	17

	A	B	C	D	E	F	G	H	I	J	
Row	Characteristics	Present in 2004	2004 units present in 2011	Change in characteristics	2004 units lost due to conversion/merger	2004 house or mobile home moved out	2004 units changed to nonresidential use	2004 units lost through demolition or disaster	2004 units badly damaged or condemned	2004 units lost in other ways	Row
	Income sources of families and primary individuals										
18	Wages and salaries	815,700	593,500	216,800	0	0	700	2,600	800	1,300	18
20	Dividends, interest, or rent	375,400	155,900	217,600	0	0	300	900	500	300	20
21	Public assistance or public welfare	23,600	1,300	21,600	0	0	0	0	0	700	21

**Forward-Looking Table D: Income and Housing Cost, St. Louis**

	A	B	C	D	E	F	G	H	I	J	
Row	Characteristics	Present in 2004	2004 units present in 2011	Change in characteristics	2004 units lost due to conversion/merger	2004 house or mobile home moved out	2004 units changed to nonresidential use	2004 units lost through demolition or disaster	2004 units badly damaged or condemned	2004 units lost in other ways	Row
1	Occupied units	1,029,400	923,200	99,100	0	0	700	3,500	800		1
	Tenure										
2	Owner-occupied	750,400	642,400	104,600	0	0	300	1,900	400		2
3	Homeownership rate	72.9%									3
4	Renter-occupied	279,000	205,100	70,200	0	0	400	1,600	400		4
	Renter monthly housing costs										
5	No cash rent	9,500	1,800	7,400	0	0	0	300	0		5
6	Less than \$350	30,900	5,900	23,700	0	0	0	700	0		6
7	\$350 to \$599	84,100	24,500	59,000	0	0	0	0	0		7
8	\$600 to \$799	93,900	33,100	59,800	0	0	0	600	400		8
9	\$800 to \$1,249	49,700	23,500	25,800	0	0	400	0	0		9
10	\$1,250 or more	10,800	3,600	7,200	0	0	0	0	0		10
	Renter household income										
11	Less than \$15,000	64,000	19,900	42,700	0	0	0	300	0		11
12	\$15,000 to \$29,999	73,900	12,200	60,300	0	0	400	1,000	0		12
13	\$30,000 to \$49,999	66,800	12,200	54,400	0	0	0	300	0		13
14	\$50,000 to \$99,999	64,100	10,100	53,700	0	0	0	0	400		14
15	\$100,000 or more	10,100	600	9,300	0	0	0	0	0		15

	A	B	C	D	E	F	G	H	I	J	
Row	Characteristics	Present in 2004	2004 units present in 2011	Change in characteristics	2004 units lost due to conversion/merger	2004 house or mobile home moved out	2004 units changed to nonresidential use	2004 units lost through demolition or disaster	2004 units badly damaged or condemned	2004 units lost in other ways	Row
	Owner monthly housing costs										
16	Less than \$350	139,900	28,700	110,100	0	0	0	300	300		16
17	\$350 to \$599	162,200	48,300	112,800	0	0	300	900	0		17
18	\$600 to \$799	78,900	14,200	64,000	0	0	0	500	100		18
19	\$800 to \$1,249	186,600	66,300	120,000	0	0	0	0	0		19
20	\$1,250 or more	182,900	127,500	55,100	0	0	0	300	0		20
	Owner household income										
21	Less than \$15,000	74,700	15,000	58,900	0	0	0	600	0		21
22	\$15,000 to \$29,999	102,100	24,300	77,300	0	0	0	300	0		22
23	\$30,000 to \$49,999	131,100	31,100	99,400	0	0	0	300	300		23
24	\$50,000 to \$99,999	271,200	108,600	161,400	0	0	300	500	100		24
25	\$100,000 or more	171,200	95,600	75,400	0	0	0	300	0		25

**Backward-Looking Table A: Housing Characteristics, St. Louis**

	A	B	C	D	E	F	G	H	I	J	
Row	2011 characteristics	Present in 2011	2011 units present in 2004	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 2004 stock	2011 units added in other ways	Row
1	Housing stock	1,248,000	1,124,400	0	1,600	1,400	1,600	111,700	2,500	4,800	1
	Occupancy status										
2	Occupied	1,115,200	940,600	68,600	800	0	1,300	100,800	1,900	1,200	2
3	Vacant	127,200	12,500	98,400	800	1,400	0	10,300	600	3,200	3
4	Seasonal	5,600	600	3,600	0	0	300	700	0	300	4
	Units in structure										
5	1, detached	886,200	798,200	0	0	0	600	84,200	1,700	1,600	5
6	1, attached	43,400	34,500	0	0	0	0	8,800	0	0	6
7	2 to 4	130,900	122,100	0	1,600	0	800	5,600	800	0	7
8	5 to 9	52,300	47,100	0	0	0	0	5,200	0	0	8
9	10 to 19	50,700	47,200	0	0	0	300	3,200	0	0	9
10	20 to 49	22,200	15,400	0	0	0	0	3,500	0	3,200	10
11	50 or more	14,400	13,800	0	0	0	0	600	0	0	11
12	Manufactured/mobile home	47,900	46,100	0	0	1,400	0	500	0	0	12

	A	B	C	D	E	F	G	H	I	J	
Row	2011 characteristics	Present in 2011	2011 units present in 2004	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 2004 stock	2011 units added in other ways	Row
	Year built										
13	2010–2014	10,700	0	0	0	0	0	10,700	0	0	13
14	2005–2009	84,600	0	0	0	0	0	84,600	0	0	14
15	2000–2004	86,300	76,400	0	0	0	0	9,900	0	0	15
16	1995–1999	78,200	71,100	0	0	0	0	6,500	0	600	16
17	1990–1994	74,600	74,600	0	0	0	0	0	0	0	17
18	1985–1989	98,500	97,200	0	0	1,400	0	0	0	0	18
19	1980–1984	70,400	70,400	0	0	0	0	0	0	0	19
20	1975–1979	98,300	95,100	0	0	0	0	0	0	3,200	20
21	1970–1974	92,400	92,400	0	0	0	0	0	0	0	21
22	1960–1969	196,400	196,100	0	0	0	300	0	0	0	22
23	1950–1959	130,900	130,100	0	800	0	0	0	0	0	23
24	1940–1949	64,700	63,400	0	0	0	0	0	1,300	0	24
25	1930–1939	38,600	37,200	0	800	0	0	0	0	600	25
26	1920–1929	59,900	59,600	0	0	0	0	0	0	300	26
27	1919 or earlier	63,400	61,000	0	0	0	1,300	0	1,100	0	27

	A	B	C	D	E	F	G	H	I	J	
Row	2011 characteristics	Present in 2011	2011 units present in 2004	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 2004 stock	2011 units added in other ways	Row
	Rooms										
28	1	1,700	0	1,100	0	0	0	0	0	600	28
29	2	1,300	0	1,000	0	0	300	0	0	0	29
30	3	82,400	55,000	20,600	800	0	0	5,200	600	300	30
31	4	201,500	121,600	63,400	800	0	800	13,700	600	600	31
32	5	284,400	124,600	136,800	0	1,400	0	18,500	800	2,400	32
33	6	237,000	84,800	130,400	0	0	600	21,300	0	0	33
34	7	198,200	72,200	107,900	0	0	0	17,300	0	800	34
35	8	139,700	47,300	72,600	0	0	0	19,200	600	0	35
36	9	60,300	13,300	38,900	0	0	0	8,100	0	0	36
37	10 or more	41,400	12,000	21,000	0	0	0	8,400	0	0	37
	Bedrooms										
38	None	3,500	0	2,800	0	0	0	0	0	600	38
39	1	117,900	82,900	25,000	1,600	0	300	7,100	600	300	39
40	2	308,900	228,700	57,400	0	0	800	20,100	1,300	600	40
41	3	532,900	377,000	107,000	0	1,400	600	44,600	0	2,400	41
42	4 or more	284,800	197,200	46,400	0	0	0	39,900	600	800	42
43	Multiunit structures	270,400	245,500	0	1,600	0	1,100	18,200	800	3,200	43
	Stories in structure										
44	1	24,600	24,000	0	0	0	0	600	0	0	44
45	2	133,500	122,000	0	800	0	800	9,300	800	0	45
46	3	98,100	89,700	0	0	0	0	8,400	0	0	46
47	4 to 6	11,300	7,200	0	800	0	0	0	0	3,200	47
48	7 or more	3,000	2,700	0	0	0	300	0	0	0	48



**Backward-Looking Table B: Unit Quality, St. Louis**

	A	B	C	D	E	F	G	H	I	J	
Row	2011 characteristics	Present in 2011	2011 units present in 2004	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 2004 stock	2011 units added in other ways	Row
1	Occupied units	1,115,200	940,600	68,600	800	0	1,300	100,800	1,900	1,200	1
2	With complete kitchen	1,104,300	924,700	74,100	800	0	1,300	100,200	1,900	1,200	2
3	Lacking complete kitchen facilities	10,900	0	10,400	0	0	0	600	0	0	3
4	With complete plumbing	1,108,000	929,900	72,100	800	0	1,300	100,800	1,900	1,200	4
5	Lack some plumbing	7,200	0	7,200	0	0	0	0	0	0	5
6	No hot piped water	600	0	600	0	0	0	0	0	0	6
7	No bathtub/shower	0	0	0	0	0	0	0	0	0	7
8	No flush toilet	0	0	0	0	0	0	0	0	0	8
9	No exclusive use	6,600	0	6,600	0	0	0	0	0	0	9
	Water										
10	Public/private water	1,032,000	862,700	66,800	800	0	1,300	97,800	1,900	600	10
11	Well serving 1 to 5 units	79,900	70,300	6,600	0	0	0	2,400	0	600	11
12	Other water source	3,200	1,100	1,600	0	0	0	500	0	0	12
	Sewer										
13	Public sewer	979,700	805,000	80,700	800	0	800	90,000	1,900	600	13
14	Septic tank/cesspool	135,500	107,500	16,000	0	0	600	10,800	0	600	14
15	Other										15

	A	B	C	D	E	F	G	H	I	J	
Row	2011 characteristics	Present in 2011	2011 units present in 2004	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 2004 stock	2011 units added in other ways	Row
16	Severe problems	7,200	0	7,200	0	0	0	0	0	0	16
17	Plumbing	7,200	0	7,200	0	0	0	0	0	0	17
18	Heating										18
19	Electric										19
20	Upkeep										20
21	Moderate problems	29,100	0	28,500	0	0	0	600	0	0	21
22	Plumbing	1,100	0	1,100	0	0	0	0	0	0	22
23	Heating	600	0	600	0	0	0	0	0	0	23
24	Kitchen	10,900	0	10,400	0	0	0	600	0	0	24
25	Upkeep	17,100	0	17,100	0	0	0	0	0	0	25

**Backward-Looking Table C: Occupant Characteristics, St. Louis**

	A	B	C	D	E	F	G	H	I	J	
Row	2011 characteristics	Present in 2011	2011 units present in 2004	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 2004 stock	2011 units added in other ways	Row
1	Occupied units	1,115,200	940,600	68,600	800	0	1,300	100,800	1,900	1,200	1
	Age of householder										
2	Under 65	878,400	666,200	120,400	800	0	1,300	87,800	1,300	600	2
3	65 to 74	130,500	24,100	96,300	0	0	0	8,900	600	600	3
4	75 or older	106,300	41,900	60,200	0	0	0	4,100	0	0	4
	Children in household										
5	Some	351,000	171,600	137,900	0	0	600	40,300	600	0	5
6	None	764,200	492,400	207,300	800	0	800	60,400	1,300	1,200	6
	Race and ethnicity										
7	White alone	927,400	762,800	76,800	800	0	1,300	83,200	1,300	1,200	7
8	Hispanic	28,300	13,100	11,700	0	0	0	3,500	0	0	8
9	Non-Hispanic	899,100	735,100	79,700	800	0	1,300	79,700	1,300	1,200	9
10	Black alone	148,000	79,900	53,000	0	0	0	14,600	600	0	10
11	Hispanic	600	0	600	0	0	0	0	0	0	11
12	Non-Hispanic	147,500	77,800	54,500	0	0	0	14,600	600	0	12
13	American Indian or Alaska Native alone	2,200	600	1,600	0	0	0	0	0	0	13
14	Asian alone	28,800	10,900	14,900	0	0	0	3,000	0	0	14
15	Pacific Islander alone	300	0	300	0	0	0	0	0	0	15
16	Two or more races	8,500	4,400	4,000	0	0	0	0	0	0	16
17	Hispanic or Latino (any race)	30,500	14,200	12,800	0	0	0	3,500	0	0	17

	A	B	C	D	E	F	G	H	I	J	
Row	2011 characteristics	Present in 2011	2011 units present in 2004	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 2004 stock	2011 units added in other ways	Row
	Income sources of families and primary individuals										
18	Wages and salaries	827,300	608,400	129,300	800	0	1,300	84,900	1,900	600	18
20	Dividends, interest, or rent	329,800	161,500	133,500	0	0	600	33,000	600	600	20
21	Public assistance or public welfare	18,300	1,300	16,400	0	0	0	600	0	0	21

**Backward-Looking Table D: Income and Housing Cost, St. Louis**

	A	B	C	D	E	F	G	H	I	J	
Row	2011 characteristics	Present in 2011	2011 units present in 2004	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 2004 stock	2011 units added in other ways	Row
1	Occupied units	1,115,200	940,600	68,600	800	0	1,300	100,800	1,900	1,200	1
	Tenure										
2	Owner-occupied	804,400	668,700	52,000	0	0	600	82,500	600	0	2
3	Homeownership rate	72.1%									3
4	Renter-occupied	310,800	194,300	94,200	800	0	800	18,200	1,300	1,200	4
	Renter monthly housing costs										
5	No cash rent	11,400	1,900	8,900	0	0	0	0	0	600	5
6	Less than \$350	19,100	5,300	11,200	0	0	0	1,800	800	0	6
7	\$350 to \$599	56,200	22,500	30,700	0	0	0	2,400	0	600	7
8	\$600 to \$799	88,900	31,100	53,300	800	0	0	3,800	0	0	8
9	\$800 to \$1,249	108,700	22,000	77,500	0	0	800	7,900	600	0	9
10	\$1,250 or more	26,500	3,700	20,500	0	0	0	2,400	0	0	10
	Renter household income										
11	Less than \$15,000	82,400	18,300	59,700	0	0	0	3,000	1,300	0	11
12	\$15,000 to \$29,999	74,400	11,600	55,800	0	0	0	6,400	0	600	12
13	\$30,000 to \$49,999	78,400	10,600	62,900	0	0	800	3,500	0	600	13
14	\$50,000 to \$99,999	56,500	9,600	43,600	800	0	0	2,500	0	0	14
15	\$100,000 or more	19,200	700	15,600	0	0	0	2,900	0	0	15

	A	B	C	D	E	F	G	H	I	J	
Row	2011 characteristics	Present in 2011	2011 units present in 2004	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 2004 stock	2011 units added in other ways	Row
	Owner monthly housing costs										
16	Less than \$350	52,100	28,700	22,900	0	0	0	600	0	0	16
17	\$350 to \$599	133,100	49,800	79,200	0	0	0	4,100	0	0	17
18	\$600 to \$799	74,900	14,900	57,700	0	0	0	2,400	0	0	18
19	\$800 to \$1,249	194,000	69,500	107,100	0	0	600	16,400	600	0	19
20	\$1,250 or more	350,200	134,600	156,600	0	0	0	59,100	0	0	20
	Owner household income										
21	Less than \$15,000	58,700	15,000	42,000	0	0	0	1,700	0	0	21
22	\$15,000 to \$29,999	110,300	24,600	82,700	0	0	0	2,900	0	0	22
23	\$30,000 to \$49,999	131,500	32,600	87,900	0	0	0	10,400	600	0	23
24	\$50,000 to \$99,999	270,400	113,300	123,900	0	0	600	32,600	0	0	24
25	\$100,000 or more	233,600	100,700	98,100	0	0	0	34,900	0	0	25

**Forward-Looking Rental Dynamics Table 1: Counts, 2004–2011, St. Louis**

Affordability categories	A Total in 2004	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	59,400	19,000	5,100	11,600	7,500	6,900	700	0	0	4,300	2,500	1,700
Extremely low rent	47,700	5,700	4,600	18,200	5,100	5,200	0	0	0	6,600	1,600	700
Very low rent	156,200	8,100	5,300	66,000	42,900	17,500	0	0	600	10,000	4,700	900
Low rent	42,100	1,600	700	4,700	7,500	18,200	1,300	0	0	4,700	3,000	400
Moderate rent	9,100	0	0	2,900	0	3,200	1,200	0	600	1,200	0	0
High rent	2,600	0	0	0	700	700	0	0	0	1,100	0	0
Very high rent	4,400	0	0	600	800	800	1,700	0	0	500	0	0
Extremely high rent	4,500	500	0	600	0	0	0	0	2,800	500	0	0
Total	326,000	34,900	15,700	104,600	64,500	52,500	4,900	0	4,000	28,900	11,800	3,700

**Forward-Looking Rental Dynamics Table 2: Row Percentages, 2004–2011, St. Louis**

Affordability categories	A Total in 2004	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	59,400	32.1%	8.5%	19.6%	12.6%	11.6%	1.2%	0.0%	0.0%	7.3%	4.2%	2.9%
Extremely low rent	47,700	12.0%	9.6%	38.1%	10.7%	11.0%	0.0%	0.0%	0.0%	13.7%	3.4%	1.4%
Very low rent	156,200	5.2%	3.4%	42.3%	27.5%	11.2%	0.0%	0.0%	0.4%	6.4%	3.0%	0.6%
Low rent	42,100	3.9%	1.6%	11.2%	17.8%	43.3%	3.1%	0.0%	0.0%	11.1%	7.2%	0.9%
Moderate rent	9,100	0.0%	0.0%	31.8%	0.0%	34.9%	13.2%	0.0%	7.1%	13.1%	0.0%	0.0%
High rent	2,600	0.0%	0.0%	0.0%	28.7%	28.7%	0.0%	0.0%	0.0%	42.6%	0.0%	0.0%
Very high rent	4,400	0.0%	0.0%	14.6%	17.5%	17.5%	37.8%	0.0%	0.0%	12.4%	0.0%	0.0%
Extremely high rent	4,500	12.2%	0.0%	14.4%	0.0%	0.0%	0.0%	0.0%	62.6%	10.8%	0.0%	0.0%
Total	326,000	10.8%	4.8%	32.1%	19.8%	16.1%	1.5%	0.0%	1.3%	8.9%	3.6%	1.1%

**Backward-Looking Rental Dynamics Table 1: Counts, 2004–2011, St. Louis**

Affordability categories	A Total in 2011	B Non- market in 2004	C Extremely low rent in 2004	D Very low rent in 2004	E Low rent in 2004	F Moderate rent in 2004	G High rent in 2004	H Very high rent in 2004	I Extremely high rent in 2004	J Owner- occupied in 2004	K Seasonal or related vacant in 2004	L New construction	M Added in other ways
Non-market	50,500	17,600	5,600	7,900	1,700	0	0	0	500	9,100	1,700	5,000	1,400
Extremely low rent	18,700	5,000	4,200	5,000	600	0	0	0	0	2,700	0	1,200	0
Very low rent	123,800	10,800	17,300	59,200	4,300	2,600	0	500	500	20,400	3,400	4,100	600
Low rent	84,700	7,300	4,500	40,000	6,500	0	700	500	0	15,400	1,800	4,600	3,200
Moderate rent	73,200	6,200	4,300	15,800	16,100	2,800	700	500	0	18,000	3,200	5,000	600
High rent	9,900	700	0	0	1,100	1,000	0	1,800	0	3,400	0	1,900	0
Very high rent	3,400	0	0	0	0	0	0	0	0	2,300	0	1,100	0
Extremely high rent	4,600	0	0	500	0	500	0	0	2,400	0	0	1,100	0
Total	368,700	47,600	35,900	128,500	30,300	6,900	1,500	3,400	3,400	71,300	10,100	24,000	5,800

**Backward-Looking Rental Dynamics Table 2: Row Percentages, 2004–2011, St. Louis**

Affordability categories	A Total in 2011	B Non- market in 2004	C Extremely low rent in 2004	D Very low rent in 2004	E Low rent in 2004	F Moderate rent in 2004	G High rent in 2004	H Very high rent in 2004	I Extremely high rent in 2004	J Owner- occupied in 2004	K Seasonal or related vacant in 2004	L New construction	M Added in other ways
Non-market	50,500	34.8%	11.1%	15.7%	3.4%	0.0%	0.0%	0.0%	1.1%	18.0%	3.3%	9.8%	2.7%
Extremely low rent	18,700	26.7%	22.5%	26.8%	3.0%	0.0%	0.0%	0.0%	0.0%	14.5%	0.0%	6.4%	0.0%
Very low rent	123,800	8.8%	13.9%	47.8%	3.5%	2.1%	0.0%	0.4%	0.4%	16.5%	2.7%	3.3%	0.5%
Low rent	84,700	8.6%	5.4%	47.3%	7.7%	0.0%	0.9%	0.6%	0.0%	18.1%	2.2%	5.4%	3.8%
Moderate rent	73,200	8.4%	5.9%	21.6%	22.1%	3.8%	1.0%	0.7%	0.0%	24.6%	4.3%	6.9%	0.8%
High rent	9,900	7.6%	0.0%	0.0%	10.9%	10.4%	0.0%	18.2%	0.0%	34.2%	0.0%	18.7%	0.0%
Very high rent	3,400	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	66.5%	0.0%	33.5%	0.0%
Extremely high rent	4,600	0.0%	0.0%	11.7%	0.0%	11.7%	0.0%	0.0%	51.5%	0.0%	0.0%	25.1%	0.0%
Total	368,700	12.9%	9.7%	34.8%	8.2%	1.9%	0.4%	0.9%	0.9%	19.3%	2.7%	6.5%	1.6%