

THE IMPACT OF HURRICANE KATRINA ON THE NEW ORLEANS HOUSING STOCK: 2009 AMERICAN HOUSING SURVEY RESULTS

Since 1973, field representatives from the Census Bureau have collected data for the American Housing Survey (AHS). The AHS includes a national survey, conducted in odd-numbered years, and independent metropolitan area surveys, which are typically conducted on a 6-year cycle. The AHS is a joint effort between the U.S. Department of Housing and Urban Development (HUD) and the Census Bureau. Beginning in 2011, a total of 60 metropolitan area surveys will be conducted and rotated on a 4-year cycle. In 2011, 30 metropolitan area surveys will be conducted, and the field representatives of the Census Bureau will return to the same metropolitan areas to conduct the 2015 survey. The remaining 30 metropolitan area surveys will be conducted in 2013 and again in 2017.

The AHS is a statistically representative sample of housing units in the United States and includes data on renters and homeowners, single-family homes, apartments, size of housing units, household composition and incomes, housing conditions and structural characteristics, neighborhood quality, financing and housing costs, monthly housing expenses, and the overall availability of affordable housing. An important feature of the AHS is that the survey revisits the same housing units each time, chronicling the history of American housing.

In 2009, at HUD's direction, the Census Bureau conducted the New Orleans metropolitan area survey (referred to as the New Orleans AHS). Questions were added to assess the impact of Hurricane Katrina, which devastated much of the area in August 2005, on housing and households in the New Orleans metropolitan area, including questions on the types of repair and remodeling work completed on Hurricane Katrina-damaged units. In addition to new units added to the survey sample in 2009, households in the same housing units from the 2004 New Orleans AHS sample were surveyed (including visits to 2004 sample units that were vacant in 2009). This sampling design allows for comparisons of the pre- and post-Hurricane Katrina housing conditions in New Orleans. In 2011, the same housing units will be revisited to measure additional signs of recovery and changes in the housing conditions

in the New Orleans metropolitan area since Hurricane Katrina came ashore. The 2009 New Orleans AHS included more than 3,400 housing units and covered the major parishes in the New Orleans metropolitan area: Jefferson, Orleans, Plaquemines, St. Bernard, St. Charles, St. John the Baptist, and St. Tammany.

In September 2010, HUD and the Census Bureau released the results of the 2009 New Orleans AHS in microdata form and tabular reports. The 2009 New Orleans AHS microdata is the basis for this article. Because the AHS is a sample, the estimates are subject to sampling and non-sampling variability. This article also explains the many ways to access this rich data source.

Selected Housing Characteristics From the 2009 New Orleans AHS

The New Orleans housing stock consists of more than 512,500 housing units, of which approximately 71,700 are vacant or for seasonal use. According to the New Orleans AHS, families in New Orleans are homeowners by a ratio of 2 to 1. These homeowners generally live in single-family housing that is fairly new, has three or more bedrooms, and more than one complete bathroom. These housing units have few deficiencies. In 2009, households paid approximately 25 percent of their income toward housing costs, up 5 percentage points from 2004.

Table 1 shows the composition of housing stock in the New Orleans metropolitan area. The New Orleans AHS estimates that the New Orleans housing stock included 512,500 units in 2009, down 8.6 percent from the 561,000 units estimated in the 2004 New Orleans AHS. The vacancy rate increased from 10.5 percent in 2004 to 14.0 percent in 2009. Of the 436,000 occupied units in 2009, 66.6 percent were owner occupied. This homeownership rate is a slight increase from the 64.9-percent rate recorded in the 2004 New Orleans AHS.

Table 2 shows that the predominant type of housing in the New Orleans metropolitan area is the single-family unit, which accounts for 75.4 percent of the New Orleans housing stock. The most popular single-family units are detached units, which account for 303,800 housing units (69.7 percent of the occupied stock), followed by attached units (25,000 housing units, or 5.7 percent of the occupied stock).

Approximately 92,400 housing units, or 21.2 percent of the total occupied housing stock, are in multifamily buildings. The most prevalent multifamily housing size category is the two- to four-unit building, which accounts for more than one-half of all multi-

Table 1. Composition of the Housing Stock

Housing Type	2004		2009	
	Number of Units	Percentage	Number of Units	Percentage
All	561,000	100.0	512,500	100.0
Total Occupied	498,200	88.8	436,000	85.1
Owner Occupied	323,300	57.6	290,400	56.7
Renter Occupied	174,900	31.2	145,700	28.4
Vacant	58,900	10.5	71,700	14.0

Table 2. Housing Stock by Type and Tenure (Occupied Units)

2004 Type of Housing Unit	All		Owner		Renter	
	Number of Units	Percentage	Number of Units	Percentage	Number of Units	Percentage
Single-family detached	324,200	65.1	279,900	86.6	44,300	25.3
Single-family attached	41,000	8.2	13,500	4.2	27,500	15.7
Multifamily	108,900	21.9	10,400	3.2	98,500	56.3
2–4 units	54,600	11.0	6,800	2.1	47,800	27.3
5–9 units	18,100	3.6	1,200	0.4	16,900	9.7
10–19 units	13,000	2.6	300	0.1	12,700	7.3
20–49 units	10,400	2.1	1,100	0.3	9,300	5.3
50 units or more	12,800	2.6	1,000	0.3	11,800	6.7
Manufactured (mobile)	24,100	4.8	19,400	6.0	4,700	2.7
2009 Type of Housing Unit	All		Owner		Renter	
	Number of Units	Percentage	Number of Units	Percentage	Number of Units	Percentage
Single-family detached	303,800	69.7	260,700	89.8	43,100	29.6
Single-family attached	25,000	5.7	8,200	2.8	16,900	11.6
Multifamily	92,400	21.2	10,600	3.7	81,800	56.1
2–4 units	52,200	12.0	7,400	2.5	44,800	30.7
5–9 units	11,800	2.7	900	0.3	10,900	7.5
10–19 units	10,200	2.3	400	0.1	9,800	6.7
20–49 units	9,200	2.1	800	0.3	8,300	5.7
50 units or more	9,000	2.1	1,100	0.4	8,000	5.5
Manufactured (mobile)	14,800	3.4	10,900	3.8	3,900	2.7

family units. Approximately 9,000 housing units are in the largest (50 or more units) multifamily structures, representing about 9.7 percent of the multifamily housing stock.

As of 2009, the housing stock in New Orleans was slightly younger than the overall U.S. housing stock. As Table 3 demonstrates, approximately 30.2 percent of the units have been built since 1980, and the median construction date is 1972—meaning one-half of the housing units are less than 39 years old. New Orleans also has its share of old houses: 23,400 units (5.4 percent of all housing units) are more than 92 years old.

Table 4 presents the distribution of housing units among the parishes in 2004 and 2009. Since 2004,

the proportion of units in Orleans Parish has decreased by 6.0 percentage points, although units in St. Tammany Parish and Jefferson Parish increased by 4.5 percentage points and 3.7 percentage points, respectively. The redistribution reflects the loss of units due to the effects of Hurricane Katrina and the subsequent growth in the parishes least affected by the storm.

In 2009, approximately 320,000 homes in New Orleans (62.5 percent) have three or more bedrooms. Housing units containing three bedrooms are the most popular and account for 219,000 (42.7 percent) housing units (see Table 5). Approximately 2,000 housing units (0.4 percent) do not have a separate bedroom. Since 2004, the proportion of units with

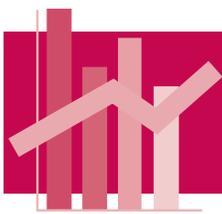


Table 3. Year Structure Built (Occupied Units)

Year Built	2004		2009	
	Number of Units	Percentage	Number of Units	Percentage
2005–09	NA	NA	18,000	4.1
2000–04	18,700	3.8	22,600	5.2
1995–99	14,400	2.9	12,800	2.9
1990–94	17,800	3.6	16,800	3.9
1985–89	31,500	6.3	25,500	5.8
1980–84	38,400	7.7	36,300	8.3
1975–79	61,800	12.4	55,400	12.7
1970–74	68,000	13.6	57,300	13.1
1960–69	89,300	17.9	70,200	16.1
1950–59	54,500	10.9	41,900	9.6
1940–49	41,200	8.3	28,100	6.4
1930–39	21,100	4.2	14,600	3.3
1920–29	14,000	2.8	12,900	3.0
1919 or earlier	27,400	5.5	23,400	5.4

NA = not available.

Table 4. Housing Location (Occupied Units)

Parish	2004		2009	
	Number of Units	Percentage	Number of Units	Percentage
Jefferson	172,400	34.6	167,200	38.3
Orleans	178,100	35.7	129,500	29.7
Plaquemines	9,600	1.9	5,300	1.2
St. Bernard	24,100	4.8	10,400	2.4
St. Charles	18,500	3.7	20,100	4.6
St. John the Baptist	18,400	3.7	16,500	3.8
St. Tammany	77,100	15.5	87,000	20.0

Table 5. Number of Bedrooms per Housing Unit

Number of Bedrooms	2004		2009	
	Number of Units	Percentage	Number of Units	Percentage
0	3,700	0.7	2,000	0.4
1	65,000	11.6	60,900	11.9
2	154,800	27.6	129,700	25.3
3	237,600	42.4	218,600	42.7
4 or more	100,000	17.8	101,300	19.8

one or two bedrooms has declined by about 2.0 percentage points in favor of units with three or more bedrooms. Virtually all housing units (98.7 percent) have one or more bathrooms; only 6,700 housing units report having no bathroom. Nearly 163,000 housing units have one complete bathroom and nearly 285,000 have two or more bathrooms—an increase of nearly 7,000 units compared with the number of bathrooms in the 2004 New Orleans AHS (see Table 6).

New Orleans' housing units—especially owner-occupied units—have fewer deficiencies in 2009 than they did in 2004. Table 7 shows the incidence of selected deficiencies for all occupied housing units and then distinguishes between owner- and renter-occupied housing units. Of the approximately 436,000 occupied units in the New Orleans area, about 6,800 have holes in the floors; the incidence is lower for owner-occupied units (1.1 percent) than for renter-occupied units (2.5 percent). Open cracks

or holes in interior walls are more prevalent—24,200 occupied units reported this deficiency—and the incidence for renters (7.1 percent) is higher than for owners (4.8 percent). The incidence of exposed wiring for all occupied housing units decreased from 3,000 units in 2004 to 1,300 units in 2009.

Table 8 shows the distribution of monthly housing costs by tenure. Housing costs for renters include contract rent, property insurance, and utilities. Housing costs for owners include mortgage (or installment loan) payments, property insurance, real estate taxes, fees (association, condominium, or cooperative), park fees for manufactured (mobile) homes, land rents, routine maintenance, and utilities. Median monthly housing costs for occupied units in 2009 increased by approximately 31.6 percent from costs reported in the 2004 New Orleans AHS. For all housing units, the median monthly housing cost in 2009 was \$846 per month, with owners having a median cost of \$816 and renters having a median cost of \$870. In 2004, the median monthly housing cost was \$643 (in 2009

dollars), with a median cost of \$556 for owners and \$688 for renters. Approximately 11,000 households pay no cash rent for their housing units. These include households living in units owned by relatives or friends and those occupied by persons who receive housing as part of their employment. A higher percentage of owners (20.3 percent) have housing costs of \$1,500 or more per month compared with renters (8.0 percent).

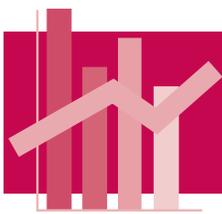
An alternative method for assessing the impact of housing costs is to estimate the median housing cost burden; that is, the proportion of income spent on housing. Since Hurricane Katrina struck in 2005, the median housing cost burden for all housing units rose from 20 percent in 2004 to 25 percent in 2009. The difference between owners and renters is large, with renters paying a median of 41 percent of their incomes and owners paying 20 percent in 2009. In 2004, renters paid a median of 30 percent of their incomes and owners paid 15 percent.

Table 6. Number of Bathrooms per Housing Unit

Number of Bathrooms	2004		2009	
	Number of Units	Percentage	Number of Units	Percentage
0	12,500	2.2	6,700	1.3
1	208,500	37.2	162,900	31.8
1.5	61,600	11.0	57,900	11.3
2 or more	278,500	49.6	285,000	55.6

Table 7. Selected Housing Deficiencies (Occupied Units)

2004 Deficiency	All		Owner		Renter	
	Number of Units	Percentage	Number of Units	Percentage	Number of Units	Percentage
Holes in floors	9,200	1.8	4,500	1.4	4,700	2.7
Open cracks or holes (interior)	42,700	8.6	22,500	7.0	20,200	11.5
Broken plaster or peeling paint (interior)	19,400	3.9	8,100	2.5	11,300	6.5
Exposed wiring	3,000	0.6	1,800	0.6	1,200	0.7
Rooms without electrical outlets	10,200	2.0	5,400	1.7	4,800	2.7
2009 Deficiency	All		Owner		Renter	
	Number of Units	Percentage	Number of Units	Percentage	Number of Units	Percentage
Holes in floors	6,800	1.6	3,300	1.1	3,600	2.5
Open cracks or holes (interior)	24,200	5.6	13,900	4.8	10,300	7.1
Broken plaster or peeling paint (interior)	8,300	1.9	3,900	1.3	4,500	3.1
Exposed wiring	1,300	0.3	600	0.2	700	0.5
Rooms without electrical outlets	6,400	1.5	3,200	1.1	3,200	2.2



Hurricane Katrina caused significant population upheaval and damage, affecting many occupied housing units in the New Orleans metropolitan area. According to the 2009 New Orleans AHS, nearly one-half of the households moved more than twice since Hurricane Katrina occurred, and more than 10 percent moved more than five times (see Table 9).

Of the 290,400 owner-occupied units, more than 252,000 units were damaged by Hurricane Katrina. Of those, more than 90 percent have undergone some repairs as of 2009. Nearly 11,000 units were severely damaged (razed or condemned), and more

than 88 percent of those severely damaged units were rebuilt. More than 18,000 homeowners either have or intend to elevate their homes as a result of the damage caused by Hurricane Katrina.

Repairs are quite costly in New Orleans—one-half of the homeowners spent \$5,000 or more for repairs. Table 10 shows that approximately 112,000 households, or 57 percent of the affected homeowners, repaired their roof. A significant number of homeowners added additional rooms or repaired electrical wiring, windows, fencing, or walls.

Table 8. Monthly Housing Costs (Occupied Housing Units) by Tenure

2009 Cost Range (\$)	All		Owner		Renter	
	Number of Units	Percentage	Number of Units	Percentage	Number of Units	Percentage
Less than 100	2,300	0.5	1,300	0.4	1,000	0.7
100–199	10,300	2.4	7,900	2.7	2,400	1.6
200–249	12,900	3.0	10,600	3.7	2,400	1.6
250–299	16,300	3.7	13,300	4.6	3,100	2.1
300–349	13,700	3.1	12,300	4.2	1,400	1.0
350–399	19,700	4.5	16,800	5.8	2,900	2.0
400–449	17,500	4.0	14,900	5.1	2,600	1.8
450–499	19,000	4.4	15,800	5.4	3,300	2.3
500–599	28,600	6.6	19,200	6.6	9,300	6.4
600–699	30,100	6.9	17,100	5.9	13,000	8.9
700–799	28,300	6.5	13,600	4.7	14,600	10.0
800–999	61,200	14.0	29,000	10.0	32,300	22.2
1,000–1,249	60,900	14.0	35,500	12.2	25,400	17.4
1,250–1,499	33,800	7.8	24,400	8.4	9,400	6.5
1,500–1,999	36,500	8.4	28,100	9.7	8,400	5.8
2,000–2,499	14,700	3.4	13,000	4.5	1,700	1.2
2,500 or more	19,100	4.4	17,700	6.1	1,400	1.0
No cash rent	11,100	2.5	NA	NA	11,100	7.6

NA = not available.

Table 9. Number of Residences Since Hurricane Katrina

Number of Residences Since Hurricane Katrina	Number of Units	Percentage
1	58,600	19.5
2	94,900	31.5
3	76,500	25.4
4	37,100	12.3
5	16,600	5.5
6	7,600	2.5
7	3,300	1.1
8 or more	3,600	1.2

Table 10. Repairs to the Damaged Owner-Occupied Units by Type

Type of Repair	Number of Units	Percentage
Roof	112,300	56.9
Room(s) added	17,000	8.7
Electrical wiring	6,100	3.1
Windows	5,500	2.8
Fencing or wall	4,200	2.1
Deck added	4,200	2.1
Central air conditioning	3,900	2.0

Accessing Housing Information

HUD and the Census Bureau give high priority to making AHS results accessible. Users may download AHS information in tabular and microdata formats. The tabulations are available on paper, CD-ROM, and downloadable Internet files. The microdata files (in ASCII or SAS formats) are available on CD-ROM and can be downloaded from the Internet. For copies of the printed versions, contact HUD USER at 1-800-245-2691 or P.O. Box 23268, Washington, DC 20026-3268. Users can purchase national AHS reports from the Government Printing Office by calling 202-512-1800, and they can obtain the metropolitan area reports from the Census Bureau by calling 301-763-4636 or writing to the Census Bureau, Washington, DC 20233-8500. Both the Census Bureau and HUD maintain Internet sites, and HUD operates an AHS electronic mailing list for the AHS user community. The URL for the HUD AHS website is www.huduser.org/datasets/ahs.html. The site provides the following items:

- The 2009 New Orleans AHS microdata files in SAS and ASCII formats.
- Summary statistics for the 2009 New Orleans AHS.
- The code book for the survey, revised for the 2009 survey, in PDF files.

- Links to the Census Bureau website.
- Microdata in downloadable format for the 1995, 1997, 1999, 2001, 2003, 2005, 2007, and 2009 national surveys and the 1995, 1996, 1998, 2002, 2004, 2007, and 2009 metropolitan area surveys.
- Information for ordering reports and documents from HUD USER.

The URL for the Census Bureau AHS website is www.census.gov/hhes/www/ahs.html. This site provides these items:

- The AHS national and metropolitan reports from 1975 through 2009 in PDF files. Other AHS and housing reports.
- A description of the surveys, historical changes in the surveys, definitions of concepts and variables, sample design and sizes, estimation weights, and survey results in brief formats.
- Information for ordering reports and documents from the Census Bureau's Customer Service Center.

HUD operates an Internet mailing list to provide information and create a forum for the exchange of information within the AHS user community. Subscription instructions are posted at www.huduser.org/emaillists/ahslist.html.