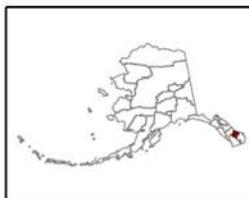


# City & Borough of Wrangell



CDP = Census Designated Place

CA = Census Area



Map Prepared by:  
Alaska Department of Labor & Workforce Development

September 2011

Source: US Census  
2010 TIGERline



## Table of Contents

Regional and Statewide Housing Characteristics.....	2
Wrangell City and Borough Dashboard .....	3
Wrangell Borough Housing Need Highlights .....	4
Wrangell City and Borough Summary .....	5
Community .....	5
Overcrowding.....	6
Affordability.....	7
Energy .....	8
Single-family Units .....	8
Multifamily Units .....	10
Historical Household Electricity Usage.....	12
Inefficient and Older Homes .....	12
Housing Condition .....	13
Ventilation .....	13
Indoor Air Quality .....	13
Draftiness.....	13

## Regional and Statewide Housing Characteristics

This census area summary only includes the highlights of housing characteristics at the census area level. The 2017 Alaska Housing Assessment provides a significant amount of data and analysis at statewide, ANCSA region and census area levels. That assessment provides a statewide analysis of housing characteristics, how they compare to national numbers, and the estimated housing needs. Within the 2017 Alaska Housing Assessment, written summaries are available for each individual ANCSA region and census area, and data profiles are also available characterizing the housing stock from the perspective of community, overcrowding, energy, affordability and need. These different tiers of information and analysis allow researchers, housing authorities, policymakers and others to generate answers to specific questions. For a more detailed discussion of estimating housing need and comparison of methods to previous housing assessments, see Appendix C Selected Methodology in 2017 Alaska Housing Assessment.

## Wrangell City and Borough Dashboard

**Population:** The Alaska Department of Labor and Workforce Development's current (2015) population estimate for the Wrangell City and Borough is 2,442, which is essentially unchanged from 2000.

**Housing Units:** There are currently 1,468 housing units in the Wrangell City and Borough. Of these, 1,163 are occupied, 101 are for sale or rent, and the remaining 251 are seasonal or otherwise vacant units.

**Energy and Energy Costs:** The average home in the Wrangell Borough is 1,800 square feet and uses 206 million BTUs of energy annually, compared to the statewide average of 227 million BTUs per year. Using AKWarm estimates, the average annual energy cost for homes in the Wrangell Borough is \$4,512. This is approximately 1.1 times the statewide average and twice the national average.

**Overcrowding:** An estimated 15 (1 percent) of occupied units are either overcrowded (1 percent) or severely overcrowded (rounds to zero percent). This is less than the national average, and makes this census area the least overcrowded census area in the state.

**Drafty Homes and Ventilation:** Approximately 692 (66 percent) of occupied homes in the Wrangell Borough are drafty, exceeding seven air changes per hour at 50 Pascals (ACH50). The statewide average is 36 percent. In contrast, there are an estimated 377 occupied housing units (36 percent) in the Wrangell Borough that are relatively airtight and lack a continuous ventilation system. These homes are at higher risk of issues with moisture and indoor air quality.

**Affordability:** On average, approximately 275 (24 percent) of households in the Wrangell Borough are cost-burdened, spending more than 30 percent of total household income on housing costs, including rent, utilities and energy. Statewide, 31 percent of households are cost-burdened.

**Senior Housing:** There are an estimated 24 beds in senior housing facilities in the Wrangell City and Borough. Currently the Alaska Department of Labor and Workforce Development estimates there are 471 seniors in the census area and projects an increase to 719 by 2030.

**Housing Issues:** There are an estimated 547 homes built before the 1980s in the Wrangell Borough that have not been retrofitted through a state program in the past 10 years. Approximately 53 (5 percent) homes in the Wrangell Borough lack complete kitchens and approximately 49 (4 percent) lack complete bathrooms.

## Wrangell Borough Housing Need Highlights

Wrangell Borough has had a consistent population for the past 15 years that projected to stay the same through 2030;<sup>1</sup> however, the population of seniors is projected to rise by 34 percent by 2030. The primary housing need faced by the Wrangell Borough is for more senior housing. A secondary priority is the need to retrofit existing homes.

**Housing Gap:** There are 1,468 housing units in the census area, with 77 percent occupied.<sup>2</sup> One percent of the occupied units are overcrowded, making this the least overcrowded census area in the state with 15 overcrowded units. The housing gap is projected to rise to 23 units overcrowded in 2020, based on current population and construction trends.<sup>3</sup>

**Affordable Housing Need:** The average annual home energy costs in the Wrangell Borough are \$4,512, which is approximately 1.1 times the state average and twice the national average.<sup>4</sup> Approximately 24 percent of households are cost-burdened, meaning they spend more than 30 percent of their income on housing costs.<sup>5</sup>

**Senior Housing Needs:** There are 24 beds for seniors in the census area. The senior population is 471, and that number is expected to rise to 719 by 2030.<sup>6</sup> <sup>7</sup> Increasing available senior housing could ensure adequate assisted and independent living facilities for the projected population.

**Retrofit Needs:** Sixty-six percent of homes are drafty, compared to the statewide average of 36 percent.<sup>8</sup> In contrast, 36 percent are relatively airtight and lack a continuous ventilation system. Five percent of all occupied homes have continuous mechanical ventilation, the second lowest in the state. Homes built before 1980 that have not been retrofit make up 53 percent of all homes in the borough. All have potential for an energy retrofit being able to increase the comfort and safety of the home while decreasing energy use.

<sup>1</sup> Hunsinger, Eddie, Sandberg, E., & Brooks, L. (2016). Alaska Population Projections 2015 to 2045. Alaska Department of Labor and Workforce Development, Research and Analysis Section.

<sup>2</sup> U.S. Census Bureau. (2016). *American Community Survey, 2010–2014 American Community Survey Five-year Estimates*.

<sup>3</sup> See Appendix C: Methodology for details.

<sup>4</sup> U.S. Energy Information Administration, Independent Statistics and Analysis. (2016). Residential Energy Consumption Survey (RECS): 2009. Retrieved from <https://www.eia.gov/consumption/residential/data/2009/index.php>

<sup>5</sup> U.S. Census Bureau. (2016). *American Community Survey, 2010–2014 American Community Survey Five-year Estimates*.

<sup>6</sup>AHFC Senior Housing Office. (2016). *Inventory List: Independent Living Homes/Facilities*. Revised 5/02/2016. Retrieved from <https://www.ahfc.us/senior-support/>

<sup>7</sup> Hunsinger, Eddie, Sandberg, E., & Brooks, L. (2016). Alaska Population Projections 2015 to 2045. Alaska Department of Labor and Workforce Development, Research and Analysis Section.

<sup>8</sup> See Appendix C: Methodology for details.

# Wrangell City and Borough Summary

## Community

The Wrangell census area is located on the Southeast panhandle of Alaska and is in the Sealaska Native Corporation ANCSA region. The average home size in the census area is 1,766 square feet.

The ratio of dependents, including those under 16 and over 65, relative to the working age population in the Wrangell City and Borough is higher than the statewide average and lower than the national ratio.<sup>9</sup> The Wrangell City and Borough is expected to see an increase in the nonworking age population by 2030.

The ratio of senior age dependents to the working age population is higher than the statewide average and higher than the national average. The Wrangell City and Borough region is projected to see the ratio of senior age dependents to working age dependents increase by 1.7 times by 2030.

There are an estimated 24 dedicated beds in senior housing in the Wrangell Borough with none of those dedicated to assisted care living.<sup>10</sup> Currently the Alaska Department of Labor and Workforce Development estimates there are 471 seniors in the census area and projects that there will be 719 senior citizens by 2030.<sup>11</sup> In the Wrangell Borough no senior citizens are in assisted care housing, whereas statewide 2.8 percent of senior citizens live in assisted care housing. Nationally, approximately 3.5 percent of senior citizens are in senior living facilities.<sup>12</sup>

Comparison of the growth rates in the senior age (65+) segment of the population to the dependent age (0 - 15) population indicate that in the Wrangell City and Borough region the primary pressure for new housing over the next 15 years will come from households with elderly people.

<sup>9</sup> Hunsinger, Eddie, Sandberg, E., & Brooks, L. (2016). "Alaska Population Projections 2015 to 2045." Alaska Department of Labor and Workforce Development, Research and Analysis Section.

U.S. Census Bureau. (2016). *American Community Survey, 2010-2014 American Community Survey Five-year Estimates*.

<sup>10</sup> AHFC Senior Housing Office. (2016). *Inventory List: Independent Living Homes/Facilities*. Revised 5/02/2016. Retrieved from <https://www.ahfc.us/senior-support/>

<sup>11</sup> Hunsinger, Eddie, Sandberg, E., & Brooks, L. (2016). "Alaska Population Projections 2015 to 2045." Alaska Department of Labor and Workforce Development, Research and Analysis Section.

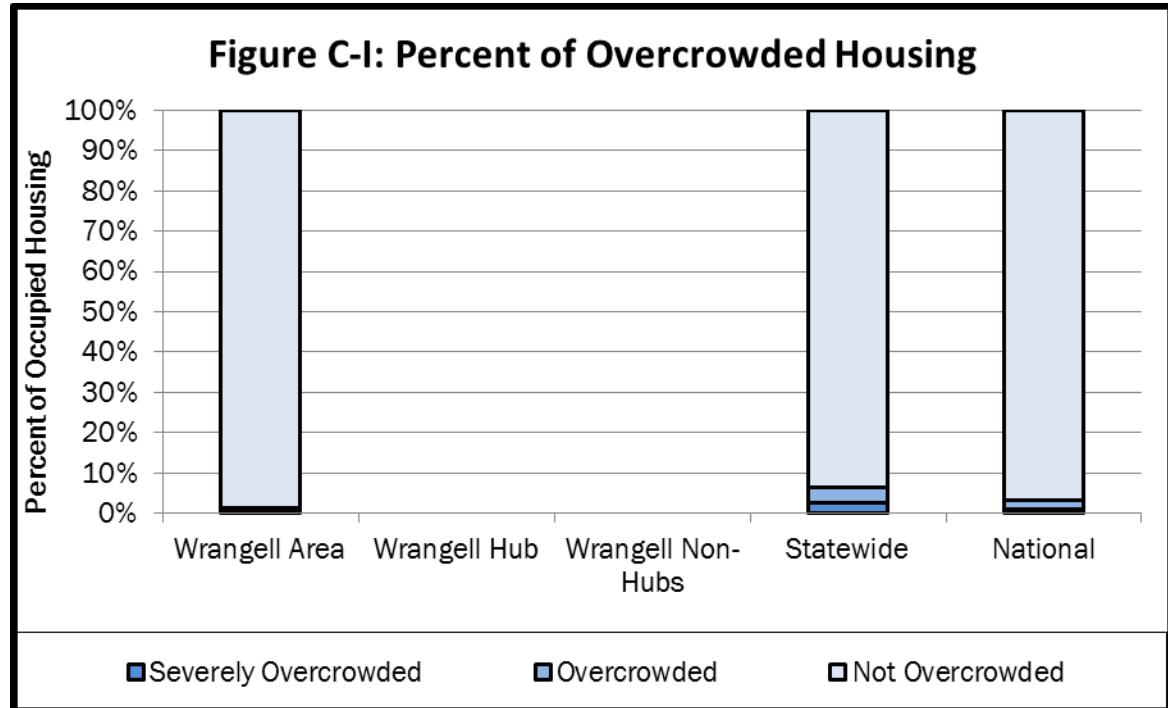
<sup>12</sup> Ribbe, M., Ljunggren, G., Steel, K., Topinkova, E., Hawes, C., Ikegami, N., ... Jonnson, P. (1997). "Nursing Homes in 10 Nations: A Comparison Between Countries and Settings." *Age and Ageing*. 26(S2), 3-12.

## Overcrowding<sup>13</sup>

The Wrangell City and Borough is the least overcrowded census area in Alaska. Approximately 1 percent of the households are overcrowded in the census area as a whole. The rate of overcrowding in the Wrangell City and Borough is approximately 20 percent of the statewide average (6.4 percent) and approximately 39 percent of the national average (3.3 percent).

Overcrowding is defined as households with more than 1 person per room. Severe overcrowding is defined as households with more than 1.5 persons per room.

Approximately 7 percent of housing units in the Wrangell City and Borough are available for sale or rent. Additionally, 17 percent of housing units in the Wrangell City and Borough are considered vacant because they are used for seasonal, recreational or other non-year-round purposes.

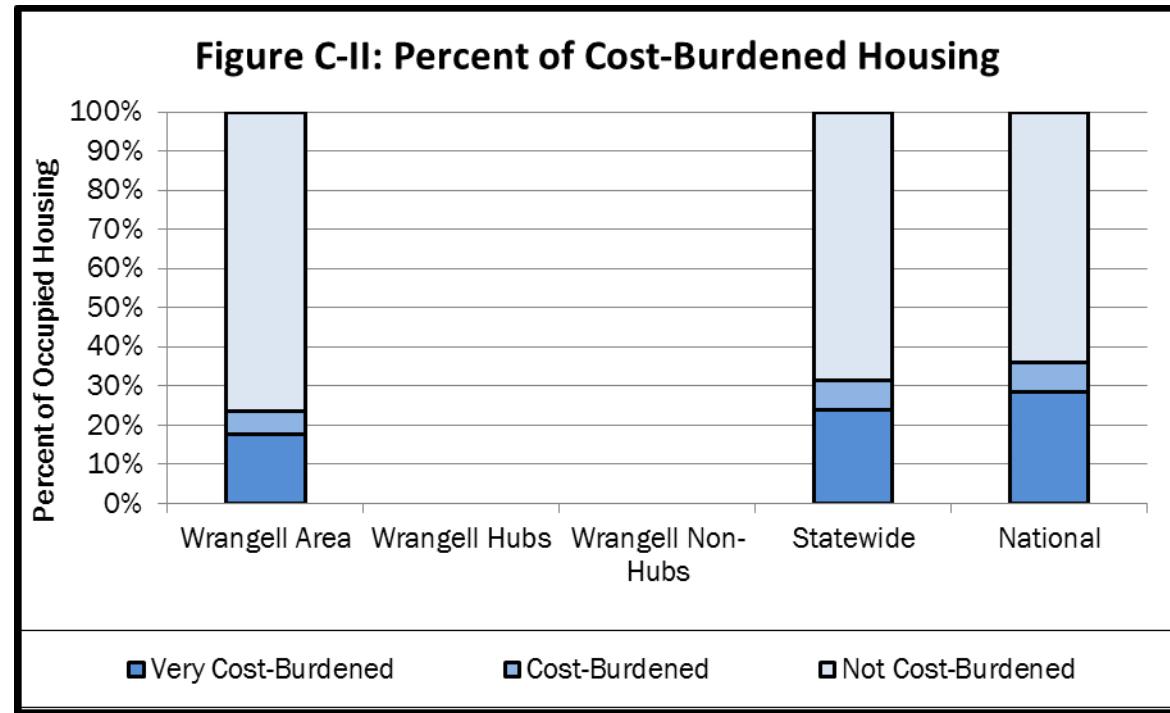


<sup>13</sup> U.S. Census Bureau. (2016). *American Community Survey, 2010-2014 American Community Survey Five-year Estimates*.

## Affordability<sup>14</sup>

According to estimates from the U.S. Census American Community Survey (ACS), 24 percent of households in the Wrangell City and Borough are cost-burdened, that is, spend more than 30 percent of their income on housing costs. The rate of cost-burdened households in the Wrangell City and Borough is 66 percent of the national average (36 percent).

The median household income in the Wrangell City and Borough is \$48,324. This is lower than the statewide median of \$71,829. The national median is \$53,482.



<sup>14</sup> U.S. Census Bureau. (2016). *American Community Survey, 2010-2014 American Community Survey 5-year estimates*.

## Energy<sup>15</sup>

### Single-family Units

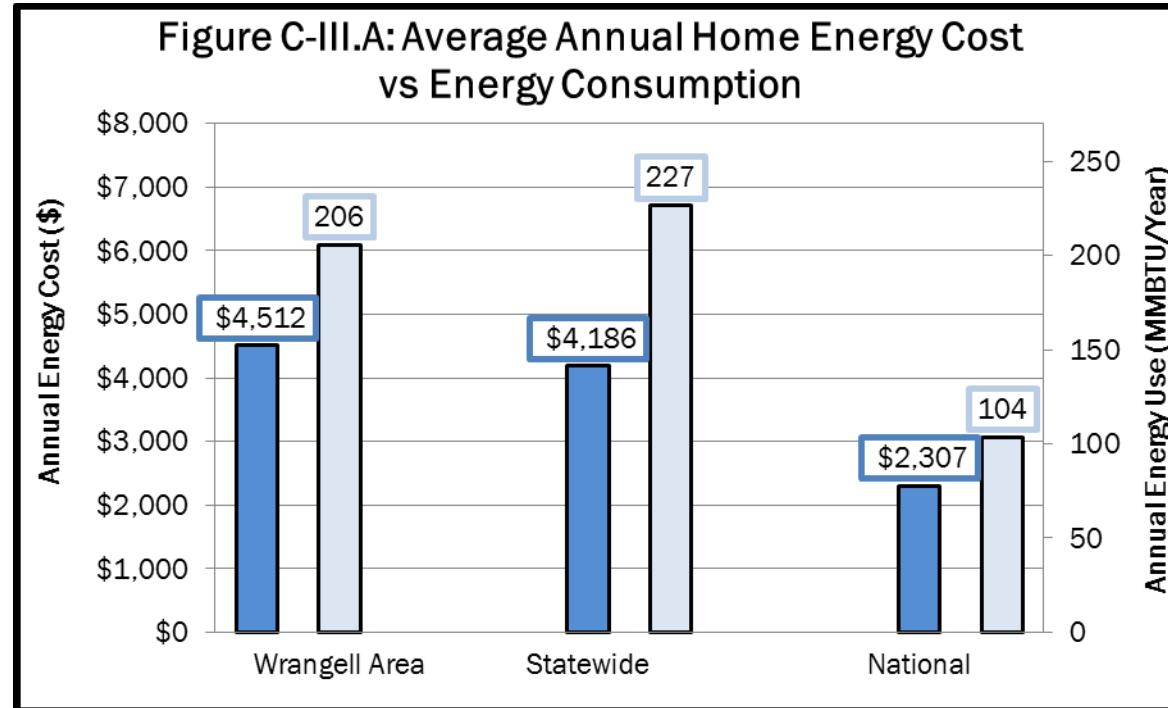
Single-family homes in the Wrangell Borough consume an average of 206 million BTUs per year, the ninth highest energy consumption in the state. This average annual energy consumption is 91 percent of the statewide average of 227 million BTUs and twice the national average.

Energy costs for single-family homes in the Wrangell Borough average \$4,512 annually. This is the 13th highest in the state. Wrangell Borough energy costs are 1.1 times the statewide average and twice the national average.

With an average footprint of 1,800 square feet, single-family homes in the Wrangell Borough are smaller than the statewide average of 1,955 square feet. Nationally the average house size is 2,425 square feet.

The energy use intensity (EUI), or annual energy used per square foot for a single-family home in the Wrangell Borough averages 128,000 BTUs per square foot, the 14th lowest in the state. This is approximately the same as the statewide average of 128,000 BTUs per square foot and three times the national average. The energy cost index (ECI), or annual energy cost per square foot, for a single-family home in the Wrangell Borough averages \$2.51, the eighth lowest in the state. This is 1.1 times the statewide average of \$2.31 per square foot and 2.6 times the national average of \$0.95 per square foot.

The home heating index (HHI) in the Wrangell Borough for the average single-family home is 12.9 BTUs/ft<sup>2</sup>/HDD. This is the second highest in the state. The HHI for the Wrangell Borough is higher than the statewide average of 8.83 BTU/ft<sup>2</sup>/HDD. The normalized cost of energy, in terms of dollars per million BTUs, for a single-family home in the Wrangell Borough averages \$24.10,



<sup>15</sup> See Appendix C: Methodology for details.

the 11th highest in the state. This is 1.5 times the statewide average of \$15.80 per million BTUs and 1.1 times the national average of \$22.27 per million BTUs.

## Multifamily Units

Multifamily housing units in the Wrangell Borough consume an average of 125 million BTUs per year, the 12th highest energy consumption in the state. This average annual energy consumption is 80 percent of the statewide average of 156 million BTUs and twice the national average.

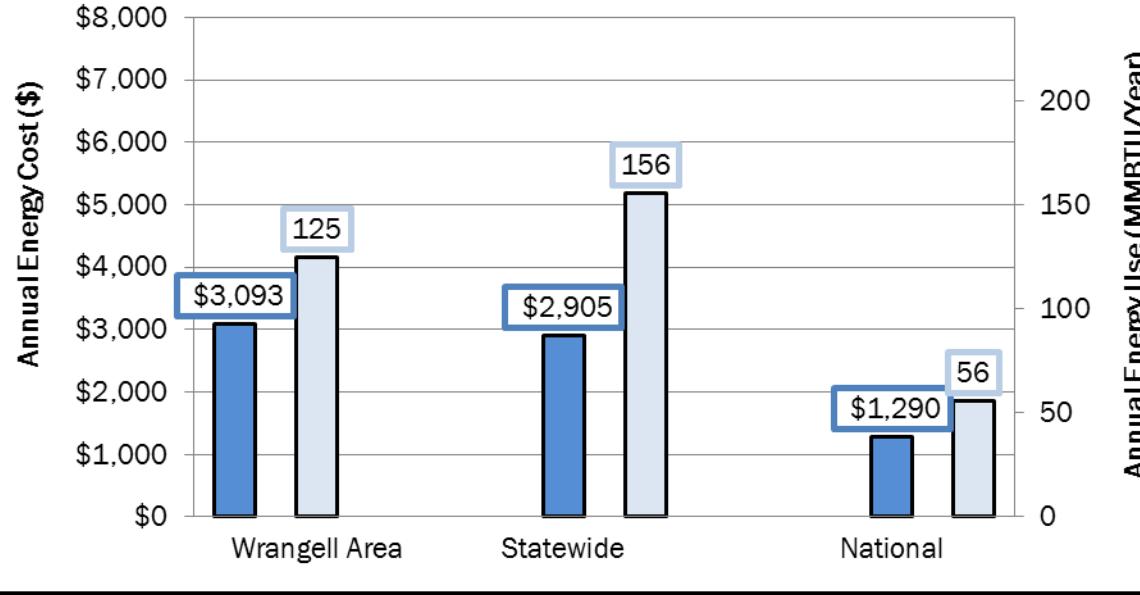
Energy costs for multifamily housing units in the Wrangell Borough average \$3,093 annually. This is the 13th highest in the state. Wrangell Borough energy costs are 1.1 times the statewide average and 2.4 times the national average.

With an average footprint of 1,294 square feet, multifamily housing units in the Wrangell Borough are approximately the same as the statewide average of 1,284 square feet. Nationally the average unit in multifamily housing is 930 square feet.

The energy use intensity (EUI), or annual energy used per square foot, for a multifamily housing unit in the Wrangell Borough averages 98,000 BTUs per square foot, the seventh lowest in the state. This is 77 percent of the statewide average of 128,000 BTUs per square foot and 1.6 times the national average. The energy cost index (ECI), or annual energy cost per square foot, for a multifamily housing unit in the Wrangell Borough averages \$2.39, the 10th lowest in the state. This is 1.1 times the statewide average of \$2.27 per square foot and 1.7 times the national average of \$1.39 per square foot.

The home heating index (HHI) in the Wrangell Borough for the average multifamily housing unit is 9.38 BTUs/ft<sup>2</sup>/HDD. This is the fourth highest in the state. The HHI for the Wrangell Borough is higher than the statewide average of 8.28 BTU/ft<sup>2</sup>/HDD. The normalized cost of energy, in terms of dollars per million BTUs, for a unit in multifamily housing in the Wrangell Borough averages

Figure C-III.B: Average Annual Home Energy Cost vs Energy Consumption



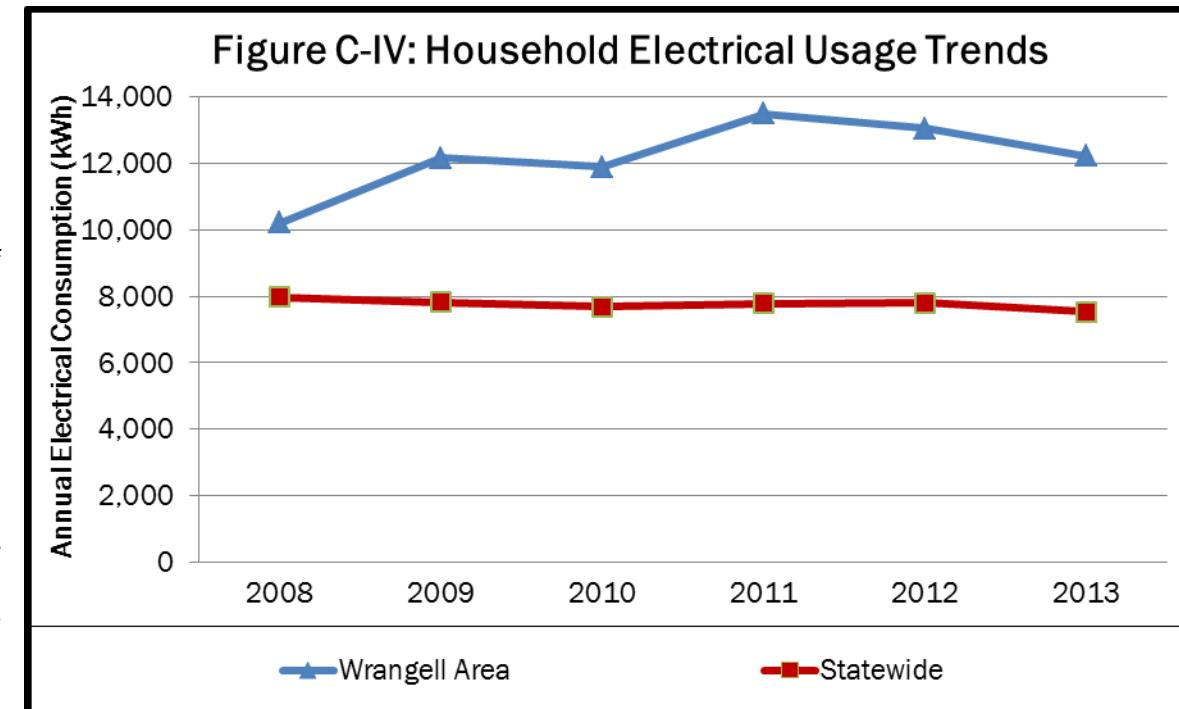
\$25.84, the ninth highest in the state. This is twice the statewide average of \$12.79 per million BTUs and 1.1 times the national average of \$23.12 per million BTUs.

### Historical Household Electricity Usage<sup>16</sup>

In 2013 the average household in the Wrangell City and Borough consumed 12,233 kWh of electricity annually. This is approximately 20 percent more than in 2008. Statewide, the average household consumed 7,540 kWh of electricity in 2013, a decrease of 5 percent since 2008.

### Inefficient and Older Homes<sup>17</sup>

Approximately 264 (23 percent) of the occupied homes in the Wrangell Borough are estimated to be 1-star homes. A 1-star home uses approximately four times more energy than if built to AHFC's Building Energy Efficiency Standard (BEES). Statewide, approximately 14,600 (6 percent) of occupied homes are estimated to be 1-star homes.



Older homes built before 1980 that have not been retrofitted are potentially homes in need. Approximately 53 percent of all homes in the Wrangell Borough fit these two criteria, higher than the statewide average of 39 percent.

<sup>16</sup> Fay, G., Villalobos Melendez, A. & West. C. (2014). *Alaska Energy Statistics: 1960-2011*. UAA Institute of Social and Economic Research. Retrieved from: [http://iser.uaa.alaska.edu/Publications/2013\\_12-AlaskaEnergyStatistics2011Report\\_Final\\_2014-04-30.pdf](http://iser.uaa.alaska.edu/Publications/2013_12-AlaskaEnergyStatistics2011Report_Final_2014-04-30.pdf)

<sup>17</sup> See Appendix C: Methodology for details.

## Housing Condition <sup>18</sup>

### Ventilation

Approximately 5 percent of the occupied homes in the Wrangell Borough region have heat recovery or continuous mechanical ventilation systems installed. This is the second lowest in the state. Statewide approximately 20 percent of occupied homes have continuous mechanical ventilation systems, with or without heat recovery.

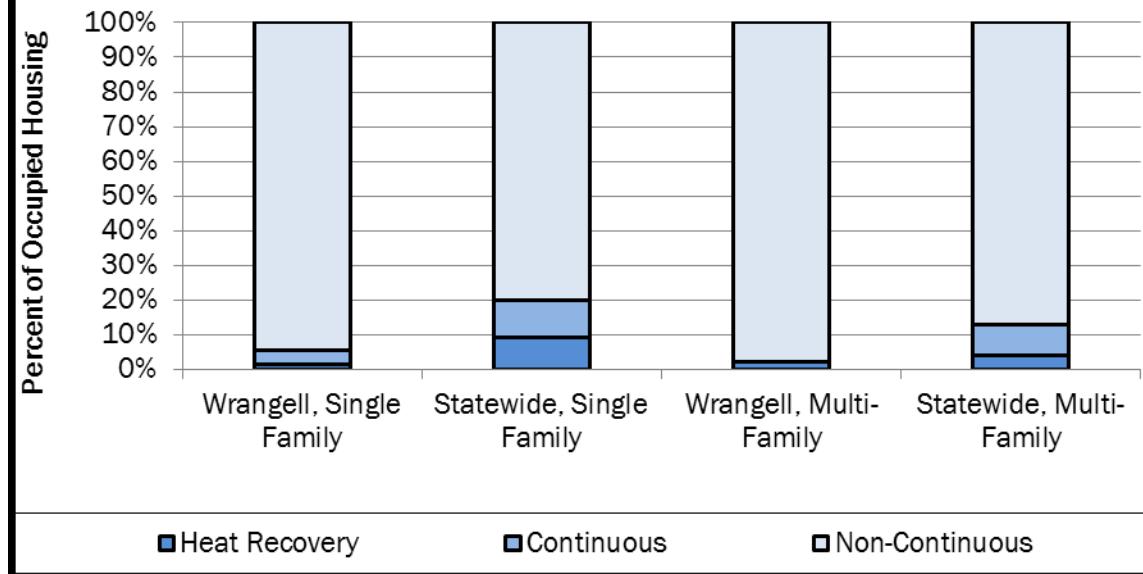
### Indoor Air Quality

A tight home with no or inadequate ventilation has an increased risk of issues with indoor air quality or moisture. The Wrangell Borough has the ninth lowest percentage of housing units in the state that are both relatively airtight and lack continuous mechanical ventilation. Approximately 305 (26 percent) of the occupied homes in the Wrangell Borough are estimated to be at moderate risk, with 119 (10 percent) estimated to be at high risk. Statewide, approximately 30 percent of occupied homes are estimated to be at moderate risk and 26 percent at high risk.

### Draftiness

To quantify drafty homes, the following definitions were used. Drafty homes will see test results of between 7 and 12 air changes per hour at 50 Pascals (ACH50) when subjected to a blower door test. Very drafty homes will see test results of greater than 12 ACH50. Approximately 372 (32 percent) of the occupied homes in the Wrangell Borough are estimated to be drafty, with 392 (34 percent) estimated to be very drafty. Statewide approximately 24 percent of occupied homes are estimated to be drafty and 12 percent are estimated to be very drafty.

**Figure C-V: Ventilation Types by Percent of Households**



<sup>18</sup> See Appendix C: Methodology for details.