

# Understanding Public Housing Across America

A Data-Driven Dashboard Analysis

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# Executive Summary

This report synthesizes information from various screenshots and a summary document to provide a comprehensive overview of public housing in America, focusing on key performance indicators, demographic breakdowns, and household composition analyses.

## Key Findings

### National Scale

892,385 total housing units with 39,725 (4.4%) vacant units

### Financial Metrics

Average rent: \$412 | Median household income: \$18,254

### Demographics

62.2% minority representation (560,962 units)

### Household Composition

785,648 total households with average size of 2.02 people

### Vulnerable Populations

-  73.9% female-headed households
-  26.8% elderly residents
-  33.8% with disabilities

### Households with Children

Of households with children:

**91%**

headed by one adult

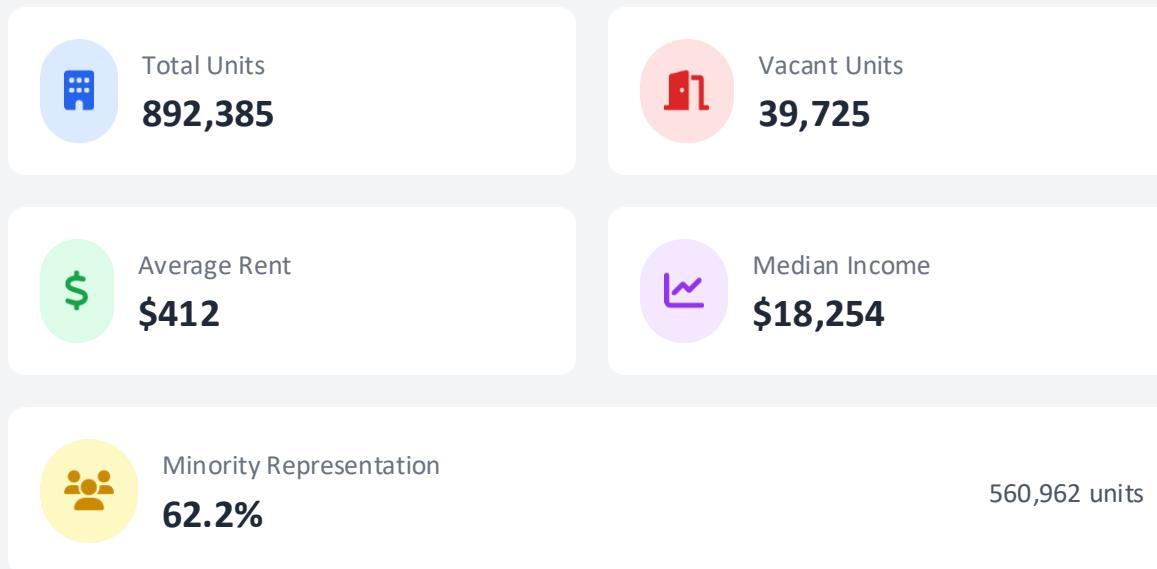
**9%**

headed by two adults

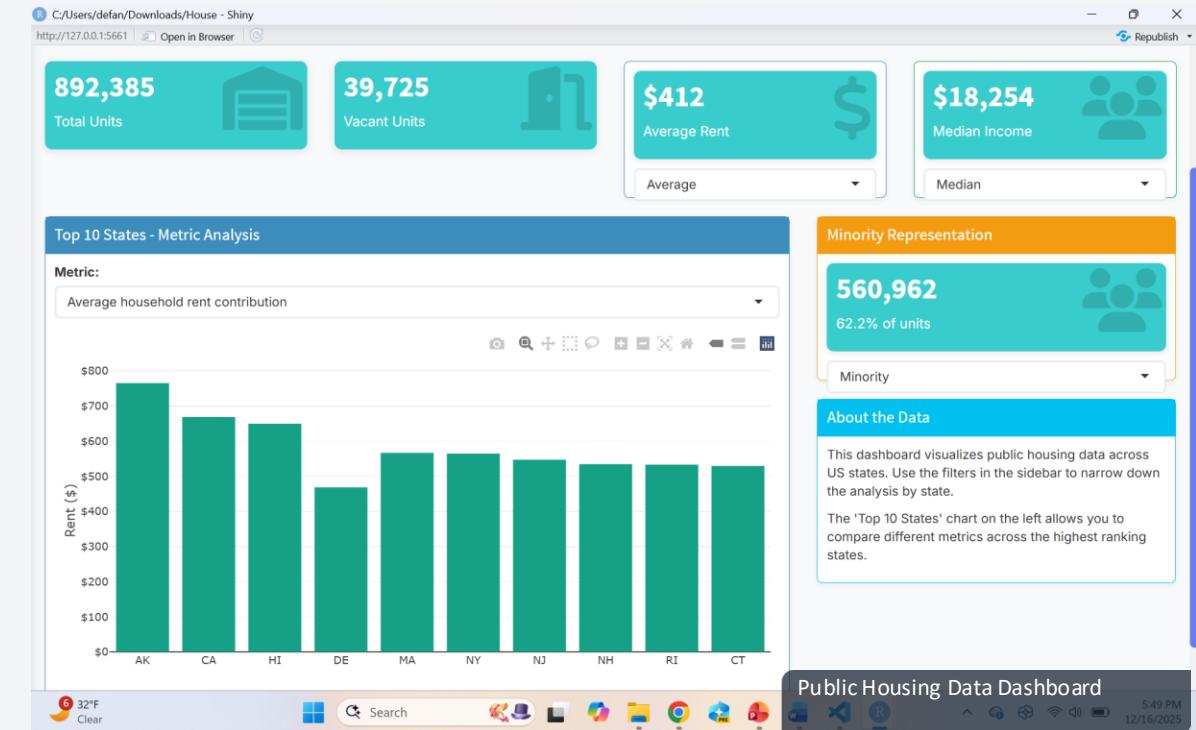
# Public Housing Dashboard Overview

## Key Performance Indicators

The public housing dashboard <https://edefang.shinyapps.io/House/> provides a high-level overview of the public housing landscape, presenting key metrics and allowing for state-level comparisons. These metrics offer a foundational understanding of the scale and operational aspects of public housing nationwide.



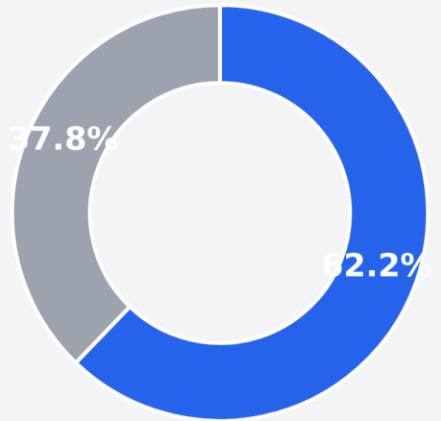
## Dashboard Visualization



### Key Features

- State-level comparisons
- Vacancy rate tracking
- Top 10 states analysis
- Rent contribution analysis

# Minority Representation in Public Housing



■ Minority (62.2%)

■ Non-Minority (37.8%)

Minority households represent a significant majority of public housing residents, highlighting the need to address diverse demographic needs in policy.

## Key Statistics

- ✖ 62.2% of public housing residents are minority households
- 🏠 Total minority units: 560,962

## Racial Breakdown

- 🔴 Black residents: 41.7%
- 🟡 Hispanic residents: 26.1%
- 🟢 Other minority groups: 14.4%

# Top 10 States Analysis - Total Units

This analysis compares public housing unit distribution across the top 10 states, providing insights into regional variations and performance metrics.

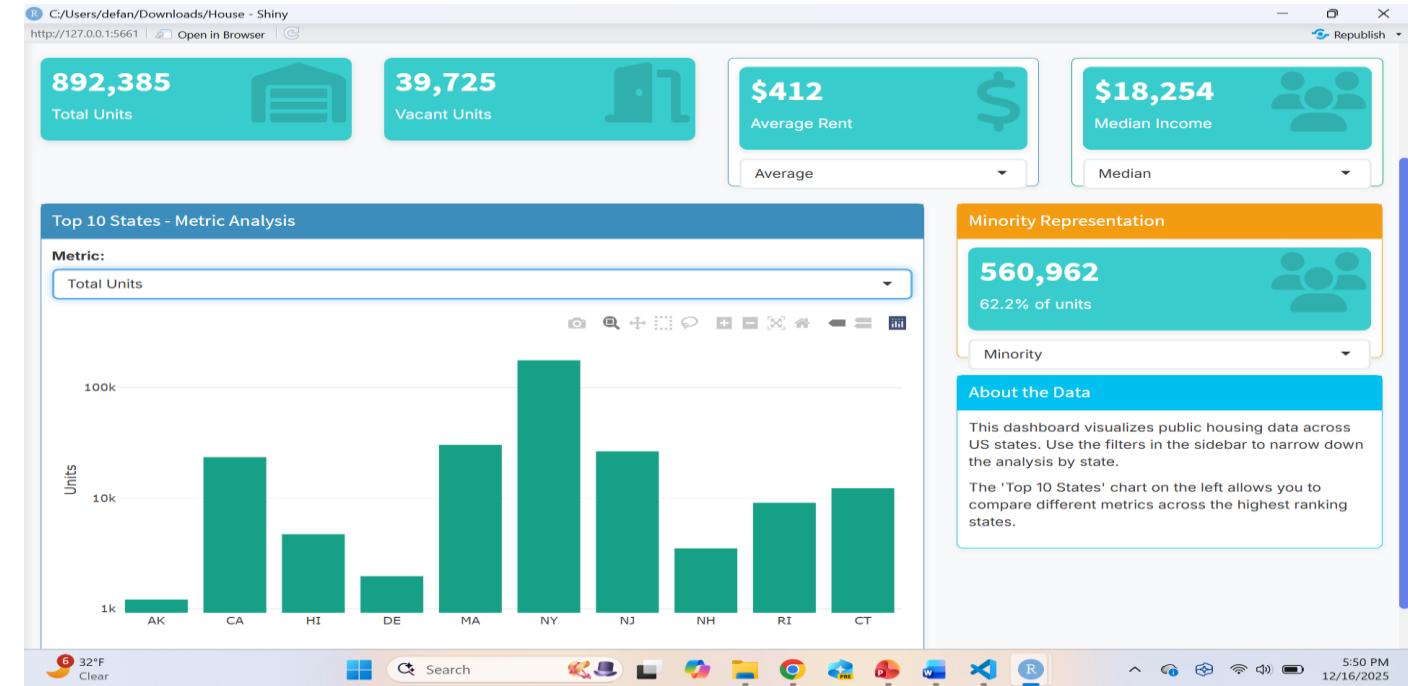
## Key Insights

- ✓ State-level comparison reveals regional disparities in public housing
- ✓ Unit distribution varies significantly across different states
- ✓ Top states account for a substantial portion of total public housing units

## Methodology

Analysis based on current public housing dashboard metrics, focusing on total units count and state-level comparisons.

## State-Level Comparison of Total Units



### HIGHEST CONCENTRATION

## NEWYORK

Dominant market share

### HIGHEST vacant unit

## NEWYORK

Dominant market share

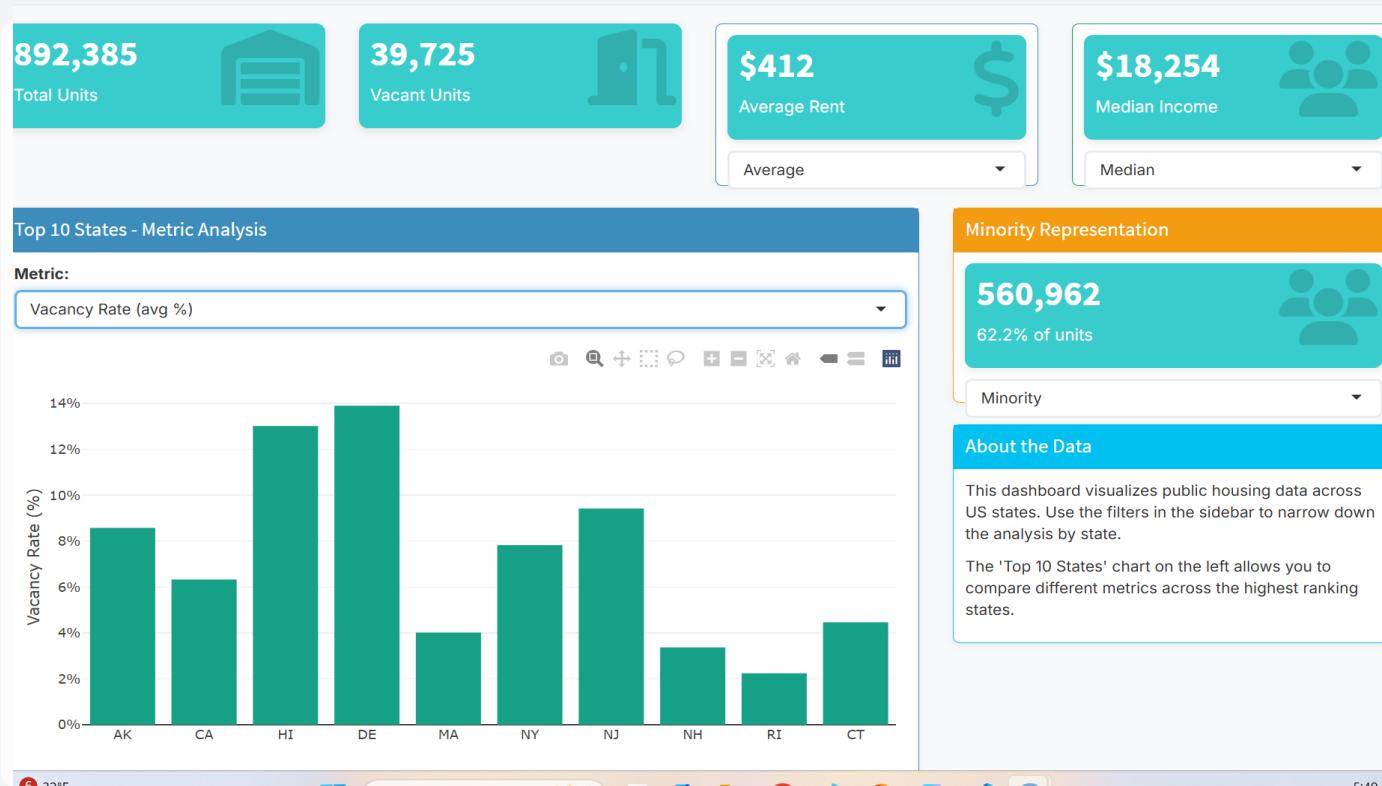
### TOTAL UNITS NATIONWIDE

## 892,385

As of latest report

# Top 10 States Analysis - Vacancy Rates

Analysis of vacancy rates across the top 10 states, showing housing utilization efficiency and identifying states with the highest and lowest vacancy rates.



## Key Insights

- Hawaii has the lowest vacancy rate at 0%, indicating high housing utilization
- Delaware has the highest vacancy rate at 14%, suggesting potential oversupply or accessibility issues
- Seven of the top 10 states have vacancy rates between 5-10%, indicating moderate housing market balance

## Vacancy Rate Bar graph

- States with higher vacancy rates may indicate potential opportunities or challenges in housing market efficiency

# Demographic Profile of Public Housing Residents

The demographic analysis of public housing residents reveals key insights into household composition and racial distribution.

 Total Households

**785,648**

 Avg. Household Size

**2.02**

people per household

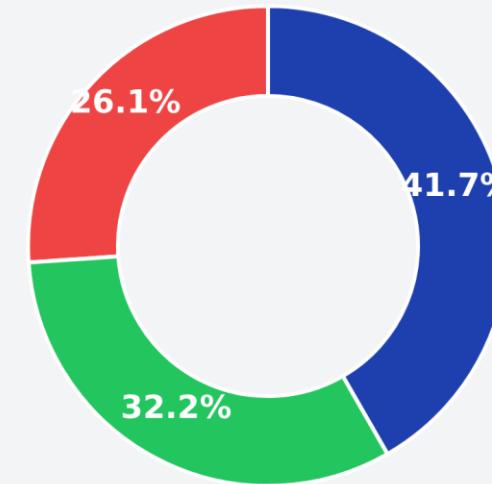
## Racial Composition

Minority households represent 71.7% of the total, with Black households making up 41.7% and Hispanic households 26.1% of all units.

 Black (41.7%)

 Hispanic (26.1%)

 Other (32.2%)



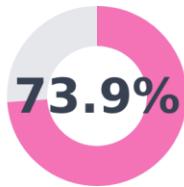
Minority households represent 71.7% of public housing units

# Vulnerable Populations Analysis

Public housing serves diverse vulnerable populations requiring policy prioritization.



## Female-Headed Households



**73.9%**

of all households

30.9% are female-headed families with children



## Elderly Residents



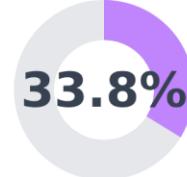
**26.8%**

of all residents

Percentage of elderly in population



## Disabled Population



**33.8%**

of non-elderly residents

Have disabilities requiring accessible housing



These vulnerable populations should be prioritized in policy discussions and resource allocation.

# Household Income Statistics

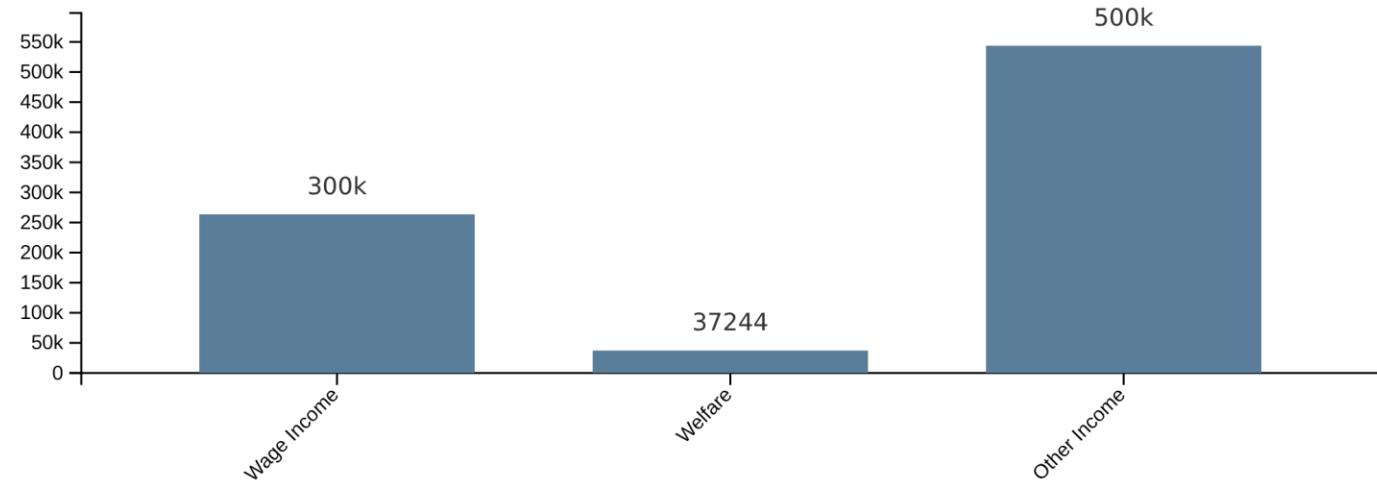
## \$ Average Household Income

**\$18,587**

Annual household income

- i 474,659 households earn at least \$18,000 annually

## Income Sources Breakdown



Wage  
Income

**263,452**

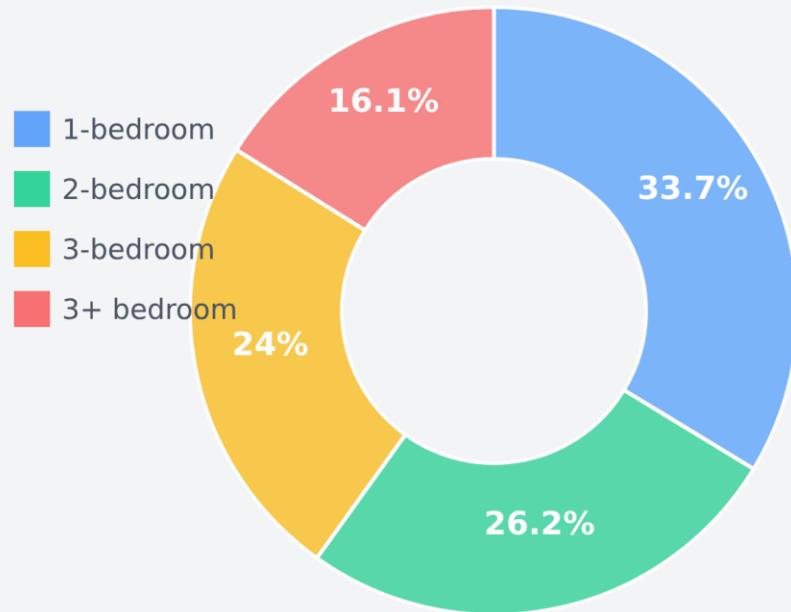
Welfare

**37,244**

Other  
Income

**543,678**

# Housing Unit Distribution by Size



*Distribution of public housing units by bedroom count*



## Unit Size Distribution

Public housing units are distributed across four bedroom categories, with clear preferences for certain unit sizes.

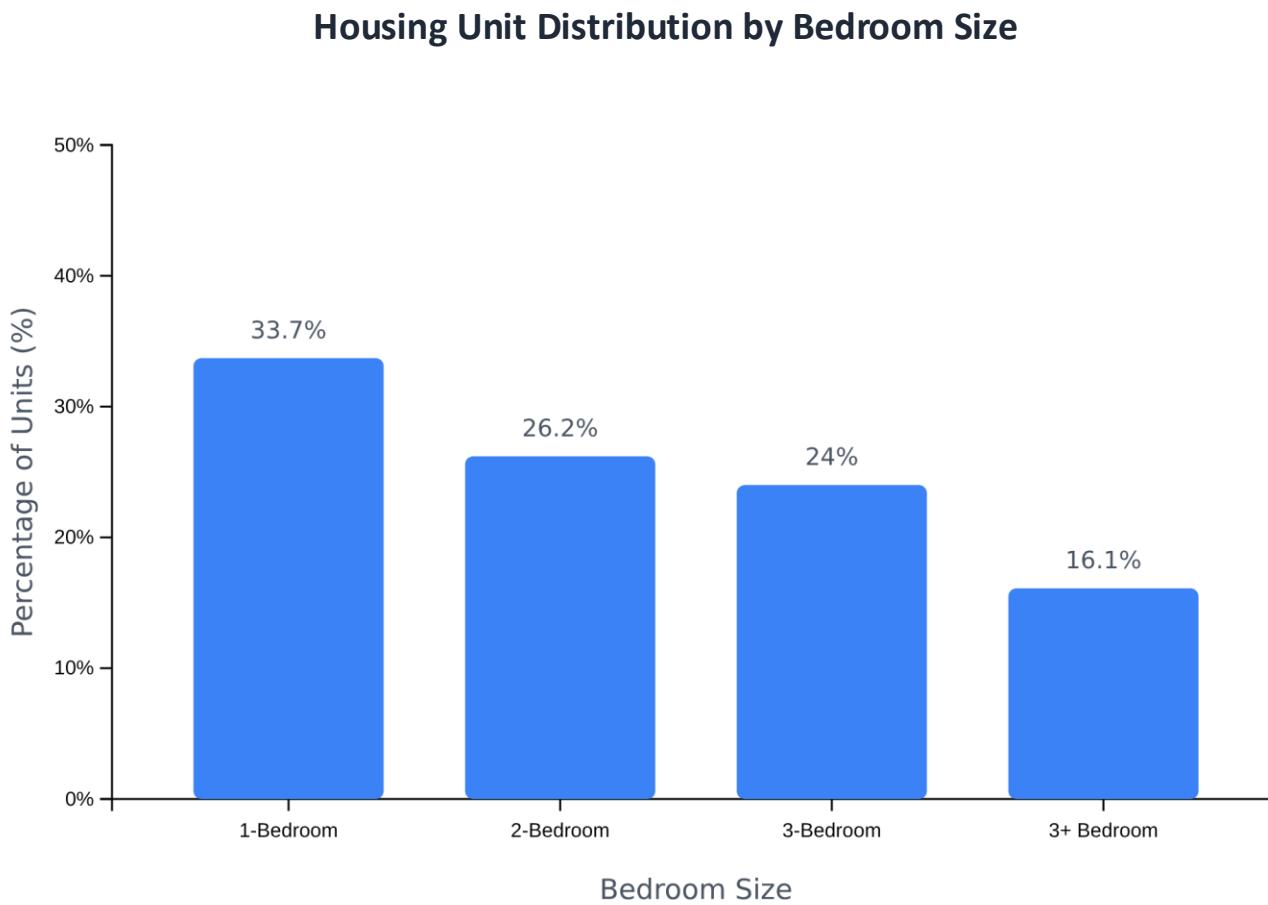
### Key Insights:

- ✓ 1-bedroom units are most common, representing **33.7%** of all units
- ✓ Combined 2 and 3-bedroom units represent **50.2%** of the inventory
- ✓ Large units (3+ bedrooms) make up **16.2%** of available housing



The distribution suggests a higher demand for smaller units, which may indicate a higher proportion of single-person households or couples without children in the public housing population.

# Income Distribution Across Unit Types



## \$ Average Household Income

**\$18,587**

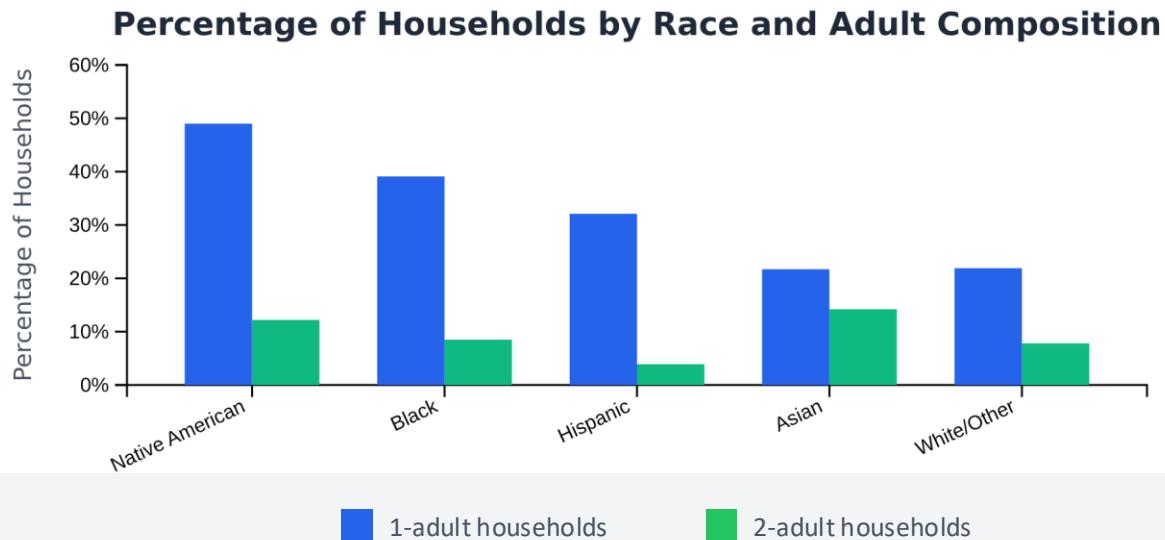
Overall average household income

## Income Sources

	Wages	<b>263,452 households</b>
	Welfare	<b>37,244 households</b>
	Other Income	<b>543,678 households</b>

**Key Insight:** 474,659 households earn at least \$18,000 annually, which is a significant portion of the public housing population.

# Household Composition by Race

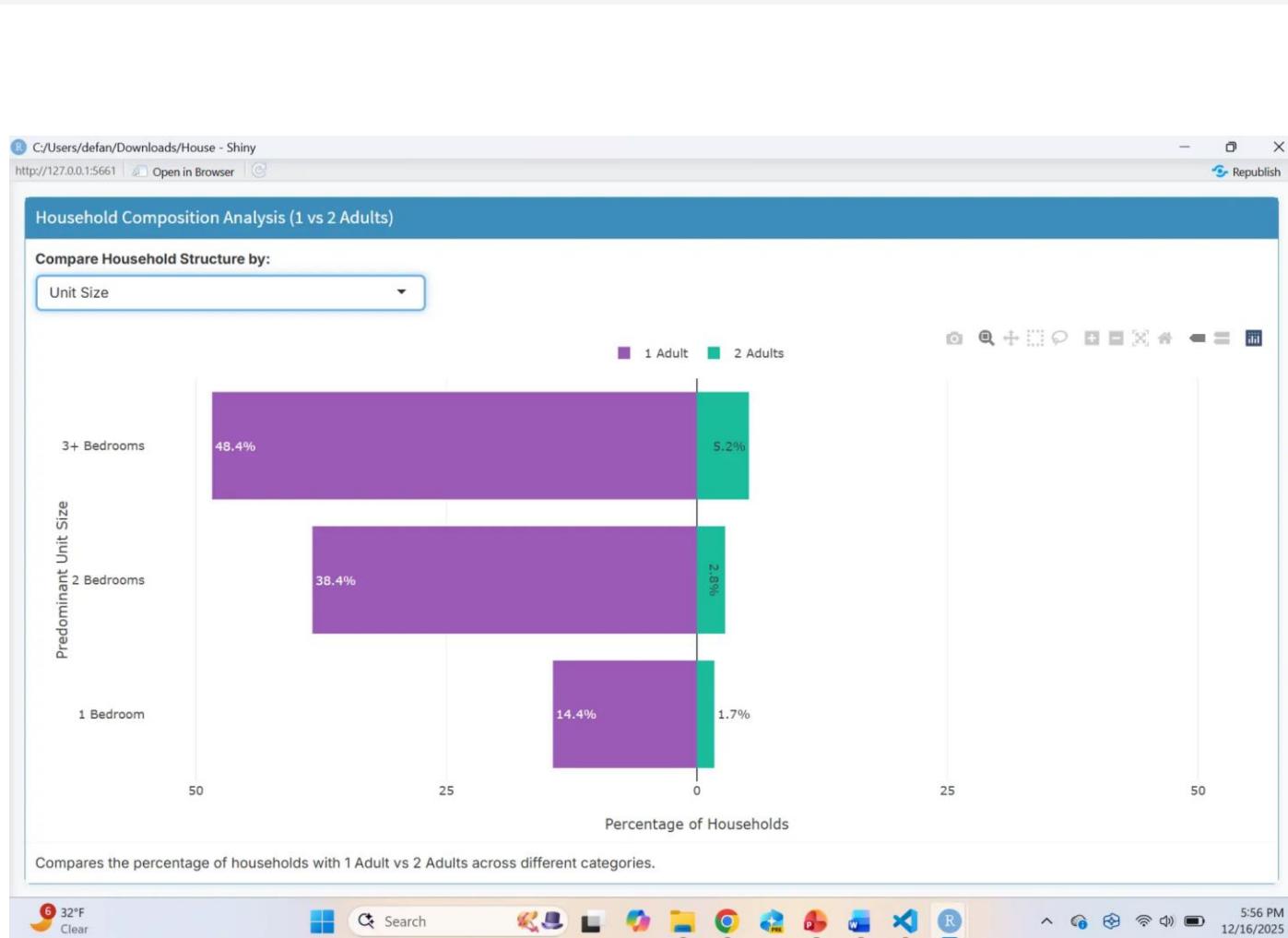


## Key Insights

- Native American households have highest 1-adult rate (49%)
- Asian households have highest 2-adult rate (14.2%)
- Hispanic households show second-highest 1-adult rate (32.1%)
- All racial groups show higher 1-adult rate than 2-adult



# Household Composition by Unit Size



## Key Insights

- ✓ 1-adult households are significantly more common across all unit sizes
- ✓ Both 1-adult and 2-adult households tend to reside in larger units
- ✓ Large units (3+ bedrooms) are more likely to be occupied by 1-adult households

### 1-Bedroom Units

**14.4%**

1 Adult

**1.7%**

2 Adults

### 2-Bedroom Units

**38.4%**

1 Adult

**2.8%**

2 Adults

### 3+ Bedroom Units

**48.4%**

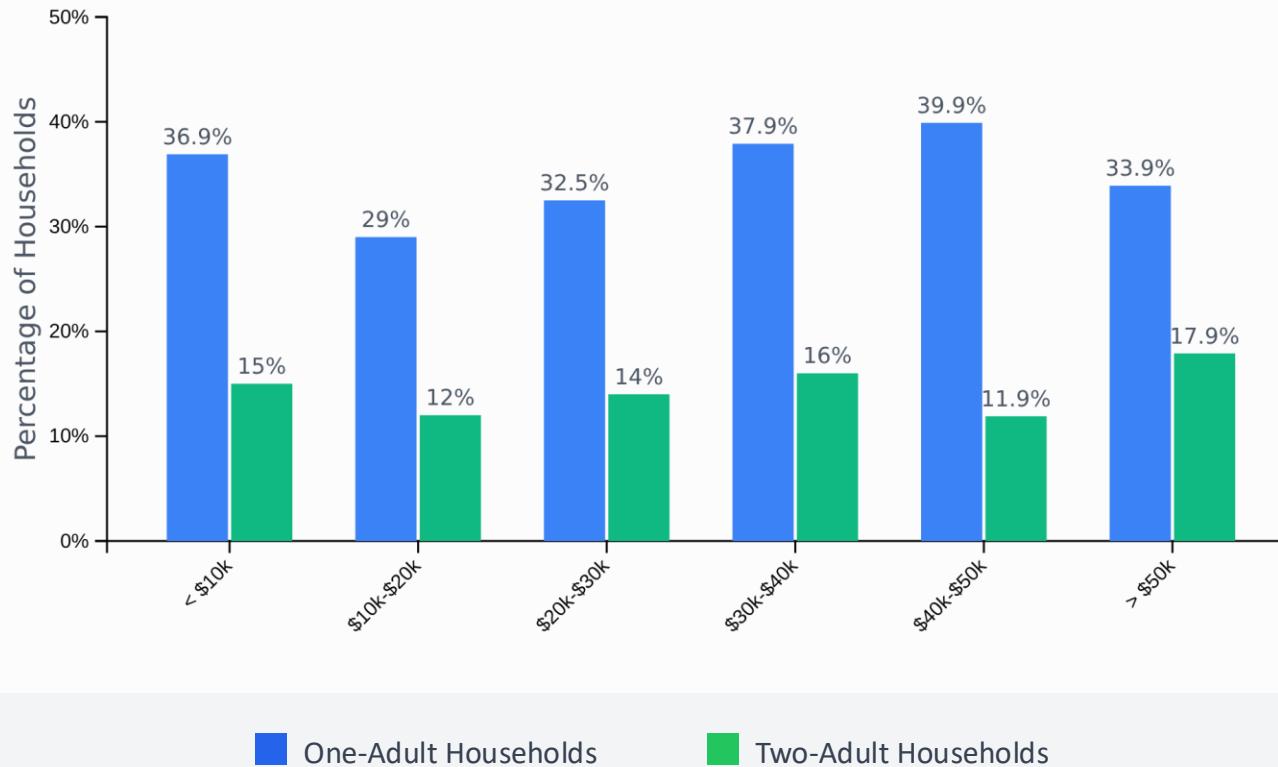
1 Adult

**5.2%**

2 Adults

# Household Composition by Income Level

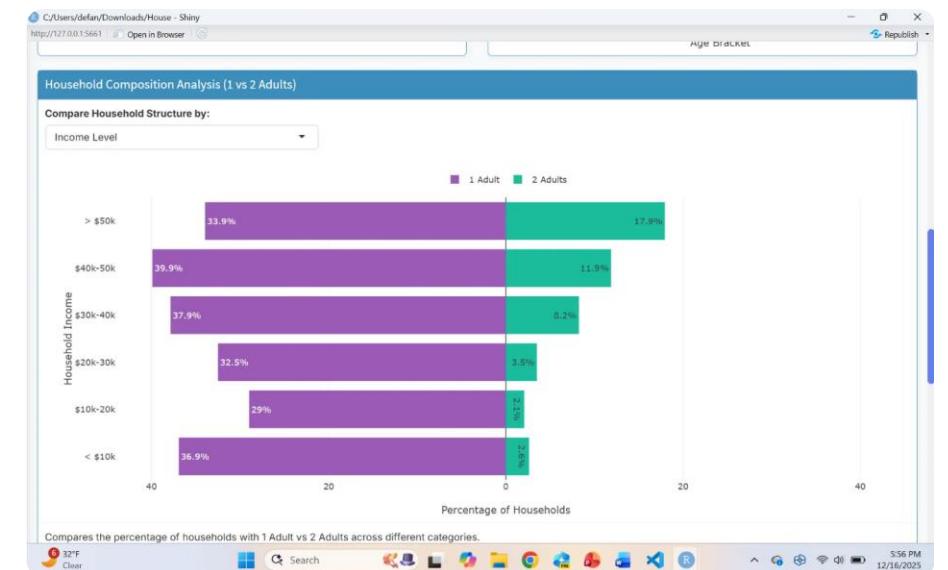
Analysis shows 1-adult households consistently exceed two-adult households across all income brackets, with the gap widening at lower income levels.



## Key Insights

- One-adult households dominate across all income levels
- Largest disparity in lower income brackets

## Income Distribution Data



# Households with Children Analysis

Analysis of household composition among families with children in public housing reveals important patterns about family structure and housing needs.



## Dominant Household Structure

A clear majority (91%) of households with children are headed by a single adult, highlighting the prevalence of single-parent households in the public housing system.



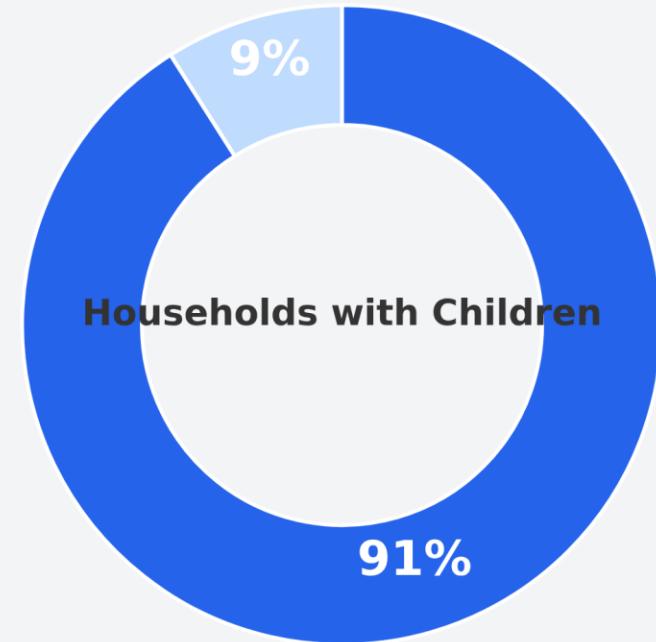
## Implications for Housing Policy

The high percentage of single-parent households suggests a need for housing policies that address the specific needs of these families, including larger unit sizes and support services.



## Comparative Analysis

The 9% of households headed by two adults represent an important minority group that often requires different housing considerations than single-parent households.



■ One Adult Head (91%)

■ Two Adult Heads (9%)

# Statistical Analysis of Rent Price Factors

## Regression Analysis Results

A multiple linear regression model and an OLS model was employed to identify key predictors of rent prices in public housing units.

### Model Performance

R-squared: 7.8%

Model has low explanatory power, capturing only 7.8% of rent variance

### Strongest Predictor

Overhoused Units (%)

Identified as the strongest predictor of rent prices

### Bedroom Size Impact

Explains only ~40% of rent price variance

Income is a stronger predictor than bedroom size

## Regression Output

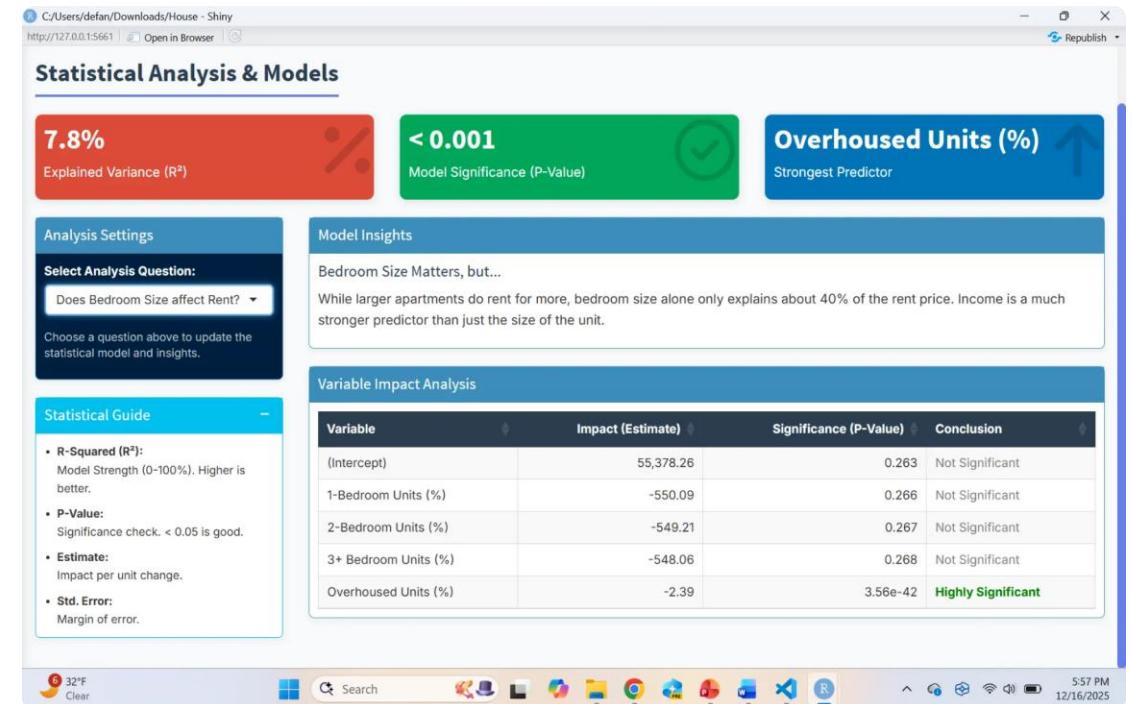


Figure 1: Statistical output from regression analysis



### Key Insight

Variables related to percentage of different bedroom unit types were not statistically significant ( $P > 0.05$ ).

# Model Performance and Significance

## Model Overview

Statistical analysis of factors affecting rent prices. R-squared = 0.078, explaining **7.8%** of variance.

✓ R-squared

**7.8%**

Low explanatory power

▢ P-value

**< 0.001**

High model significance

## Strongest Predictor



Overhoused Units (%)

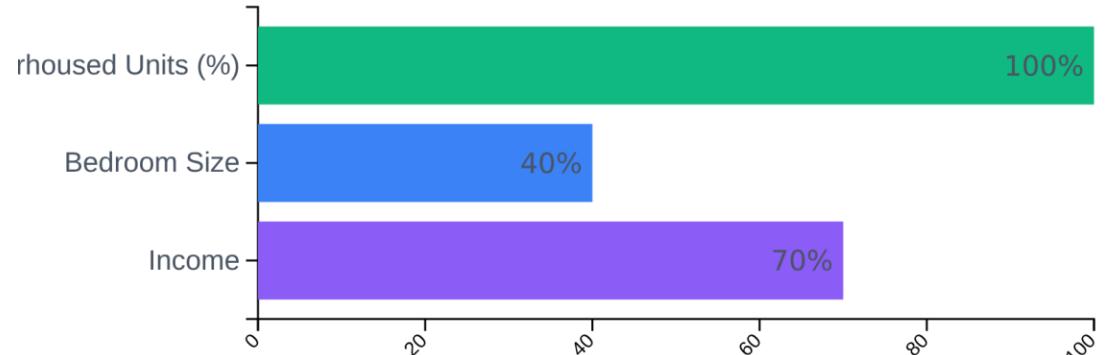
Identified as the strongest predictor

## Statistical Significance

- Model is statistically significant (P-value < 0.001)
- Income is a stronger predictor than bedroom size
- Percentage of bedroom unit types not significant

## Factor Importance in Rent Prediction

Relative Importance in Rent Prediction Model



ⓘ Income shows stronger correlation with rent prices

# Key Findings and Insights

## Population & Demographics

- ✓ 785,648 total households with average size of 2.02 people
- ✓ 62.2% minority representation (560,962 units)
- ✓ 73.9% female-headed households (30.9% with children)

## Financial Insights

- ✓ Average rent: \$412 | Median household income: \$18,254
- ✓ 474,659 households earning  $\geq \$18k$
- ✓ Major income sources: Wage (263,452), welfare (37,244), other (543,678)

## Household Composition

- ✓ 1-adult households more prevalent across all demographic groups
- ✓ Native American households show highest percentage of 1-adult households (49%)
- ✓ Asian households have highest percentage of 2-adult households (14.2%)

## Rent Price Factors

- ✓ "Overhoused Units (%)" strongest predictor (R-squared 7.8%)
- ✓ Bedroom size explains only ~40% of rent price variation
- ✓ Income is a stronger predictor of rent than unit size

# Policy Implications and Recommendations

Data-driven insights from the public housing dashboard analysis provide a foundation for targeted policy interventions. These recommendations aim to address key challenges and leverage opportunities identified in the data.



## Demographic Targeting

- ✓ Address disparity in minority representation (62.2%) through targeted funding
- ✓ Develop programs for female-headed households (73.9%)



## Income Support

- ✓ Strengthen rent assistance programs given median income of \$18,254
- ✓ Address financial vulnerability of households with children



## Housing Unit Distribution

- ✓ Address preference for larger units (33.7% 1-bedroom, 26.2% 2-bedroom)
- ✓ Encourage mixed-income developments to reduce concentration of poverty



## Family Structure

- ✓ Develop support programs for single-adult households (91% of households with children)
- ✓ Address needs of elderly residents (26.8%) and residents with disabilities (33.8%)

# Acknowledgments

Thank you to all the data sources and contributors who made this analysis possible

## Data Sources

-  National Public Housing Database
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-  Data Visualization Libraries
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-  All AI agents

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