Estimating the Right-Sized Affordable Housing Gap

Rochester, NY

Harvard-Bloomberg City Leadership Initiative
Andrea Ringer / Adam Staveski

TEAM BIOS

Andrea Ringer, MPP '21

Andrea is a first-year MPP student who has experience using quantitative research methods to evaluate programs run by local governments and nonprofit organizations. Prior to HKS, she worked as a data analyst and project manager for an economic research lab in South Bend, Indiana, where she focused on evaluating programs in education, workforce development, and homelessness prevention.

After HKS, Andrea plans to shift to work at the city government level. She is interested in policies that promote community engagement and equitable economic development.

Adam Staveski, MPP '21

Adam is a first-year MPP student at the Harvard Kennedy School. Prior to HKS, Adam worked as an Assistant Analyst at the Congressional Budget Office in Washington, DC. There, he worked with a team of 20 PhD economists to develop macroeconomic forecasts of the U.S. economy. He was most heavily involved with projects pertaining to international trade, labor force participation, and housing markets.

At HKS, Adam has shifted his focus to urban economic policy. As a Rochester native, he is excited to apply his skills and passion to the benefit of his hometown.

1. *METHODOLOGY*
2. *RIGHT-SIZED*
3. *AFFORDABLE*
4. *GAP ESTIMATE*
5. *NEXT STEPS*

Methodology: *Framework for Analysis*

Estimating the Gap in Affordable and Available Rental Units for Families

APRIL 2019 | WHITNEY AIRGOOD-OBRYCKI & JENNIFER MOLINSKY

JCHS | JOINT CENTER FOR HOUSING STUDIES

1 **Right-Sized**
Does the household have 2.0 people or less living in each bedroom?

2 **Affordable**
Is the household paying 30% or less of its adjusted gross income on rent?

3 **Available**
Is the shortfall due to a supply shortage or poor household sorting?

Methodology: Data Sources

American Community Survey (ACS) →
- Nationally representative survey
- Most current and reliable data source for local statistics
- Data on demographic and housing characteristics

Public Use Microdata Sample (PUMS) →
- ACS product with more detail than summary tables
- Household and individual-level responses
- No geography smaller than PUMAs

PUMS 1-Year Data File →
- Samples 1% of the population each year
- Provides more timely estimates than 5-year file
- Estimates are more uncertain

PUMS 5-Year Data File →
- Samples 5% of the population every 5 years
- Provides less timely estimates than 1-year file
- Estimates have greater precision

Methodology: Population of Interest

Renter Households

52,366

+/- 1,512

Renter households

Renter Individuals

118,357

+/- 3,237

Renter individuals

2. RIGHT-SIZED

Right-Sized: Standards of Overcrowding

Bedroom Standard

- How many people can live in a bedroom before it becomes overcrowded?

- In the United States, HUD sometimes uses a standard of **2.0 people per livable bedroom**

- In Canada, national occupancy standards require no more than 2.0 people per livable bedroom (with restrictions)

Room Standard

- How many people can live in a room, on average, before it becomes overcrowded?

- In the United States, HUD uses a standard of **1.0 people per livable room**

- In the United Kingdom, health agencies use a standard of 1.5 people per livable room

Right-Sized: Overcrowding Rubric

Overcrowding Rubric: 2.0 People Per Bedroom Standard			
Household Size	Bedroom Need	Overcrowding Standard (BR)	Severe Overcrowding Standard (BR)
1	0	--	--
2	1	0	--
3	2	1	0
4	2	1	0
5	3	2	1
6	3	2	1
7	4	3	2
8	4	3	2
9	5	4	3
10	5	4	3

Right-Sized: Quantifying Overcrowding

Renter Households

1,501

+/- 370

Renter households are overcrowded

2.9%

+/- 0.7%

Of renter households are overcrowded

Renter Individuals

6,709

+/- 1,533

Renters are overcrowded

5.7%

+/- 1.3%

Of renters are overcrowded

Right-Sized: Quantifying Overcrowding

Severe Overcrowding as a Share of Overcrowding

Legend: Overcrowded (gray), Severely Overcrowded (yellow)

Households: 205
People: 1,226
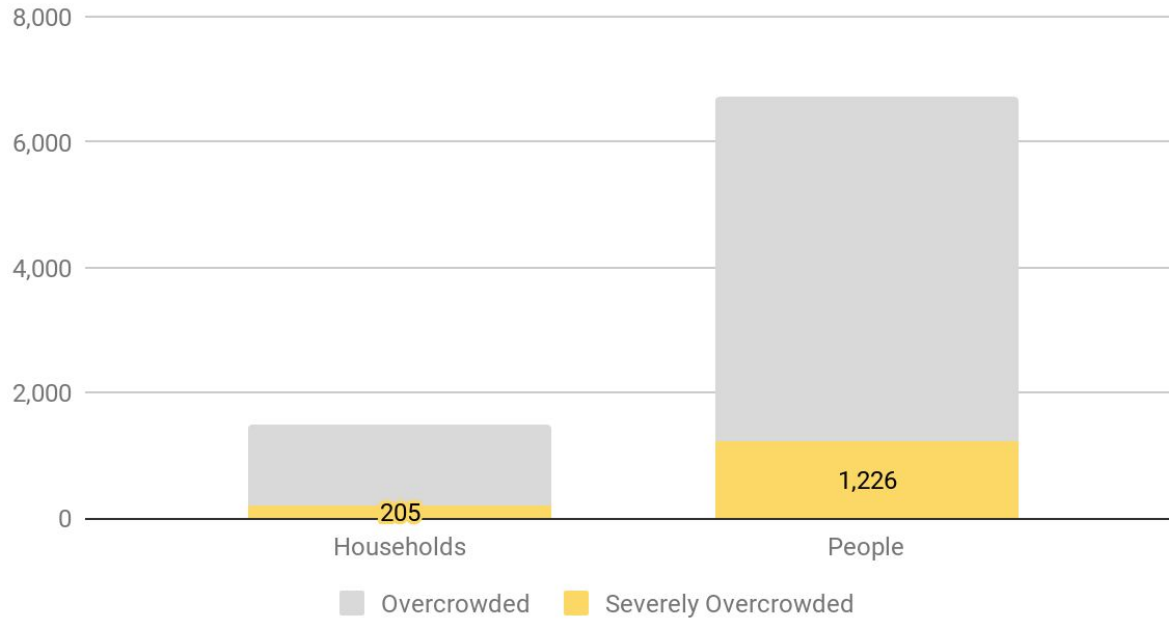
Right-Sized: Demographics of Overcrowding

Household-Level

- Household income
- Household size
- Household type
- Presence of children

Person-Level

- Race
- Sex
- Age
- College student
- Citizenship status
- Occupation

Right-Sized: Computing the Likelihood of Overcrowding

Computing the Likelihood of Overcrowding					
	Crowded		Not Crowded		Likelihood (%)
Citizen at Birth	5,380	80%	103,348	93%	**4.9%**
Naturalized Citizen	369	6%	3,024	3%	**10.9%**
Non-Citizen	960	14%	5,276	5%	**15.4%**
TOTAL:	**6,709**	**100%**	**111,648**	**100%**	**5.7%**

$$5,380 \div 108,728 = 4.9\%$$

Right-Sized: Demographics of Overcrowding

Demographic Analysis of Overcrowded Individuals in Rochester, NY		
Rank	**If you are a(n) _____ renter living in Rochester, NY...**	**Then there is a _____% chance you are living in an overcrowded household.**
1	7+ person household	27.8%
2	Asian	26.9%
3	Married person	16.4%
4	Non-citizen	15.4%
5	5-6 person household	14.6%
6	Parent of a child under 6	12.0%
7	Naturalized citizen	10.9%
8	Child ages 0-17	8.5%
	AVERAGE RESIDENT	*5.7%*

⟵ 5x

⟵ 3x

⟵ 2x

Right-Sized: Income Quintiles of Overcrowded

Middle-Income Households Have The Most Overcrowding

Income Quintile	Overcrowded Households
Poorest 20%	198
Second-Poorest 20%	236
Middle 20%	341
Second-Richest 20%	399
Richest 20%	327
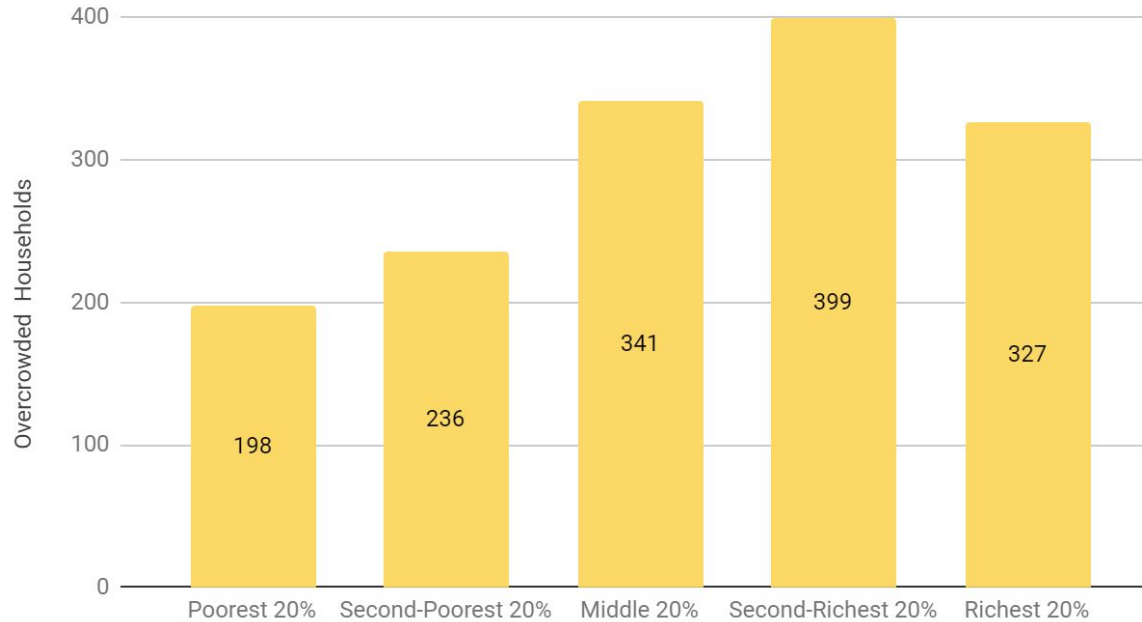
Right-Sized: Race and Citizenship of Overcrowded

Asian Immigrants Comprise a Large Share of the Overcrowded Population			
	Native-Born Citizen	**Naturalized Citizen**	**Non-Citizen**	**Immigrant Share (%)**
White	1,415	0	14	**1%**
Black	2,387	127	148	**10%**
Hispanic	1,257	40	175	**15%**
Asian	74	202	623	**92%**
Other	247	0	0	**0%**
TOTAL:	**5,380**	**369**	**960**	**20%**

Right-Sized: *Occupations of Overcrowded*

Occupations of Overcrowded Individuals (Ages 18-64)				
Rank	**Occupation Category**	**Occupation Description**	**Count**	**Percent**
1	Not employed	Not in labor force / Unemployed	993	27%
2	Sales	Retail sales / Professional sales	388	11%
3	Production Workers	Metal workers / Printers / Dry cleaners / Tailors / Machine operators	356	10%
4	Health Services	Home health aides / Personal care aides	319	9%
5	Office	Clerks / Customer service / Administrative	283	8%
6	Custodial	Janitors / Maids	280	8%
7	Culinary	Dishwashers / Cooks / Hosts	246	7%
8	Transportation	Movers / Packers	142	4%
	TOTAL:		*3,688*	*100%*

Right-Sized: Key Takeaways

1 Roughly 3% of renter households and 6% of renter individuals are overcrowded

2 Large households, Asian individuals, and immigrants are most likely to be overcrowded

3 Income and occupation are not correlated with rates of overcrowding

4 In theory, **overcrowding can be eliminated under current market conditions**

3. AFFORDABLE

Affordable: Demographic Analysis

Characteristics of rental households based on…

Rent Burden

- Type of household
- Family type + employment status
- Occupation
- Race
- 1-person households
- Length of residence in rental unit

Length of Residence in Unit

- Age
- Race
- Household income
- Employment status
- Presence of children

Affordable: Rent Burden

Rent Burden

Rent as % of household income
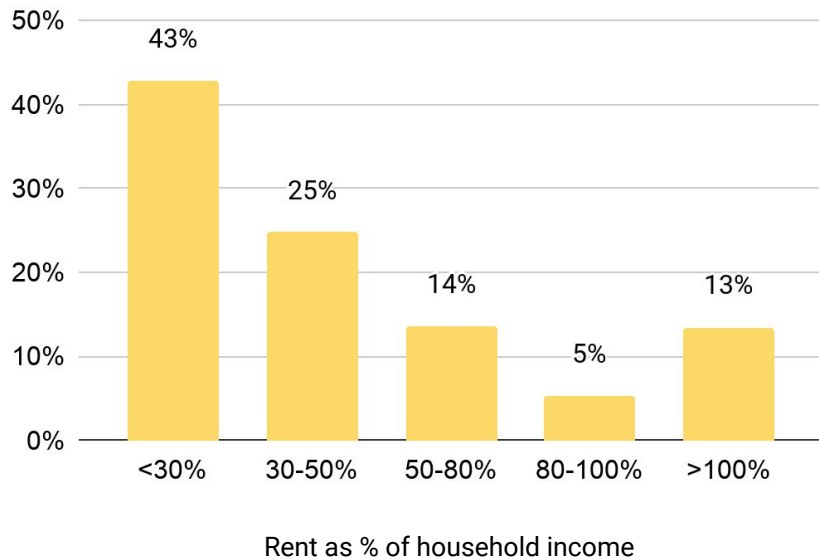
Rent Burden Categories	
% of Household Income	*Count*
<30%	22,433
30-50%	12,965
50-80%	7,131
80-100%	2,768
>100%	7,069
TOTAL:	*52,366*

Affordable: Rent Burden

< 30% income   ⟶   *Non rent burdened*

30 to 50% income   ⟶   *Rent burdened*

> 50% income   ⟶   *Severely rent burdened*
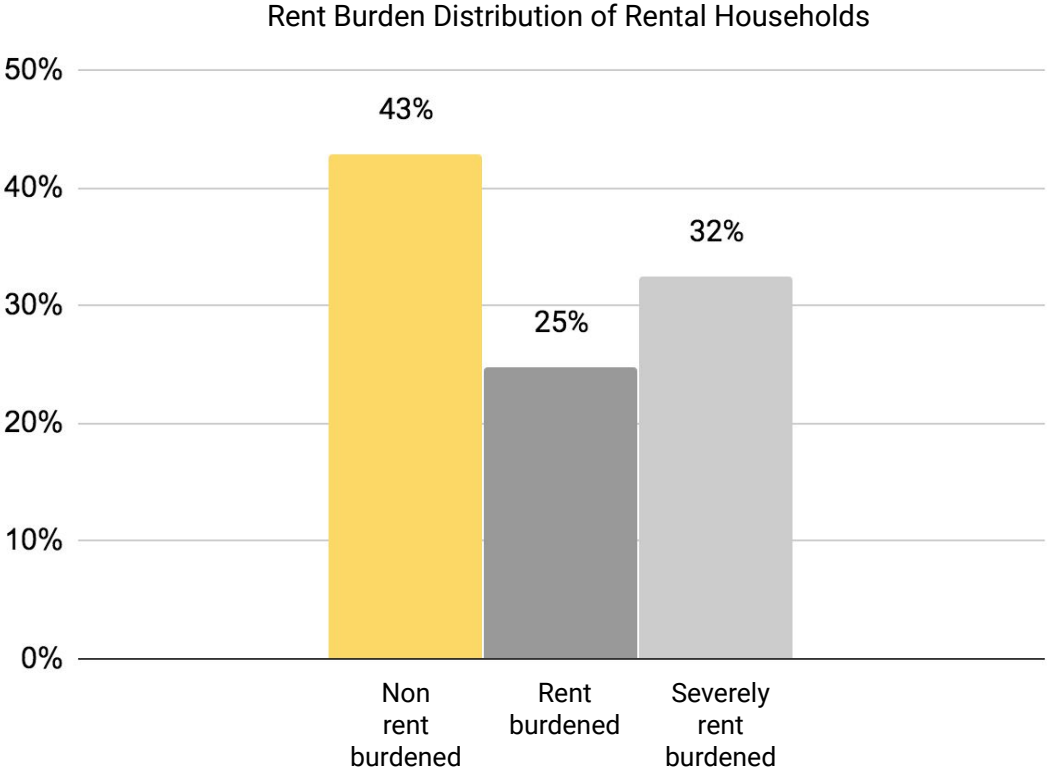
Affordable: Rent Burden

Rent Burden Distribution of Rental Households

Affordable: Rent Burden

Rent Burden Distribution of Rental Households

- All rental HHs: 52,366
- Non rent burdened: 22,433
- Rent burdened: 12,965
- Severely rent burdened: 16,968
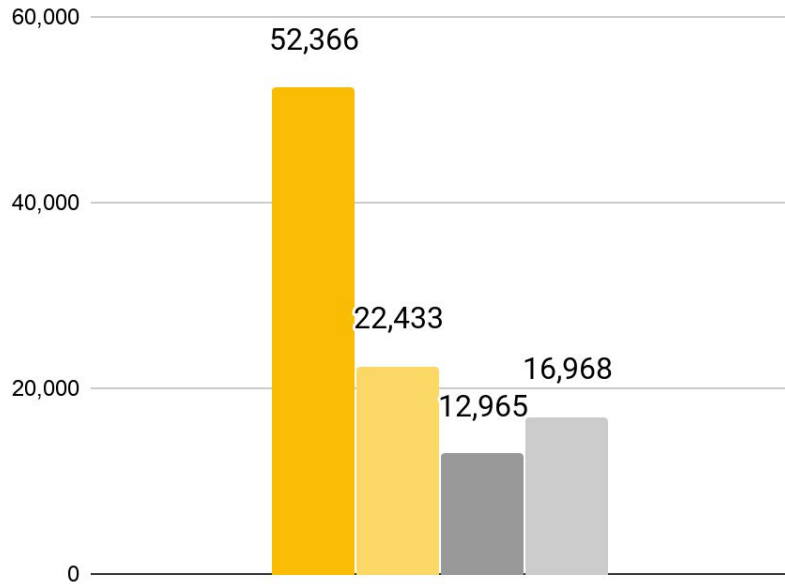
Married Couple Households
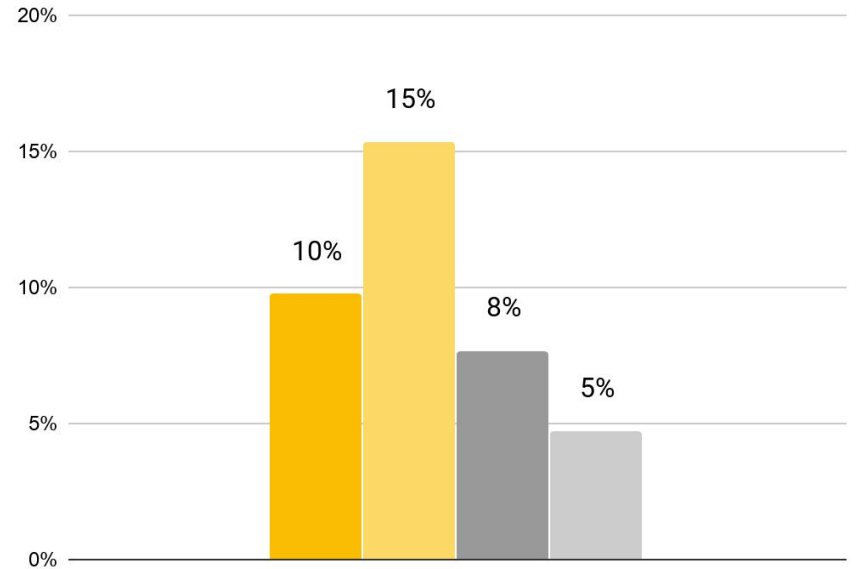
- All rental HHs: 10%
- Non rent burdened: 15%
- Rent burdened: 8%
- Severely rent burdened: 5%

Legend: All rental HHs | Non rent burdened | Rent burdened | Severely rent burdened

Affordable: Rent Burden

Rent Burden Distribution of Rental Households
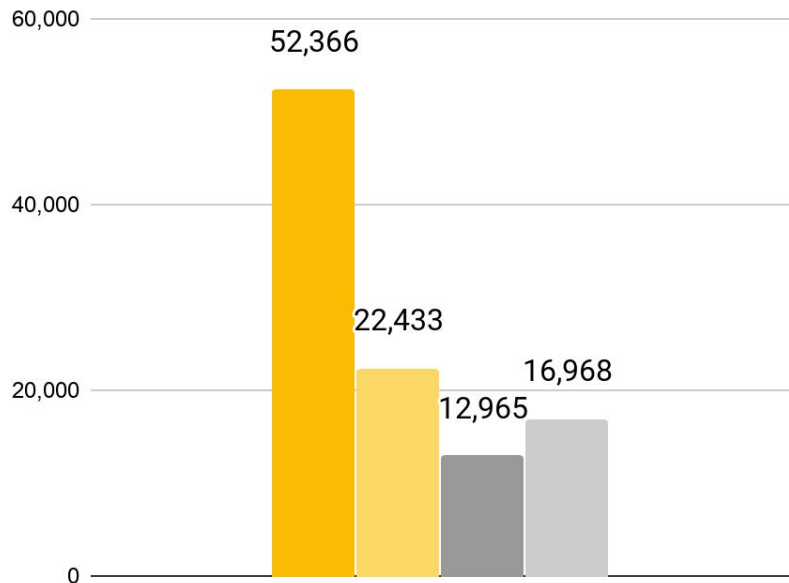
Rental Households: Uncertainty		
	Std Error	*95% Confidence*
Non rent burdened	801	[20,863 , 24,003]
Rent burdened	549	[11,890 , 14,040]
Severely rent burdened	580	[15,831, 18,105]
TOTAL:	771	[50,854 , 53,878]

Legend: ■ All rental HHs ■ Non rent burdened ■ Rent burdened ■ Severely rent burdened

Chart values: 52,366 · 22,433 · 12,965 · 16,968

Affordable: Type of Household

Married Couple Households

Chart showing Married Couple Households percentages:
- All rental: 10%
- Non rent burdened: 15%
- Rent burdened: 8%
- Severely rent burdened: 5%

Legend: All rental, Non rent burdened, Rent burdened, Severely rent burdened
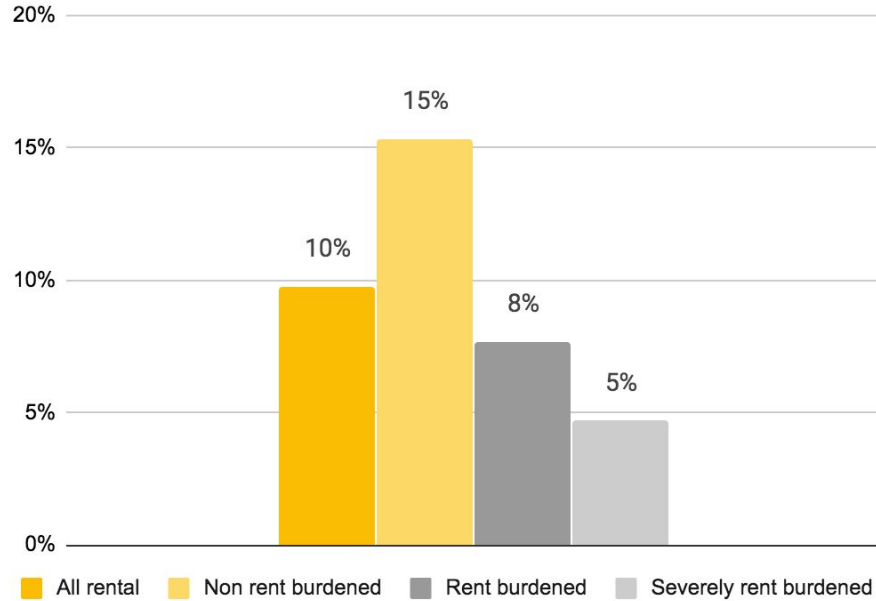
Key Takeaway

Married couple households are less likely to be rent burdened

Married couple households compose...
- 10% of all rental households
- 15% of all non rent burdened households

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Affordable: Type of Household

Key Takeaway

Female single headed households are more likely to be severely rent burdened

Approximately 7,307 female single headed households are severely rent burdened*

Female Single Headed Households

29%

All rental households

43%

Severely rent burdened households

*Between 6383 and 8232 households

Affordable: Type of Household

Non 1-Person Households (non family)

All rental: 12%
Non rent burdened: 20%
Rent burdened: 8%
Severely rent burdened: 5%

Legend: All rental, Non rent burdened, Rent burdened, Severely rent burdened

1-Person Households

All rental: 45%
Non rent burdened: 42%
Rent burdened: 48%
Severely rent burdened: 44%

Legend: All rental, Non rent burdened, Rent burdened, Severely rent burdened
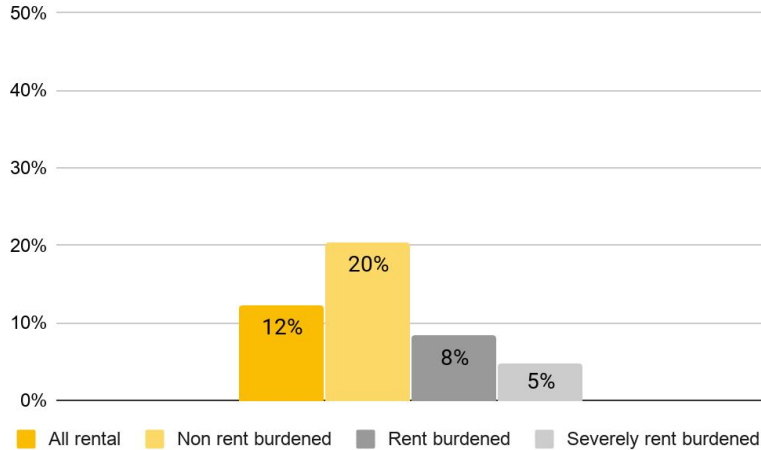
Key Takeaway

Non 1-person households are more likely not to be rent burdened
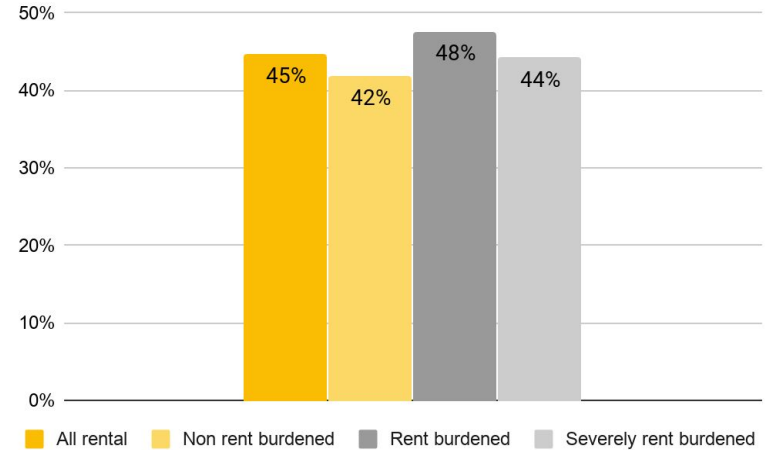
Key Takeaway

1-person households are *not* more likely to be rent burdened

However, 1-person households compose a large share of rental households of *all* rent burdens

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Affordable: Family Type and Employment Status

Married Couple Households
(with at least one spouse in the labor force)

Chart data:
- All rental HHs: 18%
- Non rent burdened: 36%
- Rent burdened: 11%
- Severely rent burdened: 6%

Legend: All rental HHs | Non rent burdened | Rent burdened | Severely rent burdened

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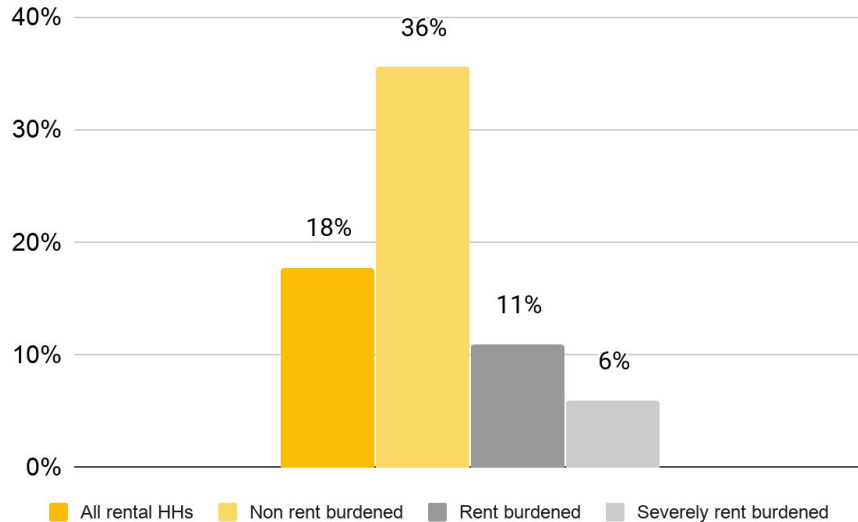
Key Takeaway

Married couple households, with at least one spouse in the labor force, are more likely not to be rent burdened

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Married couple households, with at least one spouse in the labor force, compose…
- 18% of rental family households
- 36% of non rent-burdened family households
- 11% of rent-burdened family households

Affordable: Family Type and Employment Status

Female Single Headed Households (householder *not* in the labor force)

Chart axis: 60%, 40%, 20%, 0%

Bars:
- All rental family HHs: 25%
- Non rent burdened: 10%
- Rent burdened: 19%
- Severely rent burdened: 41%

Legend:
- All rental family HHs
- Non rent burdened
- Rent burdened
- Severely rent burdened
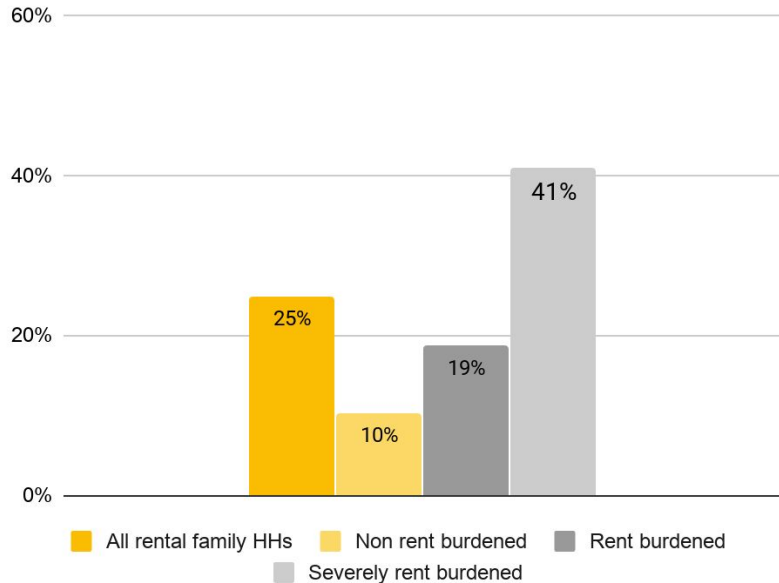
Key Takeaway

Female single headed households, with the householder *not* in the labor force, are more likely to be severely rent burdened

Female single headed households, not in the labor force, compose…
- 25% of all rental family households
- 41% of rent-burdened family households

Affordable: Family Type and Employment Status

Key Takeaway

Female single headed households, with the householder in the labor force, are more likely to be rent burdened

Female single headed households, in the labor force, compose…
- 42% of all rental households
- 53% of rent-burdened households

Female Single Headed Households (householder in the labor force)

Legend
All rental family HHs
Non rent burdened
Rent burdened
Severely rent burdened

Chart values:
- All rental family HHs: 42%
- Non rent burdened: 35%
- Rent burdened: 53%
- Severely rent burdened: 44%
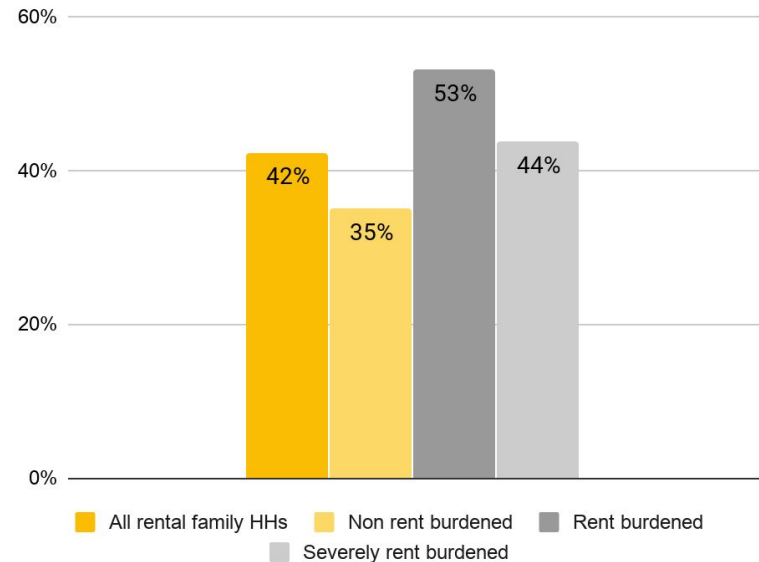
Affordable: Occupation of Female Single Headed Households

Legend: **All rental HHs** | **Non rent burdened** | **Rent burdened** | **Severely rent burdened**

Medical Services
- All rental HHs: 26%
- Non rent burdened: 32%
- Rent burdened: 30%
- Severely rent burdened: 17%

Professional Services
- All rental HHs: 17%
- Non rent burdened: 19%
- Rent burdened: 15%
- Severely rent burdened: 17%

Social / Care Services
- All rental HHs: 11%
- Non rent burdened: 10%
- Rent burdened: 10%
- Severely rent burdened: 12%

Retail
- All rental HHs: 10%
- Non rent burdened: 6%
- Rent burdened: 11%
- Severely rent burdened: 12%

Entertainment Services
- All rental HHs: 10%
- Non rent burdened: 6%
- Rent burdened: 10%
- Severely rent burdened: 12%

Manufacturing
- All rental HHs: 6%
- Non rent burdened: 7%
- Rent burdened: 4%
- Severely rent burdened: 8%

Key Takeaway

A female single head-of-household is *not* more likely to be rent burdened by working in a certain occupational category

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Affordable: Rent Burdened Population by Race

White

- 50%
- 40%
- 30%
- 20%
- 10%
- 0%

29% | 40% | 25% | 19%

Black

- 50%
- 40%
- 30%
- 20%
- 10%
- 0%

45% | 38% | 50% | 49%

Hispanic

- 50%
- 40%
- 30%
- 20%
- 10%
- 0%

21% | 16% | 20% | 26%

■ Rental population   ■ Non rent burdened pop.   ■ Rent burdened pop.   ■ Severely rent burdened pop.
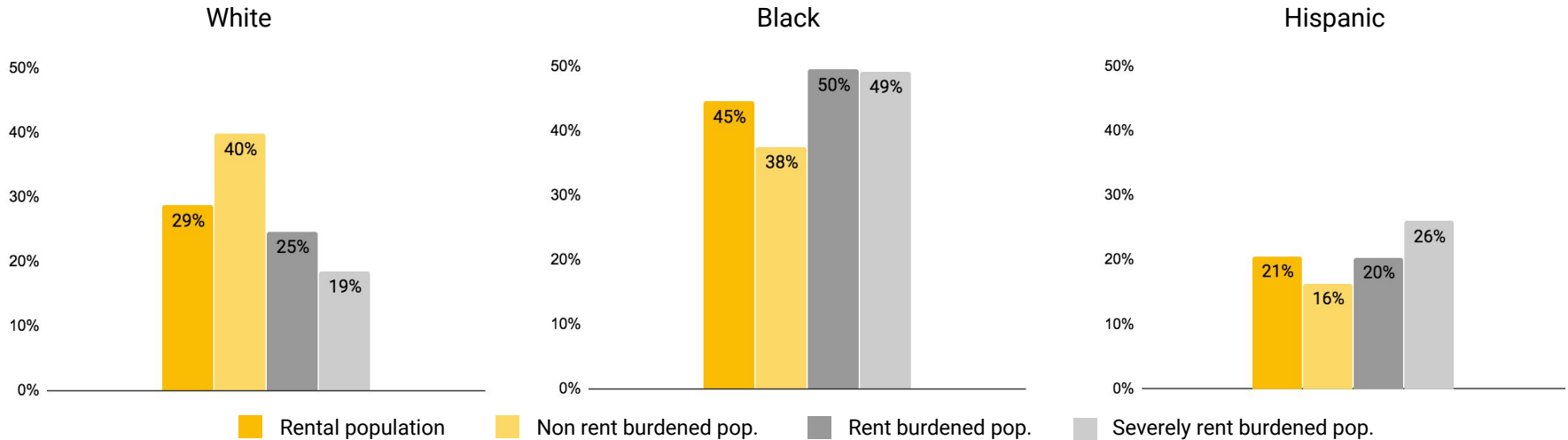
Takeaway #1

White renters are more likely not to be rent burdened

Takeaway #2

Black renters compose a large proportion of the rent burdened and severely rent burdened population. However, they are *not* more likely to be rent burdened

Takeaway #3

Hispanic renters are more likely to be severely rent burdened

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Affordable: Rent Burdened Population by Race

Rent Burden by Race				
	Rental population	Non rent burdened population	Rent burdened population	Severely rent burdened population
White	34,841	19,538	7,167	7,452
Black	53,939	18,442	14,367	19,791
Hispanic	24,878	8,012	5,893	10,439
Other	7,489	3,144	1,586	2,526
Total	121,147	49,136	29,013	40,208

Affordable: Length of Residence in Rental Unit

Less than 12 mos

- 29% All rental HHs
- 29% Non rent burdened
- 25% Rent burdened
- 32% Severely rent burdened

13 to 23 mos

- 11% All rental HHs
- 12% Non rent burdened
- 10% Rent burdened
- 11% Severely rent burdened

2 to 4 years

- 29% All rental HHs
- 28% Non rent burdened
- 30% Rent burdened
- 29% Severely rent burdened

5+ years

- 31% All rental HHs
- 32% Non rent burdened
- 36% Rent burdened
- 28% Severely rent burdened

Legend: All rental HHs | Non rent burdened | Rent burdened | Severely rent burdened

Key Takeaway

Households that have lived in their rental unit for a short amount of time are *not* more likely to be rent burdened

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Affordable: Key Takeaways

1 About **30,000 households** are living in housing that is not affordable, approximately 57% of all rental households in the city

2 1-person households are a large share - 45 percent - of renter households

3 Female single headed households are more likely to be rent burdened. Even when they are working, their housing is still unaffordable

4 Hispanic renters are more likely to be severely rent burdened. Black renters make up a large share of the rental and rent-burdened populations

5 Households that have moved recently are *not* more likely to be rent burdened

Affordable: 1-Person Households

Rent Burden Distribution of 1-Person Households
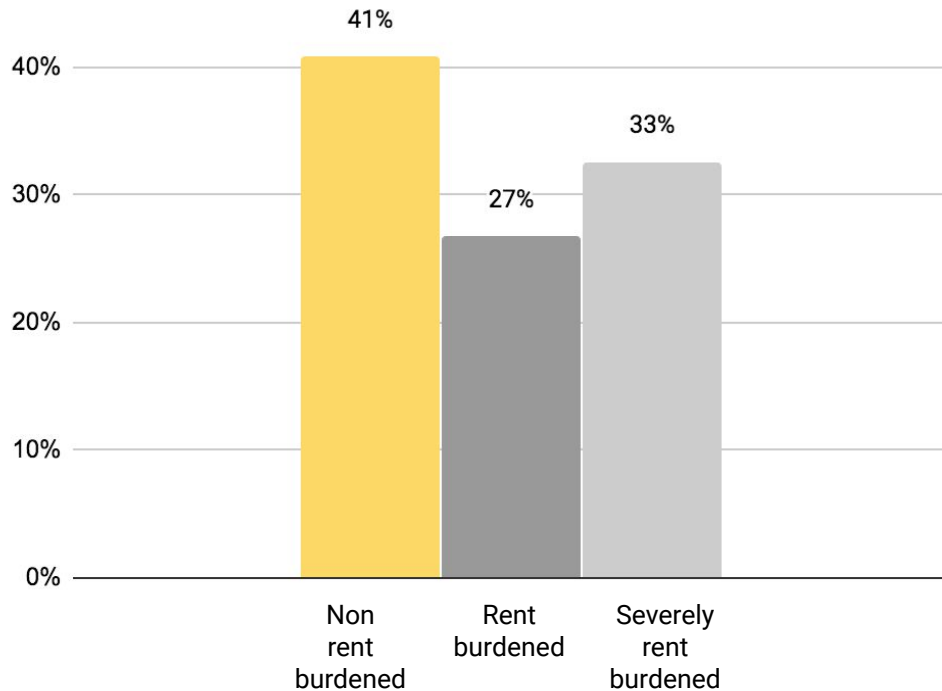
1-Person Households: Rent Burden	
Category	*Count*
Non rent burdened	9,406
Rent burdened	6,162
Severely rent burdened	7,498
All	23,066

Affordable: 1-Person Households

Race

- 1-person households are approximately…
  - 48% White
  - 35% Black
  - 12% Hispanic

- Race does not make a 1-person household more likely to be rent burdened

Age

- 1-person households are most likely to be aged 50-70. Persons aged 50-70 make up 39% of 1-person households
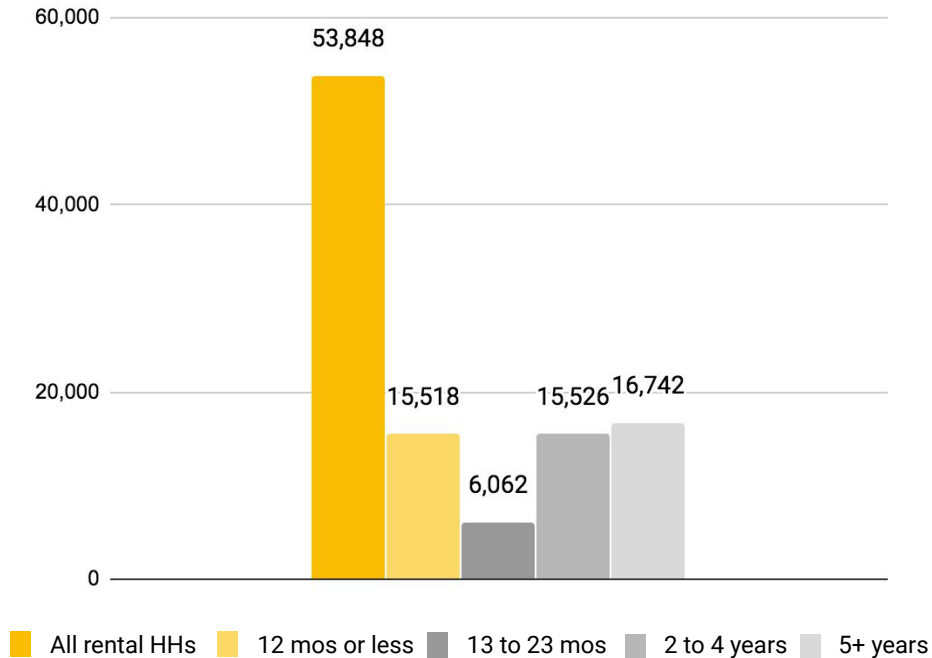
- Age does not make a 1-person household more likely to be rent burdened

Marital Status

- 60% of 1-person households are never married

- Among 1-person households aged 50-70 are approximately…
  - 41% never married
  - 32% divorced

- Marital status does not make a household more likely to be rent burdened

Length of Residence in Rental Unit

Households by Length of Time in Rental Unit: Uncertainty		
	Std Error	*95% Confidence*
12 mos or less	614	[14315 , 16721]
13 to 23 mos	419	[5240 , 6884]
2-4 years	547	[14454 , 16598]
5+ years	623	[15521 , 17963]
All rental HHs	773	[52334 , 55362]

Chart values:
- All rental HHs: 53,848
- 12 mos or less: 15,518
- 13 to 23 mos: 6,062
- 2 to 4 years: 15,526
- 5+ years: 16,742

Legend: All rental HHs · 12 mos or less · 13 to 23 mos · 2 to 4 years · 5+ years

Length of Residence in Rental Unit By HoH Age

Legend: ■ All rental HHs ■ 12 mos or less ■ 13 to 23 mos ■ 2 to 4 years ■ 5+ years

Younger than 30
- All rental HHs: 29%
- 12 mos or less: 50%
- 13 to 23 mos: 45%
- 2 to 4 years: 26%
- 5+ years: 5%

30 to 50 years old
- All rental HHs: 39%
- 12 mos or less: 34%
- 13 to 23 mos: 34%
- 2 to 4 years: 48%
- 5+ years: 38%

50 to 70 years old
- All rental HHs: 26%
- 12 mos or less: 15%
- 13 to 23 mos: 19%
- 2 to 4 years: 24%
- 5+ years: 41%

70+ years old
- All rental HHs: 6%
- 12 mos or less: 1%
- 13 to 23 mos: 2%
- 2 to 4 years: 3%
- 5+ years: 15%

Takeaway #1

Younger head-of-households are more likely to have lived in their rental unit for less than 2 years
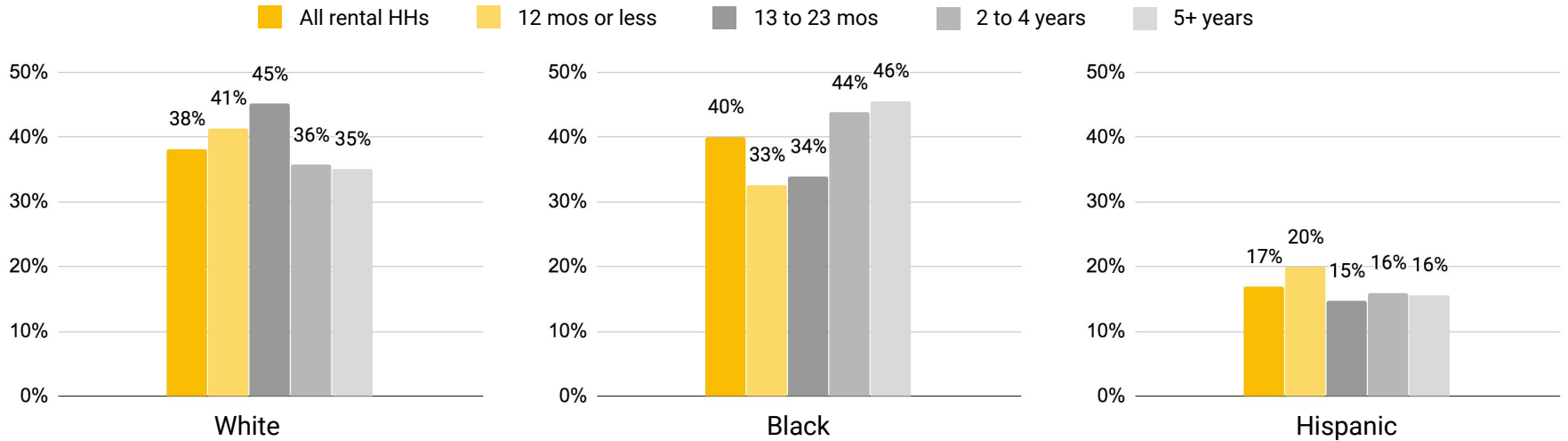
Takeaway #2

Middle-aged head-of-households are more likely to have lived in their rental unit for 2 to 4 years

Takeaway #3

Older head-of-households are more likely to have lived in their rental unit for 5+ years

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Length of Residence in Rental Unit By HoH Race

Legend: All rental HHs | 12 mos or less | 13 to 23 mos | 2 to 4 years | 5+ years

White
- All rental HHs: 38%
- 12 mos or less: 41%
- 13 to 23 mos: 45%
- 2 to 4 years: 36%
- 5+ years: 35%

Black
- All rental HHs: 40%
- 12 mos or less: 33%
- 13 to 23 mos: 34%
- 2 to 4 years: 44%
- 5+ years: 46%

Hispanic
- All rental HHs: 17%
- 12 mos or less: 20%
- 13 to 23 mos: 15%
- 2 to 4 years: 16%
- 5+ years: 16%

Key Takeaway

Head-of-households who are Black are *less* likely to have lived in their rental unit for 1 year or less

Length of Residence in Rental Unit By Household Income

Legend: All rental HHs | 12 mos or less | 13 to 23 mos | 2 to 4 years | 5+ years

<30% AMI: 45% | 42% | 38% | 48% | 47%

30-50% AMI: 21% | 20% | 20% | 19% | 24%

50-80% AMI: 16% | 19% | 20% | 14% | 14%

>80% AMI: 18% | 19% | 21% | 18% | 15%
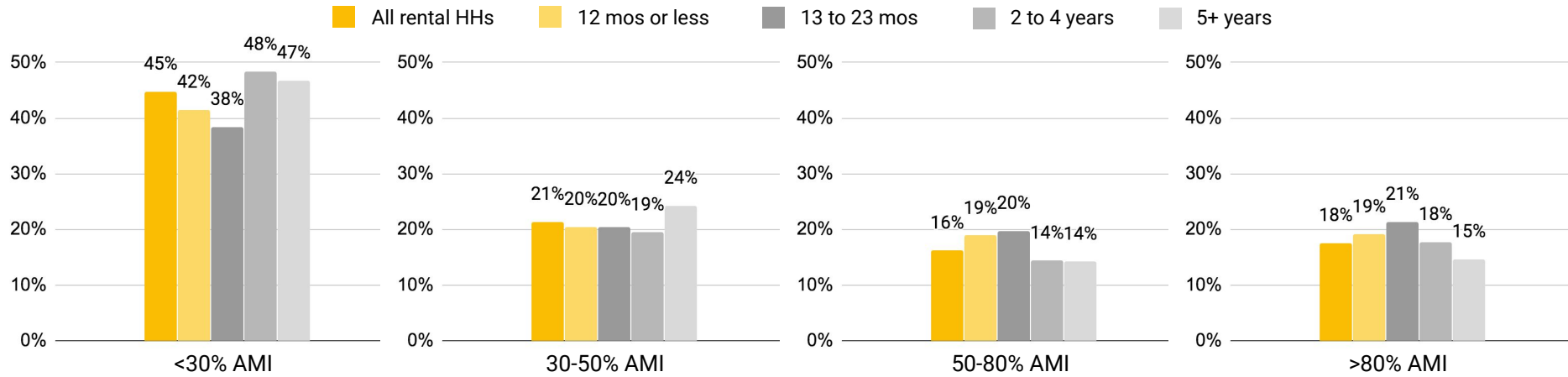
Key Takeaway

A large proportion of rental households in their rental unit for any length of residence have household income less than 30% AMI

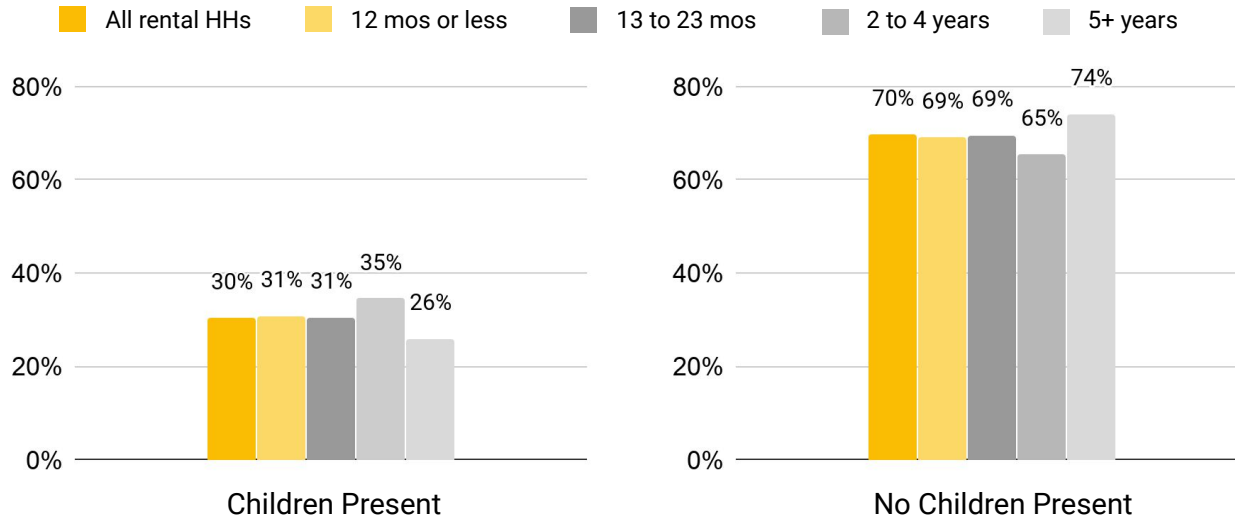# *Length of Residence in Rental Unit By HoH Employment Status*

Legend: All rental HOHs | 12 mos or less | 13 to 23 mos | 2 to 4 years | 5+ years

Full-Time Employment
- All rental HOHs: 37%
- 12 mos or less: 43%
- 13 to 23 mos: 47%
- 2 to 4 years: 37%
- 5+ years: 28%

Part-Time Employment
- All rental HOHs: 18%
- 12 mos or less: 21%
- 13 to 23 mos: 20%
- 2 to 4 years: 18%
- 5+ years: 15%

Unemployed
- All rental HOHs: 6%
- 12 mos or less: 6%
- 13 to 23 mos: 5%
- 2 to 4 years: 7%
- 5+ years: 4%

Out of Labor Force
- All rental HOHs: 39%
- 12 mos or less: 29%
- 13 to 23 mos: 29%
- 2 to 4 years: 38%
- 5+ years: 53%

Takeaway #1

Head-of-households employed full-time are more likely to have moved in the past 2 years

Takeaway #2

Head-of-households out of the labor force are more likely to have lived in their rental unit for 5+ years

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Length of Residence in Rental Unit By Presence of Children

Legend: ■ All rental HHs　■ 12 mos or less　■ 13 to 23 mos　■ 2 to 4 years　■ 5+ years

Children Present

- 30%
- 31%
- 31%
- 35%
- 26%

No Children Present

- 70%
- 69%
- 69%
- 65%
- 74%

Key Takeaway

Households with children are not more
likely to have lived in their rental unit for
a short or long amount of time

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Length of Residence in Rental Unit: Key Takeaways

1 The head-of-household's age tracks with length of residence in the rental unit. Younger HoHs are more likely to have lived in the unit for a short time, and older HoHs for a long time

2 Head-of-households who are Black are *less* likely to have lived in their rental unit for less than a year

3 A large proportion of households in their rental unit for any length of residence have household income less than 30% AMI

4 Head-of-households employed full time are more likely to have moved in the past 2 years

4. GAP ESTIMATE

Gap Estimate: Two Estimate Types

Current Conditions

- Based on the latest data, how many people are currently unable to find a right-sized affordable (RSA) housing unit?

- What is the **actual** right-sized affordable housing gap?

Perfect Sorting Conditions

- In a hypothetical world in which we could allocate renter households to rental units, what is the size of the right-sized affordable (RSA) housing gap?

- What is the right-sized affordable housing gap **in an ideal world**?

Gap Estimate: Households

Current Conditions

30,671

+/- 1,433

Rental households are not RSA

58.6%

+/- 2.2%

Of rental households are not RSA

Perfect Sorting Conditions

14,839

+/- 1,237

Rental households are not RSA

28.3%

+/- 2.2%

Of rental households are not RSA

Gap Estimate: People

Current Conditions

68,401

+/- 3,603

Renters unable to find RSA housing

61.3%

+/- 2.2%

Of renters are unable to find RSA housing

Perfect Sorting Conditions

33,216

+/- 3,110

Renters unable to find RSA housing

29.8%

+/- 2.2%

Of renters are unable to find RSA housing

Gap Estimate: Current Conditions Methodology

1. Define

- Create mutually exclusive affordability tiers based on percentages of Rochester's AMI ($74,000)

- Create mutually exclusive size tiers based on the 2.0 people per bedroom standard

2. Sort

- Sort every rental unit a bucket based on its affordability and size tiers

- Sort every rental household into a bucket based on its household income and number of people

3. Count

- Count the difference between unit availability and unit need in each category

- Assume that renters must rent within their affordability and size bucket

Gap Estimate: AMI Rubric

Area Median Income for Rochester MSA: $74,000				
	30% AMI	**50% AMI**	**80% AMI**	**120% AMI**
Income	$22,200	$37,000	$59,200	$88,800
Max Rent	$555	$925	$1,480	$2,220

Gap Estimate: *Current Conditions*

Estimating the Current Affordable Housing Gap					
Availability of Rental Housing					
	<30% AMI	***30-50% AMI***	***50-80% AMI***	***80-120% AMI***	***>120% AMI***
Count	8,981	23,679	16,835	2,509	362
Percent	17.2%	45.2%	32.1%	4.8%	0.7%
Need for Rental Housing					
Count	23,455	11,198	8,503	5,579	3,631
Percent	44.8%	21.4%	16.2%	10.7%	6.9%
Difference: Availability - Need					
Count	-14,474	12,481	8,332	-3,070	-3,269
Percentage	-27.6%	23.8%	15.9%	-5.9%	-6.2%

Gap Estimate: *Current Conditions*

Estimating the Current Right-Sized Affordable Housing Gap

Difference: Availability - Need					
	<30% AMI	30-50% AMI	50-80% AMI	80-120% AMI	>120% AMI	TOTAL:
0-1 Bedroom	-10,232	2,805	-3,077	-3,219	-2,247	**-15,970**
2 Bedroom	-3,871	6,077	3,225	-723	-933	**3,775**
3 Bedroom	-460	3,035	5,632	461	-106	**8,562**
4 Bedroom	2	497	2,292	357	3	**3,151**
5+ Bedroom	87	67	260	54	14	**482**
TOTAL:	**-14,474**	**12,481**	**8,332**	**-3,070**	**-3,269**	**0**

Gap Estimate: Perfect Sorting Methodology

1. Sort

- Sort renter households from lowest to highest household income

- Sort rental units from least to most expensive

2. Allocate

- Allocate the least expensive rental unit to the lowest-income household that can afford it

- Renters are <u>not</u> bounded by affordability and size tiers

3. Count

- This process is repeated for every rental unit

- Households that were not allocated a unit are counted as part of the gap

Gap Estimate: Perfect Sorting Conditions

Estimating the Right-Sized Affordable Housing Gap Under Perfect Sorting Conditions

Computed on a Household Basis					
	<30% AMI	30-50% AMI	50-80% AMI	80-120% AMI	>120% AMI	TOTAL:
0-1 Bedroom	-9,448	0	0	0	0	-9,448
2 Bedroom	-4,083	0	0	0	0	-4,083
3 Bedroom	-1,136	0	0	0	0	-1,136
4 Bedroom	-136	-23	0	0	0	-159
5+ Bedroom	0	-13	0	0	0	-13
TOTAL:	-14,803	-36	0	0	0	-14,839

Gap Estimate: *Perfect Sorting Conditions*

Estimating the Right-Sized Affordable Housing Gap Under Perfect Sorting Conditions						
Computed on a Person Basis						
	<30% AMI	**30-50% AMI**	**50-80% AMI**	**80-120% AMI**	**>120% AMI**	**TOTAL:**
0-1 Bedroom	-11,735	0	0	0	0	-11,735
2 Bedroom	-14,152	0	0	0	0	-14,152
3 Bedroom	-6,057	0	0	0	0	-6,057
4 Bedroom	-994	-161	0	0	0	-1,155
5+ Bedroom	0	-117	0	0	0	-117
TOTAL:	-32,938	-278	0	0	0	-33,216

Gap Estimate: Key Takeaways

1 Roughly 60% of renter households currently lack right-sized affordable housing

2 This gap is largest for households making <30% of AMI and for households comprising 1 or 2 people

3 Half of the current gap can be eliminated through "perfect sorting" of households

4 Even with perfect sorting, there is still a 15,000-unit gap that cannot be filled with the current stock of rentals

5. NEXT STEPS

Next Steps

Spatial Analysis

- What is the geographic distribution of affordability issues?

- Data exists at PUMA level. We would need to make assumptions to match it with tract-level data.

Time Series Analysis

- Have there been any underlying time trends in the RSA housing gap?

- We would need to analyze individual 1-year PUMS data files to find trends across samples.

Policy Extension

- What are the implications of these results? How do we make them actionable?

- Qualitative analysis of policy options?

- Analysis of the City's current housing initiatives?

QUESTIONS?

APPENDIX

Right-Sized: Overcrowding Rubric

Overcrowding Rubric: 1.0 People Per Room Standard			
Household Size	**Number of Rooms**	**Overcrowding Standard (R)**	**Severe Overcrowding Standard (R)**
1	1	--	--
2	2	1	--
3	3	2	1
4	4	3	2
5	5	4	2
6	6	5	3
7	7	6	4
8	8	7	4
9	9	8	5
10	10	9	6

Right-Sized: *Quantifying Overcrowding*

Uncertainty Surrounding Estimates of Overcrowding: 2.0 People Per Bedroom			
Measured on a Household Basis			
	Point Estimate	Standard Error	95% Confidence Interval
Crowded	1,501	189	[1,131 -- 1,871]
Not Crowded	50,865	749	[49,397 -- 52,333]
TOTAL:	**52,366**	**771**	**[50,854 -- 53,878]**
Measured on a Person Basis			
	Point Estimate	Standard Error	95% Confidence Interval
Crowded	6,709	782	[5,176 -- 8,242]
Not Crowded	111,648	1,758	[108,203 -- 115,093]
TOTAL:	**118,357**	**1,651**	**[115,120 -- 121,594]**

Right-Sized: *Quantifying Overcrowding*

Uncertainty Surrounding Estimates of Overcrowding: 1.0 People Per Room			
Measured on a Household Basis			
	Point Estimate	Standard Error	95% Confidence Interval
Crowded	1,092	175	[750 -- 1,434]
Not Crowded	51,274	767	[49,770 -- 52,778]
TOTAL:	**52,366**	**771**	**[50,854 -- 53,878]**
Measured on a Person Basis			
	Point Estimate	Standard Error	95% Confidence Interval
Crowded	5,999	849	[4,335 -- 7,663]
Not Crowded	112,358	1,792	[108,845 -- 115,871]
TOTAL:	**118,357**	**1,651**	**[115,120 -- 121,594]**

Right-Sized: Quantifying Severe Overcrowding

Uncertainty Surrounding Estimates of Severe Overcrowding: 2.0 People Per Bedroom			
Measured on a Household Basis			
	Point Estimate	Standard Error	95% Confidence Interval
Crowded	205	77	[54 -- 356]
Not Crowded	52,161	784	[50,624 -- 53,698]
TOTAL:	**52,366**	**771**	**[50,854 -- 53,878]**
Measured on a Person Basis			
	Point Estimate	Standard Error	95% Confidence Interval
Crowded	1,226	477	[291 -- 2,161]
Not Crowded	117,131	1,736	[113,728 -- 120,534]
TOTAL:	**118,357**	**1,651**	**[115,120 -- 121,594]**

Right-Sized: Quantifying Severe Overcrowding

Uncertainty Surrounding Estimates of Severe Overcrowding: 1.0 People Per Room			
Measured on a Household Basis			
	Point Estimate	Standard Error	95% Confidence Interval
Crowded	485	123	[230 -- 740]
Not Crowded	51,881	779	[50,353 -- 53,409]
TOTAL:	**52,366**	**771**	**[50,854 -- 53,878]**
Measured on a Person Basis			
	Point Estimate	Standard Error	95% Confidence Interval
Crowded	1,862	519	[845 -- 2,879]
Not Crowded	116,495	1,776	[113,014 -- 119,976]
TOTAL:	**118,357**	**1,651**	**[115,120 -- 121,594]**

Right-Sized: Demographic Analysis

Uncertainty Surrounding Estimates of Overcrowding by Income Quintile			
Measured on a Household Basis			
	Point Estimate	Standard Error	95% Confidence Interval
Poorest 20%	223	75	[76 -- 370]
Second-Poorest 20%	211	62	[90 -- 332]
Middle 20%	271	85	[103 -- 439]
Second-Richest 20%	428	114	[205 -- 651]
Richest 20%	368	100	[172 -- 564]

Right-Sized: Demographic Analysis

Uncertainty Surrounding Estimates of Citizenship Status by Race			
Measured on a Person Basis			
	Native-Born Citizen	Naturalized Citizen	Non-Citizen
White	[724 -- 2106]	N/A	[-15 -- 43]
Black	[1339 -- 3435]	[-66 -- 320]	[-65 -- 361]
Hispanic	[631 -- 1883]	[-8 -- 88]	[10 -- 340]
Asian	[-8 -- 156]	[-14 -- 418]	[89 -- 1157]
Other	[49 -- 445]	N/A	N/A

Affordable: Type of Household

Married Couple Households

Married Couple Households: Uncertainty of Point Estimates			
	Point Est.	*Std Error*	*95% Confidence*
All rentals	5,255	318	[4,633 -- 5,877]
Non rent burdened	3,439	284	[2,881 -- 3,997]
Rent burdened	996	134	[733 -- 1,259]
Severely rent burdened	798	131	[542 -- 1,054]

Married Couple Households: Uncertainty of Proportions			
	Prop. Estimate	*Std Error*	*95% Confidence*
All rentals	10%	0.57%	[9% -- 11%]
Non rent burdened	15%	1.10%	[13% -- 17%]
Rent burdened	8%	1.00%	[6% -- 10%]
Severely rent burdened	5%	0.80%	[3% -- 6%]

Affordable: Type of Household

Female Single Headed Households

Female Single Headed Households: Uncertainty of Point Estimates			
	Prop. Estimate	*Std Error*	*95% Confidence*
All rentals	15,439	498	[14,463 -- 16,415]
Non rent burdened	3,772	327	[3,131 -- 4,413]
Rent burdened	4,083	303	[3,489 -- 4,677]
Severely rent burdened	7,307	472	[6,382 -- 8,232]

Female Single Headed Households: Uncertainty of Proportions			
	Prop. Estimate	*Std Error*	*95% Confidence*
All rentals	29%	0.83%	[27% -- 30%]
Non rent burdened	17%	1.30%	[14% -- 19%]
Rent burdened	31%	1.90%	[29% -- 34%]
Severely rent burdened	43%	2.40%	[39% -- 47%]

Non 1-Person Households (non family)

Affordable: Type of Household

1-Person Households

Non 1-Person Households (non family)

	Point Est.	Std Error	95% Confidence
All rentals	6,628	390	[5,863 -- 7,393]
Non rent burdened	4,572	346	[3,894 -- 5,220]
Rent burdened	1,085	179	[735 -- 1,435]
Severely rent burdened	820	145	[537 -- 1,103]

1-Person Households

	Point Est.	Std Error	95% Confidence
All rentals	24,066	705	[22,684 -- 25,448]
Non rent burdened	9,403	565	[8,295 -- 10,511]
Rent burdened	6,174	460	[5,273 -- 7,075]
Severely rent burdened	7,500	460	[6,598 -- 8,402]

Non 1-Person Households (non family)

	Prop. Estimate	Std Error	95% Confidence
All rentals	12%	0.70%	[11% -- 14%]
Non rent burdened	20%	1.36%	[18% -- 23%]
Rent burdened	8%	1.33%	[6% -- 11%]
Severely rent burdened	5%	0.84%	[3% -- 6%]

1-Person Households

	Prop. Estimate	Std Error	95% Confidence
All rentals	45%	1.14%	[42% -- 47%]
Non rent burdened	42%	2.03%	[38% -- 46%]
Rent burdened	48%	2.92%	[42% -- 53%]
Severely rent burdened	44%	2.25%	[40% -- 49%]

Affordable: Family Type and Employment Status

Married Couple Households
(at least one spouse in labor force)

Rent Burden Category	Count
All rental family HHs	4,080
Non rent burdened	2,953
Rent burdened	619
Severely rent burdened	508

Single Female Headed Households
(householder in labor force)

Rent Burden Category	Count
All rental family HHs	9,718
Non rent burdened	2,912
Rent burdened	3,020
Severely rent burdened	3,774

Single Female Headed Households
(householder *not* in labor force)

Rent Burden Category	Count
All rental family HHs	5,721
Non rent burdened	860
Rent burdened	1,063
Severely rent burdened	3,533

Affordable: Length of Time in Rental Unit

Rent Burden by Length of Time in Rental Unit				
Time in unit	All rental HHs	Non rent burdened	Rent burdened	Severely rent burdened
All rentals	53,848	22,433	12,965	16,968
12 months or less	15,518	6,415	3,204	5,384
13-23 months	6,062	2,685	1,263	1,933
2-4 years	15,526	6,209	3,881	4,983
5+ years	16,742	7,124	4,617	4,668

Length of Time in Rental Unit by Household Income

Households Earning <30% AMI			
Time in Unit	Estimate	Std Error	95% Confidence
All rentals	23,455	628	[22,225 -- 24,685]
12 months or less	6,231	418	[5,412 -- 7,050]
13-23 months	2,262	253	[1,766 -- 2,758]
2-4 years	7,285	415	[6,471 -- 8,099]
5+ years	7,677	428	[6,839 -- 8,515]

Length of Residence in Rental Unit By Household Income

Length of Time in Rental Unit: Mean Income with 95% Confidence Interval

Chart data points:
- All rental HHs: $36,361
- 12 mos or less: $36,626
- 13-23 mos: $43,721
- 2-4 years: $35,488
- 5+ years: $34,284
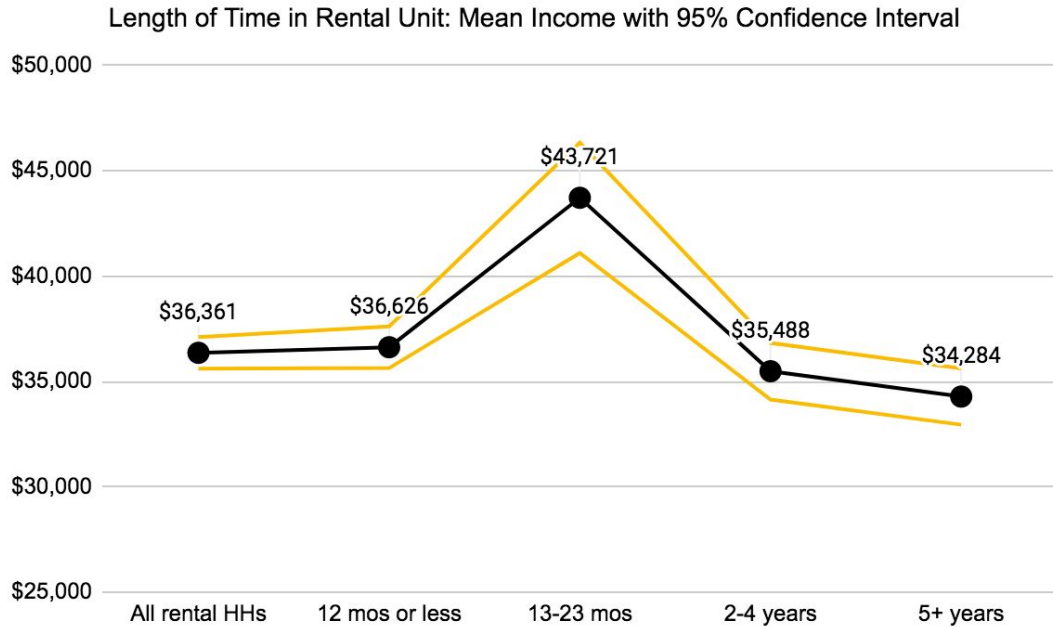
Key Takeaway

Households who have lived in their rental unit for 13-23 months have a higher mean income

Gap Estimate: Uncertainty Surrounding Current RSA Gap

Uncertainty Surrounding the Current Affordable Housing Gap					
Availability of Rental Housing (95% Confidence Intervals)					
	<30% AMI	**30-50% AMI**	**50-80% AMI**	**80-120% AMI**	**>120% AMI**
Count	[8,199 -- 9,763]	[22,359 -- 24,999]	[15,602 -- 18,068]	[1,933 -- 3,085]	[154 -- 570]
Need for Rental Housing (95% Confidence Intervals)					
	<30% AMI	**30-50% AMI**	**50-80% AMI**	**80-120% AMI**	**>120% AMI**
Count	[22,225 -- 24,685]	[10,045 -- 12,351]	[7,424 -- 9,582]	[4,745 -- 6,413]	[3,083 -- 4,179]

Gap Estimate: Uncertainty Surrounding Current RSA Gap

Uncertainty Surrounding the Current Right-Sized Affordable Housing Gap				
Availability of Rental Housing (95% Confidence Intervals)				
	<30% AMI	*30-50% AMI*	*50-80% AMI*	*80-120% AMI*	*>120% AMI*
0-1 Bedroom	[6,068 -- 7,460]	[9,613 -- 11,595]	[2,029 -- 3,225]	[275 -- 685]	[13 -- 293]
2 Bedroom	[871 -- 1,569]	[7,740 -- 9,638]	[4,533 -- 6,073]	[452 -- 1,236]	[-15 -- 227]
3 Bedroom	[489 -- 1,055]	[2,927 -- 4,201]	[5,525 -- 7,049]	[441 -- 1,041]	[-15 -- 71]
4 Bedroom	[35 -- 241]	[413 -- 1,053]	[1,900 -- 2,800]	[153 -- 627]	[-16 -- 138]
5+ Bedroom	[1 -- 173]	[15 -- 163]	[103 -- 433]	[-11 -- 119]	[-12 -- 40]

Gap Estimate: Uncertainty Surrounding Current RSA Gap

Uncertainty Surrounding the Current Right-Sized Affordable Housing Gap				
Need for Rental Housing (95% Confidence Intervals)				
	<30% AMI	*30-50% AMI*	*50-80% AMI*	*80-120% AMI*	*>120% AMI*
0-1 Bedroom	[15,766 -- 18,226]	[6,795 -- 8,803]	[4,906 -- 6,502]	[2,970 -- 4,428]	[1,963 -- 2,837]
2 Bedroom	[4,218 -- 5,964]	[2,114 -- 3,110]	[1,586 -- 2,570]	[1,152 -- 1,982]	[671 -- 1,407]
3 Bedroom	[922 -- 1,542]	[345 -- 713]	[364 -- 946]	[127 -- 433]	[31 -- 237]
4 Bedroom	[2 -- 270]	[94 -- 378]	[-15 -- 131]	[-13 -- 79]	[-7 -- 123]
5+ Bedroom	N/A	[-11 -- 55]	[-8 -- 24]	N/A	N/A

Gap Estimate: Uncertainty Surrounding Ideal RSA Gap

Uncertainty Surrounding Estimates of Perfect Conditions Gap			
Measured on a Household Basis			
	Point Estimate	Standard Error	95% Confidence Interval
Households in Gap	14,839	631	[13,601 -- 16,077]
Households Not in Gap	37,527	879	[35,805 -- 39,249]
Total Renter Households	52,366	771	[50,854 -- 53,878]
Gap (% of Total)	28.3%	1.1%	[26.1% -- 30.6%]