

Bethel Census Area



CDP = Census Designated Place
CA = Census Area



Map Prepared by:
Alaska Department of Labor
& Workforce Development

August 2015

Source: US Census
2010 TIGERline

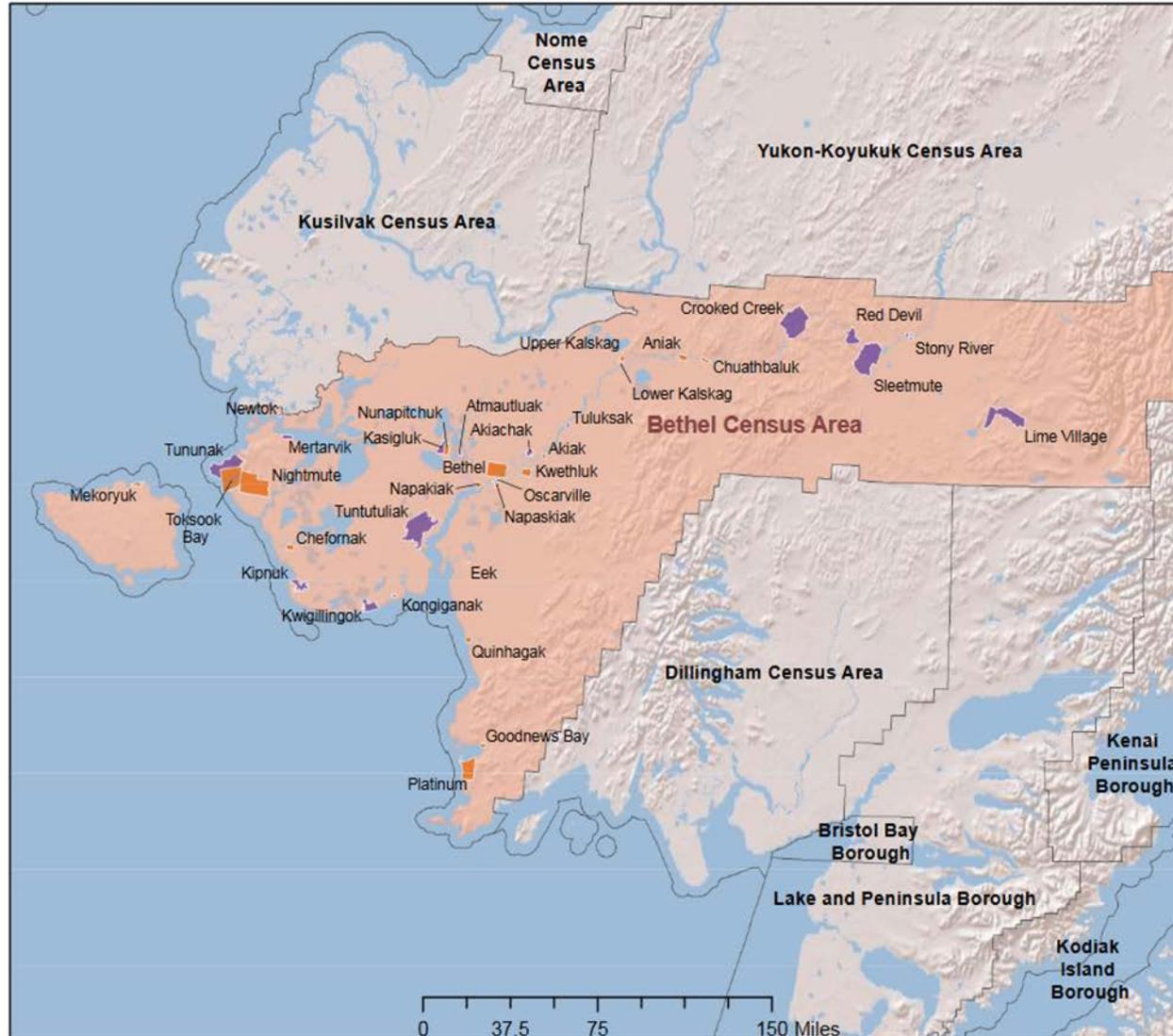


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Regional and Statewide Housing Characteristics

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.

Bethel Census Area Dashboard

Population: The Alaska Department of Labor and Workforce Development's current (2015) population estimate for the Bethel census area is 18,153, an increase of 13 percent from 2000.

Housing Units: There are currently 5,734 housing units in the Bethel census area. Of these, 4,441 are occupied, 142 are for sale or rent, and the remaining 1,336 are seasonal or otherwise vacant units.

Energy and Energy Costs: The average home in the Bethel census area is 954 square feet and uses 131 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 Bethel census area is \$4,659. This is approximately 1.1 times the statewide average and twice the national average.

Overcrowding: An estimated 1,545 (35 percent) of occupied units are either overcrowded (16 percent) or severely overcrowded (19 percent). This is nearly 11 times the national average, and makes this census area the third most overcrowded census area in the state.

Drafty Homes and Ventilation: Approximately 2,210 (48 percent) of occupied homes in the Bethel census area are drafty, exceeding seven air changes per hour at 50 Pascals (ACH50). The statewide average is 36 percent. In contrast, there are an estimated 1,519 occupied housing units (33 percent) in the Bethel census area 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 1,022 (23 percent) of households in the Bethel census area 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 39 beds in senior housing facilities in the Bethel census area. Currently the Alaska Department of Labor and Workforce Development estimates there are 1,223 seniors in the census area and projects an increase to 2,194 by 2030.

Housing Issues: There are an estimated 1,752 homes built before the 1980s in the Bethel census area that have not been retrofitted through a state program in the past 10 years. Approximately 1,187 (27 percent) homes in the Bethel census area lack complete kitchens and approximately 1,554 (35 percent) lack complete bathrooms.

Bethel Census Area Housing Need Highlights

The primary need in the Bethel census area is to retrofit current housing stock to decrease energy use and avoid potential problems caused by homes lacking proper ventilation systems.

This need is followed closely by the need for new housing units and senior housing because an estimated 35 percent of homes are overcrowded and severely overcrowded.¹

The *Yukon-Kuskokwim Delta Regional Energy Plan*² similarly addresses the need for energy-efficient houses. The plan ranks energy efficiency and conservation as the second-highest priority energy goal, behind improving maintenance and operations of energy systems. Specific issues regarding lack of energy efficiency and conservation in residences include lack of standards and best practices for arctic climate-appropriate design and construction, and the need for energy education for homeowners and students. The authors of the plan suggest future projects include educational visits to homes and schools addressing energy conservation practices, ensuring that new buildings are climate-appropriate and energy efficient, and performing research to determine more accurate energy costs. Projects such as these will reduce energy use and cost, helping to decrease the number of cost-burdened households.

Housing Gap: There are currently 5,734 housing units in the census area, and 75 percent of are occupied.³ An estimated 35 percent of occupied units in Bethel are overcrowded or severely overcrowded. This is 11 times the national average and makes Bethel census area the third most overcrowded census area in the state. Because 2 percent of the housing units are for sale or rent (other vacant units are seasonal or for other purposes) and the population is growing, the housing gap must be met by new construction.

Affordable Housing Need: The average annual energy cost for homes in the census area is \$4,659. This contributes to approximately 23 percent of the cost-burdened households, meaning they spend more than 30 percent of their income on housing.⁴ Addressing the need for retrofits should reduce energy costs and increase affordability.

¹ U.S. Census Bureau. (2016). *American Community Survey, 2010–2014 American Community Survey Five-year Estimates*.

² WHPacific, Inc., & Information Insights. (2016). *Yukon-Kuskokwim Delta Regional Energy Plan*. Retrieved from <http://nuvistacoop.org/resource-library/>.

³ U.S. Census Bureau. (2016). *American Community Survey, 2010–2014 American Community Survey Five-year Estimates*.

⁴ U.S. Census Bureau. (2016). *American Community Survey, 2010–2014 American Community Survey Five-year Estimates*.

Senior Housing Needs: There are 39 beds in senior housing facilities in the Bethel census area.⁵ Meanwhile, there are 1,223 seniors in the census area and this number is projected to increase to 2,194 by 2030.⁶ Increasing the amount of available senior housing should ensure there are adequate assisted and independent living facilities for the projected population.

Retrofit Needs: The need to retrofit homes in the Bethel census area is significant. Almost half (48 percent) of the homes in the area are drafty compared to the statewide average of 36 percent.⁷ In contrast, 33 percent are relatively airtight and lack a continuous ventilation system. Homes built before 1980 that have not been retrofitted make up 38 percent of all homes. All homes have high potential for an energy retrofit being able to increase the comfort and safety while decreasing energy use.

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

⁶ Hunsinger, Eddie, Sandberg, E., & Brooks, L. (2016). *Alaska Population Projections 2015 to 2045*. Alaska Department of Labor and Workforce Development, Research and Analysis Section.

⁷ See Appendix C: Methodology for details.

Bethel Census Area Summary

Community

The Bethel census area is bisected by the Kuskokwim River in Southwest Alaska. The majority of the census area's many communities are located on the banks of the Kuskokwim and its tributaries, or on the coast of the Bering Sea. Bethel census area is in the Calista Native Corporation ANCSA region. The average home size in the census area is 950 square feet.

The ratio of dependents, including those under 16 and over 65, relative to the working age population in the Bethel census area is higher than the statewide average and lower than the national ratio.⁸ The Bethel census area 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 lower than the statewide average and lower than the national average. The Bethel census area 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 39 dedicated beds in senior housing in the Bethel census area, with none of those dedicated to assisted care living.⁹ Currently the Alaska Department of Labor and Workforce Development estimates there are 1,223 seniors in the census area and projects that there will be 2,194 senior citizens by 2030.¹⁰ In the Bethel census area no senior citizens are in assisted care housing, while statewide there are 2.8 percent of senior citizens in assisted care housing. Nationally, approximately 3.5 percent of senior citizens are in senior living facilities.¹¹

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

⁸ 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*.

⁹ HFC Senior Housing Office. (2016). *Inventory List: Independent Living Homes/Facilities*. Revised 5/02/2016. Retrieved from <https://www.ahfc.us/senior-support/>

¹⁰ Hunsinger, Eddie, Sandberg, E., & Brooks, L. (2016). "Alaska Population Projections 2015 to 2045." Alaska Department of Labor and Workforce Development, Research and Analysis Section.

¹¹ 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.

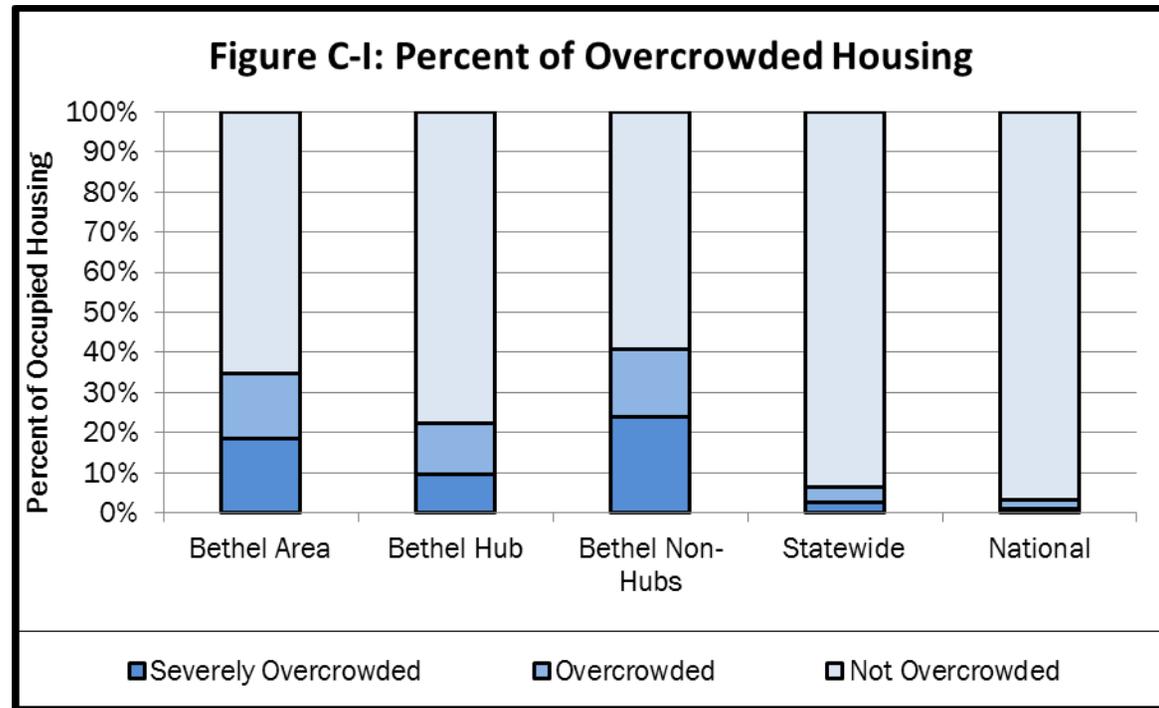
Overcrowding¹²

The Bethel census area is the third most overcrowded census area in Alaska. Approximately 35 percent of the households are overcrowded in the census area as a whole. The rate of overcrowding in the Bethel census area is more than 5.4 times the statewide average (6.4 percent) and approximately 10.5 times more than the national average (3.3 percent).

Overcrowding in the non-hub communities is more prevalent than that found in the hub community. 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. Non-hub communities in the Bethel census area average nearly twice the overcrowding rate of the hub community, with approximately 41 percent of households overcrowded compared to the hub community's 22 percent. Further, 24 percent of non-hub community households are severely overcrowded. This is 24 times more than the national average.

Approximately 2 percent of housing units in the Bethel census area are available for sale or rent. The percentage of units for sale or rent in the non-hub communities (1 percent) is less than in the hub communities (4 percent). Additionally, 23 percent of housing units in the Bethel census area are considered vacant because they are used for seasonal, recreational or other non-year-round purposes.

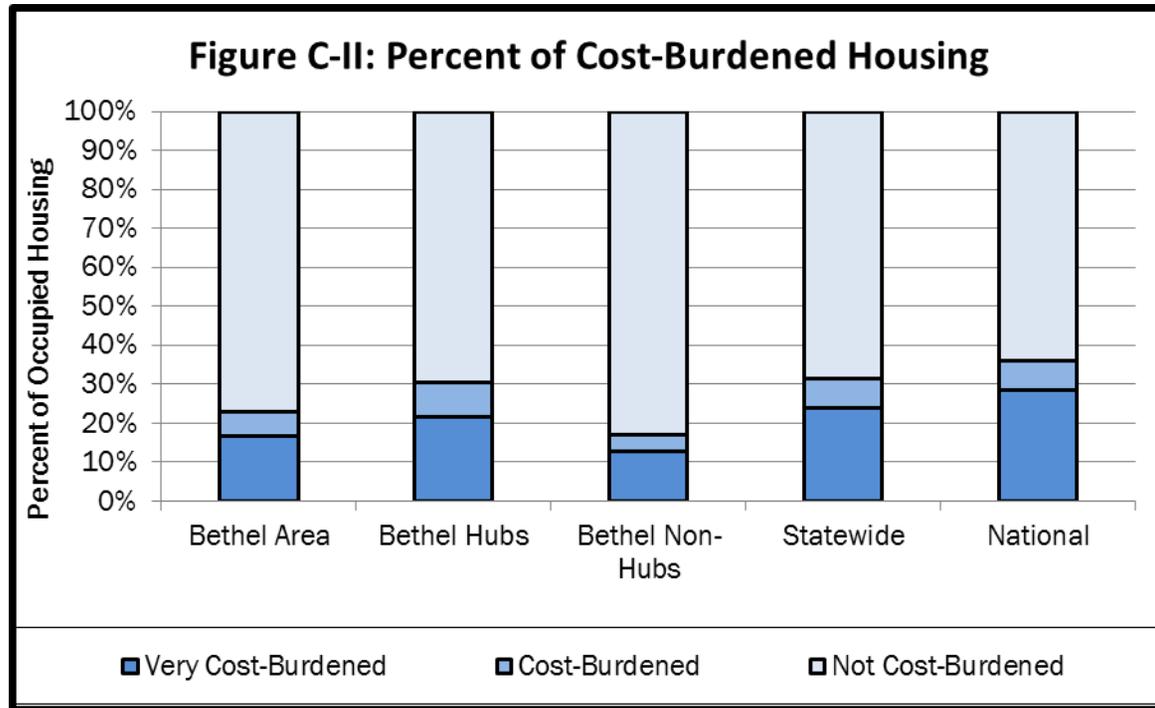


¹² U.S. Census Bureau. (2016). *American Community Survey, 2010-2014 American Community Survey Five-year Estimates*.

Affordability¹³

According to estimates from the the U.S. Census American Community Survey (ACS), 23 percent of households in the Bethel census area are cost-burdened, that is, spend more than 30 percent of their income on housing costs. Non-hub communities have a lower percentage (17 percent) of households that are cost-burdened than the hub community of Bethel (30 percent). The rate of cost-burdened households in the Bethel census area is 60 percent of the national average (36 percent).

The median household income in the Bethel census area is \$51,930. This is lower than the statewide median of \$71,829. The national median is \$53,482.



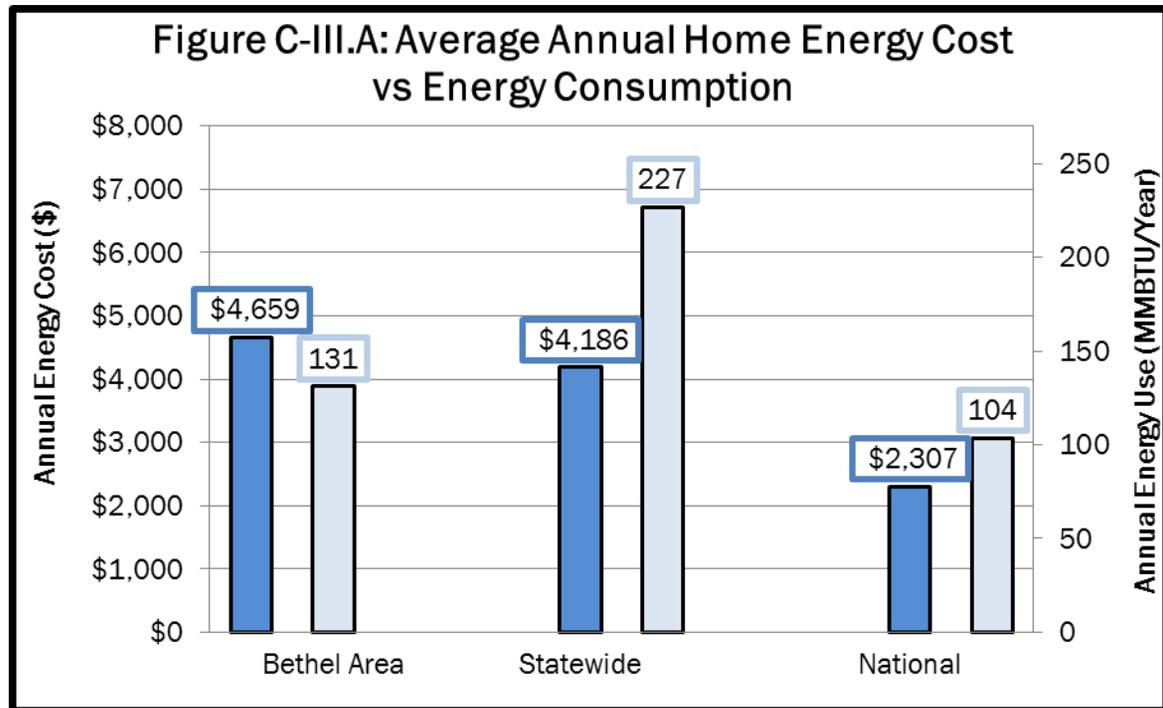
¹³ U.S. Census Bureau. (2016). *American Community Survey, 2010-2014 American Community Survey Five-year Estimates*.

Energy¹⁴

Single-family Units

Single-family homes in the Bethel census area consume an average of 131 million BTUs per year, the third lowest energy consumption in the state. This average annual energy consumption is 58 percent of the statewide average of 227 million BTUs and 1.3 times the national average.

Energy costs for single-family homes in the Bethel census area average \$4,659 annually. This is the 10th highest in the state. Bethel census area energy costs are 1.1 times the statewide average and twice the national average.



With an average footprint of 954 square feet, single-family homes in the Bethel census area 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 Bethel census area averages 148,000 BTUs per square foot, the seventh highest in the state. This is 1.2 times the statewide average of 128,000 BTUs per square foot and 3.5 times the national average. The energy cost index (ECI), or annual energy cost per square foot, for a single-family home in the Bethel census area averages \$4.89, the fifth highest in the state. This is 2.1 times the statewide average of \$2.31 per square foot and 5.1 times the national average of \$0.95 per square foot.

The home heating index (HHI) in the Bethel census area for the average single-family home is 8.71 BTUs/ft²/HDD. This is the 10th lowest in the state. The HHI for the Bethel census area is approximately the same as the statewide average of 8.83 BTU/ft²/HDD. The normalized cost of energy, in terms of dollars per million BTUs, for a single-family home in the Bethel census area averages

¹⁴ See Appendix C: Methodology for details.

\$32.41, the fourth highest in the state. This is 2.1 times the statewide average of \$15.80 per million BTUs and 1.5 times the national average of \$22.27 per million BTUs.

Multifamily Units

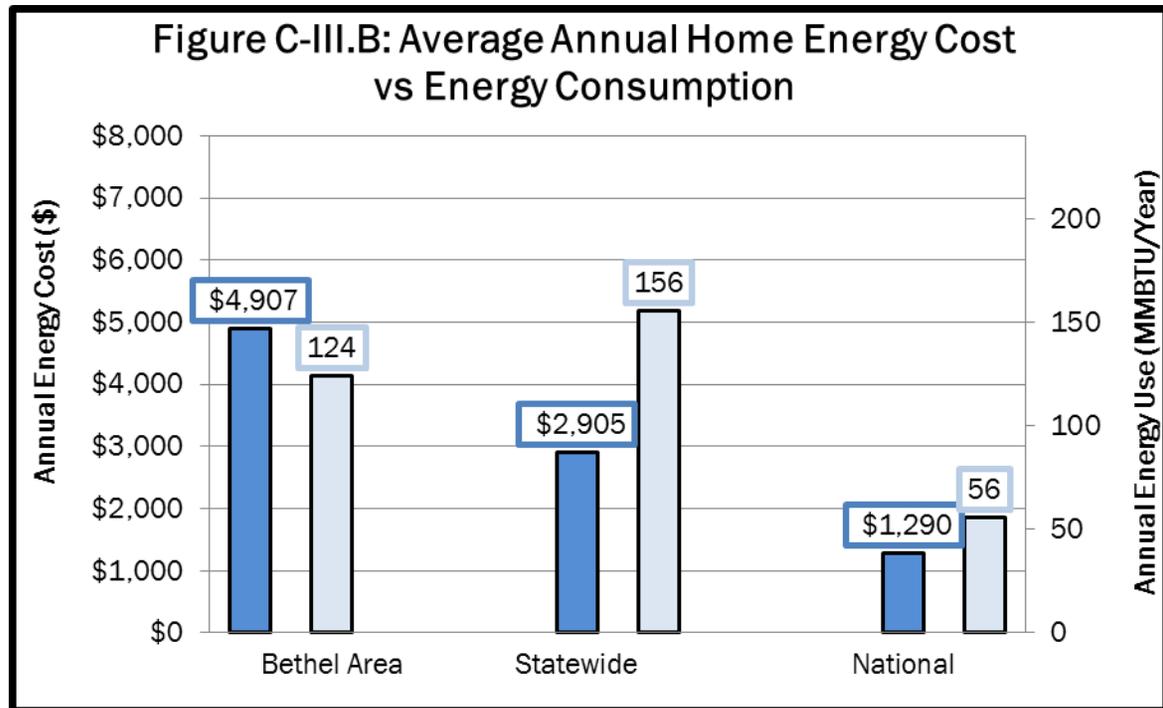
Multifamily housing units in the Bethel census area consume an average of 124 million BTUs per year, the 13th highest energy consumption in the state. This average annual energy consumption is 80 percent of the statewide average of 156 million BTUs and 1.3 times the national average.

Energy costs for multifamily housing units in the Bethel census area average \$4,907 annually. This is the second highest in the state. Bethel census area energy costs are 1.7 times the statewide average and 3.8 times the national average.

With an average footprint of 988 square feet, multifamily housing units in the Bethel census area are smaller than 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 Bethel census area averages 132,000 BTUs per square foot, the sixth highest in the state. This is approximately the same as the statewide average of 128,000 BTUs per square foot and 2.2 times the national average. The energy cost index (ECI), or annual energy cost per square foot, for a multifamily housing unit in the Bethel census area averages \$4.96, the second highest in the state. This is 2.2 times the statewide average of \$2.27 per square foot and 3.6 times the national average of \$1.39 per square foot.

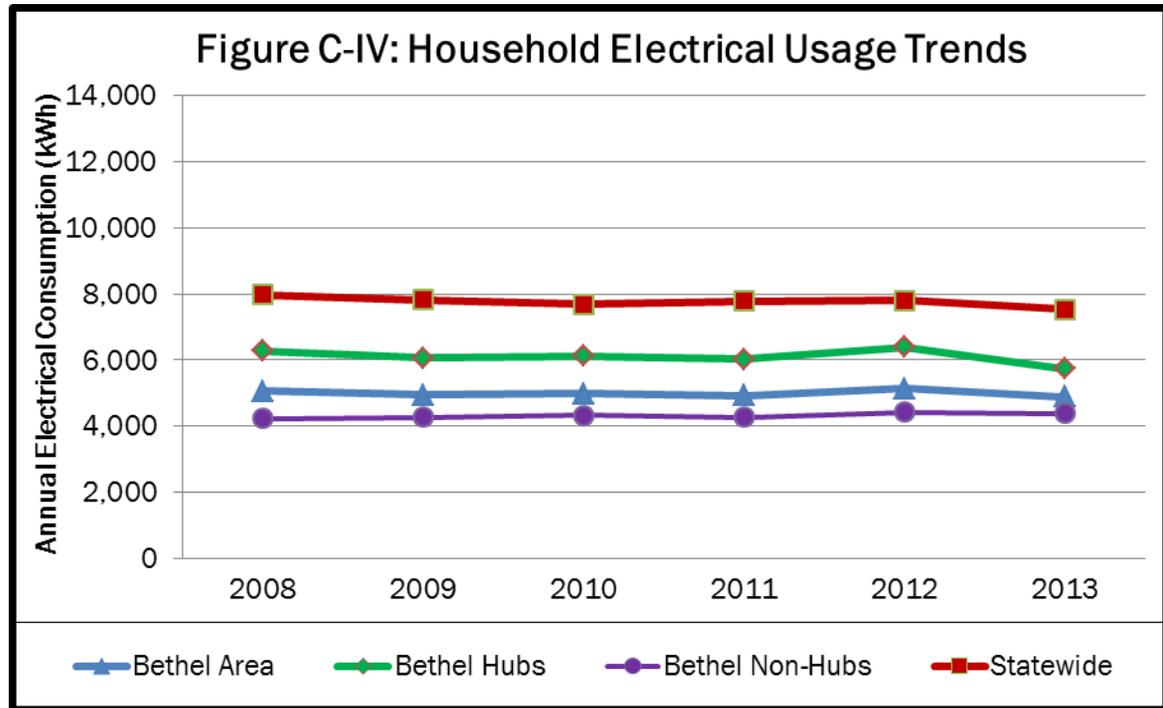
The home heating index (HHI) in the Bethel census area for the average multifamily housing unit is 6.38 BTUs/ft²/HDD. This is the 11th lowest in the state. The HHI for the Bethel census area is lower than the statewide average of 8.28 BTU/ft²/HDD. The normalized cost of energy, in terms of dollars per million BTUs, for a unit in multifamily housing in the Bethel census area averages



\$37.29, the fifth highest in the state. This is 2.9 times the statewide average of \$12.79 per million BTUs and 1.6 times the national average of \$23.12 per million BTUs.

Historical Household Electricity Usage¹⁵

In 2013 the average household in the Bethel census area consumed 4,887 kWh of electricity annually. This is approximately 3 percent less than in 2008. Hub communities in the census area averaged 5,746 kWh per year. This is a decrease of 8 percent over the same period. In contrast, non-hub communities averaged 4,377 kWh in 2013, an increase of 3 percent since 2008. Statewide, the average household consumed 7,540 kWh of electricity in 2013, a decrease of 5 percent since 2008.



Inefficient and Older Homes¹⁶

Approximately 506 (11 percent) of the occupied homes in the Bethel census area 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 38 percent of all homes in the Bethel census area fit these two criteria. This is lower than the statewide average of 39 percent.

¹⁵ 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

¹⁶ See Appendix C: Methodology for details.

Housing Condition ¹⁷

Ventilation

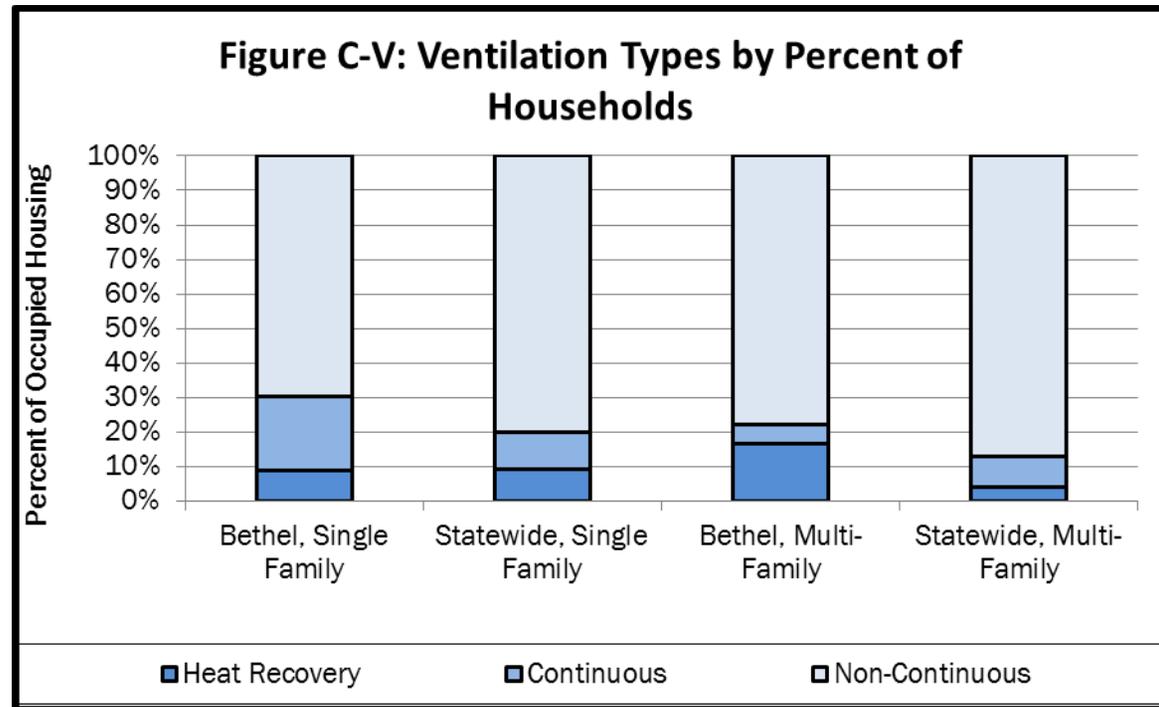
Approximately 30 percent of the occupied homes in the Bethel census area region have heat recovery or continuous mechanical ventilation systems installed. This is the fifth highest in the state. Statewide approximately 20 percent of occupied homes have continuous mechanical ventilation systems, with 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 Bethel census area has the 11th lowest percentage of housing units in the state that are both relatively airtight and lack continuous mechanical ventilation. Approximately 992 (22 percent) of the occupied homes in the Bethel census area are estimated to be at moderate risk, with 492 (11 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 1,675 (38 percent) of the occupied homes in the Bethel census area are estimated to be drafty, with 471 (11 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.



¹⁷ See Appendix C: Methodology for details.