

American Housing Survey

**Components of Inventory Change and
Rental Dynamics Analysis:
Indianapolis, 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 Indianapolis 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 Indianapolis and on their occupants in both 2004 and 2011.

In 2004 the Indianapolis metropolitan area contained 745,000 housing units, including vacant units. By 2011 the number of housing units had increased to 765,300. Part of this increase was due to a redefinition of the metropolitan area that added two counties but eliminated one. We estimate that the 2011 count of housing units for the metropolitan area as defined in 2004 would be 753,300. This represents an overall increase of 1.1 percent, which translates to an average annual increase of 0.2 percent over the 7-year period.

Between 2004 and 2011, 10,600 units left the housing stock. Of these, 4,300 are clearly permanent losses—the original unit is gone, and major construction would be required to replace it with a new unit. Another 3,600 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 2,600 units that left the housing stock either permanently or temporarily for “other” reasons, a category that encompasses a wide variety of situations. Demolitions and natural disasters accounted for 3,500 of the permanent losses, while mergers and conversions contributed another 800 permanent losses

In the period between the 2004 and the 2011 AHS surveys, 89,800 units were added to the housing stock. Ninety-one percent of these additions were newly constructed units. The 2011 AHS did track move-ins of mobile homes in Indianapolis, a factor that contributed 2,400 units. Finally, 200 new units were formed from the conversion or merger of 2004 units. We classified 3,500 units as recovered because these units had been in the housing stock at some point but were classified in 2004 as nonresidential (1,900) or uninhabitable (1,600). Finally, 1,900 units were added in other unclassified ways.

The rate at which units leave or enter the stock can vary by the characteristics of the units and the characteristics of their occupants. For some segments of the Indianapolis housing market, the rate of loss or the rate of addition was statistically different from key benchmark rates, either the rate for all units or the rate for all occupied units. Following are instances in which the differences were noteworthy.

- Among units that were vacant in 2004, the loss rate was much higher.

- The loss rate was lower among more recently built units and higher among older units.
- Smaller units (3 rooms or 1 bedroom) experienced high loss rates, whereas larger units (8 rooms or 4 or more bedrooms) had lower rates.
- Units with no hot piped water had a higher-than-average loss rate.
- Owner-occupied units in 2004 experienced a low loss rate, but one not statistically different from that of all occupied units. Among owner-occupied units, those occupied in 2004 by high-income households (\$50,000 or more) and those with high monthly housing costs (\$1,250 or more) had very low loss rates.
- Units that were renter-occupied in 2004 had higher-than-typical loss rates, particularly those with lower monthly housing costs (\$350–\$599) and those occupied by households earning less than \$15,000.
- Overall, units in multifamily structures experienced a low rate of addition, and this was particularly the case among units in small multifamily structures (2–4 units, 5–9 units, or 2 stories). Single-family attached units and units in large multifamily buildings (20–49 units or 4–6 floors) had higher-than-average rates of addition.
- Small units (3–6 rooms or 0–2 bedrooms) had low rates of addition, while large units (8 or more rooms or 4 or more bedrooms) experienced a high rate.
- The rate of addition was lower than average among units with wells or septic tanks.
- New additions to the stock were underrepresented among units with moderate physical problems.
- As separate groups, households in 2011 with Black householders or householders listing themselves as multiple race had low rates of addition, whereas those with Asian householders had a higher-than-average rate. Additions were lower than average among households on public assistance.
- 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 \$50,000 and those with low monthly housing costs (less than \$1,250). Additions were higher than normal among high-cost rentals (\$1,250 or more) and those occupied by households earning more than \$100,000.
- The rate of addition among units that were owner-occupied in 2011 was higher than that of all occupied units but not statistically different. Among owner-occupied units, those occupied by lower income owners (less than \$30,000) and those with lower monthly housing costs (less than \$800) had lower rates of addition, while those occupied by high-income owners (\$50,000 or more) and those with high monthly housing costs (\$1,250 or more) had higher-than-average rates of addition.

The 2004 rental stock in Indianapolis was affordable. Of the 238,900 rental units in 2004, 154,800 were extremely low rent or very low rent units. In addition, 38,800 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 2004 rental stock. The three highest rent categories comprised only 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)—45.2 percent of all 2004 units compared to 8.1 percent. By 2011, 16.2 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 Indianapolis was less affordable in 2011 than in 2004. Of the 263,000 rental units in 2011, 100,300 were extremely low rent or very low rent units. In addition, 25,600 units were non-market; that is, they were either assisted or offered for no cash rent. These three categories accounted for 47.9 percent of the 2011 rental stock. The three highest rent categories comprised 6.1 percent of the rental stock. Moves from a more affordable category (sometimes called gentrification) exceeded moves from a less affordable category (sometimes called filtration)—38.5 percent of all 2011 units compared to 7.1 percent. Of the rental units in 2011, 27.4 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: Indianapolis, 2004–2011

1. Introduction

This report describes how the housing stock in the Indianapolis 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 Indianapolis and on their occupants in both 2004 and 2011.¹

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

CINCH reports present both forward-looking analysis (what happened to the 2004 units by 2011) and backward-looking analysis (where the 2011 units came from in terms of 2004).³ This paper repeats the analysis contained in the most recent CINCH and rental dynamics studies, but its organization differs from that of previous reports.

- Section 2 discusses data and related issues that affect the CINCH and rental dynamics analysis for Indianapolis.
- 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.

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

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

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

- Section 6 summarizes the changes to the housing stock of the Indianapolis 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: Indianapolis

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 Indianapolis metropolitan area contained 745,000 housing units, including vacant units. By 2011 the number of housing units had increased to 765,300. Part of this increase was due to a redefinition of the metropolitan area that added two counties (Brown and Putnam), but the increase was partially offset by the elimination of Madison County. 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 753,300. This represents an overall increase of 1.1 percent, which translates to an average annual increase of 0.2 percent over the 7-year period.

The change in the geographical definition of Indianapolis 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 Indianapolis 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 2,877 sample units that were common to the 2004 and 2011 AHS Indianapolis surveys and satisfied all the analytical requirements.⁴ Between 2004 and 2011, 61 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 2,938 sample units. Between 2004 and 2011, 345 sample units meeting the analytical requirements were added to the AHS survey to represent additions to the stock throughout the metropolitan area as defined in 2011; thus, the backward-looking analysis is based on a maximum of 3,222 sample units. In the forward-looking analysis, the average weight of a sample unit is approximately 254 units; in the backward-looking analysis, the average weight of a sample unit is approximately 238 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 Indianapolis, 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.

⁴ The 2004 AHS surveyed 4,814 units in the Indianapolis metropolitan area; 3,549 of these units were in the 2011 AHS public use file (PUF). Of the 1,265 sample units no longer in the survey, 185 were legitimate temporary or permanent losses to the housing stock and were considered for the analysis. The remaining 1,080 cases are coded as “sample reduction for the current survey year” with no further explanation. Some, but certainly not all, of the dropped cases were sample units in the part of the Indianapolis metropolitan area that was not in the 2011 definition.

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, only 10,600 units left the housing stock.⁵ Of these, 4,300 are clearly permanent losses—the original unit is gone, and major construction would be required to replace it with a new unit. Another 3,600 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 2,600 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 2004 Indianapolis Housing Units in 2011⁶

Present in 2004	745,000
2004 units present in 2011	734,400
Units no longer in the stock	10,600
2004 units lost due to conversion/merger	800
2004 house or mobile home moved out	0
2004 units lost through demolition or disaster	3,500
Permanent losses	4,300
2004 units changed to nonresidential use	2,200
2004 units badly damaged or condemned	1,400
Temporary losses	3,600
2004 units lost in other ways	2,600

Demolitions and natural disasters accounted for 3,500 of the permanent losses, while mergers and conversions contributed another 800 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 Indianapolis 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 2004.

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

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

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

Appendix B contains four forward-looking tables that break the overall stock into more than 100 subgroups, such as single-family detached houses or units occupied by Black householders in 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 2011.⁷

Table 2: Sources for 2011 Indianapolis Housing Stock⁸

2011 housing stock	765,300
2011 units present in 2004	675,500
Total additions to stock	89,800
Units added by new construction	81,800
House or mobile home moved in	2,400
Units added by conversion/merger	200
New or reconstructed units	84,400
Units added from nonresidential use	1,900
Units added from temporary losses	1,600
Recovered units	3,500
Units added in other ways	1,900

In the period between the 2004 and the 2011 AHS surveys, 89,800 units were added to the housing stock. Ninety-one percent of these additions were newly constructed units. The 2011 AHS did track move-ins of mobile homes in Indianapolis, a factor that contributed 2,400 units. Finally, 200 new units were formed from the conversion or merger of 2004 units.

We classified 3,500 units as recovered because these units had been in the housing stock at some point but were classified in 2004 as nonresidential (1,900) or uninhabitable (1,600). Finally, 1,900 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.

⁷ 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.

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

4. Components With Atypical Losses or Additions

The Indianapolis metropolitan area lost 1.4 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 1.1 percent of its units between 2004 and 2011.

We examined all of the components of the 2004 Indianapolis 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 Indianapolis, 2004–2011⁹

Characteristics	Present in 2004	Total lost	Percent lost
<i>Housing stock</i>	745,000	10,600	1.4%
<i>Occupancy status</i>			
Occupied	657,700	7,000	1.1%
Vacant	86,100	3,500	4.1% **
<i>Year built</i>			
2000–2004	82,900	200	0.2% ***
1995–1999	66,100	200	0.3% ***
1985–1989	55,000	200	0.3% **
1930–1939	23,500	1,200	5.3% *
1919 or earlier	53,500	2,400	4.5% **
<i>Rooms</i>			
3	52,200	2,000	3.8% *
8	66,900	400	0.5% *
<i>Bedrooms</i>			
1	80,100	3,000	3.7% **
4 or more	147,000	900	0.6% *
<i>Plumbing</i>			
No hot piped water	1,500	500	36.0% *
<i>Tenure</i>			
Owner-occupied	469,800	0	0.6%
Renter-occupied	187,900	3,900	2.1% *
<i>Renter monthly housing costs</i>			
\$350 to \$599	64,700	1,800	2.8% *
<i>Renter household income</i>			
Less than \$15,000	49,300	1,600	3.2% *
<i>Owner monthly housing costs</i>			
\$1,250 or more	122,300	200	0.2% ***
<i>Owner household income</i>			
\$50,000 to \$99,999	173,400	800	0.5% *
\$100,000 or more	102,500	400	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.

- Among units that were vacant in 2004, the loss rate was much higher.
- The loss rate was lower among more recently built units and higher among older units.
- Smaller units (3 rooms or 1 bedroom) experienced high loss rates, whereas larger units (8 rooms or 4 or more bedrooms) had lower rates.

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

- Units with no hot piped water had a higher-than-average loss rate.
- Owner-occupied units in 2004 experienced a low loss rate, but one not statistically different from that of all occupied units. Among owner-occupied units, those occupied in 2004 by high-income households (\$50,000 or more) and those with high monthly housing costs (\$1,250 or more) had very low rates.
- Units that were renter-occupied in 2004 had higher-than-typical loss rates, particularly those with lower monthly housing costs (\$350–\$599) and those occupied by households earning less than \$15,000.

The 89,800 additions reported in Table 2 represent 11.7 percent of the 2011 housing stock. The rate of addition varied by the characteristics of the housing. Additions represented 12.1 percent of occupied units.

We examined all of the components of the 2004 Indianapolis 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 Indianapolis, 2004–2011¹⁰

Characteristics	Present in 2011	Total additions	Percent additions
<i>Housing stock</i>	765,300	89,800	11.7%
<i>Occupancy status</i>			
Occupied	676,700	81,800	12.1%
Vacant	85,600	8,000	9.4%
<i>Units in structure</i>			
1, attached	33,861	6,700	19.8% **
2 to 4	60,544	2,600	4.3% ***
5 to 9	51,447	2,800	5.4% ***
20 to 49	17,216	3,900	22.4% **
<i>Rooms</i>			
3	55,607	4,600	8.2% *
4	116,131	8,300	7.2% ***
5	182,310	17,100	9.4% **
6	147,590	13,000	8.8% **
8	71,076	11,400	16.1% **
9	41,477	7,800	18.9% **
10 or more	31,328	10,600	33.9% ***
<i>Bedrooms</i>			
None	5,045	200	4.3% *
1	78,305	6,700	8.6% *
2	197,495	15,100	7.6% ***
4 or more	172,304	35,200	20.4% ***
<i>Multifamily units</i>	174,820	14,800	8.5% ***
<i>Stories in structure</i>			
2	105,602	5,000	4.7% ***
4 to 6	5,626	1,600	27.8% *
<i>Water</i>			
Well serving 1 to 5 units	79,089	4,100	5.1% ***
<i>Sewer</i>			
Septic tank/cesspool	88,102	5,600	6.3% ***
<i>Moderate problems</i>	14,292	700	5.0% **
Upkeep	8,250	500	5.6% *
<i>Race and ethnicity</i>			
Black alone	100,512	8,400	8.4% **
Black Non-Hispanic	97,848	7,900	8.1% ***
Asian alone	13,148	3,600	27.2% **
Two or more races	8,890	300	2.9% ***
<i>Tenure</i>		0	
Owner-occupied	455,500	61,600	13.5%
Renter-occupied	221,200	20,200	9.1% ***

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

Characteristics	Present in 2011	Total additions	Percent additions
<i>Renter monthly housing costs</i>			
\$350 to \$599	42,531	1,800	4.1% ***
\$600 to \$799	68,251	4,700	6.9% ***
\$800 to \$1,249	75,679	6,800	9.0% *
\$1,250 or more	17,009	5,200	30.4% ***
<i>Renter household income</i>			
Less than \$15,000	58,897	4,200	7.1% ***
\$15,000 to \$29,999	60,555	3,000	5.0% ***
\$30,000 to \$49,999	42,716	3,600	8.5% *
\$100,000 or more	11,526	2,800	23.9% **
<i>Owner monthly housing costs</i>			
Less than \$350 per month	38,857	2,800	7.3% **
\$350 to \$599	78,502	5,900	7.5% ***
\$600 to \$799	46,786	2,300	5.0% ***
\$1,250 or more	157,291	34,700	22.0% ***
<i>Owner household income</i>			
Less than \$15,000	35,247	2,300	6.5% **
\$15,000 to \$29,999	64,212	4,200	6.5% ***
\$50,000 to \$99,999	155,393	24,900	16.0% **
\$100,000 or more	113,639	20,100	17.7% ***

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

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

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

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

- Overall, units in multifamily structures experienced a low rate of addition, and this was particularly the case among units in small multifamily structures (2–4 units, 5–9 units, or 2 stories). Single-family attached units and units in large multifamily buildings (20–49 units or 4–6 floors) had higher-than-average rates of addition.
- Small units (3–6 rooms or 0–2 bedrooms) had low rates of addition, while large units (8 or more rooms or 4 or more bedrooms) experienced a high rate.
- The rate of addition was lower than average among units with wells or septic tanks.
- New additions to the stock were underrepresented among units with moderate physical problems.
- As separate groups, households in 2011 with Black householders or householders listing themselves as multiple race had low rates of addition, whereas those with Asian householders had a higher-than-average rate. Additions were lower than average among households on public assistance.
- 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 \$50,000

and those with low monthly housing costs (less than \$1,250). Additions were higher than normal among high-cost rentals (\$1,250 or more) and those occupied by households earning more than \$100,000.

- The rate of addition among units that were owner-occupied in 2011 was higher than that of all occupied units but not statistically different. Among owner-occupied units, those occupied by lower income owners (less than \$30,000) and those with lower monthly housing costs (less than \$800) had lower rates of addition, while those occupied by high-income owners (\$50,000 or more) and those with high monthly housing costs (\$1,250 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.¹¹ The categories are

¹¹ Gross rent is equal to rent plus utilities.

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.

Table 5: Summary of Forward-Looking Rental Dynamics for Indianapolis

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	38,800	NA	24.5%	60.2%	15.3%
Extremely low rent	23,600	4.9%	4.1%	63.2%	27.8%
Very low rent	131,200	6.2%	42.3%	39.3%	12.2%
Low rent	30,700	12.4%	18.0%	54.9%	14.7%
Moderate rent	8,000	33.4%	11.6%	15.3%	39.7%
High rent	2,500	48.9%	10.5%	0.0%	40.7%
Very high rent	3,000	56.5%	0.0%	0.0%	43.5%
Extremely high rent	1,100	58.3%	20.5%	NA	21.2%
Total	238,900	8.1%	30.5%	45.2%	16.2%

The 2004 rental stock in Indianapolis was affordable. Of the 238,900 rental units in 2004, 154,800 were extremely low rent or very low rent units. In addition, 38,800 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 2004 rental stock. The three highest rent categories comprised only 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)—45.2 percent of all 2004 units compared to 8.1 percent.

By 2011, 16.2 percent of the 238,900 rental units in 2004 were no longer in the rental stock (38,700 units). The largest proportion of these losses was due to changes in tenure, with 22,200 rental units becoming owner-occupied or vacant for sale in 2011. Another 10,900 units became seasonal units, units occupied by persons with usual residence elsewhere, or units used for migratory workers. Finally, 5,600 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 Indianapolis was less affordable in 2011 than in 2004. Of the 263,000 rental units in 2011, 100,300 were extremely low rent or very low rent units. In addition, 25,600 units were non-market; that is, they were either assisted or offered for no cash rent. These three categories accounted for 47.9 percent of the 2011 rental stock. The three highest rent categories

comprised 6.1 percent of the rental stock. Moves from a more affordable category (sometimes called gentrification) exceeded moves from a less affordable category (sometimes called filtration)—38.5 percent of all 2011 units compared to 7.1 percent.

Table 6: Summary of Backward-Looking Rental Dynamics for Indianapolis

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	25,600	NA	35.9%	29.0%	35.1%
Extremely low rent	6,800	12.3%	14.0%	42.8%	30.9%
Very low rent	93,500	22.8%	57.9%	4.8%	14.5%
Low rent	65,500	64.1%	8.2%	2.8%	24.9%
Moderate rent	55,600	59.7%	1.7%	0.8%	37.9%
High rent	12,300	25.2%	1.8%	10.5%	62.6%
Very high rent	2,400	17.5%	0.0%	18.1%	64.4%
Extremely high rent	1,300	31.3%	15.7%	NA	53.0%
Total	263,000	38.5%	27.0%	7.1%	27.4%

Of the 263,000 rental units in 2011, 27.4 percent were not rental in 2004 (72,000 units). The largest proportion of these gains was due to changes in tenure, with 44,000 rental units having been owner-occupied or vacant for sale in 2004. Another 4,900 units had been seasonal units, units occupied by persons with usual residence elsewhere, or units used for migratory workers. Finally, 23,100 rental units had not been in the housing stock in 2004. Of these 19,400 were added by new construction and 3,700 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: Indianapolis Metropolitan Area, 2004–2011

In 2004 the Indianapolis metropolitan area contained 745,000 housing units, including vacant units. By 2011 the number of housing units had increased to 765,300. Part of this increase was due to a redefinition of the metropolitan area that added two counties (Brown and Putnam), but the increase was partially offset by the elimination of Madison County. 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 753,300. This represents an overall increase of 1.1 percent, which translates to an average annual increase of 0.2 percent over the 7-year period.

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

Between 2004 and 2011, only 10,600 units left the housing stock. Of these, 4,300 are clearly permanent losses—the original unit is gone, and major construction would be required to replace it with a new unit. Another 3,600 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 2,600 units that left the housing stock either permanently or temporarily for “other” reasons, a category that encompasses a wide variety of situations.

Demolitions and natural disasters accounted for 3,500 of the permanent losses, while mergers and conversions contributed another 800 permanent losses. Unfortunately, the 2011 AHS survey in Indianapolis 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 2004.

In the period between the 2004 and the 2011 AHS surveys, 89,800 units were added to the housing stock. Ninety-one percent of these additions were newly constructed units. The 2011 AHS did track move-ins of mobile homes in Indianapolis, a factor that contributed 2,400 units. Finally, 200 new units were formed from the conversion or merger of 2004 units.

We classified 3,500 units as recovered because these units had been in the housing stock at some point but were classified in 2004 as nonresidential (1,900) or uninhabitable (1,600). Finally, 1,900 units were added in other unclassified ways.

The Indianapolis metropolitan area lost 1.4 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 1.1 percent of its units between 2004 and 2011.

- Among units that were vacant in 2004, the loss rate was much higher.
- The loss rate was lower among more recently built units and higher among older units.
- Smaller units (3 rooms or 1 bedroom) experienced high loss rates, whereas larger units (8 rooms or 4 or more bedrooms) had lower rates.
- Units with no hot piped water had a higher-than-average loss rate.
- Owner-occupied units in 2004 experienced a low loss rate, but one not statistically different from that of all occupied units. Among owner-occupied units, those occupied in 2004 by high-income households (\$50,000 or more) and those with high monthly housing costs (\$1,250 or more) had very low rates.
- Units that were renter-occupied in 2004 had higher-than-typical loss rates, particularly those with lower monthly housing costs (\$350–\$599) and those occupied by households earning less than \$15,000.

The 89,800 additions reported in Table 2 represent 11.7 percent of the 2011 housing stock. The rate of addition varied by the characteristics of the housing. Additions represented 12.1 percent of occupied units.

- Overall, units in multifamily structures experienced a low rate of addition, and this was particularly the cases among units in small multifamily structures (2–4 units, 5–9 units, or

2 stories). Single-family attached units and units in large multifamily buildings (20–49 units or 4–6 floors) had higher-than-average rates of addition.

- Small units (3–6 rooms or 0–2 bedrooms) had low rates of addition, while large units (8 or more rooms or 4 or more bedrooms) experienced a high rate.
- The rate of addition was lower than average among units with wells or septic tanks.
- New additions to the stock were underrepresented among units with moderate physical problems.
- As separate groups, households in 2011 with Black householders or householders listing themselves as multiple race had low rates of addition, whereas those with Asian householders had a higher-than-average rate. Additions were lower than average among households on public assistance.
- 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 \$50,000 and those with low monthly housing costs (less than \$1,250). Additions were higher than normal among high-cost rentals (\$1,250 or more) and those occupied by households earning more than \$100,000.
- The rate of addition among units that were owner-occupied in 2011 was higher than that of all occupied units but not statistically different. Among owner-occupied units, those occupied by lower income owners (less than \$30,000) and those with lower monthly housing costs (less than \$800) had lower rates of addition, while those occupied by high-income owners (\$50,000 or more) and those with high monthly housing costs (\$1,250 or more) had higher-than-average rates of addition.

The 2004 rental stock in Indianapolis was affordable. Of the 238,900 rental units in 2004, 154,800 were extremely low rent or very low rent units. In addition, 38,800 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 2004 rental stock. The three highest rent categories comprised only 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)—45.2 percent of all 2004 units compared to 8.1 percent.

By 2011, 16.2 percent of the 238,900 rental units in 2004 were no longer in the rental stock (38,700 units). The largest proportion of these losses was due to changes in tenure, with 22,200 rental units becoming owner-occupied or vacant for sale in 2011. Another 10,900 units became seasonal units, units occupied by persons with usual residence elsewhere, or units used for migratory workers. Finally, 5,600 rental units were no longer in the housing stock in 2011.

The rental stock in Indianapolis was less affordable in 2011 than in 2004. Of the 263,000 rental units in 2011, 100,300 were extremely low rent or very low rent units. In addition, 25,600 units were non-market; that is, they were either assisted or offered for no cash rent. These three

categories accounted for 47.9 percent of the 2011 rental stock. The three highest rent categories comprised 6.1 percent of the rental stock. Moves from a more affordable category (sometimes called gentrification) exceeded moves from a less affordable category (sometimes called filtration)—38.5 percent of all 2011 units compared to 7.1 percent.

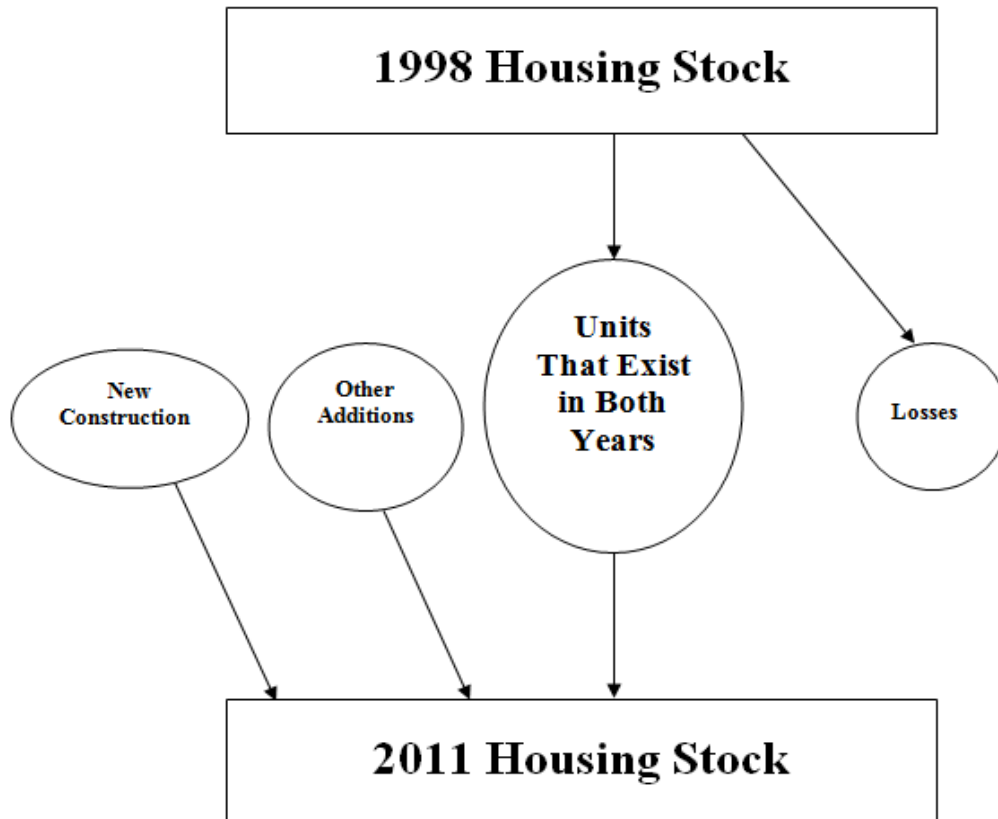
Of the 263,000 rental units in 2011, 27.4 percent were not rental in 2004 (72,000 units). The largest proportion of these gains was due to changes in tenure, with 44,000 rental units having been owner-occupied or vacant for sale in 2004. Another 4,900 units had been seasonal units, units occupied by persons with usual residence elsewhere, or units used for migratory workers. Finally 23,100 rental units had not been in the housing stock in 2004. Of these 19,400 were added by new construction and 3,700 by other means.

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:¹²

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

The AHS has four features that make CINCH analysis possible:

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

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

¹² Previous CINCH analyses have distinguished between the “status” of a unit with respect to the housing stock (e.g., existing as a nonresidential structure) and the “characteristics” of the unit or its occupants (e.g., rental vs. owner-occupied, or race of householder). This report uses this same distinction. Also adopting previous CINCH terminology, Appendix A will refer to the more recent AHS survey year, 2011, as the current year and the previous AHS survey year, 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.¹³ 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.

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

Why changes in geography boundaries affect CINCH analysis

The analysis in this report applies only to that portion of the metropolitan area that was common to the metropolitan area as defined in both 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.¹⁴

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

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

Columns Unique to Backward-Looking Tables

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

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

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

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

- Column I is the CINCH estimate of the number of units from column B that were added by 2011 from units that were structurally unsound in 2004.¹⁶
- Column J is the CINCH estimate of the number of units from column B that were added by 2011 from units that had been temporarily lost to the stock in 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.

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

Backward-Looking Rental Dynamics Table 1 details by affordability category where the rental units in the 2011 housing stock came from with respect to the 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, Indianapolis

	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	745,000	734,400	0	800	0	2,200	3,500	1,400	2,600	1
	Occupancy status										
2	Occupied	657,700	583,100	67,600	700	0	1,400	2,100	1,100	1,800	2
3	Vacant	86,100	21,000	61,500	200	0	800	1,400	300	900	3
4	Seasonal	1,200	0	1,200	0	0	0	0	0	0	4
	Units in structure										
5	1, detached	521,400	514,600	0	0	0	1,300	2,700	1,100	1,800	5
6	1, attached	38,600	38,100	0	0	0	200	0	0	300	6
7	2 to 4	43,100	41,800	0	300	0	300	300	200	200	7
8	5 to 9	51,000	50,500	0	300	0	0	0	0	200	8
9	10 to 19	35,800	35,400	0	200	0	0	200	200	0	9
10	20 to 49	16,400	16,100	0	0	0	200	200	0	0	10
11	50 or more	11,400	10,700	0	0	0	300	200	0	200	11
12	Manufactured/mobile home	27,300	27,300	0	0	0	0	0	0	0	12

	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
	Year built										
15	2000–2004	82,900	82,700	0	0	0	0	200	0	0	15
16	1995–1999	66,100	65,900	0	0	0	200	0	0	0	16
17	1990–1994	58,300	58,000	0	0	0	200	200	0	0	17
18	1985–1989	55,000	54,800	0	0	0	0	200	0	0	18
19	1980–1984	34,600	34,600	0	0	0	0	0	0	0	19
20	1975–1979	43,900	43,900	0	0	0	0	0	0	0	20
21	1970–1974	64,300	64,300	0	0	0	0	0	0	0	21
22	1960–1969	110,000	108,100	0	300	0	200	500	200	700	22
23	1950–1959	77,300	75,100	0	200	0	700	400	200	700	23
24	1940–1949	46,500	44,700	0	0	0	0	900	200	700	24
25	1930–1939	23,500	22,300	0	0	0	200	500	400	200	25
26	1920–1929	29,100	28,800	0	0	0	200	200	0	0	26
27	1919 or earlier	53,500	51,100	0	300	0	700	500	500	300	27
	Rooms										
28	1	1,400	200	1,200	0	0	0	0	0	0	28
29	2	4,800	2,100	2,300	0	0	0	200	0	200	29
30	3	52,200	33,700	16,500	200	0	700	300	200	700	30
31	4	111,900	64,800	44,500	200	0	500	900	200	900	31
32	5	178,100	101,800	74,000	200	0	900	500	400	400	32
33	6	154,400	72,800	79,600	200	0	200	900	400	400	33
34	7	105,900	41,100	64,100	0	0	0	500	0	200	34
35	8	66,900	27,400	39,200	0	0	0	0	400	0	35
36	9	35,000	13,900	20,900	0	0	0	200	0	0	36
37	10 or more	34,300	11,000	23,100	200	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	6,200	2,800	3,100	0	0	0	200	0	200	38
39	1	80,100	64,700	12,500	200	0	800	700	300	1,000	39
40	2	196,300	161,200	31,700	300	0	700	1,000	400	900	40
41	3	315,400	264,700	47,700	200	0	700	1,100	500	500	41
42	4 or more	147,000	117,800	28,300	200	0	0	500	200	0	42
43	Multiunit structures	157,700	154,400	0	800	0	800	800	300	500	43
	Stories in structure										
44	1	15,500	15,000	0	200	0	200	200	0	0	44
45	2	97,700	96,300	0	300	0	500	300	300	0	45
46	3	37,400	36,400	0	300	0	0	300	0	300	46
47	4 to 6	4,400	4,400	0	0	0	0	0	0	0	47
48	7 or more	2,600	2,300	0	0	0	200	0	0	200	48

Forward-Looking Table B: Unit Quality, Indianapolis

	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	657,700	583,100	67,600	700	0	1,400	2,100	1,100	1,800	1
2	With complete kitchen	647,900	569,400	71,800	700	0	1,200	2,100	1,100	1,600	2
3	Lacking complete kitchen facilities	9,800	500	9,000	0	0	200	0	0	200	3
4	With complete plumbing	653,200	574,100	72,600	700	0	1,400	2,000	900	1,600	4
5	Lack some plumbing	4,500	400	3,500	0	0	0	200	200	200	5
6	No hot piped water	1,500	200	700	0	0	0	200	200	200	6
7	No bathtub/shower	700	200	300	0	0	0	0	0	200	7
8	No flush toilet	700	200	300	0	0	0	0	0	200	8
9	No exclusive use	3,000	200	2,800	0	0	0	0	0	0	9
	Water										
10	Public/private water	563,500	498,100	60,500	700	0	1,000	1,200	700	1,200	10
11	Well serving 1 to 5 units	92,300	78,300	12,000	0	0	400	900	400	400	11
12	Other water source	1,900	0	1,700	0	0	0	0	0	200	12
	Sewer										
13	Public sewer	547,200	479,300	63,400	700	0	700	1,200	500	1,400	13
14	Septic tank/cesspool	110,100	85,300	22,500	0	0	700	900	500	200	14
15	Other	400	200	0	0	0	0	0	0	200	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	7,200	700	6,000	0	0	0	200	200	200	16
17	Plumbing	4,500	400	3,500	0	0	0	200	200	200	17
18	Heating	2,800	300	2,500	0	0	0	0	0	0	18
19	Electric	200	0	0	0	0	0	0	0	200	19
20	Upkeep										20
21	Moderate problems	17,600	700	16,700	0	0	200	0	0	0	21
22	Plumbing	2,700	0	2,700	0	0	0	0	0	0	22
23	Heating	400	0	300	0	0	0	200	0	0	23
24	Kitchen	9,800	500	9,000	0	0	200	0	0	200	24
25	Upkeep	7,700	0	7,700	0	0	0	0	0	0	25

Forward-Looking Table C: Occupant Characteristics, Indianapolis

Row	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	
1	Occupied units	657,700	583,100	67,600	700	0	1,400	2,100	1,100	1,800	1
	Age of householder										
2	Under 65	534,000	426,400	101,900	700	0	900	1,600	1,100	1,400	2
3	65 to 74	63,600	11,800	51,200	0	0	0	500	0	200	3
4	75 or older	60,100	25,200	34,100	0	0	500	0	0	200	4
	Children in household										
5	Some	240,500	123,200	115,200	200	0	200	400	900	500	5
6	None	417,200	298,300	114,100	500	0	1,200	1,800	200	1,200	6
	Race and ethnicity										
7	White alone	545,900	460,500	80,100	300	0	1,100	1,800	900	1,200	7
8	Hispanic	27,100	11,100	15,200	0	0	0	400	200	200	8
9	Non-Hispanic	518,900	425,600	88,700	300	0	1,100	1,400	700	1,100	9
10	Black alone	88,200	56,400	30,300	300	0	200	300	200	500	10
11	Hispanic	2,600	300	2,200	200	0	0	0	0	0	11
12	Non-Hispanic	85,600	54,600	29,600	200	0	200	300	200	500	12
13	American Indian or Alaska Native alone	1,900	300	1,500	0	0	200	0	0	0	13
14	Asian alone	8,800	4,400	4,400	0	0	0	0	0	0	14
15	Pacific Islander alone	1,000	300	700	0	0	0	0	0	0	15
16	Two or more races	11,800	4,400	7,400	0	0	0	0	0	0	16
17	Hispanic or Latino (any race)	30,800	12,200	17,600	200	0	200	400	200	200	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	537,400	385,200	147,300	500	0	700	1,400	1,100	1,300	18
20	Dividends, interest, or rent	224,100	70,900	152,200	0	0	200	500	0	400	20
21	Public assistance or public welfare	11,000	200	10,400	0	0	200	200	0	0	21

Forward-Looking Table D: Income and Housing Cost, Indianapolis

	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	657,700	583,100	67,600	700	0	1,400	2,100	1,100	1,800	1
	Tenure										
2	Owner-occupied	469,800	391,700	75,000	0	0	900	900	500	700	2
3	Homeownership rate	71.40%									3
4	Renter-occupied	187,900	132,800	51,200	700	0	500	1,200	500	1,000	4
	Renter monthly housing costs										
5	No cash rent	6,100	300	5,900	0	0	0	0	0	0	5
6	Less than \$350	15,200	5,200	9,700	0	0	200	0	200	0	6
7	\$350 to \$599	64,700	21,500	41,500	500	0	200	400	200	500	7
8	\$600 to \$799	60,100	24,500	34,600	0	0	0	500	0	500	8
9	\$800 to \$1,249	35,100	16,800	17,600	200	0	200	200	200	0	9
10	\$1,250 or more	6,700	1,200	5,400	0	0	0	200	0	0	10
	Renter household income										
11	Less than \$15,000	49,300	17,300	30,300	300	0	300	300	200	500	11
12	\$15,000 to \$29,999	56,100	16,300	39,000	200	0	0	0	0	500	12
13	\$30,000 to \$49,999	43,300	5,300	37,500	0	0	200	200	200	0	13
14	\$50,000 to \$99,999	35,100	6,900	27,100	200	0	0	700	200	0	14
15	\$100,000 or more	4,200	500	3,700	0	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	81,800	18,100	62,800	0	0	400	400	0	200	16
17	\$350 to \$599	72,800	23,100	49,400	0	0	200	200	0	0	17
18	\$600 to \$799	53,900	10,900	42,300	0	0	200	200	200	200	18
19	\$800 to \$1,249	139,000	56,900	81,200	0	0	200	0	400	400	19
20	\$1,250 or more	122,300	72,200	49,900	0	0	0	200	0	0	20
	Owner household income										
21	Less than \$15,000	40,300	6,400	33,000	0	0	400	400	0	200	21
22	\$15,000 to \$29,999	61,800	17,700	43,600	0	0	200	0	200	200	22
23	\$30,000 to \$49,999	91,800	20,300	70,900	0	0	0	400	0	200	23
24	\$50,000 to \$99,999	173,400	60,100	112,500	0	0	0	200	400	200	24
25	\$100,000 or more	102,500	46,800	55,300	0	0	400	0	0	0	25

Backward-Looking Table A: Housing Characteristics, Indianapolis

	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	765,300	675,500	0	200	2,400	1,900	81,800	1,600	1,900	1
	Occupancy status										
2	Occupied	676,700	534,100	60,800	200	1,900	1,900	75,600	900	1,200	2
3	Vacant	85,600	19,000	58,600	0	400	0	6,200	600	700	3
4	Seasonal	3,000	0	3,000	0	0	0	0	0	0	4
	Units in structure										
5	1, detached	538,900	473,700	0	0	0	500	62,800	900	1,000	5
6	1, attached	33,900	27,100	0	200	0	200	5,800	400	0	6
7	2 to 4	60,500	58,000	0	0	0	0	2,600	0	0	7
8	5 to 9	51,400	48,700	0	0	0	0	2,500	200	0	8
9	10 to 19	32,500	29,200	0	0	0	200	3,100	0	0	9
10	20 to 49	17,200	13,400	0	0	0	0	2,900	0	900	10
11	50 or more	13,100	10,800	0	0	0	400	1,800	0	0	11
12	Manufactured/mobile home	17,700	14,700	0	0	2,400	500	200	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	8,400	200	0	0	0	0	8,100	0	0	13
14	2005–2009	58,700	0	0	0	0	300	58,200	200	0	14
15	2000–2004	90,800	75,000	0	0	0	200	14,600	0	900	15
16	1995–1999	61,900	59,800	0	0	1,400	0	800	0	0	16
17	1990–1994	54,000	53,800	0	0	0	0	200	0	0	17
18	1985–1989	49,700	48,500	0	0	1,000	0	0	200	0	18
19	1980–1984	31,700	30,900	0	0	0	700	0	0	0	19
20	1975–1979	40,600	40,600	0	0	0	0	0	0	0	20
21	1970–1974	60,300	59,800	0	200	0	0	0	0	200	21
22	1960–1969	101,700	100,500	0	0	0	500	0	200	500	22
23	1950–1959	70,300	69,800	0	0	0	0	0	400	0	23
24	1940–1949	42,000	41,500	0	0	0	0	0	200	200	24
25	1930–1939	20,800	20,600	0	0	0	0	0	200	0	25
26	1920–1929	27,600	27,400	0	0	0	200	0	0	0	26
27	1919 or earlier	47,000	47,000	0	0	0	0	0	0	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	1,000	200	800	0	0	0	0	0	0	28
29	2	5,300	1,900	2,200	0	0	0	200	0	900	29
30	3	55,600	32,700	18,300	0	0	200	3,600	200	500	30
31	4	116,100	62,100	45,700	200	0	1,000	6,500	400	200	31
32	5	182,300	90,500	74,700	0	1,400	200	15,500	0	0	32
33	6	147,600	66,200	68,400	0	500	0	12,000	200	300	33
34	7	113,400	37,200	60,400	0	500	500	14,400	500	0	34
35	8	71,100	25,100	34,500	0	0	0	11,400	0	0	35
36	9	41,500	12,900	20,800	0	0	0	7,600	200	0	36
37	10 or more	31,300	10,400	10,300	0	0	0	10,600	0	0	37
	Bedrooms										
38	None	5,000	2,600	2,300	0	0	0	0	200	0	38
39	1	78,300	62,800	8,800	0	0	400	4,900	0	1,400	39
40	2	197,500	151,800	30,700	200	0	1,000	12,700	700	500	40
41	3	312,200	237,500	42,100	0	2,400	200	29,800	200	0	41
42	4 or more	172,300	108,300	28,800	0	0	200	34,500	500	0	42
43	Multiunit structures	174,800	160,000	0	0	0	600	13,000	200	900	43
	Stories in structure										
44	1	23,100	19,400	0	0	0	0	2,800	0	900	44
45	2	105,600	100,600	0	0	0	0	4,800	200	0	45
46	3	38,200	33,900	0	0	0	200	4,100	0	0	46
47	4 to 6	5,600	4,100	0	0	0	200	1,400	0	0	47
48	7 or more	2,300	2,100	0	0	0	200	0	0	0	48

Backward-Looking Table B: Unit Quality, Indianapolis

	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	676,700	534,100	60,800	200	1,900	1,900	75,600	900	1,200	1
2	With complete kitchen	668,500	520,900	66,200	200	1,900	1,900	75,100	900	1,200	2
3	Lacking complete kitchen facilities	8,200	400	7,400	0	0	0	500	0	0	3
4	With complete plumbing	669,900	525,900	62,700	200	1,900	1,600	75,400	900	1,200	4
5	Lack some plumbing	6,800	400	6,000	0	0	200	200	0	0	5
6	No hot piped water	400	200	200	0	0	0	0	0	0	6
7	No bathtub/shower	900	200	700	0	0	0	0	0	0	7
8	No flush toilet	400	200	200	0	0	0	0	0	0	8
9	No exclusive use	5,700	200	5,100	0	0	200	200	0	0	9
	Water										
10	Public/private water	597,400	458,000	61,700	200	1,900	1,400	72,300	900	900	10
11	Well serving 1 to 5 units	79,100	70,500	4,500	0	0	500	3,300	0	300	11
12	Other water source	200	0	200	0	0	0	0	0	0	12
	Sewer										
13	Public sewer	588,400	441,200	70,900	200	1,900	1,400	70,800	900	900	13
14	Septic tank/cesspool	88,100	76,000	6,600	0	0	500	4,800	0	300	14
15	Other	200	200	0	0	0	0	0	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
16	Severe problems	10,500	600	9,200	0	0	200	500	0	0	16
17	Plumbing	6,800	400	6,000	0	0	200	200	0	0	17
18	Heating	3,700	200	3,200	0	0	0	300	0	0	18
19	Electric										19
20	Upkeep										20
21	Moderate problems	14,300	600	12,900	0	0	0	700	0	0	21
22	Plumbing	400	0	400	0	0	0	0	0	0	22
23	Heating										23
24	Kitchen	8,200	400	7,400	0	0	0	500	0	0	24
25	Upkeep	6,700	0	6,400	0	0	0	300	0	0	25

Backward-Looking Table C: Occupant Characteristics, Indianapolis

	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	676,700	534,100	60,800	200	1,900	1,900	75,600	900	1,200	1
	Age of householder										
2	Under 65	553,500	392,500	89,100	200	900	1,400	68,200	700	500	2
3	65 to 74	65,400	10,700	49,600	0	1,000	500	3,600	0	0	3
4	75 or older	57,700	23,200	29,900	0	0	0	3,800	200	700	4
	Children in household										
5	Some	237,600	112,000	85,500	0	900	500	38,000	700	0	5
6	None	439,100	273,300	124,000	200	1,000	1,400	37,600	200	1,200	6
	Race and ethnicity										
7	White alone	550,900	418,500	63,600	200	1,900	1,100	63,500	700	1,200	7
8	Hispanic	35,900	9,800	22,000	0	0	200	3,600	200	0	8
9	Non-Hispanic	515,000	387,500	62,800	200	1,900	900	59,900	500	1,200	9
10	Black alone	100,500	53,200	38,900	0	0	0	8,200	200	0	10
11	Hispanic	2,700	200	1,900	0	0	0	500	0	0	11
12	Non-Hispanic	97,800	51,600	38,300	0	0	0	7,700	200	0	12
13	American Indian or Alaska Native alone	3,000	200	2,000	0	0	500	300	0	0	13
14	Asian alone	13,100	4,100	5,500	0	0	200	3,300	0	0	14
15	Pacific Islander alone										15
16	Two or more races	8,900	4,000	4,600	0	0	0	300	0	0	16
17	Hispanic or Latino (any race)	39,400	10,800	24,100	0	0	200	4,100	200	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	508,000	354,400	85,100	200	1,900	1,100	64,100	700	500	18
20	Dividends, interest, or rent	142,100	65,700	57,900	0	0	200	18,200	0	0	20
21	Public assistance or public welfare	7,300	300	6,700	0	0	0	0	200	0	21

Backward-Looking Table D: Income and Housing Cost, Indianapolis

	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	676,700	534,100	60,800	200	1,900	1,900	75,600	900	1,200	1
	Tenure										
2	Owner-occupied	455,500	356,900	36,900	0	1,000	1,000	58,900	700	0	2
3	Homeownership rate	67.3%									3
4	Renter-occupied	221,200	125,900	75,200	200	900	900	16,700	200	1,200	4
	Renter monthly housing costs										
5	No cash rent	7,800	200	6,700	0	0	200	300	0	300	5
6	Less than \$350	10,000	5,000	4,000	0	0	0	500	0	500	6
7	\$350 to \$599	42,500	20,700	20,000	0	0	0	1,500	0	300	7
8	\$600 to \$799	68,300	23,300	40,300	200	500	400	3,300	0	200	8
9	\$800 to \$1,249	75,700	15,200	53,600	0	500	200	5,900	200	0	9
10	\$1,250 or more	17,000	1,000	10,800	0	0	0	5,200	0	0	10
	Renter household income										
11	Less than \$15,000	58,900	16,700	38,100	200	0	200	3,200	0	500	11
12	\$15,000 to \$29,999	60,600	15,600	42,000	0	500	200	2,300	0	0	12
13	\$30,000 to \$49,999	42,700	5,500	33,600	0	0	400	2,700	200	300	13
14	\$50,000 to \$99,999	47,500	6,100	34,800	0	500	0	5,700	0	500	14
15	\$100,000 or more	11,500	400	8,300	0	0	0	2,800	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	38,900	16,500	19,500	0	500	0	2,100	200	0	16
17	\$350 to \$599	78,500	20,300	52,300	0	0	800	5,100	0	0	17
18	\$600 to \$799	46,800	10,100	34,400	0	0	0	2,100	200	0	18
19	\$800 to \$1,249	134,100	51,000	67,100	0	500	200	15,000	200	0	19
20	\$1,250 or more	157,300	66,900	55,800	0	0	0	34,700	0	0	20
	Owner household income										
21	Less than \$15,000	35,200	5,900	27,000	0	500	0	1,800	0	0	21
22	\$15,000 to \$29,999	64,200	15,600	44,400	0	0	700	3,200	200	0	22
23	\$30,000 to \$49,999	87,000	18,500	58,300	0	500	300	9,200	200	0	23
24	\$50,000 to \$99,999	155,400	55,300	75,200	0	0	0	24,600	200	0	24
25	\$100,000 or more	113,600	43,200	50,400	0	0	0	20,100	0	0	25

Forward-Looking Rental Dynamics Table 1: Counts, 2004–2011, Indianapolis

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	38,800	9,500	900	12,200	6,000	4,100	200	0	0	3,800	1,300	800
Extremely low rent	23,600	1,200	1,000	10,100	3,600	800	300	0	200	3,800	1,900	900
Very low rent	131,200	5,500	2,600	55,500	35,300	15,100	700	500	0	7,500	5,600	2,900
Low rent	30,700	500	500	2,900	5,500	15,600	1,000	0	200	2,600	1,400	500
Moderate rent	8,000	200	0	1,200	1,200	900	1,200	0	0	2,800	200	200
High rent	2,500	200	0	200	200	500	300	0	0	700	300	0
Very high rent	3,000	0	0	0	200	0	1,400	0	0	1,000	0	300
Extremely high rent	1,100	0	0	0	200	0	0	400	200	0	200	0
Total	238,900	17,100	5,000	82,100	52,200	37,000	5,100	900	600	22,200	10,900	5,600

Forward-Looking Rental Dynamics Table 2: Row Percentages, 2004–2011, Indianapolis

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	38,800	24.5%	2.4%	31.3%	15.4%	10.5%	0.6%	0.0%	0.0%	9.9%	3.2%	2.2%
Extremely low rent	23,600	4.9%	4.1%	42.8%	15.2%	3.2%	1.1%	0.0%	1.0%	16.1%	8.1%	3.6%
Very low rent	131,200	4.2%	2.0%	42.3%	26.9%	11.5%	0.6%	0.4%	0.0%	5.7%	4.3%	2.2%
Low rent	30,700	1.5%	1.5%	9.4%	18.0%	51.0%	3.1%	0.0%	0.8%	8.4%	4.7%	1.7%
Moderate rent	8,000	2.9%	0.0%	15.0%	15.5%	11.6%	15.3%	0.0%	0.0%	34.6%	2.8%	2.2%
High rent	2,500	9.6%	0.0%	9.6%	9.6%	19.9%	10.5%	0.0%	0.0%	30.2%	10.5%	0.0%
Very high rent	3,000	0.0%	0.0%	0.0%	7.9%	0.0%	48.6%	0.0%	0.0%	32.1%	0.0%	11.4%
Extremely high rent	1,100	0.0%	0.0%	0.0%	21.5%	0.0%	0.0%	36.8%	20.5%	0.0%	21.2%	0.0%
Total	238,900	7.2%	2.1%	34.4%	21.9%	15.5%	2.1%	0.4%	0.3%	9.3%	4.6%	2.4%

Backward-Looking Rental Dynamics Table 1: Counts, 2004–2011, Indianapolis

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	25,600	9,200	1,100	5,400	500	200	200	0	0	5,200	800	2,300	700
Extremely low rent	6,800	800	900	2,500	400	0	0	0	0	700	0	900	500
Very low rent	93,500	11,700	9,600	54,100	2,900	1,300	300	0	0	9,600	1,600	1,700	700
Low rent	65,500	5,200	3,400	33,300	5,400	1,100	300	200	200	11,500	700	2,500	1,600
Moderate rent	55,600	3,800	600	14,500	14,300	900	400	0	0	12,800	900	7,100	200
High rent	12,300	200	200	600	900	1,100	200	1,300	0	3,600	700	3,400	0
Very high rent	2,400	0	0	400	0	0	0	0	400	700	200	700	0
Extremely high rent	1,300	0	200	0	200	0	0	0	200	0	0	700	0
Total	263,000	30,900	16,200	110,800	24,600	4,600	1,500	1,500	900	44,000	4,900	19,400	3,700

Backward-Looking Rental Dynamics Table 2: Row Percentages, 2004–2011, Indianapolis

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	25,600	35.9%	4.5%	20.9%	2.0%	0.8%	0.9%	0.0%	0.0%	20.3%	3.0%	9.1%	2.7%
Extremely low rent	6,800	12.3%	14.0%	36.6%	6.2%	0.0%	0.0%	0.0%	0.0%	10.1%	0.0%	13.9%	6.9%
Very low rent	93,500	12.5%	10.3%	57.9%	3.1%	1.4%	0.3%	0.0%	0.0%	10.2%	1.7%	1.8%	0.8%
Low rent	65,500	8.0%	5.2%	50.9%	8.2%	1.7%	0.5%	0.3%	0.3%	17.6%	1.1%	3.8%	2.4%
Moderate rent	55,600	6.8%	1.2%	26.0%	25.7%	1.7%	0.8%	0.0%	0.0%	23.1%	1.6%	12.8%	0.4%
High rent	12,300	1.7%	1.8%	5.3%	7.7%	8.6%	1.8%	10.5%	0.0%	29.1%	5.5%	28.0%	0.0%
Very high rent	2,400	0.0%	0.0%	17.5%	0.0%	0.0%	0.0%	0.0%	18.1%	27.8%	8.6%	28.0%	0.0%
Extremely high rent	1,300	0.0%	15.7%	0.0%	15.7%	0.0%	0.0%	0.0%	15.7%	0.0%	0.0%	53.0%	0.0%
Total	263,000	11.8%	6.2%	42.1%	9.4%	1.8%	0.6%	0.6%	0.3%	16.7%	1.9%	7.4%	1.4%