

**American Housing Survey**

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

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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 Buffalo 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 Buffalo and on their occupants in both 2002 and 2011.

In 2002 the Buffalo metropolitan area contained 515,500 housing units, including vacant units. By 2011 the number of housing units had increased to 520,200, an overall increase of 0.9 percent. There were no changes to the definition of the Buffalo metropolitan area between the 2002 and 2011 AHS surveys.

Between 2002 and 2011, only 11,500 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 6,200 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 1,600 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, 38,200 units were added to the housing stock. Eighty-five percent of these additions were newly constructed units. The 2011 AHS did not track move-ins of mobile homes in Buffalo. Also 1,900 new units were formed from the conversion or merger of 2002 units. We classified 1,400 units as recovered because these units had been in the housing stock at some point but were classified in 2002 as nonresidential (1,200) or uninhabitable (200). Finally, 2,400 units were added in other unclassified ways.

The Buffalo metropolitan area lost 2.2 percent of all 2002 housing units by 2011; additions between 2002 and 2011 represented 7.3 percent of the 2011 housing stock. Losses and additions varied across portions of the Buffalo 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:

- Units vacant in 2002 were four times more likely to be lost to the stock by 2011.
- The loss rate was higher among older units.
- Units in multifamily structures had high loss rates, particularly larger structures (50 or more units or 4–6 stories).

- Single-family detached units had a lower-than-average loss rate, as did larger units (6 rooms). Smaller units (3 rooms or 1 bedroom) had higher-than-average loss rates.
- Owner-occupied units in 2002 experienced a low loss rate, but one not statistically different from that of all occupied units. Among owner-occupied units, those occupied in 2002 by higher income households (\$100,000 or more) had a very low loss rate.
- Renter-occupied units in 2002 experienced a higher loss rate, but one not statistically different from that of all occupied units. Among renter-occupied units, those with low rent in 2002 (\$350–\$599) had a high loss rate.
- Single-family attached units had a higher-than-average rate of addition. The pattern among multifamily units seems inconsistent. The rate of addition among units in multifamily buildings with 50 or more units was much higher than average, whereas the rate among units in multifamily buildings with 4 to 6 stories was much lower than average. The rates among units in multifamily buildings with 1 or 2 stories was higher than average.
- Both small units (2 or 3 rooms or 1 bedroom) and large units (8 or 10 or more rooms or 4 or more bedrooms) had higher-than-average rates of addition. Midsize units (5 or 6 rooms or 3 bedrooms) had lower-than-average rates of addition.
- The rate of addition was lower than average among units with wells.
- As separate groups, households in 2011 with children had a higher-than-average rate of addition, but households on public assistance had a lower-than-average rate.
- Among owner-occupied units, those occupied by lower income owners (\$15,000–\$49,999) and those with lower monthly housing costs (less than \$1,250) had lower rates of addition, while those occupied by high-income owners (\$100,000 or more) and those with high monthly housing costs (\$1,250 or more) had higher-than-average rates of addition.
- The rate of addition among units that were renter-occupied in 2011 was slightly higher than that of all occupied units but not statistically different. However, among renter-occupied units, addition rates clearly varied by monthly housing costs in 2011. Those units with low housing costs (less than \$800) had lower rates of addition, while those with high housing costs (\$800 or more) had higher-than-average rates of addition.

The 2002 rental stock in Buffalo was affordable. Of the 168,100 rental units in 2002, 106,400 were extremely low rent or very low rent units. In addition, 29,700 units were non-market; that is, they were either assisted or offered for no cash rent. These three categories accounted for 81.0 percent of the 2002 rental stock. The three highest rent categories comprised less than 3 percent of the rental stock. Moves to a less affordable category (sometimes called gentrification) exceeded moves to a more affordable category (sometimes called filtration)—30.4 percent of all 2002 units compared to 12.2 percent. By 2011, 19.2 percent of the 168,100 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 Buffalo was less affordable in 2011 than in 2002. Of the 178,000 rental units in 2011, 77,800 were extremely low rent or very low rent units. In addition, 27,700 units were non-market; that is, they were either assisted or offered for no cash rent. These three categories accounted for 59.3 percent of the 2011 rental stock. The three highest rent categories comprised 6.2 percent of the rental stock. Moves from a more affordable category (sometimes called gentrification) exceeded moves from a less affordable category (sometimes called filtration)—27.8 percent of all 2011 units compared to 11.0 percent. Of the 178,000 rental units in 2011, 25.8 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: Buffalo, 2002–2011

## 1. Introduction

This report describes how the housing stock in the Buffalo 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 Buffalo and on their occupants in both 2002 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 2002 units by 2011) and backward-looking analysis (where the 2011 units came from in terms of 2002).<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 Buffalo.
- 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.

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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 Buffalo 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: Buffalo**

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 Buffalo metropolitan area contained 515,500 housing units, including vacant units. By 2011 the number of housing units had increased to 520,200, an overall increase of 0.9 percent. There were no changes to the definition of the Buffalo metropolitan area between the 2002 and 2011 AHS surveys.

### **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 1,594 sample units that were common to the 2002 and 2011 AHS Buffalo surveys and satisfied all the analytical requirements.<sup>4</sup> Between 2002 and 2011, 78 sample units in the common area meeting the

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<sup>4</sup> The 2002 AHS surveyed 4,555 units in the Buffalo metropolitan area; 2,214 of these units were in the 2011 AHS public use file (PUF). Of the 2,341 sample units no longer in the survey, 608 were legitimate temporary or permanent losses to the housing stock and were considered for the analysis. The remaining 1,733 cases are coded as “sample reduction for the current survey year” with no further explanation.



analytical requirements were lost to the stock; thus, the forward-looking analysis is based on a maximum of 1,672 sample units. Between 2002 and 2011, 128 sample units meeting the analytical requirements were added to the AHS survey to represent additions to the stock; thus, the backward-looking analysis is based on a maximum of 1,722 sample units. In the forward-looking analysis, the average weight of a sample unit is approximately 308 units; in the backward-looking analysis, the average weight of a sample unit is approximately 302 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 Buffalo, 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.

## ***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 11,500 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 6,200 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 1,600 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 Buffalo Housing Units in 2011<sup>5</sup>**

Present in 2002	515,500
2002 units present in 2011	504,000
<b>Units no longer in the stock</b>	<b>11,500</b>
2002 units lost due to conversion/merger	1,000
2002 house or mobile home moved out	0
2002 units lost through demolition or disaster	2,600
<b>Permanent losses</b>	<b>3,700</b>
2002 units changed to nonresidential use	2,700
2002 units badly damaged or condemned	3,500
<b>Temporary losses</b>	<b>6,200</b>
<b>2002 units lost in other ways</b>	<b>1,600</b>

Demolitions and natural disasters accounted for 2,600 of the permanent losses, while mergers and conversions contributed another 1,000 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 Buffalo 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.

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.<sup>6</sup>

<sup>5</sup> Numbers may not add consistently due to rounding. Counts were rounded to the nearest hundred.

<sup>6</sup> Inconsistencies between Tables 1 and 2 result from a combination of (1) changes in control housing counts between censuses and (2) different weights.

**Table 2: Sources for 2011 Buffalo Housing Stock<sup>7</sup>**

2011 housing stock	520,200
2011 units present in 2002	482,000
<b>Total additions to stock</b>	<b>38,200</b>
Units added by new construction	32,500
House or mobile home moved in	0
Units added by conversion/merger	1,900
<b>New or reconstructed units</b>	<b>34,400</b>
Units added from nonresidential use	1,200
Units added from temporary losses	200
<b>Recovered units</b>	<b>1,400</b>
<b>Units added in other ways</b>	<b>2,400</b>

In the period between the 2002 and the 2011 AHS surveys, 38,200 units were added to the housing stock. Eighty-five percent of these additions were newly constructed units. The 2011 AHS did not track move-ins of mobile homes in Buffalo. Also 1,900 new units were formed from the conversion or merger of 2002 units.

We classified 1,400 units as recovered because these units had been in the housing stock at some point but were classified in 2002 as nonresidential (1,200) or uninhabitable (200). Finally, 2,400 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.

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

The Buffalo metropolitan area lost 2.2 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 1.5 percent of its units between 2002 and 2011.

We examined all of the components of the 2002 Buffalo 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

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<sup>7</sup> Numbers may not add consistently due to rounding. Counts were rounded to the nearest hundred.

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 Buffalo, 2002–2011<sup>8</sup>**

Characteristics	Present in 2002	Total lost	Percent lost
<i>Housing stock</i>	515,500	11,500	2.2%
<i>Occupancy status</i>			
Occupied	461,300	6,900	1.5%
Vacant	50,800	4,500	8.8%***
<i>Units in structure</i>			
1, detached	305,300	3,500	1.2%**
50 or more	9,600	1,600	17.0%***
<i>Year built</i>			
1985–1989	22,100	100	0.6%*
1970–1974	44,300	300	0.8%*
1960–1969	61,200	400	0.7%**
1920–1929	47,100	2,700	5.7%*
<i>Rooms</i>			
3	38,900	3,400	8.7%***
6	126,700	1,400	1.1%*
<i>Bedrooms</i>			
1	49,800	3,400	6.8%**
<i>Multiunit structures</i>	184,700	7,200	3.9%*
<i>Stories in structure</i>			
4 to 6	16,300	2,000	12.2%**
<i>Race and ethnicity</i>			
Black alone	37,400	1,900	5.1%*
Black Non-Hispanic	36,200	1,900	5.3%*
<i>Tenure</i>			
Owner-occupied	314,100	3,000	1.0%
Renter-occupied	147,200	4,000	2.7%
<i>Renter monthly housing costs</i>			
\$350 to \$599	72,500	2,600	3.6%*
<i>Owner household income</i>			
\$100,000 or more	56,100	200	0.4%***

\*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.

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

- Units vacant in 2002 were four times more likely to be lost to the stock by 2011.

<sup>8</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.

- The loss rate was higher among older units.
- Units in multifamily structures had high loss rates, particularly larger structures (50 or more units or 4–6 stories).
- Single-family detached units had a lower-than-average loss rate, as did larger units (6 rooms). Smaller units (3 rooms or 1 bedroom) had higher-than-average loss rates.
- Owner-occupied units in 2002 experienced a low loss rate, but one not statistically different from that of all occupied units. Among owner-occupied units, those occupied in 2002 by higher income households (\$100,000 or more) had a very low loss rate.
- Renter-occupied units in 2002 experienced a higher loss rate, but one not statistically different from that of all occupied units. Among renter-occupied units, those with low rent in 2002 (\$350–\$599) had a high loss rate.

The 38,200 additions reported in Table 2 represented 7.3 percent of the 2011 housing stock. The rate of addition varied by the characteristics of the housing. Additions represented 7.6 percent of occupied units.

We examined all of the components of the 2002 Buffalo 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 Buffalo, 2002–2011<sup>9</sup>**

Characteristics	Present in 2011	Total additions	Percent additions
<i>Housing stock</i>	520,200	38,200	7.3%
<i>Occupancy status</i>			
Occupied	469,800	35,500	7.6%
Vacant	49,000	2,700	5.6%

<sup>9</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.

<b>Characteristics</b>	<b>Present in 2011</b>	<b>Total additions</b>	<b>Percent additions</b>
<i>Units in structure</i>			
1, attached	15,600	2,600	16.7%*
2 to 4	116,700	5,000	4.3%**
50 or more	14,600	4,400	30.1%***
<i>Rooms</i>			
2	1,900	700	38.5%*
3	42,100	6,100	14.5%**
5	118,000	6,000	5.1%*
6	117,500	5,500	4.6%**
8	47,700	5,800	12.1%*
10 or more	10,500	2,000	18.9%*
<i>Bedrooms</i>			
1	51,900	6,400	12.3%*
3	212,900	10,300	4.8%**
4 or more	110,300	12,600	11.4%**
<i>Stories in structure (multifamily)</i>			
1	5,100	1,400	28.0%*
2	65,000	7,500	11.5%*
4 to 6	13,900	200	1.6%***
<i>Water</i>			
Well serving 1 to 5 units	15,300	300	2.0%**
<i>Children in household</i>			
Some	129,500	14,100	10.9%**
<i>Income sources of families and primary individuals</i>			
Public assistance or public welfare	9,200	200	2.4%*
<i>Tenure</i>			
Owner-occupied	311,200	21,600	6.9%
Renter-occupied	158,600	13,900	8.8%
<i>Renter monthly housing costs</i>			
\$350 to \$599	38,000	1,000	2.6%***
\$600 to \$799	46,600	1,400	2.9%***
\$800 to \$1,249	45,800	7,100	15.5%***
\$1,250 or more	7,900	2,100	27.0%**
<i>Owner monthly housing costs</i>			
Less than \$350	16,500	500	3.3%*
\$350 to \$599	67,400	300	0.4%***
\$800 to \$1,249	80,300	2,700	3.4%***
\$1,250 or more	103,700	15,600	15.0%***
<i>Owner household income</i>			
\$15,000 to \$29,999	42,900	500	1.2%***
\$30,000 to \$49,999	55,100	2,500	4.5%*
\$100,000 or more	81,100	10,500	13.0%***

\*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 provide insights into the limited number of new additions to the Buffalo housing stock.

- Single-family attached units had a higher-than-average rate of addition. The pattern among multifamily units seems inconsistent. The rate of addition among units in multifamily buildings with 50 or more units was much higher than average, whereas the rate among units in multifamily buildings with 4 to 6 stories was much lower than average. The rates among units in multifamily buildings with 1 or 2 stories was higher than average.
- Both small units (2 or 3 rooms or 1 bedroom) and large units (8 or 10 or more rooms or 4 or more bedrooms) had higher-than-average rates of addition. Midsize units (5 or 6 rooms or 3 bedrooms) had lower-than-average rates of addition.
- The rate of addition was lower than average among units with wells.
- As separate groups, households in 2011 with children had a higher-than-average rate of addition, but households on public assistance had a lower-than-average rate.
- Among owner-occupied units, those occupied by lower income owners (\$15,000–\$49,999) and those with lower monthly housing costs (less than \$1,250) had lower rates of addition, while those occupied by high-income owners (\$100,000 or more) and those with high monthly housing costs (\$1,250 or more) had higher-than-average rates of addition.
- The rate of addition among units that were renter-occupied in 2011 was slightly higher than that of all occupied units but not statistically different. However, among renter-occupied units, addition rates clearly varied by monthly housing costs in 2011. Those units with low housing costs (less than \$800) had lower rates of addition, while those with high housing costs (\$800 or more) had higher-than-average rates of addition.

## **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.<sup>10</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 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 Buffalo**

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	29,700	NA	37.1%	44.0%	18.9%
Extremely low rent	15,200	8.5%	12.2%	53.3%	25.9%
Very low rent	91,200	9.6%	45.3%	26.5%	18.6%
Low rent	20,800	33.3%	33.1%	23.1%	10.5%
Moderate rent	6,700	19.4%	30.0%	12.9%	37.8%
High rent	300	0.0%	0.0%	0.0%	100.0%
Very high rent	200	0.0%	0.0%	0.0%	100.0%
Extremely high rent	4,000	56.3%	29.4%	NA	14.3%
Total	168,100	12.2%	38.2%	30.4%	19.2%

The 2002 rental stock in Buffalo was affordable. Of the 168,100 rental units in 2002, 106,400 were extremely low rent or very low rent units. In addition, 29,700 units were non-market; that is, they were either assisted or offered for no cash rent. These three categories accounted for 81.0 percent of the 2002 rental stock. The three highest rent categories comprised less than 3 percent of the rental stock. Moves to a less affordable category (sometimes called gentrification)

<sup>10</sup> Gross rent is equal to rent plus utilities.



exceeded moves to a more affordable category (sometimes called filtration)—30.4 percent of all 2002 units compared to 12.2 percent.

By 2011, 19.2 percent of the 168,100 rental units in 2002 were no longer in the rental stock (32,300 units). The largest proportion of these losses was due to changes in tenure, with 16,500 rental units becoming owner-occupied or vacant for sale in 2011. Another 11,000 units became seasonal units, units occupied by persons with usual residence elsewhere, or units used for migratory workers. Finally, 4,800 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-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 Buffalo was less affordable in 2011 than in 2002. Of the 178,000 rental units in 2011, 77,800 were extremely low rent or very low rent units. In addition, 27,700 units were non-market; that is, they were either assisted or offered for no cash rent. These three categories accounted for 59.3 percent of the 2011 rental stock. The three highest rent categories comprised 6.2 percent of the rental stock. Moves from a more affordable category (sometimes called gentrification) exceeded moves from a less affordable category (sometimes called filtration)—27.8 percent of all 2011 units compared to 11.0 percent.

**Table 6: Summary of Backward-Looking Rental Dynamics for Buffalo**

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	27,700	NA	41.1%	36.4%	22.4%
Extremely low rent	9,200	15.4%	18.4%	38.3%	27.8%
Very low rent	68,600	17.1%	58.2%	7.4%	17.3%
Low rent	37,400	57.6%	17.5%	0.7%	24.1%
Moderate rent	24,100	50.6%	8.9%	1.0%	39.5%
High rent	4,900	18.5%	0.0%	7.0%	74.5%
Very high rent	2,400	26.5%	0.0%	0.0%	73.5%
Extremely high rent	3,800	27.0%	36.0%	NA	37.0%
Total	178,000	27.8%	35.4%	11.0%	25.8%

Of the 178,000 rental units in 2011, 25.8 percent were not rental in 2002 (45,900 units). The largest proportion of these gains was due to changes in tenure, with 22,500 rental units having been owner-occupied or vacant for sale in 2002. Another 7,900 units had been seasonal units, units occupied by persons with usual residence elsewhere, or units used for migratory workers. Finally, 15,500 rental units had not been in the housing stock in 2002. Of these 10,700 were added by new construction and 4,800 by other means. Backward-Looking Rental Dynamics Table 2 shows how the movement into the rental varied stock across the affordability categories.

## **6. Summary of Housing Market Changes: Buffalo Metropolitan Area, 2002–2011**

In 2002 the Buffalo metropolitan area contained 515,500 housing units, including vacant units. By 2011 the number of housing units had increased to 520,200, an overall increase of 0.9 percent. There were no changes to the definition of the Buffalo metropolitan area between the 2002 and 2011 AHS surveys.

Between 2002 and 2011, only 11,500 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 6,200 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 1,600 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, 38,200 units were added to the housing stock. Eighty-five percent of these additions were newly constructed units. The 2011 AHS did not track move-ins of mobile homes in Buffalo. Also, 1,900 new units were formed from the conversion or merger of 2002 units. We classified 1,400 units as recovered because these units had been in the housing stock at some point but were classified in 2002 as nonresidential (1,200) or uninhabitable (200). Finally, 2,400 units were added in other unclassified ways.

The Buffalo metropolitan area lost 2.2 percent of all 2002 housing units by 2011; additions between 2002 and 2011 represented 7.3 percent of the 2011 housing stock. Losses and additions varied across portions of the Buffalo 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:

- Units vacant in 2002 were four times more likely to be lost to the stock by 2011.
- The loss rate was higher among older units.
- Units in multifamily structures had high loss rates, particularly larger structures (50 or more units or 4–6 stories).
- Single-family detached units had a lower-than-average loss rate, as did larger units (6 rooms). Smaller units (3 rooms or 1 bedroom) had higher-than-average loss rates.
- Owner-occupied units in 2002 experienced a low loss rate, but one not statistically different from that of all occupied units. Among owner-occupied units, those occupied in 2002 by higher income households (\$100,000 or more) had a very low loss rate.
- Renter-occupied units in 2002 experienced a higher loss rate, but one not statistically different from that of all occupied units. Among renter-occupied units, those with low rent in 2002 (\$350–\$599) had a high loss rate.

- Single-family attached units had a higher-than-average rate of addition. The pattern among multifamily units seems inconsistent. The rate of addition among units in multifamily buildings with 50 or more units was much higher than average, whereas the rate among units in multifamily buildings with 4 to 6 stories was much lower than average. The rates among units in multifamily buildings with 1 or 2 stories was higher than average.
- Both small units (2 or 3 rooms or 1 bedroom) and large units (8 or 10 or more rooms or 4 or more bedrooms) had higher-than-average rates of addition. Midsize units (5 or 6 rooms or 3 bedrooms) had lower-than-average rates of addition.
- The rate of addition was lower than average among units with wells.
- As separate groups, households in 2011 with children had a higher-than-average rate of addition, but households on public assistance had a lower-than-average rate.
- Among owner-occupied units, those occupied by lower income owners (\$15,000–\$49,999) and those with lower monthly housing costs (less than \$1,250) had lower rates of addition, while those occupied by high-income owners (\$100,000 or more) and those with high monthly housing costs (\$1,250 or more) had higher-than-average rates of addition.
- The rate of addition among units that were renter-occupied in 2011 was slightly higher than that of all occupied units but not statistically different. However, among renter-occupied units, addition rates clearly varied by monthly housing costs in 2011. Those units with low housing costs (less than \$800) had lower rates of addition, while those with high housing costs (\$800 or more) had higher-than-average rates of addition.

The 2002 rental stock in Buffalo was affordable. Of the 168,100 rental units in 2002, 106,400 were extremely low rent or very low rent units. In addition, 29,700 units were non-market; that is, they were either assisted or offered for no cash rent. These three categories accounted for 81.0 percent of the 2002 rental stock. The three highest rent categories comprised less than 3 percent of the rental stock. Moves to a less affordable category (sometimes called gentrification) exceeded moves to a more affordable category (sometimes called filtration)—30.4 percent of all 2002 units compared to 12.2 percent. By 2011, 19.2 percent of the 168,100 rental units in 2002 were no longer in the rental stock (32,300 units). The largest proportion of these losses was due to changes in tenure, with 16,500 rental units becoming owner-occupied or vacant for sale in 2011.

The rental stock in Buffalo was less affordable in 2011 than in 2002. Of the 178,000 rental units in 2011, 77,800 were extremely low rent or very low rent units. In addition, 27,700 units were non-market; that is, they were either assisted or offered for no cash rent. These three categories accounted for 59.3 percent of the 2011 rental stock. The three highest rent categories comprised 6.2 percent of the rental stock. Moves from a more affordable category (sometimes called gentrification) exceeded moves from a less affordable category (sometimes called filtration)—

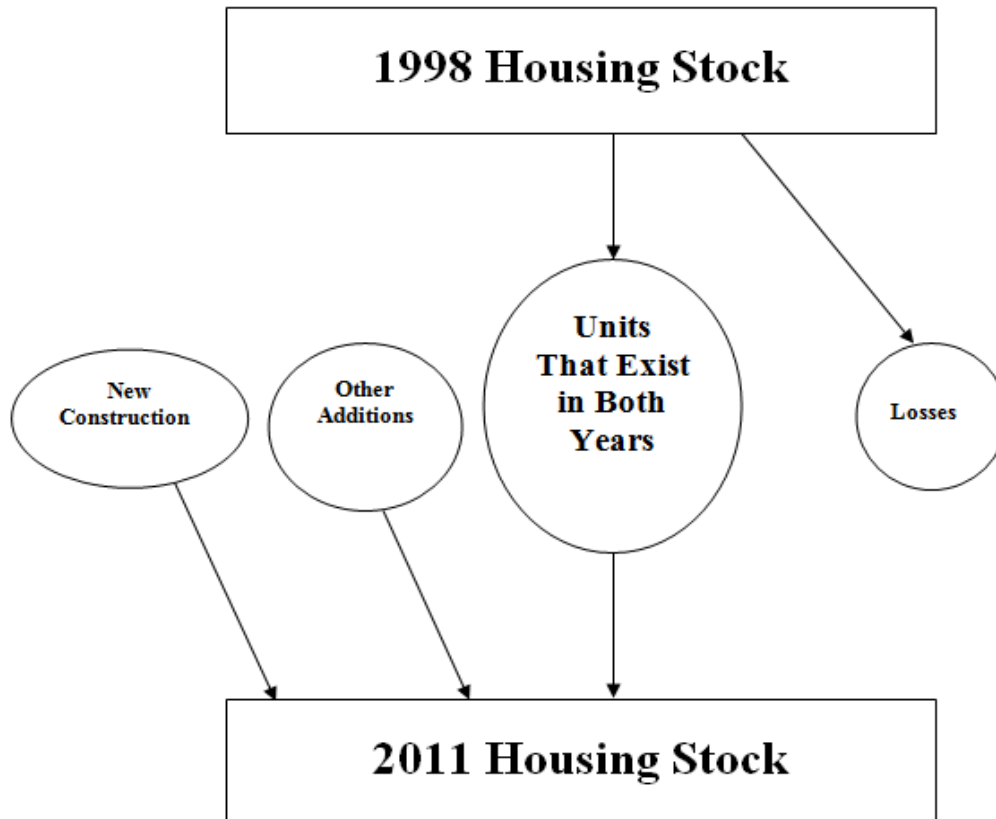
27.8 percent of all 2011 units compared to 11.0 percent. Of the 178,000 rental units in 2011, 25.8 percent were not rental in 2002 (45,900 units). The largest proportion of these gains was due to changes in tenure, with 22,500 rental units having been owner-occupied or vacant for sale in 2002.

## 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:<sup>11</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>11</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, 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.<sup>12</sup> 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.

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<sup>12</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 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.<sup>13</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>14</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 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

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<sup>13</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>14</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 2002.<sup>15</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 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.

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<sup>15</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 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, Buffalo**

	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	515,500	504,000	0	1,000	0	2,700	2,600	3,500	1,600	1
	Occupancy status										
2	Occupied	461,300	417,600	36,800	1,000	0	900	1,600	2,700	700	2
3	Vacant	50,800	10,300	36,100	0	0	1,700	1,000	800	900	3
4	Seasonal	3,400	1,400	1,900	0	0	100	0	0	0	4
	Units in structure										
5	1, detached	305,300	301,700	0	200	0	500	1,200	1,500	200	5
6	1, attached	16,900	16,100	0	100	0	300	100	0	300	6
7	2 to 4	136,000	132,100	0	800	0	200	900	1,200	900	7
8	5 to 9	27,500	26,000	0	0	0	0	500	800	200	8
9	10 to 19	6,000	6,000	0	0	0	0	0	0	0	9
10	20 to 49	5,600	5,400	0	0	0	100	0	0	0	10
11	50 or more	9,600	8,000	0	0	0	1,600	0	0	0	11
12	Manufactured/mobile home	8,700	8,700	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	6,400	6,200	0	0	0	0	0	200	0	15
16	1995–1999	15,800	15,600	0	100	0	200	0	0	0	16
17	1990–1994	24,900	24,900	0	0	0	0	0	0	0	17
18	1985–1989	22,100	22,000	0	0	0	100	0	0	0	18
19	1980–1984	9,300	9,300	0	0	0	0	0	0	0	19
20	1975–1979	14,900	14,900	0	0	0	0	0	0	0	20
21	1970–1974	44,300	43,900	0	0	0	0	300	0	0	21
22	1960–1969	61,200	60,800	0	0	0	200	300	0	0	22
23	1950–1959	73,500	72,500	0	100	0	200	200	200	400	23
24	1940–1949	38,300	37,500	0	200	0	0	300	200	200	24
25	1930–1939	60,100	58,500	0	0	0	100	300	900	300	25
26	1920–1929	47,100	44,400	0	200	0	1,600	400	300	300	26
27	1919 or earlier	97,400	93,500	0	400	0	400	900	1,800	400	27
	Rooms										
28	1	2,200	1,000	1,100	0	0	100	0	0	0	28
29	2	1,300	300	1,000	0	0	0	0	0	100	29
30	3	38,900	26,600	9,000	200	0	2,000	400	800	0	30
31	4	85,000	50,600	32,400	200	0	300	300	700	300	31
32	5	102,700	57,900	42,500	300	0	0	400	900	700	32
33	6	126,700	71,700	53,600	0	0	0	800	500	100	33
34	7	75,400	41,200	32,900	200	0	300	500	300	0	34
35	8	46,100	19,900	25,700	0	0	0	200	100	200	35
36	9	24,000	8,400	15,700	0	0	0	0	0	0	36
37	10 or more	13,100	2,500	10,200	200	0	0	0	200	100	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	3,000	1,500	1,200	0	0	100	0	0	100	38
39	1	49,800	36,700	9,700	200	0	2,000	400	800	0	39
40	2	139,000	113,600	22,400	200	0	300	900	800	700	40
41	3	219,100	182,900	32,800	300	0	300	1,000	1,400	500	41
42	4 or more	104,600	84,400	18,700	400	0	0	300	500	300	42
43	Multiunit structures	184,700	177,500	0	800	0	1,900	1,300	2,000	1,100	43
	Stories in structure										
44	1	2,700	2,500	0	0	0	0	0	0	200	44
45	2	70,400	69,400	0	500	0	100	0	200	200	45
46	3	90,000	86,300	0	200	0	200	1,100	1,600	600	46
47	4 to 6	16,300	14,300	0	0	0	1,600	300	0	200	47
48	7 or more	5,400	5,000	0	0	0	100	0	300	0	48



**Forward-Looking Table B: Unit Quality, Buffalo**

	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	461,300	417,600	36,800	1,000	0	900	1,600	2,700	700	1
2	With complete kitchen	448,900	399,300	42,800	1,000	0	900	1,600	2,600	700	2
3	Lacking complete kitchen facilities	12,400	1,400	10,900	0	0	0	0	100	0	3
4	With complete plumbing	455,500	403,600	44,900	1,000	0	900	1,600	2,700	700	4
5	Lack some plumbing	5,800	200	5,600	0	0	0	0	0	0	5
6	No hot piped water	1,200	0	1,200	0	0	0	0	0	0	6
7	No bathtub/shower	500	200	200	0	0	0	0	0	0	7
8	No flush toilet	500	200	200	0	0	0	0	0	0	8
9	No exclusive use	4,600	0	4,600	0	0	0	0	0	0	9
	Water										
10	Public/private water	440,200	397,300	36,200	1,000	0	900	1,600	2,400	700	10
11	Well serving 1 to 5 units	19,900	14,000	5,700	0	0	0	0	200	0	11
12	Other water source	1,200	1,100	0	0	0	0	0	100	0	12
	Sewer										
13	Public sewer	393,600	353,700	33,800	1,000	0	900	1,500	2,300	400	13
14	Septic tank/cesspool	67,700	49,400	17,500	0	0	0	200	400	300	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	7,200	200	6,800	0	0	0	0	200	0	16
17	Plumbing	5,800	200	5,600	0	0	0	0	0	0	17
18	Heating	900	0	900	0	0	0	0	0	0	18
19	Electric	500	0	300	0	0	0	0	200	0	19
20	Upkeep	200	0	0	0	0	0	0	200	0	20
21	Moderate problems	20,600	1,700	18,400	200	0	0	0	300	0	21
22	Plumbing										22
23	Heating	700	600	0	0	0	0	0	200	0	23
24	Kitchen	12,400	1,400	10,900	0	0	0	0	100	0	24
25	Upkeep	8,900	0	8,600	200	0	0	0	200	0	25

**Forward-Looking Table C: Occupant Characteristics, Buffalo**

	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	461,300	417,600	36,800	1,000	0	900	1,600	2,700	700	1
	Age of householder										
2	Under 65	355,600	272,000	78,200	600	0	700	1,200	2,600	300	2
3	65 to 74	48,800	4,500	43,600	200	0	200	0	100	200	3
4	75 or older	56,900	20,100	36,000	200	0	0	400	0	200	4
	Children in household										
5	Some	152,200	66,700	83,200	300	0	300	300	1,100	300	5
6	None	309,100	233,000	71,400	700	0	600	1,300	1,600	400	6
	Race and ethnicity										
7	White	412,500	359,300	48,600	800	0	700	700	1,800	600	7
8	Hispanic	3,900	2,300	1,400	0	0	200	0	0	0	8
9	Non-Hispanic	408,500	351,800	52,300	800	0	600	700	1,800	600	9
10	Black	37,400	25,300	10,200	300	0	0	700	800	100	10
11	Hispanic	1,300	300	900	0	0	0	0	0	0	11
12	Non-Hispanic	36,200	24,400	9,900	300	0	0	700	800	100	12
13	American Indian or Alaska Native alone	700	0	700	0	0	0	0	0	0	13
14	Asian or Pacific Islander	7,000	1,200	5,500	0	0	200	200	0	0	14
16	Other	3,600	0	3,500	0	0	0	0	100	0	16
17	Hispanic or Latino (any race)	8,200	4,400	3,600	0	0	200	0	0	0	17

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>	<b>I</b>	<b>J</b>	
<b>Row</b>	<b>Characteristics</b>	<b>Present in 2002</b>	<b>2002 units present in 2011</b>	<b>Change in characteristics</b>	<b>2002 units lost due to conversion/merger</b>	<b>2002 house or mobile home moved out</b>	<b>2002 units changed to nonresidential use</b>	<b>2002 units lost through demolition or disaster</b>	<b>2002 units badly damaged or condemned</b>	<b>2002 units lost in other ways</b>	<b>Row</b>
	Income sources of families and primary individuals										
18	Wages and salaries	353,000	252,400	95,500	600	0	700	1,000	2,300	600	18
20	Dividends, interest, or rent	213,300	76,300	133,900	800	0	600	900	700	200	20
21	Public assistance or public welfare	19,000	700	17,800	0	0	200	100	200	0	21

**Forward-Looking Table D: Income and Housing Cost, Buffalo**

	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	461,300	417,600	36,800	1,000	0	900	1,600	2,700		1
	Tenure										
2	Owner-occupied	314,100	276,200	35,000	900	0	300	900	700		2
3	Homeownership rate	68.10%									3
4	Renter-occupied	147,200	111,100	32,100	200	0	600	700	2,000		4
	Renter monthly housing costs										
5	No cash rent	6,200	1,100	4,900	0	0	0	0	0		5
6	Less than \$350	18,000	4,600	13,000	0	0	0	200	200		6
7	\$350 to \$599	72,500	20,500	49,500	200	0	500	200	1,500		7
8	\$600 to \$799	35,500	6,700	28,600	0	0	0	0	100		8
9	\$800 to \$1,249	10,400	3,100	7,000	0	0	200	0	200		9
10	\$1,250 or more	4,500	1,100	3,100	0	0	0	300	0		10
	Renter household income										
11	Less than \$15,000	41,600	14,700	25,600	0	0	300	600	300		11
12	\$15,000 to \$29,999	45,400	8,500	35,200	0	0	200	100	1,000		12
13	\$30,000 to \$49,999	34,700	6,100	27,800	200	0	200	0	300		13
14	\$50,000 to \$99,999	24,400	3,700	20,300	0	0	0	0	300		14
15	\$100,000 or more	1,100	0	1,100	0	0	0	0	0		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	45,100	6,900	37,700	200	0	0	300	0		16
17	\$350 to \$599	71,200	24,600	45,800	200	0	0	600	100		17
18	\$600 to \$799	47,400	8,500	38,500	100	0	0	0	200		18
19	\$800 to \$1,249	82,500	28,100	53,800	200	0	0	0	300		19
20	\$1,250 or more	67,900	38,200	29,100	100	0	300	0	100		20
	Owner household income										
21	Less than \$15,000	30,000	6,500	23,200	0	0	0	200	200		21
22	\$15,000 to \$29,999	46,900	13,900	32,000	700	0	0	300	0		22
23	\$30,000 to \$49,999	65,900	16,400	49,100	100	0	0	100	0		23
24	\$50,000 to \$99,999	115,200	43,700	70,500	0	0	100	300	500		24
25	\$100,000 or more	56,100	26,500	29,400	0	0	200	0	0		25

**Backward-Looking Table A: Housing Characteristics, Buffalo**

	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	520,200	482,000	0	1,900	0	1,200	32,500	200	2,400	1
	Occupancy status										
2	Occupied	469,800	402,600	31,700	1,900	0	800	30,400	200	2,200	2
3	Vacant	49,000	9,100	37,200	0	0	400	2,100	0	300	3
4	Seasonal	1,400	500	900	0	0	0	0	0	0	4
	Units in structure										
5	1, detached	314,200	292,400	0	0	0	400	21,400	0	0	5
6	1, attached	15,600	13,000	0	200	0	0	2,100	0	300	6
7	2 to 4	116,700	111,700	0	1,400	0	600	2,700	0	300	7
8	5 to 9	34,000	31,700	0	0	0	200	1,800	200	0	8
9	10 to 19	10,100	8,700	0	300	0	0	1,100	0	0	9
10	20 to 49	5,000	4,300	0	0	0	0	700	0	0	10
11	50 or more	14,600	10,200	0	0	0	0	2,600	0	1,800	11
12	Manufactured/mobile home	10,100	10,100	0	0	0	0	0	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	3,600	0	0	0	0	0	3,600	0	0	13
14	2005–2009	19,000	0	0	0	0	0	16,600	0	2,400	14
15	2000–2004	14,000	5,800	0	0	0	0	8,300	0	0	15
16	1995–1999	20,000	16,000	0	300	0	0	3,700	0	0	16
17	1990–1994	24,000	23,500	0	200	0	0	200	0	0	17
18	1985–1989	21,500	21,300	0	300	0	0	0	0	0	18
19	1980–1984	9,600	9,600	0	0	0	0	0	0	0	19
20	1975–1979	15,000	15,000	0	0	0	0	0	0	0	20
21	1970–1974	44,200	44,200	0	0	0	0	0	0	0	21
22	1960–1969	59,300	59,300	0	0	0	0	0	0	0	22
23	1950–1959	70,600	69,400	0	400	0	700	0	0	0	23
24	1940–1949	35,500	35,500	0	0	0	0	0	0	0	24
25	1930–1939	55,200	54,700	0	300	0	0	0	200	0	25
26	1920–1929	40,800	40,800	0	0	0	0	0	0	0	26
27	1919 or earlier	87,800	87,000	0	300	0	500	0	0	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	2,200	1,400	800	0	0	0	0	0	0	28
29	2	1,900	100	1,100	0	0	0	700	0	0	29
30	3	42,100	27,200	8,800	700	0	200	3,700	0	1,500	30
31	4	74,200	48,600	20,800	700	0	200	3,500	0	300	31
32	5	118,000	55,300	56,600	300	0	400	4,600	200	600	32
33	6	117,500	66,800	45,300	0	0	0	5,500	0	0	33
34	7	85,900	39,500	40,500	0	0	400	5,600	0	0	34
35	8	47,700	19,500	22,400	200	0	0	5,500	0	0	35
36	9	20,300	8,000	10,900	0	0	0	1,400	0	0	36
37	10 or more	10,500	2,400	6,100	0	0	0	2,000	0	0	37
	Bedrooms										
38	None	4,300	1,800	2,200	0	0	0	400	0	0	38
39	1	51,900	36,700	8,800	700	0	200	4,000	0	1,500	39
40	2	140,800	110,000	22,200	1,000	0	600	5,800	200	900	40
41	3	212,900	173,700	28,900	0	0	400	9,900	0	0	41
42	4 or more	110,300	82,000	15,800	200	0	0	12,400	0	0	42
43	Multiunit structures	180,300	166,500	0	1,700	0	800	8,900	200	2,200	43
	Stories in structure										
44	1	5,100	3,700	0	700	0	0	400	0	300	44
45	2	65,000	57,500	0	300	0	200	4,800	200	1,800	45
46	3	89,200	84,500	0	600	0	400	3,700	0	0	46
47	4 to 6	13,900	13,600	0	0	0	200	0	0	0	47
48	7 or more	7,200	7,200	0	0	0	0	0	0	0	48

**Backward-Looking Table B: Unit Quality, Buffalo**

	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	469,800	402,600	31,700	1,900	0	800	30,400	200	2,200	1
2	With complete kitchen	458,300	385,000	38,800	1,200	0	800	30,100	200	2,200	2
3	Lacking complete kitchen facilities	11,500	1,300	9,200	700	0	0	300	0	0	3
4	With complete plumbing	460,500	389,000	36,300	1,600	0	800	30,400	200	2,200	4
5	Lack some plumbing	9,300	300	8,700	300	0	0	0	0	0	5
6	No hot piped water	1,200	0	900	300	0	0	0	0	0	6
7	No bathtub/shower	1,200	300	600	300	0	0	0	0	0	7
8	No flush toilet	900	300	600	0	0	0	0	0	0	8
9	No exclusive use	7,800	0	7,800	0	0	0	0	0	0	9
	Water										
10	Public/private water	453,300	382,700	35,400	1,900	0	800	30,100	200	2,200	10
11	Well serving 1 to 5 units	15,300	13,700	1,300	0	0	0	300	0	0	11
12	Other water source	1,200	1,200	0	0	0	0	0	0	0	12
	Sewer										
13	Public sewer	413,200	340,000	40,900	1,900	0	800	27,200	200	2,200	13
14	Septic tank/cesspool	56,600	48,500	4,900	0	0	0	3,200	0	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	13,000	300	12,300	300	0	0	0	0	0	16
17	Plumbing	9,300	300	8,700	300	0	0	0	0	0	17
18	Heating	3,300	0	3,300	0	0	0	0	0	0	18
19	Electric										19
20	Upkeep	300	0	300	0	0	0	0	0	0	20
21	Moderate problems	15,600	1,600	13,400	300	0	0	300	0	0	21
22	Plumbing	900	0	900	0	0	0	0	0	0	22
23	Heating	500	500	0	0	0	0	0	0	0	23
24	Kitchen	11,500	1,300	9,200	700	0	0	300	0	0	24
25	Upkeep	7,300	0	7,300	0	0	0	0	0	0	25

**Backward-Looking Table C: Occupant Characteristics, Buffalo**

	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	469,800	402,600	31,700	1,900	0	800	30,400	200	2,200	1
	Age of householder										
2	Under 65	350,800	261,000	62,900	1,600	0	800	24,300	200	0	2
3	65 to 74	59,900	4,500	51,900	0	0	0	2,900	0	600	3
4	75 or older	59,100	19,600	34,500	300	0	0	3,200	0	1,500	4
	Children in household										
5	Some	129,500	63,900	51,500	0	0	400	13,800	0	0	5
6	None	340,300	226,000	93,000	1,900	0	500	16,600	200	2,200	6
	Race and ethnicity										
7	White	416,300	347,200	37,500	1,900	0	800	26,500	200	2,200	7
8	Hispanic	10,300	2,200	7,300	0	0	0	600	200	0	8
9	Non-Hispanic	406,000	340,100	35,100	1,900	0	800	26,000	0	2,200	9
10	Black	40,100	23,100	14,700	0	0	0	2,200	0	0	10
11	Hispanic	1,000	300	700	0	0	0	0	0	0	11
12	Non-Hispanic	39,000	22,200	14,700	0	0	0	2,200	0	0	12
13	American Indian or Alaska Native alone	1,200	0	1,200	0	0	0	0	0	0	13
14	Asian or Pacific Islander	9,100	1,100	6,600	0	0	0	1,400	0	0	14
16	Other	3,100	2,800	0	0	0	0	300	0	0	16
17	Hispanic or Latino (any race)	11,300	4,000	6,500	0	0	0	600	200	0	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	323,400	243,000	57,200	400	0	800	21,900	0	0	18
20	Dividends, interest, or rent	125,900	72,500	42,600	500	0	200	9,100	0	900	20
21	Public assistance or public welfare	9,200	800	8,200	0	0	0	0	200	0	21

**Backward-Looking Table D: Income and Housing Cost, Buffalo**

	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	469,800	402,600	31,700	1,900	0	800	30,400	200	2,200	1
	Tenure										
2	Owner-occupied	311,200	265,700	23,900	500	0	0	21,100	0	0	2
3	Homeownership rate	66.2%									3
4	Renter-occupied	158,600	107,800	36,900	1,400	0	800	9,300	200	2,200	4
	Renter monthly housing costs										
5	No cash rent	5,700	1,000	4,700	0	0	0	0	0	0	5
6	Less than \$350	14,500	4,800	7,500	700	0	0	1,400	200	0	6
7	\$350 to \$599	38,000	19,500	17,500	300	0	0	700	0	0	7
8	\$600 to \$799	46,600	6,300	39,000	400	0	200	700	0	0	8
9	\$800 to \$1,249	45,800	3,100	35,600	0	0	600	4,400	0	2,200	9
10	\$1,250 or more	7,900	1,200	4,500	0	0	0	2,100	0	0	10
	Renter household income										
11	Less than \$15,000	52,000	14,600	31,800	1,000	0	0	3,800	200	600	11
12	\$15,000 to \$29,999	44,500	8,300	33,400	0	0	0	2,200	0	600	12
13	\$30,000 to \$49,999	31,100	5,700	23,000	0	0	400	1,400	0	600	13
14	\$50,000 to \$99,999	26,200	3,600	20,400	0	0	500	1,500	0	300	14
15	\$100,000 or more	4,800	0	4,000	400	0	0	400	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	16,500	6,600	9,400	300	0	0	300	0	0	16
17	\$350 to \$599	67,400	23,500	43,700	0	0	0	300	0	0	17
18	\$600 to \$799	43,300	8,300	32,500	0	0	0	2,500	0	0	18
19	\$800 to \$1,249	80,300	27,400	50,100	200	0	0	2,500	0	0	19
20	\$1,250 or more	103,700	36,900	51,200	0	0	0	15,600	0	0	20
	Owner household income										
21	Less than \$15,000	24,300	6,500	16,700	0	0	0	1,100	0	0	21
22	\$15,000 to \$29,999	42,900	13,400	29,000	200	0	0	300	0	0	22
23	\$30,000 to \$49,999	55,100	16,000	36,600	300	0	0	2,200	0	0	23
24	\$50,000 to \$99,999	107,900	42,000	58,900	0	0	0	7,000	0	0	24
25	\$100,000 or more	81,100	26,100	44,400	0	0	0	10,500	0	0	25

**Forward-Looking Rental Dynamics Table 1: Counts, 2002–2011, Buffalo**

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	29,700	11,000	1,400	7,600	3,100	800	0	0	300	3,400	1,300	900
Extremely low rent	15,200	1,300	1,900	4,800	1,400	1,900	0	0	0	1,000	2,500	400
Very low rent	91,200	6,800	1,900	41,300	17,600	5,700	700	0	300	8,000	6,500	2,500
Low rent	20,800	1,300	1,500	4,200	6,900	4,300	200	300	0	1,400	500	300
Moderate rent	6,700	600	200	200	200	2,000	0	400	500	2,100	200	200
High rent	300	0	0	0	0	0	0	0	0	0	0	300
Very high rent	200	0	0	0	0	0	0	0	0	0	0	200
Extremely high rent	4,000	300	400	1,100	0	300	300	0	1,200	600	0	0
Total	168,100	21,300	7,300	59,200	29,200	15,000	1,200	700	2,300	16,500	11,000	4,800

**Forward-Looking Rental Dynamics Table 2: Row Percentages, 2002–2011, Buffalo**

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	29,700	37.1%	4.6%	25.4%	10.4%	2.6%	0.0%	0.0%	1.0%	11.6%	4.4%	2.9%
Extremely low rent	15,200	8.5%	12.2%	31.7%	9.4%	12.3%	0.0%	0.0%	0.0%	6.9%	16.4%	2.7%
Very low rent	91,200	7.4%	2.1%	45.3%	19.3%	6.2%	0.8%	0.0%	0.3%	8.8%	7.2%	2.7%
Low rent	20,800	6.1%	7.0%	20.2%	33.1%	20.5%	1.2%	1.4%	0.0%	6.8%	2.3%	1.4%
Moderate rent	6,700	8.9%	3.5%	3.5%	3.5%	30.0%	0.0%	5.3%	7.6%	31.9%	3.6%	2.3%
High rent	300	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Very high rent	200	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Extremely high rent	4,000	6.4%	9.0%	27.2%	0.0%	6.4%	7.3%	0.0%	29.4%	14.3%	0.0%	0.0%
Total	168,100	12.6%	4.3%	35.2%	17.4%	8.8%	0.8%	0.4%	1.3%	9.9%	6.6%	2.7%



**Backward-Looking Rental Dynamics Table 1: Counts, 2002–2011, Buffalo**

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	27,700	11,400	1,300	6,600	1,300	600	0	0	300	2,600	1,000	2,100	500
Extremely low rent	9,200	1,400	1,700	1,600	1,300	300	0	0	300	300	1,300	700	300
Very low rent	68,600	7,300	4,500	39,900	3,900	200	0	0	1,000	8,000	2,400	700	700
Low rent	37,400	3,000	1,400	17,100	6,600	300	0	0	0	5,300	1,900	1,100	600
Moderate rent	24,100	900	1,800	5,200	4,300	2,100	0	0	200	4,300	400	2,200	2,600
High rent	4,900	0	0	600	300	0	0	0	300	1,300	900	1,400	0
Very high rent	2,400	0	0	0	300	300	0	0	0	300	0	1,400	0
Extremely high rent	3,800	300	0	200	0	400	0	0	1,400	400	0	1,000	0
Total	178,000	24,300	10,700	71,300	18,000	4,300	0	0	3,500	22,500	7,900	10,700	4,800

**Backward-Looking Rental Dynamics Table 2: Row Percentages, 2002–2011, Buffalo**

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	27,700	41.1%	4.7%	23.8%	4.6%	2.3%	0.0%	0.0%	1.1%	9.4%	3.6%	7.5%	2.0%
Extremely low rent	9,200	15.4%	18.4%	17.5%	14.4%	3.0%	0.0%	0.0%	3.4%	3.0%	13.8%	7.4%	3.6%
Very low rent	68,600	10.6%	6.5%	58.2%	5.6%	0.3%	0.0%	0.0%	1.4%	11.7%	3.5%	1.0%	1.1%
Low rent	37,400	8.0%	3.8%	45.8%	17.5%	0.7%	0.0%	0.0%	0.0%	14.3%	5.2%	3.0%	1.6%
Moderate rent	24,100	3.7%	7.5%	21.6%	17.9%	8.9%	0.0%	0.0%	1.0%	18.0%	1.5%	9.0%	10.9%
High rent	4,900	0.0%	0.0%	12.7%	5.8%	0.0%	0.0%	0.0%	7.0%	26.1%	18.9%	29.4%	0.0%
Very high rent	2,400	0.0%	0.0%	0.0%	14.4%	12.1%	0.0%	0.0%	0.0%	12.4%	0.0%	61.1%	0.0%
Extremely high rent	3,800	9.0%	0.0%	6.1%	0.0%	11.9%	0.0%	0.0%	36.0%	9.4%	0.0%	27.6%	0.0%
Total	178,000	13.7%	6.0%	40.1%	10.1%	2.4%	0.0%	0.0%	2.0%	12.6%	4.4%	6.0%	2.7%