

**American Housing Survey**

**Components of Inventory Change and  
Rental Dynamics Analysis:  
San Francisco, 1998–2011**

*Prepared For:*

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Office of Policy Development & Research**

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

**May 2015**

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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 San Francisco metropolitan area changed between 1998 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 San Francisco and on their occupants in both 1998 and 2011.

In 1998 the San Francisco metropolitan area contained 700,300 housing units, including vacant units. By 2011 the number of housing units had increased to 766,600. This represents an overall increase of 9.5 percent, which translates to an average annual increase of 0.7 percent over the 13-year period. There were no changes to the definition of the San Francisco metropolitan area between AHS surveys.

Between 1998 and 2011, only 6,600 units left the housing stock. Of these, 3,000 are clearly permanent losses—the original unit is gone, and major construction would be required to replace it with a new unit. Another 2,000 are temporary losses—the original unit needs repairs or is being used for other purposes. These units may or may not return to the housing stock. Finally, there were 1,500 units that left the housing stock either permanently or temporarily for “other” reasons, a category that encompasses a wide variety of situations.

In the period between the 1998 and 2011 AHS surveys, 66,400 units were added to the housing stock. Seventy-six percent of these additions were newly constructed units. The 2011 AHS did not track move-ins of mobile homes in San Francisco. Also, 5,100 new units were formed from the conversion or merger of 1998 units. We classified 5,500 units as recovered because these units had been in the housing stock at some point but were classified in 1998 as nonresidential (3,800) or uninhabitable (1,700). Finally, 5,100 units were added in other unclassified ways.

The San Francisco metropolitan area lost 0.9 percent of all 1998 housing units by 2011; additions between 1998 and 2011 represent 8.7 percent of the 2011 housing stock. Losses and additions varied across portions of the San Francisco housing market defined by the characteristics of the unit or its occupants. We observed the following patterns, which were both atypical of the overall housing stock and statistically significant:

- Units that were owner-occupied in 1998 had a lower loss rate.
- The rate of addition was high among units that were vacant in 2011.
- Single-family detached units had a lower-than-average rate of addition.

- Units in multifamily structures had a higher-than-average rate of addition. For units in multifamily structures, the rate of addition varied by the size of the buildings. Units in large buildings (50 or more units or 4 or more stories) had high rates of addition.
- Units occupied in 2011 by householders 65 or older or by White householders had below-average rates of addition. Units occupied by Asian householders had an above-average rate of addition.
- The rate of addition among renter-occupied units in 2011 was higher than that among owner-occupied units; however, neither rate was statistically different from the rate for all occupied units.
- The rates of addition among units occupied by non-high-income owners and by owners paying less than \$350 in monthly housing costs were lower than average. Renter-occupied units whose households earned \$100,000 or more had a higher-than-average rate of addition. An interesting anomaly was the high rate of addition among rental units with monthly housing costs of \$350 or less.

The 1998 rental stock in San Francisco was not affordable. Of the 354,000 rental units in 1998, 97,200 were extremely low rent or very low rent units. In addition, 54,600 units were non-market; that is, they were either assisted or offered for no cash rent. These three categories accounted for 42.9 percent of the 1998 rental stock. The three highest rent categories comprised 34.2 percent of the rental stock. Moves to a less affordable category (sometimes called gentrification) were equal to moves to a more affordable category (sometimes called filtration)—31.8 percent of all 1998 units compared to 27.2 percent. By 2011, 16.2 percent of the 354,000 rental units in 1998 were no longer in the rental stock. The largest proportion of these losses was due to changes in tenure.

The rental stock in San Francisco was less affordable in 2011 than in 1998. Of the 394,600 rental units in 2011, 84,400 were extremely low rent or very low rent units. In addition, 51,700 units were non-market; that is, they were either assisted or offered for no cash rent. These three categories accounted for 34.5 percent of the 2011 rental stock. The three highest rent categories comprised 30.9 percent of the rental stock. Moves from a more affordable category (sometimes called gentrification) exceeded moves from a less affordable category (sometimes called filtration)—29.3 percent of all 2011 units compared to 22.6 percent. Of the 394,600 rental units in 2011, 22.6 percent were not rental in 1998. The largest proportion of these gains was due to changes in tenure.

# Components of Inventory Change and Rental Dynamics Analysis: San Francisco, 1998–2011

## 1. Introduction

This report describes how the housing stock in the San Francisco metropolitan area changed between 1998 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 San Francisco and on their occupants in both 1998 and 2011.<sup>1</sup>

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

CINCH reports present both forward-looking analysis (what happened to the 1998 units by 2011) and backward-looking analysis (where the 2011 units came from in terms of 1998).<sup>3</sup> This paper repeats the analysis contained in the most recent CINCH and rental dynamics studies, but its organization differs from that of previous reports.

- Section 2 discusses data and related issues that affect the CINCH and rental dynamics analysis for San Francisco.
- Section 3 explains the changes in the housing stock between 1998 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.

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

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

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

- Section 5 breaks the rental housing stock into eight affordability categories and tracks what happened to units in each of those categories between 1998 and 2011.
- Section 6 summarizes the changes to the housing stock of the San Francisco metropolitan area between 1998 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 1998–2011 period began toward the end of the longest recorded business cycle (March 1991 to November 2001), encompassed a vigorous expansion (November 2001 to December 2007), included the recent harsh recession (December 2007 to June 2009), and ended with a period of lackluster recovery.

## **2. Special Issues: San Francisco**

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 1998 the San Francisco metropolitan area contained 700,300 housing units, including vacant units. By 2011 the number of housing units had increased to 766,600. This represents an overall increase of 9.5 percent, which translates to an average annual increase of 0.7 percent over the 13-year period. There were no changes to the definition of the San Francisco metropolitan area between AHS surveys.

### **Sample size**

Both CINCH and rental dynamics require that, if a sample unit is in both the 1998 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 2,745 sample units that were

common to the 1998 and 2011 AHS San Francisco surveys and satisfied all the analytical requirements.<sup>4</sup> Between 1998 and 2011, 41 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 2,786 sample units. Between 1998 and 2011, 234 sample units meeting the analytical requirements were added to the AHS to represent additions to the stock throughout the metropolitan area as defined in 2011; thus, the backward-looking analysis is based on a maximum of 2,979 sample units. In the forward-looking analysis, the average weight of a sample unit is approximately 251 units; in the backward-looking analysis, the average weight of a sample unit is approximately 257 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 San Francisco, 13 years separate the 2011 sample from the 1998 sample. As a result, explaining the loss or addition of sample units is very challenging. This report is part of a series that compares the housing stock in 2011 to the housing stock of 7 metropolitan areas in 1998, 12 metropolitan areas in 2002, 8 metropolitan areas in 2004, and 2 metropolitan areas in 2009. We compared the pattern of changes across the 29 areas studied in these reports to the changes recorded between 2009 and 2011 at the national level. With respect to losses, the patterns are reasonably similar except for the role played by the movement of mobile homes. Mobile home move-outs are much more important in explaining losses at the national level. At both the national and metropolitan levels, the “other” category accounts for one-fifth to one-quarter of the losses. With respect to additions, new construction accounts for 72 percent of all additions at the national level but 94 percent at the metropolitan level. We suspect that data issues downplay the importance of “means other than new construction” at the metropolitan level.

## ***3. Changes to the Housing Stock: 1998–2011***

### **Losses between 1998 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.

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<sup>4</sup> The 1998 AHS surveyed 4,813 units in the San Francisco metropolitan area; 3,780 of these units were in the 2011 AHS public use file (PUF). Of the 1,033 sample units no longer in the survey, 46 were legitimate temporary or permanent losses to the housing stock and were considered for the analysis. The remaining 987 cases are coded as “sample reduction for the current survey year” with no further explanation.



Table 1 reports that between 1998 and 2011, only 6,600 units left the housing stock. Of these, 3,000 are clearly permanent losses—the original unit is gone, and major construction would be required to replace it with a new unit. Another 2,000 are temporary losses—the original unit needs repairs or is being used for other purposes. These units may or may not return to the housing stock. Finally, there were 1,500 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 1998 San Francisco Housing Units in 2011<sup>5</sup>**

Present in 1998	700,300
1998 units present in 2011	693,700
<b>Units no longer in the stock</b>	<b>6,600</b>
1998 units lost due to conversion/merger	1,700
1998 house or mobile home moved out	0
1998 units lost through demolition or disaster	1,300
<b>Permanent losses</b>	<b>3,000</b>
1998 units changed to nonresidential use	1,200
1998 units badly damaged or condemned	800
<b>Temporary losses</b>	<b>2,000</b>
<b>1998 units lost in other ways</b>	<b>1,500</b>

Demolitions and natural disasters accounted for 1,300 of the permanent losses, while mergers and conversions contributed another 1,700 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 San Francisco 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 1998.

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

Appendix B contains four forward-looking tables that break the overall stock into more than 100 subgroups, such as single-family detached houses or units occupied by Black householders in 1998. For each subgroup, these tables detail how many of the 1998 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 1998–2011 period.

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

## Additions between 1998 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 1998 and 2011.<sup>6</sup>

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

2011 housing stock	766,500
2011 units present in 1998	700,100
<b>Total additions to stock</b>	<b>66,400</b>
Units added by new construction	50,700
House or mobile home moved in	0
Units added by conversion/merger	5,100
<b>New or reconstructed units</b>	<b>55,800</b>
Units added from nonresidential use	3,800
Units added from temporary losses	1,700
<b>Recovered units</b>	<b>5,500</b>
<b>Units added in other ways</b>	<b>5,100</b>

In the period between the 1998 and 2011 AHS surveys, 66,400 units were added to the housing stock. Seventy-six percent of these additions were newly constructed units. The 2011 AHS did not track move-ins of mobile homes in San Francisco. Also, 5,100 new units were formed from the conversion or merger of 1998 units.

We classified 5,500 units as recovered because these units had been in the housing stock at some point but were classified in 1998 as nonresidential (3,800) or uninhabitable (1,700). Finally, 5,100 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 1998–2011 period.

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

The San Francisco metropolitan area lost 0.9 percent of all 1998 housing units by 2011, but the loss rate varied across sectors of the stock. For example, the occupied housing stock lost 0.8 percent of its units between 1998 and 2011.

We examined all of the components of the 1998 San Francisco housing stock contained in the four forward-looking tables in Appendix B to identify subgroups with unusual loss rates.

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

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

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 San Francisco, 1998–2011<sup>8</sup>**

Characteristics	Present in 1998	Total lost	Percent lost
<i>Housing stock</i>	700,300	6,600	0.9%
<i>Occupancy status</i>			
Occupied	663,300	5,300	0.8%
Vacant	35,000	1,100	3.1%
<i>Year built</i>			
1940–1949	95,800	200	0.2%***
<i>Tenure</i>			
Owner-occupied	323,500	900	0.3%**
Renter-occupied	339,800	4,400	1.3%
<i>Owner household income</i>			
\$100,000 or more	131,400	600	0.5%***

\* 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 identifies loss rates that were both atypical of the overall housing stock and statistically significant. Only three segments of the San Francisco housing market had loss rates statistically different from their benchmarks. The low overall loss rate and the small sample of units that were lost probably caused these limited results. The only interesting finding was:

- Units that were owner-occupied in 1998 had a lower loss rate.

The 66,400 additions reported in Table 2 represent 8.7 percent of the 2011 housing stock. The rate of addition varied by the characteristics of the housing. Additions represented 8.2 percent of occupied units.

We examined all of the components of the 1998 San Francisco 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 from the addition rate of the overall stock.

<sup>8</sup> Two conditions were necessary for a housing sector to appear in Table 3, one mathematical and one judgmental: (1) the difference between the sector’s loss rate and the benchmark rate had to have been statistically significant at the 10-percent level, and (2) the difference had to be interesting. Counts are rounded to the nearest hundred.

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 from 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 San Francisco, 1998–2011<sup>9</sup>**

Characteristics	Present in 2011	Total additions	Percent additions
<i>Housing stock</i>	766,500	66,400	8.7%
<i>Occupancy status</i>			
Occupied	720,000	59,100	8.2%
Vacant	42,700	6,500	15.3% ***
<i>Units in structure</i>			
1, detached	316,800	18,600	5.9% ***
5 to 9	68,100	3,200	4.8% ***
50 or more	74,500	19,600	26.3% ***
<i>Rooms</i>			
6	117,900	7,700	6.6% *
7	74,000	3,300	4.5% ***
<i>Multiunit structures</i>	387,600	42,000	10.8% **
<i>Stories in structure</i>			
3	142,500	9,000	6.3% **
4 to 6	85,800	14,200	16.5% ***
7 or more	37,800	10,200	26.9% ***
<i>Age of householder</i>			
65 to 74	85,800	4,100	4.8% ***
75 or older	75,400	2,600	3.4% ***
<i>Race and ethnicity</i>			
White alone	504,400	32,800	6.5% **
White Hispanic	96,000	5,400	5.6% **
White Non-Hispanic	408,400	27,500	6.7% *
Asian alone	170,000	20,500	12.1% ***
<i>Tenure</i>			
Owner-occupied	343,100	24,200	7.1%
Renter-occupied	376,900	34,900	9.3%
<i>Renter monthly housing costs</i>			
Less than \$350	32,400	4,600	14.3% *
<i>Renter household income</i>			
\$50,000 to \$99,999	103,200	5,300	5.1% **
\$100,000 or more	95,400	11,400	11.9% **
<i>Owner monthly housing costs</i>			
Less than \$350	9,300	300	3.1% *
<i>Owner household income</i>			
\$15,000 to \$29,999	30,200	1,200	4.0% **
\$50,000 to \$99,999	79,800	2,400	3.1% ***

\* 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.

<sup>9</sup> Two conditions were necessary for a housing sector to appear in Table 4, one mathematical and one judgmental: (1) the difference between the sector's addition rate and the benchmark rate had to have been statistically significant at the 10-percent level, and (2) the difference had to be interesting. Counts are rounded to the nearest hundred.

Table 4 identifies rates of addition that were both atypical of the overall housing stock and statistically significant:

- The rate of addition was high among units that were vacant in 2011.
- Single-family detached units had a lower-than-average rate of addition.
- Units in multifamily structures had a higher-than-average rate of addition. For units in multifamily structures, the rate of addition varied by the size of the buildings. Units in large buildings (50 or more units or 4 or more stories) had high rates of addition.
- Units occupied in 2011 by householders 65 or older or by White householders had below-average rates of addition. Units occupied by Asian householders had an above-average rate of addition.
- The rate of addition among renter-occupied units in 2011 was higher than that among owner-occupied units; however, neither rate was statistically different from the rate for all occupied units.
- The rates of addition among units occupied by non-high-income owners and by owners paying less than \$350 in monthly housing costs were lower than average. Renter-occupied units whose households earned \$100,000 or more had a higher-than-average rate of addition. An interesting anomaly was the high rate of addition among rental units with monthly housing costs of \$350 or less.

## ***5. Rental Market Dynamics: 1998–2011***

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

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

- High rent: Affordable to renters with incomes greater than 80 percent but less than or equal to 100 percent of local area median income.
- Very high rent: Affordable to renters with incomes greater than 100 percent but less than or equal to 120 percent of local area median income.
- Extremely high rent: Affordable to renters with incomes greater than 120 percent of local area median income.

For each category, “affordable” is defined as a gross-rent-to-income ratio of 30 percent or less for the higher of the incomes that define the boundaries for that category.<sup>10</sup> The categories are defined relative to area median income; therefore, the boundaries of the categories will change as area median income changes.

Table 5 summarizes what happened to the 1998 rental units by how affordable they were in 1998. 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 San Francisco**

Affordability categories	1998 rental units	To more affordable categories in 2011	In same affordability category in both years	To less affordable categories in 2011	1998 rental units non-rental in 2011
Non-market	54,600	NA	39.4%	44.5%	16.0%
Extremely low rent	27,700	9.0%	32.3%	44.4%	14.4%
Very low rent	69,500	14.9%	29.1%	44.8%	11.2%
Low rent	43,900	23.0%	16.3%	52.3%	8.4%
Moderate rent	37,200	26.7%	29.8%	28.8%	14.7%
High rent	81,100	53.7%	14.8%	11.8%	19.6%
Very high rent	23,800	50.1%	14.4%	6.2%	29.3%
Extremely high rent	16,200	0.0%	0.0%	NA	0.0%
Total	354,000	27.2%	24.8%	31.8%	16.2%

The 1998 rental stock in San Francisco was not affordable. Of the 354,000 rental units in 1998, 97,200 were extremely low rent or very low rent units. In addition, 54,600 units were non-market; that is, they were either assisted or offered for no cash rent. These three categories accounted for 42.9 percent of the 1998 rental stock. The three highest rent categories comprised 34.2 percent of the rental stock. Moves to a less affordable category (sometimes called gentrification) were equal to moves to a more affordable category (sometimes called filtration)—31.8 percent of all 1998 units compared to 27.2 percent.

By 2011, 16.2 percent of the 354,000 rental units in 1998 were no longer in the rental stock (57,200 units). The largest proportion of these losses was due to changes in tenure, with 40,500 rental units becoming owner-occupied or vacant for sale in 2011. Another 12,200 units became seasonal units, units occupied by persons with usual residence elsewhere, or units used for

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

migratory workers. Finally, 4,600 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 1998, 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 San Francisco was less affordable in 2011 than in 1998. Of the 394,600 rental units in 2011, 84,400 were extremely low rent or very low rent units. In addition, 51,700 units were non-market; that is, they were either assisted or offered for no cash rent. These three categories accounted for 34.5 percent of the 2011 rental stock. The three highest rent categories comprised 30.9 percent of the rental stock. Moves from a more affordable category (sometimes called gentrification) exceeded moves from a less affordable category (sometimes called filtration)—29.3 percent of all 2011 units compared to 22.6 percent.

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

Affordability categories	2011 rental units	From more affordable categories in 1998	In same affordability category in both years	From less affordable categories in 1998	2011 rental units non-rental in 1998
Non-market	51,700	NA	42.5%	27.6%	29.9%
Extremely low rent	36,300	9.8%	25.3%	43.5%	21.4%
Very low rent	48,100	15.6%	43.5%	24.2%	16.7%
Low rent	40,400	33.1%	18.2%	36.6%	12.2%
Moderate rent	95,900	39.8%	12.1%	32.8%	15.4%
High rent	55,200	40.9%	22.6%	14.4%	22.1%
Very high rent	33,900	54.3%	10.4%	8.9%	26.4%
Extremely high rent	33,000	37.2%	10.8%	NA	52.1%
Total	394,600	29.3%	23.0%	25.1%	22.6%

Of the 394,600 rental units in 2011, 22.6 percent were not rental in 1998 (89,300 units). The largest proportion of these gains was due to changes in tenure, with 41,100 rental units having been owner-occupied or vacant for sale in 1998. Another 10,900 units had been seasonal units, units occupied by persons with usual residence elsewhere, or units used for migratory workers. Finally, 37,300 rental units had not been in the housing stock in 1998. Of these, 25,100 were added by new construction and 12,200 by other means. Backward-Looking Rental Dynamics Table 2 shows how the movement into the rental stock varied across the affordability categories.

## **6. Summary of Housing Market Changes: San Francisco Metropolitan Area, 1998–2011**

In 1998 the San Francisco metropolitan area contained 700,300 housing units, including vacant units. By 2011 the number of housing units had increased to 766,600. This represents an overall increase of 9.5 percent, which translates to an average annual increase of 0.7 percent over the 13-



year period. There were no changes to the definition of the San Francisco metropolitan area between AHS surveys.

Between 1998 and 2011, only 6,600 units left the housing stock. Of these, 3,000 are clearly permanent losses—the original unit is gone, and major construction would be required to replace it with a new unit. Another 2,000 are temporary losses—the original unit needs repairs or is being used for other purposes. These units may or may not return to the housing stock. Finally, there were 1,500 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 1,300 of the permanent losses, while mergers and conversions contributed another 1,700 permanent losses. The 2011 AHS survey in San Francisco did not track mobile home move-outs.

In the period between the 1998 and 2011 AHS surveys, 66,400 units were added to the housing stock. Seventy-six percent of these additions were newly constructed units. The 2011 AHS did not track move-ins of mobile homes in San Francisco. Also, 5,100 new units were formed from the conversion or merger of 1998 units. We classified 5,500 units as recovered because these units had been in the housing stock at some point but were classified in 1998 as nonresidential (3,800) or uninhabitable (1,700). Finally, 5,100 units were added in other unclassified ways.

The San Francisco metropolitan area lost 0.9 percent of all 1998 housing units by 2011; additions between 1998 and 2011 represent 8.7 percent of the 2011 housing stock. Losses and additions varied across portions of the San Francisco housing market defined by the characteristics of the unit or its occupants. We observed the following patterns, which were both atypical of the overall housing stock and statistically significant:

- Units that were owner-occupied in 1998 had a lower loss rate.
- The rate of addition was high among units that were vacant in 2011.
- Single-family detached units had a lower-than-average rate of addition.
- Units in multifamily structures had a higher-than-average rate of addition. For units in multifamily structures, the rate of addition varied by the size of the buildings. Units in large buildings (50 or more units or 4 or more stories) had high rates of addition.
- Units occupied in 2011 by householders 65 or older or by White householders had below-average rates of addition. Units occupied by Asian householders had an above-average rate of addition.
- The rate of addition among renter-occupied units in 2011 was higher than that among owner-occupied units; however, neither rate was statistically different from the rate for all occupied units.
- The rates of addition among units occupied by non-high-income owners and by owners paying less than \$350 in monthly housing costs were lower than average. Renter-

occupied units whose households earned \$100,000 or more had a higher-than-average rate of addition. An interesting anomaly was the high rate of addition among rental units with monthly housing costs of \$350 or less.

The 1998 rental stock in San Francisco was not affordable. Of the 354,000 rental units in 1998, 97,200 were extremely low rent or very low rent units. In addition, 54,600 units were non-market; that is, they were either assisted or offered for no cash rent. These three categories accounted for 42.9 percent of the 1998 rental stock. The three highest rent categories comprised 34.2 percent of the rental stock. Moves to a less affordable category (sometimes called gentrification) were equal to moves to a more affordable category (sometimes called filtration)—31.8 percent of all 1998 units compared to 27.2 percent. By 2011, 16.2 percent of the 354,000 rental units in 1998 were no longer in the rental stock (57,200 units). The largest proportion of these losses was due to changes in tenure, with 40,500 rental units becoming owner-occupied or vacant for sale in 2011.

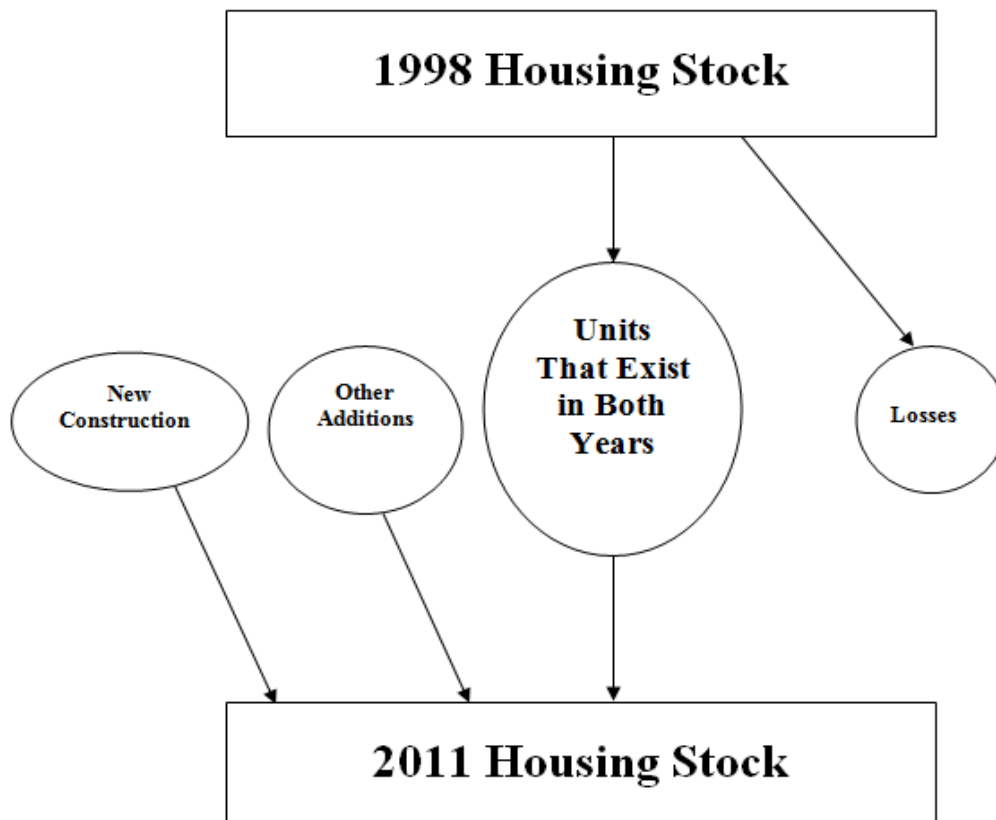
The rental stock in San Francisco was less affordable in 2011 than in 1998. Of the 394,600 rental units in 2011, 84,400 were extremely low rent or very low rent units. In addition, 51,700 units were non-market; that is, they were either assisted or offered for no cash rent. These three categories accounted for 34.5 percent of the 2011 rental stock. The three highest rent categories comprised 30.9 percent of the rental stock. Moves from a more affordable category (sometimes called gentrification) exceeded moves from a less affordable category (sometimes called filtration)—29.3 percent of all 2011 units compared to 22.6 percent. Of the 394,600 rental units in 2011, 22.6 percent were not rental in 1998 (89,300 units). The largest proportion of these gains was due to changes in tenure, with 41,100 rental units having been owner-occupied or vacant for sale in 1998.

## 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 1998 and 2011 housing stocks) and one oval (units added through new construction between 1998 and 2011). No one estimates the other three ovals: the number of units that belong to both the 1998 and 2011 housing stock, units lost to the housing stock between 1998 and 2011, and other additions to the housing stock between 1998 and 2011.

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

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

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

CINCH analysis has three goals:<sup>11</sup>

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

The AHS has four features that make CINCH analysis possible:

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

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

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<sup>11</sup> Previous CINCH analyses have distinguished between the “status” of a unit with respect to the housing stock (e.g., existing as a nonresidential structure) and the “characteristics” of the unit or its occupants (e.g., rental vs. owner-occupied, or race of householder). This report uses this same distinction. Also adopting previous CINCH terminology, Appendix A will refer to the more recent AHS survey year, 2011, as the current year and the previous AHS survey year, 1998, 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 1998 and 2011. In some cases, there may be no status, (e.g., not yet constructed in 1998) 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 1998 and 2011.

The exact accounting would apply only to AHS sample observations, roughly a 1-in-500 picture of the housing stock at the metropolitan level. To obtain estimates of the magnitude of actual changes in the housing stock, one needs to apply weights to the sampled units. When weights are applied, the accounting will no longer be exact because units have different weights in different years.<sup>12</sup> For example, the exact accounting might show that 2,500 sample units that were rental in 1998 became owner-occupied or vacant for sale in 2011. To estimate the number of units in the national housing stock that were rental in 1998 and became owner-occupied in 2011, one would need to apply weights. However, using 1998 weights would produce a different estimate than using 2011 weights. There is no conceptual reason to favor the answer using 1998 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 (1998) 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 (1998). The goal here is to explain where the units comprising the current year housing stock came from. Backward-looking analysis takes the current-year housing stock as given and looks at the source of these units, either in the base year or in new construction or other additions.

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<sup>12</sup> The Census Bureau assigns both a pure weight (the inverse of the probability of selection) and a final weight to each AHS observation. The final weights are designed to sum up to independent estimates of the total housing stock. The pure weights will vary over observations within a given AHS survey because of stratification in drawing the sample. Generally, pure weights do not vary across survey years. The final weights will differ over observations within a given AHS because the Census Bureau makes adjustments for various factors affecting the sample. The final weights of a given observation will also vary between AHS surveys because of changes in the housing stock.

## Why changes in geography boundaries affect CINCH analysis

The analysis in this report applies only to that portion of the metropolitan area that was common to the metropolitan area as defined in both 1998 and 2011, and the application to the common area is not precise for the following reasons:

- For forward-looking analysis (1998 to 2011), we observe only those sample units in the geography common to both 1998 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 1998 geography. Since the common area is smaller than the 1998 geography, the counts are overestimates for the common area.
- For the backward-looking analysis (2011 from 1998), we observe (a) sample units that were in the common area in 1998 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 1998 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 1998 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 1998 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 1998.

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 1998 housing stock by 2011. There are three possible dispositions of 1998 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 1998. There are three possible sources of 2011 units:

- Units that existed in 1998 with the same characteristics (or serving the same market).

- Units that existed in 1998 but with different characteristics (or serving a different market).
- Units that are additions to the housing stock between 1998 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 (1998 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 1998 to 2011.

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



create a new combination at a different location. For this reason, manufactured houses that move from one lot to another are treated as both losses and additions.<sup>13</sup>

- Column G is the CINCH estimate of the number of units from column B that became nonresidential at the end of the period. For example, a real estate firm, a tax preparation office, a palm reader, or some other business might buy or rent a house to use for business rather than residential purposes.<sup>14</sup>
- Column H is the CINCH estimate of the number of units from column B that were demolished or were destroyed by fires or natural disasters by 2011.
- Column I is the CINCH estimate of the number of units from column B that in 2011 were condemned or were no longer usable for housing because of extensive damage.
- Column J is the CINCH estimate of the number of units from column B that were lost by 2011 for other reasons.

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

### ***Columns Unique to Backward-Looking Tables***

In backward-looking tables, columns E through J track where units came from that are part of the housing stock in 2011 but were not part of the 1998 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 1998.
- Column H is the CINCH estimate of the number of units from column B that were newly constructed between 1998 and 2011. Note: Generally, in Backward-Looking Table A, there will be units in column H with year-built data substantially earlier than the survey year. There are three explanations for this apparent inconsistency. (1) With the exception of manufactured houses, presence in column H is determined by information from the

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<sup>13</sup> The AHS does not track what happens to a house or mobile home that is moved off of a lot that is part of the AHS sample, and does not inquire about the previous history of a unit that is moved on to a lot that is part of the AHS sample.

<sup>14</sup> If the owner or tenant both lives in a unit and conducts business out of the unit, the AHS considers the unit to be residential. Nonresidential, therefore, means strictly no residential use.

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

- Column I is the CINCH estimate of the number of units from column B that were added by 2011 from units that were structurally unsound in 1998.<sup>15</sup>
- Column J is the CINCH estimate of the number of units from column B that were added by 2011 from units that had been temporarily lost to the stock in 1998 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 1998 housing stock relate to the 2011 housing stock. Column A estimates the number of units in each affordability category in 1998. Columns B through L explain where the 1998 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 1998 units that are not in the 2011 housing stock; these can be either temporary or permanent losses to the stock.

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

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

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<sup>15</sup> These units had codes that identified them as “occupancy prohibited” or “interior exposed to the elements.”

Backward-Looking Rental Dynamics Table 1 details by affordability category where the rental units in the 2011 housing stock came from with respect to the 1998 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 1998, they will be counted in columns B through I, depending upon how affordable they are in 1998.
- 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 1998 are counted in column K.
- Column L counts rental units that were newly constructed between 1998 and 2011.
- Column M counts rental units that were added to the housing stock after 1998 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 13-year period; for example, a unit that is low rent in 1998 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 1998 and 2011.

**Forward-Looking Table A: Housing Characteristics, San Francisco**

	A	B	C	D	E	F	G	H	I	J	
Row	Characteristics	Present in 1998	1998 units present in 2011	Change in characteristics	1998 units lost due to conversion/merger	1998 house or mobile home moved out	1998 units changed to nonresidential use	1998 units lost through demolition or disaster	1998 units badly damaged or condemned	1998 units lost in other ways	Row
1	Housing stock	700,300	693,700	0	1,700	0	1,200	1,300	800	1,500	1
	Occupancy status										
2	Occupied	663,300	616,000	42,000	1,300	0	1,200	800	700	1,200	2
3	Vacant	35,000	4,700	29,200	200	0	0	500	200	300	3
4	Seasonal	2,000	0	1,700	200	0	0	0	0	0	4
	Units in structure										
5	1, detached	333,300	331,000	0	500	0	600	300	300	600	5
6	1, attached	71,900	70,700	0	0	0	0	600	200	300	6
7	2 to 4	103,400	101,300	0	1,200	0	200	0	200	500	7
8	5 to 9	50,000	49,500	0	0	0	200	200	0	200	8
9	10 to 19	49,200	49,200	0	0	0	0	0	0	0	9
10	20 to 49	42,400	42,400	0	0	0	0	0	0	0	10
11	50 or more	44,000	43,400	0	0	0	300	200	200	0	11
12	Manufactured/mobile home	6,000	6,000	0	0	0	0	0	0	0	12

	A	B	C	D	E	F	G	H	I	J	
Row	Characteristics	Present in 1998	1998 units present in 2011	Change in characteristics	1998 units lost due to conversion/ merger	1998 house or mobile home moved out	1998 units changed to nonresidential use	1998 units lost through demolition or disaster	1998 units badly damaged or condemned	1998 units lost in other ways	Row
	Year built										
16	1995–1999	9,000	9,000	0	0	0	0	0	0	0	16
17	1990–1994	12,500	12,500	0	0	0	0	0	0	0	17
18	1985–1989	29,800	29,100	0	0	0	200	500	0	0	18
19	1980–1984	16,500	16,500	0	0	0	0	0	0	0	19
20	1975–1979	31,300	31,100	0	0	0	0	200	0	0	20
21	1970–1974	56,900	56,600	0	0	0	0	200	0	200	21
22	1960–1969	97,100	95,800	0	300	0	200	200	200	500	22
23	1950–1959	133,100	132,100	0	500	0	200	200	200	0	23
24	1940–1949	95,800	95,700	0	0	0	0	0	0	200	24
25	1930–1939	65,800	65,100	0	300	0	200	0	200	0	25
26	1920–1929	65,200	64,300	0	300	0	200	200	0	300	26
27	1919 or earlier	87,200	85,900	0	300	0	300	0	300	300	27
	Rooms										
28	1	16,800	11,200	5,400	0	0	200	0	0	0	28
29	2	31,300	10,800	19,800	500	0	200	0	0	0	29
30	3	133,500	85,000	46,600	600	0	500	300	200	300	30
31	4	141,100	83,400	56,600	200	0	200	200	300	300	31
32	5	128,200	70,400	56,700	200	0	0	300	200	500	32
33	6	106,600	49,000	56,700	200	0	0	500	200	0	33
34	7	69,200	25,500	43,400	200	0	200	0	0	0	34
35	8	37,600	15,100	22,500	0	0	0	0	0	0	35
36	9	21,600	6,500	15,100	0	0	0	0	0	0	36
37	10 or more	14,400	4,700	9,300	0	0	0	0	0	300	37

	A	B	C	D	E	F	G	H	I	J	
Row	Characteristics	Present in 1998	1998 units present in 2011	Change in characteristics	1998 units lost due to conversion/ merger	1998 house or mobile home moved out	1998 units changed to nonresidential use	1998 units lost through demolition or disaster	1998 units badly damaged or condemned	1998 units lost in other ways	Row
	Bedrooms										
38	None	19,500	12,700	6,600	0	0	200	0	0	0	38
39	1	185,100	134,300	48,400	900	0	800	300	200	200	39
40	2	214,900	157,200	56,200	300	0	0	200	300	600	40
41	3	189,000	137,200	49,700	500	0	0	800	300	500	41
42	4 or more	91,800	66,800	24,600	0	0	200	0	0	200	42
43	Multiunit structures	289,100	285,900	0	1,200	0	700	300	300	600	43
	Stories in structure										
44	1	23,000	22,700	0	300	0	0	0	0	0	44
45	2	76,800	75,800	0	500	0	0	200	200	200	45
46	3	106,800	106,000	0	300	0	200	0	0	300	46
47	4 to 6	59,000	58,100	0	200	0	300	200	200	200	47
48	7 or more	23,500	23,300	0	0	0	200	0	0	0	48

**Forward-Looking Table B: Unit Quality, San Francisco**

	A	B	C	D	E	F	G	H	I	J	
Row	Characteristics	Present in 1998	1998 units present in 2011	Change in characteristics	1998 units lost due to conversion/merger	1998 house or mobile home moved out	1998 units changed to nonresidential use	1998 units lost through demolition or disaster	1998 units badly damaged or condemned	1998 units lost in other ways	Row
1	Occupied units	663,300	616,000	42,000	1,300	0	1,200	800	700	1,200	1
2	With complete kitchen	629,400	571,000	54,000	1,000	0	800	800	700	1,100	2
3	Lacking complete kitchen facilities	33,900	8,900	24,100	300	0	400	0	0	200	3
4	With complete plumbing	644,500	590,400	49,400	1,300	0	1,000	700	500	1,200	4
5	Lack some plumbing	18,800	6,400	11,800	0	0	200	200	200	0	5
6	No hot piped water	1,700	0	1,500	0	0	200	0	0	0	6
7	No bathtub/shower	7,900	5,000	2,700	0	0	200	0	0	0	7
8	No flush toilet	7,900	5,300	2,400	0	0	200	0	0	0	8
9	No exclusive use	10,600	0	10,300	0	0	0	200	200	0	9
	Water										
10	Public/private water	657,200	609,300	42,500	1,300	0	1,200	800	700	1,200	10
11	Well serving 1 to 5 units	3,400	2,800	500	0	0	0	0	0	0	11
12	Other water source	2,800	500	2,300	0	0	0	0	0	0	12
	Sewer										
13	Public sewer	648,100	602,100	41,300	1,200	0	1,000	800	700	1,100	13
14	Septic tank/cesspool	14,900	10,300	4,100	200	0	200	0	0	200	14
15	Other	200	0	200	0	0	0	0	0	0	15

	A	B	C	D	E	F	G	H	I	J	
Row	Characteristics	Present in 1998	1998 units present in 2011	Change in characteristics	1998 units lost due to conversion/merger	1998 house or mobile home moved out	1998 units changed to nonresidential use	1998 units lost through demolition or disaster	1998 units badly damaged or condemned	1998 units lost in other ways	Row
16	Severe problems	26,800	6,900	19,400	0	0	200	200	200	0	16
17	Plumbing	18,800	6,400	11,800	0	0	200	200	200	0	17
18	Heating	6,800	200	6,500	0	0	0	0	0	0	18
19	Electric	700	0	700	0	0	0	0	0	0	19
20	Upkeep	500	0	500	0	0	0	0	0	0	20
21	Moderate problems	41,800	4,200	36,400	300	0	300	300	0	200	21
22	Plumbing	1,700	0	1,700	0	0	0	0	0	0	22
23	Heating	1,900	1,500	200	0	0	0	200	0	0	23
24	Kitchen	33,900	8,900	24,100	300	0	400	0	0	200	24
25	Upkeep	17,300	200	16,500	0	0	200	300	0	0	25



**Forward-Looking Table C: Occupant Characteristics, San Francisco**

	A	B	C	D	E	F	G	H	I	J	
Row	Characteristics	Present in 1998	1998 units present in 2011	Change in characteristics	1998 units lost due to conversion/merger	1998 house or mobile home moved out	1998 units changed to nonresidential use	1998 units lost through demolition or disaster	1998 units badly damaged or condemned	1998 units lost in other ways	Row
1	Occupied units	663,300	616,000	42,000	1,300	0	1,200	800	700	1,200	1
	Age of householder										
2	Under 65	526,100	401,600	119,900	1,300	0	900	700	500	1,200	2
3	65 to 74	68,200	5,300	62,700	0	0	0	200	0	0	3
4	75 or older	69,000	17,500	51,000	0	0	300	0	200	0	4
	Children in household										
5	Some	201,100	76,000	123,500	300	0	200	300	200	500	5
6	None	462,200	342,600	115,900	1,000	0	1,000	500	500	700	6
	Race and ethnicity										
7	White	457,600	360,100	93,400	1,200	0	1,000	500	500	800	7
8	Hispanic	36,100	19,000	16,100	200	0	300	300	0	200	8
9	Non-Hispanic	421,400	302,000	116,400	1,000	0	700	200	500	700	9
10	Black	35,000	14,300	20,100	0	0	0	300	200	200	10
11	Hispanic	1,000	300	800	0	0	0	0	0	0	11
12	Non-Hispanic	34,000	13,500	19,800	0	0	0	300	200	200	12
13	American Indian or Alaska Native alone	4,100	300	3,800	0	0	0	0	0	0	13
14	Asian or Pacific Islander	123,200	74,700	47,900	200	0	200	0	0	200	14
16	Other	43,500	800	42,700	0	0	0	0	0	0	16
17	Hispanic or Latino (any race)	71,700	42,600	28,000	200	0	300	300	0	200	17

	A	B	C	D	E	F	G	H	I	J	
Row	Characteristics	Present in 1998	1998 units present in 2011	Change in characteristics	1998 units lost due to conversion/merger	1998 house or mobile home moved out	1998 units changed to nonresidential use	1998 units lost through demolition or disaster	1998 units badly damaged or condemned	1998 units lost in other ways	Row
	Income sources of families and primary individuals										
18	Wages and salaries	486,800	334,100	148,700	1,300	0	500	500	500	1,100	18
20	Dividends, interest, or rent	366,200	158,800	205,200	700	0	200	200	500	700	20
21	Public assistance or public welfare	44,000	2,600	40,500	300	0	200	300	0	0	21

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

	A	B	C	D	E	F	G	H	I	J	
Row	Characteristics	Present in 1998	1998 units present in 2011	Change in characteristics	1998 units lost due to conversion/merger	1998 house or mobile home moved out	1998 units changed to nonresidential use	1998 units lost through demolition or disaster	1998 units badly damaged or condemned	1998 units lost in other ways	Row
1	Occupied units	663,300	616,000	42,000	1,300	0	1,200	800	700	1,200	1
	Tenure										
2	Owner-occupied	323,500	268,300	54,300	300	0	0	0	0	600	2
3	Homeownership rate	48.8%									3
4	Renter-occupied	339,800	271,500	63,900	1,000	0	1,200	800	700	700	4
	Renter monthly housing costs										
5	No cash rent	7,100	800	6,000	200	0	200	0	0	0	5
6	Less than \$350	35,700	10,200	24,500	200	0	500	300	0	0	6
7	\$350 to \$599	47,300	5,200	41,300	300	0	0	200	300	0	7
8	\$600 to \$799	55,900	3,200	52,300	0	0	200	200	0	0	8
9	\$800 to \$1,249	118,100	17,300	100,100	200	0	0	200	0	300	9
10	\$1,250 or more	75,800	45,400	29,200	200	0	300	0	300	300	10
	Renter household income										
11	Less than \$15,000	74,600	20,400	52,800	200	0	500	300	300	0	11
12	\$15,000 to \$29,999	54,700	10,000	43,900	200	0	200	500	0	0	12
13	\$30,000 to \$49,999	62,500	10,200	51,100	500	0	400	0	0	300	13
14	\$50,000 to \$99,999	65,300	18,900	46,100	0	0	0	0	0	300	14
15	\$100,000 or more	82,800	24,100	58,000	200	0	200	0	300	0	15

	A	B	C	D	E	F	G	H	I	J	
Row	Characteristics	Present in 1998	1998 units present in 2011	Change in characteristics	1998 units lost due to conversion/merger	1998 house or mobile home moved out	1998 units changed to nonresidential use	1998 units lost through demolition or disaster	1998 units badly damaged or condemned	1998 units lost in other ways	Row
	Owner monthly housing costs										
16	Less than \$350	54,100	5,100	48,900	0	0	0	0	0	0	16
17	\$350 to \$599	50,300	8,300	42,000	0	0	0	0	0	0	17
18	\$600 to \$799	20,800	2,100	18,800	0	0	0	0	0	0	18
19	\$800 to \$1,249	36,900	4,100	32,600	0	0	0	0	0	200	19
20	\$1,250 or more	161,400	114,200	46,500	300	0	0	0	0	300	20
	Owner household income										
21	Less than \$15,000	30,500	4,700	25,900	0	0	0	0	0	0	21
22	\$15,000 to \$29,999	29,500	3,900	25,600	0	0	0	0	0	0	22
23	\$30,000 to \$49,999	42,700	4,900	37,900	0	0	0	0	0	0	23
24	\$50,000 to \$99,999	89,300	21,000	68,000	200	0	0	0	0	200	24
25	\$100,000 or more	131,400	73,500	57,300	200	0	0	0	0	400	25

**Backward-Looking Table A: Housing Characteristics, San Francisco**

	A	B	C	D	E	F	G	H	I	J	
Row	2011 characteristics	Present in 2011	2011 units present in 1998	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 1998 stock	2011 units added in other ways	Row
1	Housing stock	766,500	700,100	0	5,100	0	3,800	50,700	1,700	5,100	1
	Occupancy status										
2	Occupied	720,000	627,100	33,800	4,600	0	3,200	46,900	1,200	3,300	2
3	Vacant	42,700	4,100	32,100	500	0	600	3,600	600	1,300	3
4	Seasonal	3,800	100	3,000	0	0	0	300	0	500	4
	Units in structure										
5	1, detached	316,800	298,100	0	1,400	0	500	14,800	400	1,500	5
6	1, attached	58,000	52,300	0	300	0	0	4,700	200	500	6
7	2 to 4	124,300	113,900	0	3,400	0	900	4,200	200	1,700	7
8	5 to 9	68,100	64,900	0	0	0	500	2,100	700	0	8
9	10 to 19	60,000	56,300	0	0	0	200	3,300	200	0	9
10	20 to 49	60,800	55,800	0	0	0	700	4,300	0	0	10
11	50 or more	74,500	54,900	0	0	0	900	17,400	0	1,300	11
12	Manufactured/mobile home	4,100	4,100	0	0	0	0	0	0	0	12

	A	B	C	D	E	F	G	H	I	J	
Row	2011 characteristics	Present in 2011	2011 units present in 1998	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 1998 stock	2011 units added in other ways	Row
	Year built										
13	2010–2014	5,000	0	0	300	0	0	4,700	0	0	13
14	2005–2009	21,300	0	0	0	0	200	20,700	0	500	14
15	2000–2004	14,600	0	0	0	0	200	14,100	0	300	15
16	1995–1999	21,300	9,200	0	0	0	700	10,300	0	1,100	16
17	1990–1994	14,200	12,900	0	300	0	0	700	0	200	17
18	1985–1989	30,800	29,800	0	300	0	300	0	0	400	18
19	1980–1984	17,600	17,300	0	0	0	0	0	0	200	19
20	1975–1979	31,400	30,900	0	300	0	0	0	200	0	20
21	1970–1974	57,000	55,900	0	0	0	200	200	0	600	21
22	1960–1969	98,800	97,200	0	900	0	300	0	400	0	22
23	1950–1959	133,300	132,300	0	800	0	0	0	200	0	23
24	1940–1949	98,100	96,500	0	900	0	0	0	200	500	24
25	1930–1939	67,600	66,300	0	900	0	0	0	0	500	25
26	1920–1929	69,200	67,900	0	0	0	200	0	500	600	26
27	1919 or earlier	86,400	83,900	0	500	0	1,600	0	200	200	27

	A	B	C	D	E	F	G	H	I	J	
Row	2011 characteristics	Present in 2011	2011 units present in 1998	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 1998 stock	2011 units added in other ways	Row
	Rooms										
28	1	22,300	11,300	8,100	300	0	1,400	500	0	700	28
29	2	34,800	11,300	19,900	300	0	500	2,200	0	500	29
30	3	134,300	87,900	32,400	2,000	0	500	9,900	0	1,600	30
31	4	145,500	84,800	46,000	1,500	0	400	11,900	200	700	31
32	5	152,800	71,000	69,500	800	0	200	9,900	500	800	32
33	6	117,900	49,300	60,900	200	0	500	6,100	400	500	33
34	7	74,000	25,500	45,200	0	0	0	3,100	200	0	34
35	8	44,400	15,100	26,400	0	0	0	2,400	200	200	35
36	9	22,100	6,500	13,100	0	0	0	2,500	0	0	36
37	10 or more	18,500	4,800	11,100	0	0	200	2,200	200	0	37
	Bedrooms										
38	None	45,000	12,900	27,300	600	0	1,400	2,300	0	700	38
39	1	179,200	139,000	22,900	1,400	0	1,200	12,300	0	2,300	39
40	2	226,700	159,200	47,500	2,300	0	400	15,500	400	1,300	40
41	3	205,100	137,200	53,400	800	0	500	12,000	700	500	41
42	4 or more	110,500	66,500	34,300	0	0	200	8,700	600	200	42
43	Multiunit structures	387,600	345,600	0	3,400	0	3,200	31,200	1,100	3,100	43
	Stories in structure										
44	1	23,400	21,800	0	0	0	200	1,200	0	200	44
45	2	98,000	91,000	0	2,300	0	1,200	2,100	1,100	300	45
46	3	142,500	133,500	0	900	0	900	6,300	0	900	46
47	4 to 6	85,800	71,600	0	200	0	600	12,100	0	1,200	47
48	7 or more	37,800	27,700	0	0	0	200	9,500	0	400	48

**Backward-Looking Table B: Unit Quality, San Francisco**

	A	B	C	D	E	F	G	H	I	J	
Row	2011 characteristics	Present in 2011	2011 units present in 1998	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 1998 stock	2011 units added in other ways	Row
1	Occupied units	720,000	627,100	33,800	4,600	0	3,200	46,900	1,200	3,300	1
2	With complete kitchen	688,200	579,900	52,400	4,000	0	2,000	45,700	900	3,300	2
3	Lacking complete kitchen facilities	31,800	9,300	19,300	600	0	1,200	1,200	200	0	3
4	With complete plumbing	699,800	600,400	41,800	4,600	0	2,500	46,300	1,200	3,000	4
5	Lack some plumbing	20,200	6,600	12,000	0	0	700	600	0	300	5
6	No hot piped water										6
7	No bathtub/shower	9,200	5,200	3,300	0	0	700	0	0	0	7
8	No flush toilet	9,200	5,500	3,000	0	0	700	0	0	0	8
9	No exclusive use	11,000	0	10,100	0	0	0	600	0	300	9
	Water										
10	Public/private water	714,300	620,300	35,600	4,600	0	2,700	46,600	1,200	3,300	10
11	Well serving 1 to 5 units	4,500	2,800	1,000	0	0	300	300	0	0	11
12	Other water source	1,300	500	500	0	0	200	0	0	0	12
	Sewer										
13	Public sewer	706,300	613,100	34,800	4,600	0	2,700	46,600	1,200	3,300	13
14	Septic tank/cesspool	13,000	10,400	2,000	0	0	300	300	0	0	14
15	Other	700	0	500	0	0	200	0	0	0	15



	A	B	C	D	E	F	G	H	I	J	
Row	2011 characteristics	Present in 2011	2011 units present in 1998	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 1998 stock	2011 units added in other ways	Row
16	Severe problems	28,900	7,100	19,700	0	0	700	600	500	300	16
17	Plumbing	20,200	6,600	12,000	0	0	700	600	0	300	17
18	Heating	8,500	300	7,700	0	0	0	0	500	0	18
19	Electric	300	0	300	0	0	0	0	0	0	19
20	Upkeep	700	0	700	0	0	0	0	0	0	20
21	Moderate problems	31,700	4,400	24,600	600	0	700	1,200	0	300	21
22	Plumbing	2,100	0	1,800	0	0	0	0	0	300	22
23	Heating	2,000	1,500	500	0	0	0	0	0	0	23
24	Kitchen	31,800	9,300	19,300	600	0	1,200	1,200	200	0	24
25	Upkeep	7,700	300	7,200	0	0	0	0	200	0	25

**Backward-Looking Table C: Occupant Characteristics, San Francisco**

	A	B	C	D	E	F	G	H	I	J	
Row	2011 characteristics	Present in 2011	2011 units present in 1998	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 1998 stock	2011 units added in other ways	Row
1	Occupied units	720,000	627,100	33,800	4,600	0	3,200	46,900	1,200	3,300	1
	Age of householder										
2	Under 65	558,900	410,800	95,600	4,600	0	2,500	41,700	1,200	2,500	2
3	65 to 74	85,800	5,500	76,200	0	0	700	3,100	0	300	3
4	75 or older	75,400	17,900	54,800	0	0	0	2,100	0	500	4
	Children in household										
5	Some	188,800	76,600	92,900	1,700	0	300	16,300	500	500	5
6	None	531,200	350,500	140,800	2,900	0	2,900	30,600	700	2,800	6
	Race and ethnicity										
7	White	504,400	366,300	105,300	2,900	0	1,700	25,700	500	2,100	7
8	Hispanic	96,000	19,100	71,600	1,400	0	500	3,200	0	300	8
9	Non-Hispanic	408,400	307,100	73,800	1,500	0	1,200	22,500	500	1,900	9
10	Black	29,200	14,400	11,000	0	0	200	3,000	0	600	10
11	Hispanic	3,200	300	2,300	0	0	0	600	0	0	11
12	Non-Hispanic	26,000	13,600	9,200	0	0	200	2,400	0	600	12
13	American Indian or Alaska Native alone	4,500	300	3,300	0	0	0	900	0	0	13
14	Asian or Pacific Islander	170,000	79,600	69,900	1,700	0	700	17,000	500	600	14
16	Other	11,900	0	10,800	0	0	500	300	200	0	16
17	Hispanic or Latino (any race)	107,500	43,300	55,600	1,400	0	700	6,200	0	300	17

	A	B	C	D	E	F	G	H	I	J	
Row	2011 characteristics	Present in 2011	2011 units present in 1998	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 1998 stock	2011 units added in other ways	Row
	Income sources of families and primary individuals										
18	Wages and salaries	502,200	340,500	115,300	4,300	0	1,800	37,000	1,200	2,200	18
20	Dividends, interest, or rent	261,600	160,300	83,500	1,200	0	200	14,900	200	1,300	20
21	Public assistance or public welfare	10,600	2,700	6,200	300	0	200	1,200	0	0	21

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

	A	B	C	D	E	F	G	H	I	J	
Row	2011 characteristics	Present in 2011	2011 units present in 1998	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 1998 stock	2011 units added in other ways	Row
1	Occupied units	720,000	627,100	33,800	4,600	0	3,200	46,900	1,200	3,300	1
	Tenure										
2	Owner-occupied	343,100	268,800	50,100	0	0	200	22,900	0	1,100	2
3	Homeownership rate	47.7%									3
4	Renter-occupied	376,900	281,300	60,700	4,600	0	2,900	24,000	1,200	2,200	4
	Renter monthly housing costs										
5	No cash rent	8,000	800	6,900	0	0	0	300	0	0	5
6	Less than \$350	32,400	10,500	17,200	300	0	300	3,800	200	0	6
7	\$350 to \$599	27,400	5,400	19,700	0	0	1,200	800	0	300	7
8	\$600 to \$799	21,800	3,300	15,700	900	0	500	1,500	0	0	8
9	\$800 to \$1,249	67,700	18,000	43,900	1,400	0	800	2,700	0	800	9
10	\$1,250 or more	219,600	46,900	153,700	2,000	0	200	14,800	900	1,100	10
	Renter household income										
11	Less than \$15,000	63,600	21,200	36,000	600	0	900	4,700	0	300	11
12	\$15,000 to \$29,999	53,900	10,400	38,700	600	0	1,300	2,700	200	0	12
13	\$30,000 to \$49,999	60,800	10,600	43,300	1,700	0	500	3,900	200	600	13
14	\$50,000 to \$99,999	103,200	19,500	78,400	900	0	0	3,900	200	300	14
15	\$100,000 or more	95,400	24,800	59,200	800	0	200	8,800	500	1,100	15

	A	B	C	D	E	F	G	H	I	J	
Row	2011 characteristics	Present in 2011	2011 units present in 1998	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 1998 stock	2011 units added in other ways	Row
	Owner monthly housing costs										
16	Less than \$350	9,300	5,100	3,900	0	0	0	0	0	300	16
17	\$350 to \$599	30,700	8,300	22,400	0	0	0	0	0	0	17
18	\$600 to \$799	22,900	2,000	19,700	0	0	0	900	0	200	18
19	\$800 to \$1,249	34,100	4,100	28,100	0	0	0	1,900	0	0	19
20	\$1,250 or more	246,100	115,000	110,200	0	0	200	20,100	0	500	20
	Owner household income										
21	Less than \$15,000	19,700	4,700	14,000	0	0	0	900	0	0	21
22	\$15,000 to \$29,999	30,200	3,600	25,400	0	0	0	1,200	0	0	22
23	\$30,000 to \$49,999	30,500	4,700	24,000	0	0	0	1,600	0	200	23
24	\$50,000 to \$99,999	79,800	21,100	56,200	0	0	0	2,400	0	0	24
25	\$100,000 or more	182,900	73,900	91,200	0	0	200	16,800	0	800	25

**Forward-Looking Rental Dynamics Table 1: Counts, 1998–2011, San Francisco**

Affordability categories	A Total in 1998	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	54,600	21,500	3,500	2,700	2,200	7,700	3,200	2,500	2,500	5,300	2,200	1,200
Extremely low rent	27,700	2,500	8,900	4,600	1,200	3,800	1,000	700	1,000	1,500	1,800	700
Very low rent	69,500	4,400	5,900	20,200	9,500	12,800	5,400	1,200	2,200	5,500	1,800	500
Low rent	43,900	2,000	2,200	5,900	7,200	12,600	6,200	3,500	700	2,500	700	500
Moderate rent	37,200	1,000	1,200	2,000	5,700	11,100	6,300	3,700	700	3,700	1,200	500
High rent	81,100	2,200	3,700	3,300	7,900	26,500	12,000	6,100	3,500	13,800	1,700	300
Very high rent	23,800	1,500	1,500	0	300	3,000	5,700	3,400	1,500	5,000	1,300	700
Extremely high rent	16,200	200	1,000	200	500	1,000	2,000	2,900	3,500	3,200	1,500	200
Total	354,000	35,300	27,900	38,900	34,500	78,500	41,800	24,000	15,600	40,500	12,200	4,600

**Forward-Looking Rental Dynamics Table 2: Row Percentages, 1998–2011, San Francisco**

Affordability categories	A Total in 1998	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	54,600	39.4%	6.4%	4.9%	4.1%	14.1%	5.9%	4.6%	4.5%	9.7%	4.1%	2.2%
Extremely low rent	27,700	9.0%	32.3%	16.6%	4.4%	13.6%	3.5%	2.7%	3.6%	5.6%	6.4%	2.4%
Very low rent	69,500	6.3%	8.5%	29.1%	13.6%	18.4%	7.8%	1.8%	3.2%	7.9%	2.5%	0.7%
Low rent	43,900	4.5%	5.0%	13.4%	16.3%	28.7%	14.1%	7.9%	1.7%	5.6%	1.7%	1.1%
Moderate rent	37,200	2.7%	3.3%	5.3%	15.4%	29.8%	16.9%	9.9%	2.0%	10.1%	3.3%	1.4%
High rent	81,100	2.8%	4.5%	4.0%	9.8%	32.6%	14.8%	7.6%	4.3%	17.1%	2.1%	0.4%
Very high rent	23,800	6.2%	6.4%	0.0%	1.1%	12.5%	23.9%	14.4%	6.2%	21.1%	5.4%	2.8%
Extremely high rent	16,200	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	354,000	10.0%	7.9%	11.0%	9.7%	22.1%	11.8%	6.8%	4.4%	11.5%	3.4%	1.3%

**Backward-Looking Rental Dynamics Table 1: Counts, 1998–2011, San Francisco**

Affordability categories	A Total in 2011	B Non- market in 1998	C Extremely low rent in 1998	D Very low rent in 1998	E Low rent in 1998	F Moderate rent in 1998	G High rent in 1998	H Very high rent in 1998	I Extremely high rent in 1998	J Owner- occupied in 1998	K Seasonal or related vacant in 1998	L New construction	M Added in other ways
Non-market	51,700	22,000	2,500	4,600	2,000	1,000	2,300	1,500	300	4,300	1,000	8,300	1,800
Extremely low rent	36,300	3,600	9,200	6,000	2,300	1,300	3,700	1,500	1,000	4,500	500	1,100	1,700
Very low rent	48,100	2,800	4,700	20,900	6,200	2,000	3,300	0	300	3,200	800	1,800	2,200
Low rent	40,400	2,300	1,300	9,800	7,300	5,800	8,200	300	500	1,200	1,500	0	2,200
Moderate rent	95,900	8,000	3,900	13,300	13,000	11,600	27,300	3,100	1,000	8,300	3,600	1,800	1,100
High rent	55,200	3,200	1,000	5,600	6,200	6,500	12,500	5,900	2,100	8,600	1,200	1,100	1,200
Very high rent	33,900	2,600	700	1,300	3,600	3,900	6,400	3,500	3,000	4,600	1,500	2,100	700
Extremely high rent	33,000	2,600	1,000	2,300	700	800	3,500	1,500	3,600	6,400	800	8,800	1,200
Total	394,600	46,900	24,300	63,800	41,300	32,800	67,200	17,300	11,700	41,100	10,900	25,100	12,200

**Backward-Looking Rental Dynamics Table 2: Row Percentages, 1998–2011, San Francisco**

Affordability categories	A Total in 2011	B Non- market in 1998	C Extremely low rent in 1998	D Very low rent in 1998	E Low rent in 1998	F Moderate rent in 1998	G High rent in 1998	H Very high rent in 1998	I Extremely high rent in 1998	J Owner- occupied in 1998	K Seasonal or related vacant in 1998	L New construction	M Added in other ways
Non-market	51,700	42.5%	4.9%	9.0%	3.9%	2.0%	4.5%	2.9%	0.5%	8.4%	2.0%	16.1%	3.4%
Extremely low rent	36,300	9.8%	25.3%	16.4%	6.4%	3.5%	10.2%	4.2%	2.8%	12.3%	1.3%	3.1%	4.6%
Very low rent	48,100	5.8%	9.8%	43.5%	12.8%	4.1%	6.8%	0.0%	0.5%	6.7%	1.6%	3.8%	4.7%
Low rent	40,400	5.6%	3.2%	24.2%	18.2%	14.4%	20.3%	0.6%	1.3%	3.0%	3.7%	0.0%	5.5%
Moderate rent	95,900	8.3%	4.0%	13.9%	13.5%	12.1%	28.5%	3.2%	1.0%	8.6%	3.7%	1.9%	1.1%
High rent	55,200	5.9%	1.8%	10.2%	11.3%	11.8%	22.6%	10.7%	3.7%	15.5%	2.3%	2.1%	2.3%
Very high rent	33,900	7.6%	2.1%	3.8%	10.5%	11.4%	18.8%	10.4%	8.9%	13.4%	4.5%	6.2%	2.2%
Extremely high rent	33,000	7.8%	2.9%	6.9%	2.2%	2.3%	10.5%	4.6%	10.8%	19.3%	2.3%	26.7%	3.7%
Total	394,600	11.9%	6.1%	16.2%	10.5%	8.3%	17.0%	4.4%	3.0%	10.4%	2.8%	6.4%	3.1%