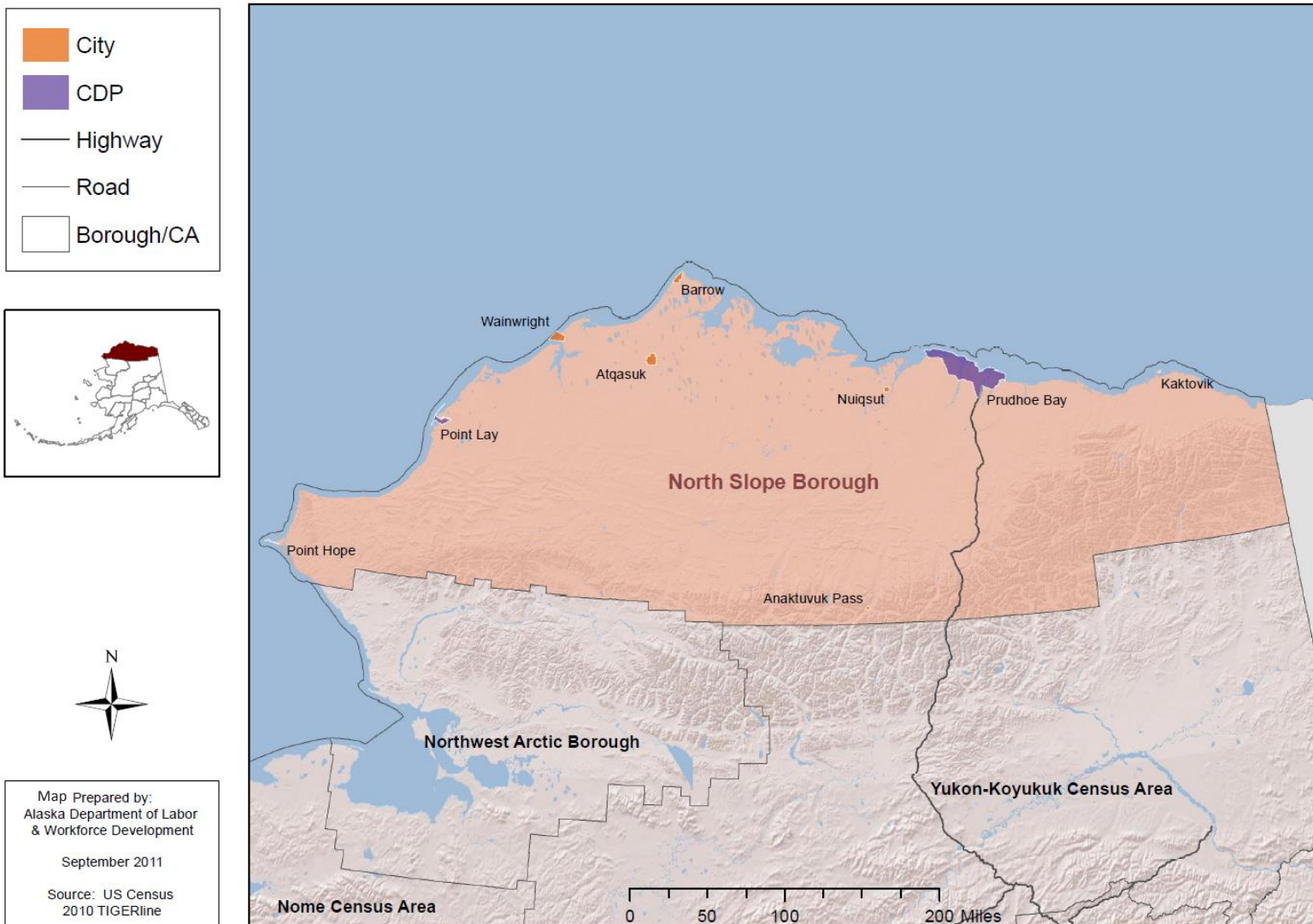


# North Slope Borough



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| Wainwright          Data Quantity: Medium   | 23     |

## ***North Slope Borough Dashboard***

**Population:** The Department of Labor and Workforce Development's current (2012) population estimate for the North Slope Borough is 9,727—an increase of 32% from 2000.

**Housing Units:** There are currently 2,517 housing units in the North Slope Borough. Of these, 1,966 are occupied, 139 are for sale or rent, and the remaining 412 are seasonal or otherwise vacant units (Profile Figure C6).

**Energy:** The average home in the North Slope Borough is 1,135 square feet and uses 175,000 BTUs of energy per square foot annually, 28% more than the statewide average of 137,000 BTUs per square foot per year.

**Energy Costs:** Using AKWarm estimates, average annual energy cost for homes in the North Slope Borough is \$3,220, which is approximately 1.2 times more than the cost in Anchorage, and 1.5 times more than the national average (Profile Figure C13).

**Energy Programs:** Approximately 12% of the occupied housing in the North Slope Borough has completed either the Home Energy Rebate, Weatherization, or BEES programs since 2008, compared to 21% statewide (Profile Figure C12).

**Housing Quality:** Within current housing stock, newer homes have better energy performance. On average, homes built in the 1970s are currently rated at 2-star-plus, compared to a current average rating of 4-star-plus for houses built after 2000.

**Air-tightness:** Within current housing stock, newer homes are tighter. On average, homes built in the last decade meet the 2009 BEES standard of 7 air-changes per hour at 50 pascals (ACH50). In contrast, homes built in the 1980s are 1.2 times leakier than those built since 2000 (Profile Figure C7).

**Ventilation:** An estimated 683 occupied housing units (or 35%) in the North Slope Borough are relatively air-tight and lack a continuous ventilation system. These houses are at higher risk of moisture and indoor air quality-related issues (Profile Figures C9-C10).

**Overcrowding:** 21.4% of occupied units are estimated to be either overcrowded (13.6%) or severely overcrowded (7.8%). This is roughly 7 times the national average, and makes the North Slope Borough the fifth most overcrowded census area in the state.

**Affordability:** On average, approximately 13% of households in the North Slope Borough spend more than 30% of total income on housing costs, which include rent, utilities, and energy costs. Based on average AKWarm estimates, annual energy costs constitute approximately 4% of census median area income for occupied housing.

## North Slope Borough Summary

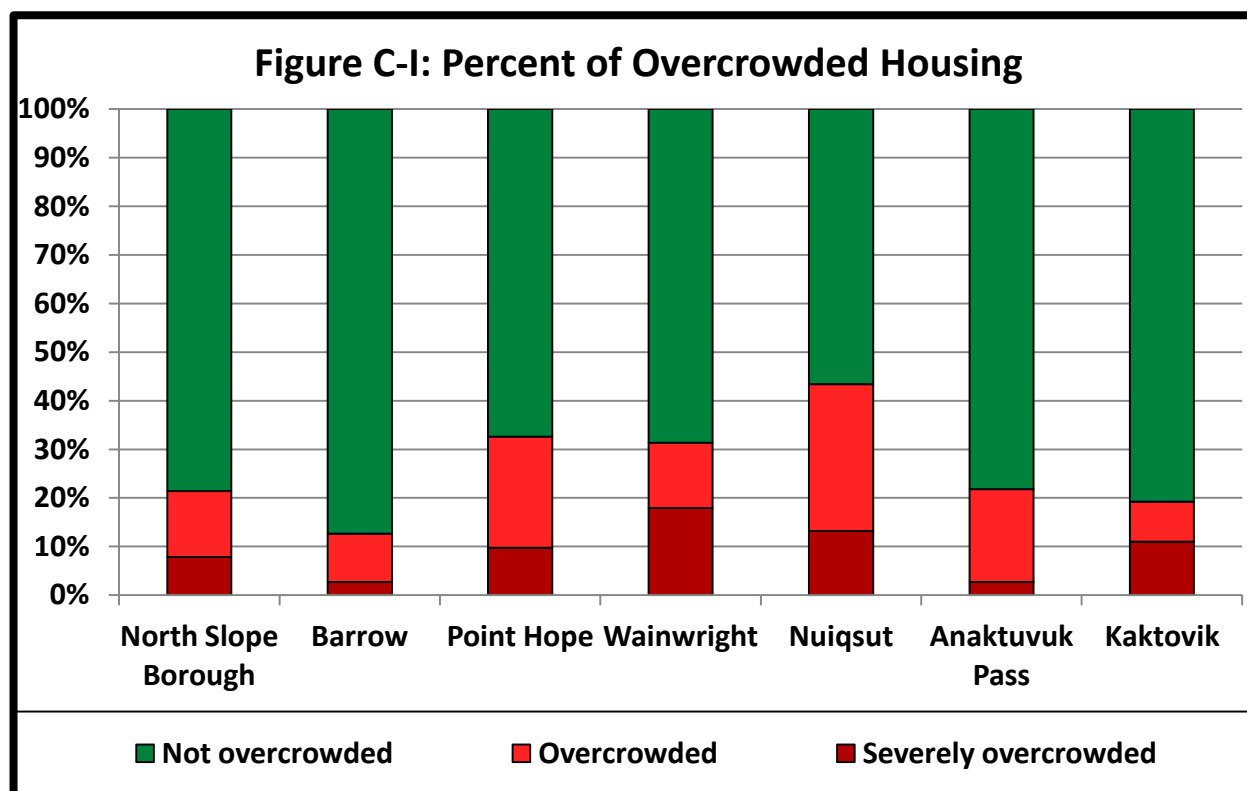
### Community

The North Slope Borough census area lies across northern Alaska. Its communities lie on the coast with the exception of Anaktuvuk Pass, which is located further inland. The North Slope census area makes up the Arctic Slope Native Corporation ANCSA region. The average home size in the census area ranges from 1,013 square feet in Point Lay to 1,237 square feet in Anaktuvuk Pass.

### Overcrowding

In North Slope communities, between 13% to 43% of households are considered overcrowded (Figure C-I). The least crowded community is Barrow, where only 13% of housing units have more than one person per room. The most crowded is Nuiqsut with 43% of housing considered overcrowded.

Approximately 6% of housing units in the census area are available for sale or rent. Available housing in individual communities ranges from an estimated no available housing in Wainwright to 8% available housing in Barrow.

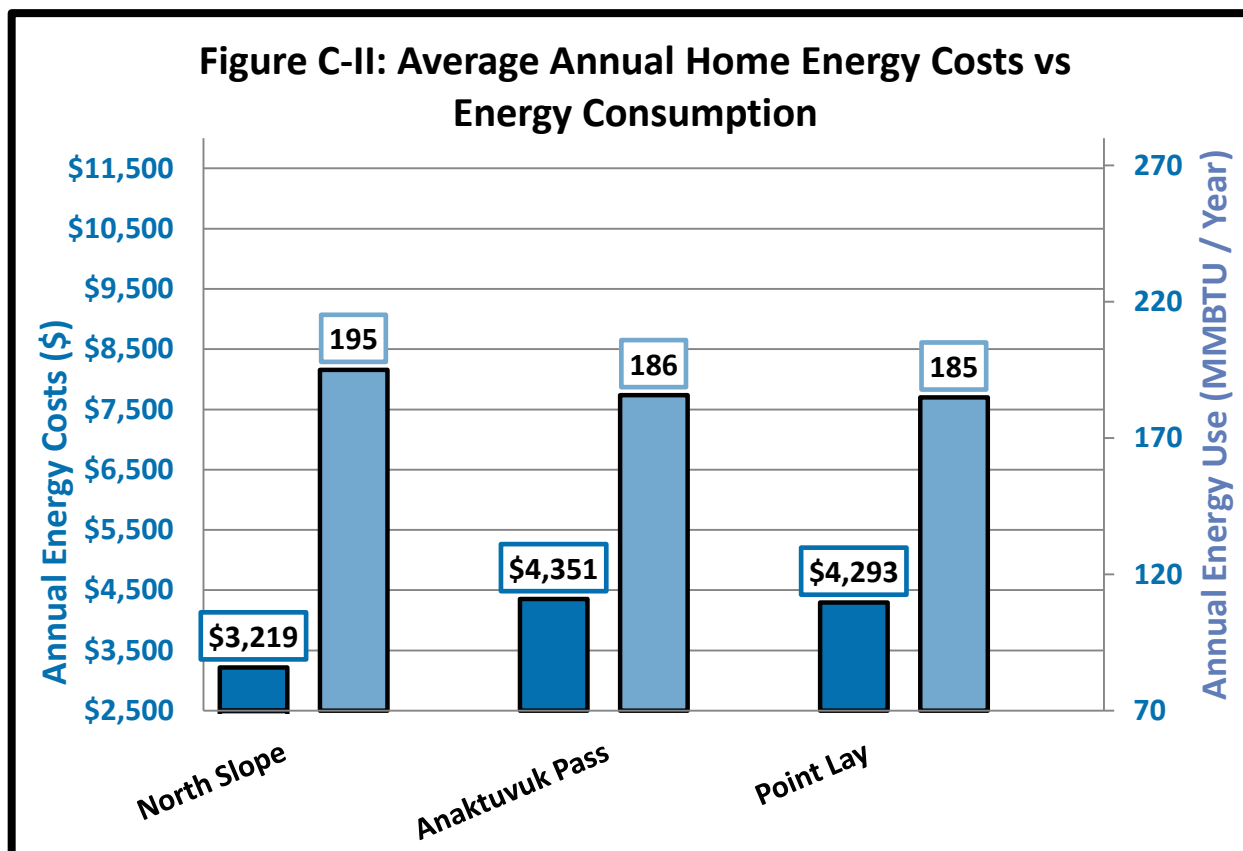


## Energy

The average annual energy use for houses in the North Slope census area is 195 million BTUs per year, which costs approximately \$3,219. The highest annual energy costs are found in Anaktuvuk Pass, where residents pay an average of \$4,351 per year in spite of having the lowest average home heating index in the census area, 5.5 BTUs/ft<sup>2</sup>/HDD. Point Lay has the lowest average energy costs at \$4,293 and the highest average home heating index, 7.2 BTUs/ft<sup>2</sup>/HDD.

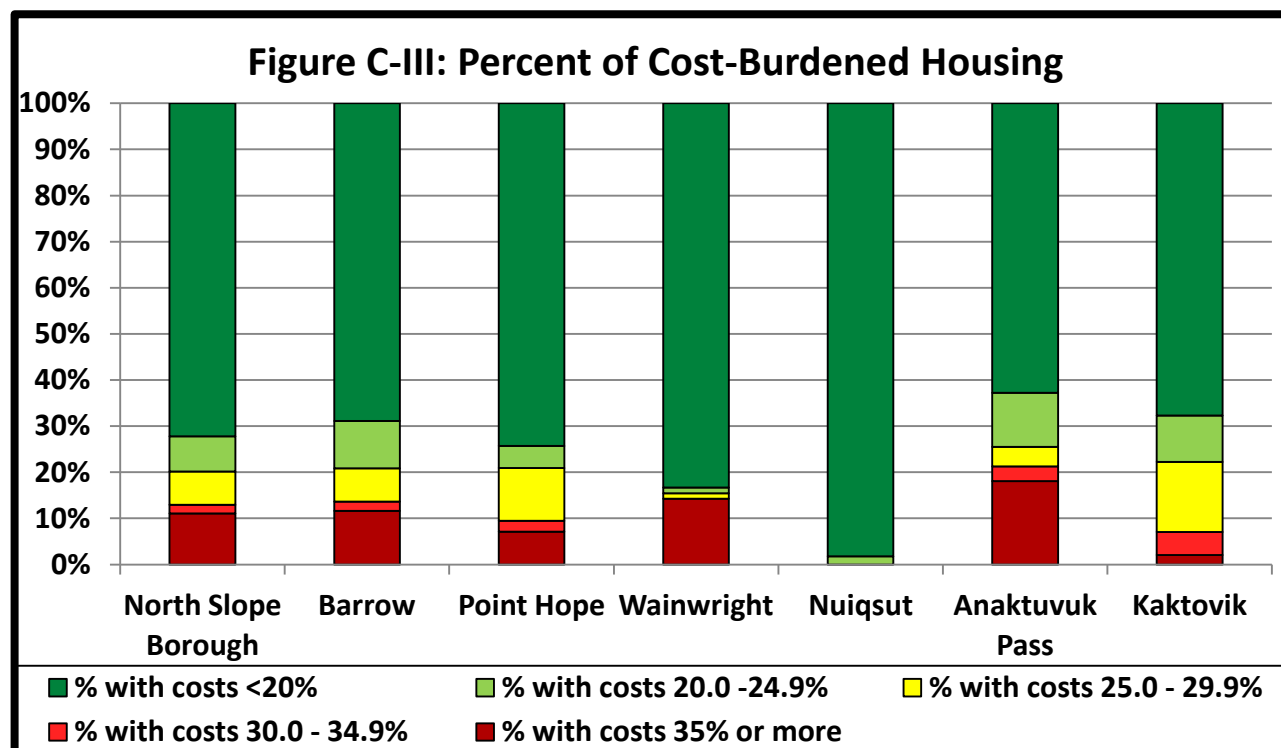
Throughout the North Slope census area, 13% of households have completed the Home Energy Rebate, Weatherization, or a BEES program. Anaktuvuk Pass has had the greatest participation with 35%

of households completing one of the programs. Barrow has had the lowest participation with only 6% of households participating in an energy program. Across the census area, two-thirds of the housing built since 1990 has an HRV installed.



## Affordability

According to ACS estimates<sup>1</sup>, affordability varies throughout the communities of the census area with 30% of households spending more than 35% of total income on housing costs in Point Lay and an estimated zero cost-burdened households in Nuiqsut. These two communities also provide the high and low for the median household incomes in the North Slope. The highest median household income is found in Nuiqsut at \$93,750, and the lowest median income of \$42,188 in Point Lay. Considering only the six most populous communities, the percentage of cost-burdened households varies from an estimated zero to 21% and median incomes range from \$46,250 to \$93,750 (Figure C-III).



<sup>1</sup> CCHRC's analysis of ACS energy costs indicate that there are systematic underestimations for rural Alaska, which suggests that ACS-based cost burdened housing estimates are low. See Appendix A, "Analysis of American Community Survey Energy Cost Estimates" for more details.

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## Community, Regional, and Statewide Housing Characteristics

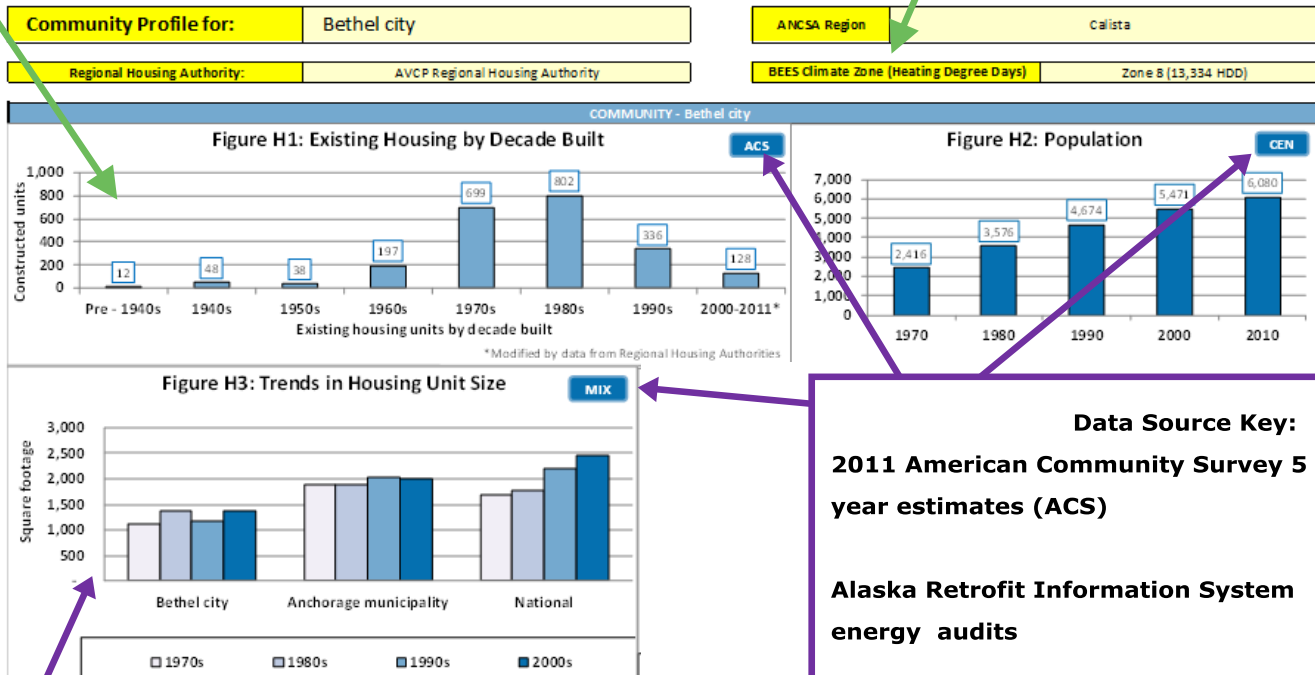
This census area summary only includes the highlights of housing characteristics at the census area level. Detailed data profile with charts and tables for both the census area and for each of the communities within it follow. The 2014 Alaska Housing Assessment provides a significant amount of data and analysis at statewide, ANCSA region, census area, and community levels. This assessment provides a statewide analysis of housing characteristics, how they compare to national numbers, and the estimated housing needs. Within the 2014 Alaska Housing Assessment, written summaries are available for each individual ANCSA region and census area, and data profiles are available for each community and census area characterizing the housing stock from the perspective of community, overcrowding, energy and affordability. These different tiers of information and analysis allow researchers, housing authorities, policymakers and others to generate answers to specific questions. For a detailed discussion of estimating housing need and comparison of methods to previous Housing Assessments, see Appendix B, "Statewide Need Assessment" of the 2014 Alaska Housing Assessment.

## How to Interpret the Profile: Data Sources, Definitions & Clarifications

1

This graph show the breakdown of *current* housing stock by the decade in which the housing units were built. It does *not* show trends over time.

The Alaska Building Energy Efficiency Standard (BEES) was established by AHFC for the State of Alaska to promote the construction of energy efficient buildings. The standards for specific building components are divided into four climate zones, from Zone 6 in Southeast AK to Zone 9 on the North Slope.



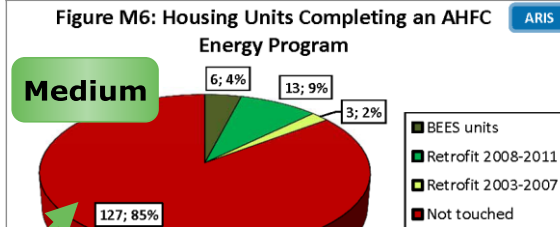
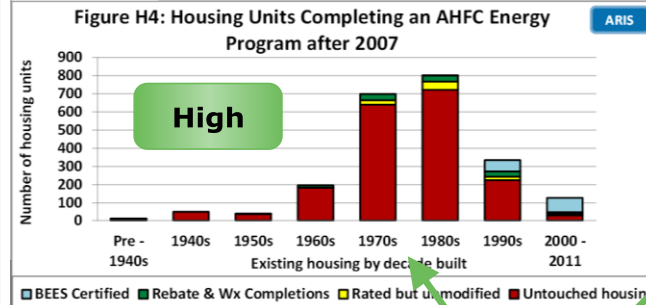
Data Sources: National trends come from the 2009 Residential Energy Consumption Statistics published by the U.S. Energy Information Administration. Anchorage and census area data come from the Alaska Retrofit Information System.



## How to Interpret the Profile: Data Sources, Definitions & Clarifications

1

Energy program activity within communities with high, medium and low amounts of ARIS data available. (See p.7 of "How to Interpret" for detail on data levels).

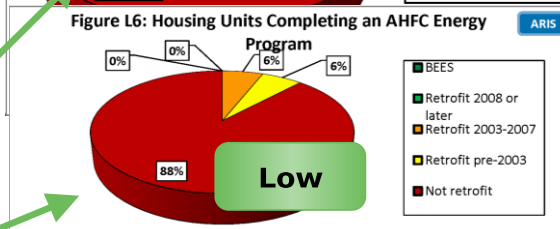


### Communities - AHFC Energy Program Activity

**High Data** - Reported by decade built for the housing units.

**Medium Data** - Reported by percent of total housing units touched.

**Low Data** - Have few or no post-2008 Weatherization/Rebate completions or BEES certifications in the ARIS database.



- PCE = Power Cost Equalization
- Average Annual Energy Cost with PCE: The cost to the household after it has been lowered by the PCE subsidy.
- Without PCE: The actual energy cost, including the amount paid by the State for PCE.

### American Community Survey (ACS) Data:

**Complete Plumbing:** Includes hot & cold running water, a flush toilet, and a bathtub or shower within the home.

**Complete Kitchen:** Includes a sink with a faucet, a stove/range, and a refrigerator.

| Houses Lacking Complete Plumbing or Kitchen Facilities | # Households | % Households |
|--|--------------|--------------|
| Lack complete plumbing                                 | 3            | 10%          |
| Lack complete kitchen                                  | 0            | 0%           |

| Estimated Total Community Space Heating Fuel Use by Type |        |           |
|--|--------|-----------|
| Fuel Oil   | 20,816 | (gallons) |
| Nat Gas  | -      | (ccf)     |
| Electricity  | 15,459 | (kWh)     |
| Wood   | 3      | (cords)   |
| Propane  | -      | (gallons) |
| Coal   | -      | (tons)    |

|                                    |         |
|------------------------------------|---------|
| Avg Annual Energy Cost with PCE    | \$5,265 |
| Avg Annual Energy Cost without PCE | \$6,643 |

| Estimated Energy Prices as of January 2013 |        |
|--|--------|
| #1 Fuel oil cost (\$ / gallon)             | \$5.16 |
| Electricity with PCE (\$/kWh)              | \$0.03 |
| Electricity cost without PCE (\$/kWh)      | \$0.27 |

| Weatherization Program Retrofits (funding increased in 2008) |       |
|--|-------|
| Date Range   | Units |
| 2008-2011  | 17    |
| 2003-2007  | -     |
| 1990-2002  | 10    |

| Housing Stock Estimates         |        |
|---------------------------------|--------|
|                                 | Number |
| All Housing                     |        |
| All Occupied Housing            |        |
| All Housing Units               |        |
| Vacant Housing for Sale or Rent |        |

Units weatherized before 2008 are eligible to participate in the program again. (Data source: Alaska Housing Finance Corporation).

## How to Interpret the Profile: Data Sources, Definitions & Clarifications

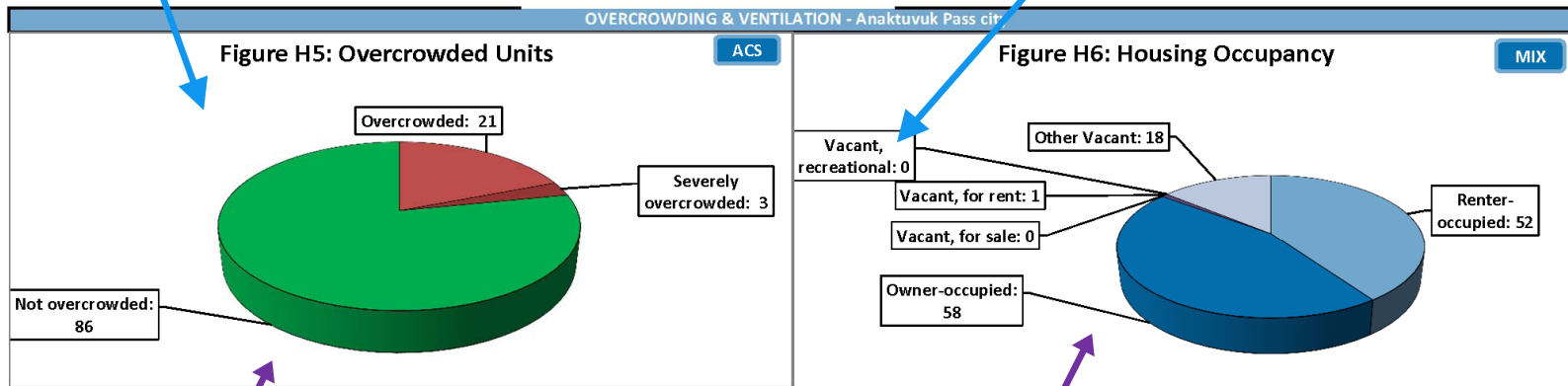
2

**Overcrowded:** Housing units with more than 1 person per room

**Severely Overcrowded:** Housing units with more than 1.5 people per room.

"Rooms" include bedrooms, living rooms, dining rooms, kitchens, and other finished, separated spaces, but not including bathrooms, porches, balconies, foyers, halls, or unfinished basements.

**Recreational:** For seasonal, recreational, or occasional use.



**Data Source:**  
2011 American  
Community  
Survey 5-year  
estimates

**Data Sources:** The number of owner-occupied, renter-occupied, and total vacant units are taken from the 2011 ACS 5-year estimates. Data for vacancy type, only available from the decennial Census, were derived by taking the decennial census ratios by vacancy type and applying them to the total number of vacant units.

## How to Interpret the Profile: Data Sources, Definitions & Clarifications

2

**Heat Recovery:** Continuous mechanical ventilation with heat recovery operated with automatic controls.

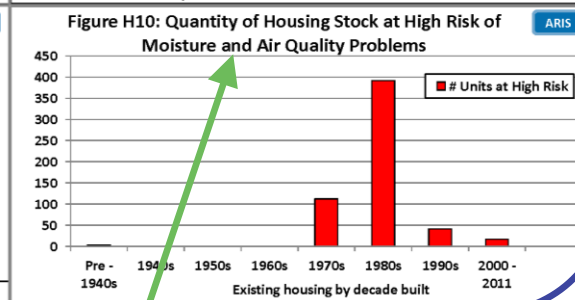
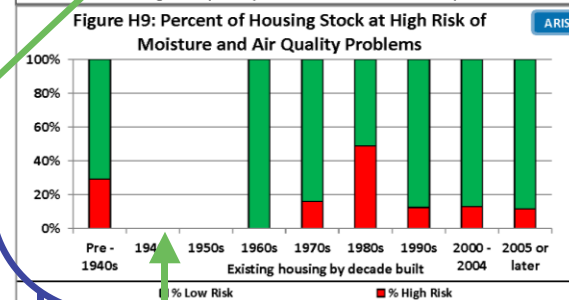
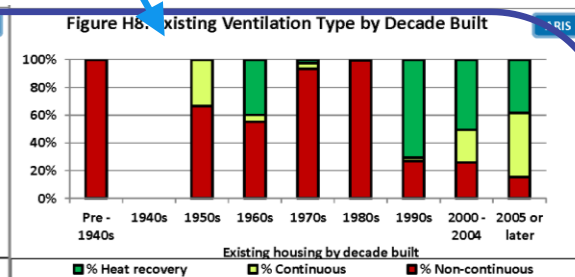
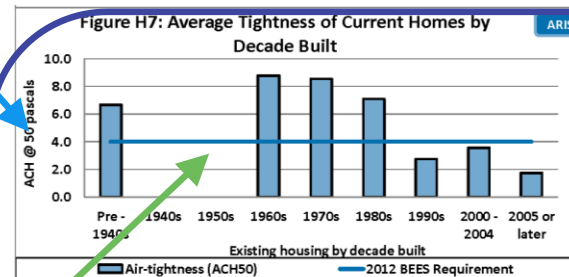
**Continuous:** Mechanical ventilation without heat recovery operated with automatic controls.

**Non-Continuous ventilation:** Includes homes with range and/or bath fans not operated using automatic controls.

**ACH50:** The results of a blower door test to measure building air leakage. Smaller numbers indicate tighter buildings. Tighter buildings lose less heated air to the outside and thus use less energy for space heating.

The 2012 Building Energy Efficiency Standard (BEES) for air-tightness is for reference only, as it was implemented after the majority of homes in Alaska were built.

Data Source:  
Alaska Retrofit  
Information  
System



Decades with no bar lack sufficient data for reporting. They should not be considered zero quantities.

**High Risk of Moisture and Air Quality Problems:** Note that moisture or poor indoor air quality have not been physically measured; these houses are considered "at-risk" because they are relatively air tight (less than 0.5 estimated natural air changes per hour) and do not have a continuous ventilation system.

## How to Interpret the Profile: Data Sources, Definitions & Clarifications

3

Rating stars and points are based on AHFC's AkWarm energy rating system.

**Average annual energy cost:**  
Includes all end uses. Costs are estimated using January 2013 energy prices, and include reductions from the PCE program.

**Space Heating, DHW, Appliances:**  
Estimated annual energy for the end uses of: Space Heating, Domestic Hot Water, and all other energy including lights, appliances, and electronics.

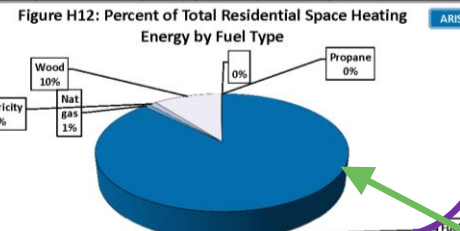
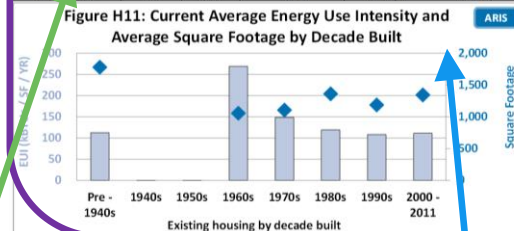
**ECI: Energy Cost Index,**  
the amount of money spent on energy per year divided by square footage.

The number of AkWarm records from each decade built that were used to calculate the averages reported.

| Current Anchorage Housing Energy Characteristics By Decade Built |                   |                   |                          |              |                                    |                                       |  |     |            |                     |                     |                         |
|--|-------------------|-------------------|--------------------------|--------------|------------------------------------|---------------------------------------|--|-----|------------|---------------------|---------------------|-------------------------|
| Current Residential Units by Year Built                          | Number of Records | Avg Energy Rating | Avg Energy Rating Points | Avg Sq. Feet | Avg. Annual Energy Cost (with PCE) | Avg. Annual Energy Use (million BTUs) | Avg Ann Energy by End Use (million Btus) |     |            | Avg. EUI (kBtUS/SF) | Avg. ECI (\$ / \$F) | Avg. Home Heating Index |
|  |                   |                   |                          |              |                                    |                                       | Space Heating                            | DHW | Appliances |                     |                     |                         |
| OVERALL  | 419               | 3-star            | 70.7                     | 1,237        | \$ 8,065                           | 160                                   | 102                                      | 27  | 26         | 132                 | \$ 6.97             | 6.5                     |
| Pre-1940   | 7                 | 3-star            | 68.3                     | 1,779        | \$ 11,107                          | 199                                   | 145                                      | 21  | 33         | 113                 | \$ 6.66             | 6.4                     |
| 1940-49  | 0                 | NR                | NR                       | NR           | NR                                 | NR                                    | NR                                       | NR  | NR         | NR                  | NR                  | NR                      |
| 1950-59  | 3                 | NR                | NR                       | NR           | NR                                 | NR                                    | NR                                       | NR  | NR         | NR                  | NR                  | NR                      |
| 1960-69  | 15                | 2-star            | 52.3                     | 1,056        | \$ 11,087                          | 287                                   | 225                                      | 35  | 27         | 269                 | \$ 10.60            | 16.0                    |
| 1970-79  | 71                | 2-star plus       | 64.5                     | 1,106        | \$ 7,961                           | 151                                   | 105                                      | 21  | 25         | 149                 | \$ 8.09             | 7.8                     |
| 1980-89  | 113               | 3-star plus       | 74.7                     | 1,361        | \$ 8,239                           | 157                                   | 100                                      | 30  | 26         | 119                 | \$ 6.40             | 5.8                     |
| 1990-99  | 111               | 4-star            | 79.9                     | 1,187        | \$ 6,395                           | 122                                   | 57                                       | 21  | 20         | 108                 | \$ 5.58             | 4.7                     |
| 2000-2004  | 71                | 3-star plus       | 77.5                     | 1,388        | \$ 8,435                           | 143                                   | 80                                       | 35  | 27         | 118                 | \$ 7.24             | 5.2                     |
| 2005-later   | 28                | 5-star            | 91.9                     | 1,233        | \$ 4,504                           | 92                                    | 39                                       | 28  | 25         | 79                  | \$ 3.82             | 2.5                     |

**Home Heating Index:**  
The energy used per square foot per year divided by the area's heating degree days.

**Data Source:**  
AkWarm ratings from AHFC's Alaska Retrofit Information System (ARIS).



Average energy characteristics of the *current* housing stock by decade built (high data communities) or by pre-/post-retrofit and new construction categories (medium data communities).

Energy Use Intensity (EUI) is the total amount of energy used per year per square foot of floor space.

This is the community's breakdown by fuel type of the energy (BTUs) used for home space heating. It is not the percent of housing using a given fuel in primary space heating devices. Because wood burning devices are inefficient, they may use a significant portion of total energy even if no homes in a community use wood as a primary fuel.

## How to Interpret the Profile: Data Sources, Definitions & Clarifications

3

Average building envelope characteristics of the *current* housing stock by decade built (high data communities) or by pre-/post-retrofit and new construction categories (medium data communities).

**ACH50:** The results of a blower door test to measure building leakiness. Smaller numbers indicate tighter buildings.

**R-value:** the capacity to resist heat flow. The higher the value, the better the insulator.

**U-value:** the conductance to heat flow. The lower the value, the better the insulator.

**Data Sources:** AkWarm ratings from AHFC's Alaska Retrofit Information System (ARIS).

Current Bethel city Housing Envelope Characteristics By Decade Built

| Current Residential Units by Year Built | Number of Records | ACH 50 | Ceiling R | Above Grade Wall R | Below Grade Wall R | Above Grade Floor R | On Grade Floor R | Below Grade Floor R | Door U | Garage Door U | Window U |
|---|-------------------|--------|-----------|--------------------|--------------------|---------------------|------------------|---------------------|--------|---------------|----------|
| OVERALL                                 | 419               | 6.4    | 23        | 17                 | 7                  | 30                  | NR               | 2                   | 0.36   | 0.27          | 0.54     |
| Pre- 1940                               | 7                 | 6.7    | 26        | 21                 | NR                 | 30                  | NR               | NR                  | 0.30   | NR            | 0.40     |
| 1940- 49                                | 0                 | NR     | NR        | NR                 | NR                 | NR                  | NR               | NR                  | NR     | NR            | NR       |
| 1950- 59                                | 3                 | NR     | NR        | NR                 | NR                 | NR                  | NR               | NR                  | NR     | NR            | NR       |
| 1960- 69                                | 15                | 8.8    | 16        | 14                 | NR                 | 21                  | NR               | NR                  | 0.44   | NR            | 1.65     |
| 1970- 79                                | 71                | 8.5    | 20        | 15                 | NR                 | 29                  | NR               | NR                  | 0.39   | NR            | 0.57     |
| 1980- 89                                | 113               | 7.1    | 29        | 17                 | NR                 | 32                  | NR               | NR                  | 0.30   | NR            | 0.44     |
| 1990- 99                                | 111               | 2.7    | 56        | 31                 | NR                 | 50                  | NR               | NR                  | 0.19   | 0.12          | 0.29     |
| 2000- 2004                              | 71                | 3.6    | 13        | 21                 | NR                 | 36                  | NR               | NR                  | 0.27   | 0.23          | 0.40     |
| 2005 or later                           | 28                | 1.7    | 41        | 22                 | NR                 | 41                  | NR               | NR                  | 0.20   | NR            | 0.31     |
| BEES 2009 - Climate Zone 8              |                   | 7.0    | 38        | 30                 | 15                 | 38                  | 15               | 15                  | 0.22   | 0.22          | 0.22     |
| BEES 2012 - Climate Zone 8              |                   | 4.0    | 48        | 30                 | 15                 | 38                  | 15               | 15                  | 0.22   | 0.22          | 0.22     |

The number of AkWarm records from each decade built that were used to calculate the averages reported.

"NR" is used when there are insufficient records to protect the confidentiality of the occupants.

### Color Coding--

**Green:** the average value meets or exceeds the 2012 BEES requirement.

**Yellow:** value is 75-99% of the 2012 BEES requirement.

**Red:** value is less than 75% of the 2012 BEES requirement.

## How to Interpret the Profile: Data Sources, Definitions & Clarifications

4

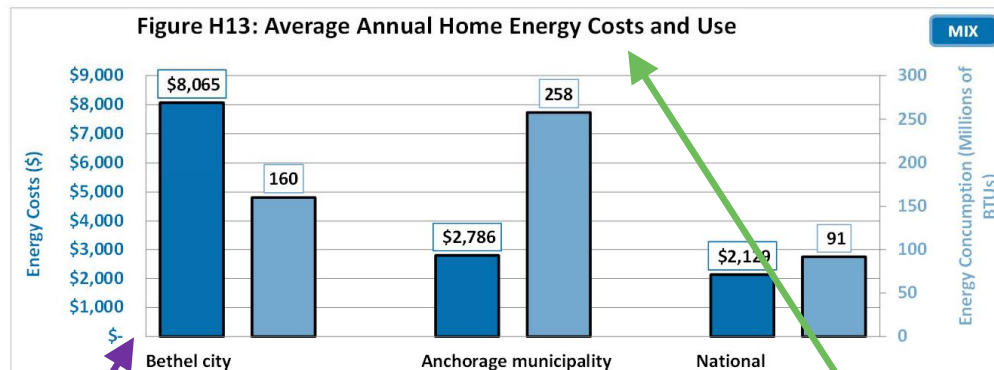
Communities are categorized in this report by the amount of ARIS data available, and reporting is more extensive for locations with more data. Data quantities are defined as--

**High:** ARIS records exist for housing units built in 7 of the 9 date ranges use in this report, and there are either more than 50 records or records totaling 20 percent or more of the total number of housing units.

**Medium:** There are three or more ARIS records. Data are presented for an "overall" group if there are "As Is" ARIS records totaling at least 10% of the community's occupied housing units.

**Low:** There are fewer than three ARIS records for the location.

Community Template - Data Quantity: High



| Housing Information | Avg Household Size<br>(# of people) |
|---------------------|-------------------------------------|
| All-occupied        | 3.4                                 |
| Owner-occupied      | 3.7                                 |
| renter-occupied     | 3.1                                 |

**Data Source:**  
2007-2011 American  
Community Survey

**Data Sources:** Census Area and Anchorage data come from AFHC's Alaska Retrofit Information System.  
National figures come from the U.S. Energy Information Administration's 2009 Residential Energy Consumption Statistics (RECS) for "cold"/"very cold" climate regions.

Average annual home energy costs and usage estimates are for all end uses, including space heating, domestic hot water, lighting and appliances. Costs are estimated using January 2013 energy prices and include reductions from the PCE program.

## How to Interpret the Profile: Data Sources, Definitions & Clarifications

4

**Data Source:**  
2007-2011  
American  
Community  
Survey.

"Value" is determined by responses to the ACS question: "How much do you think this house and lot, apartment, or mobile home (and lot, if owned) would sell for if it were for sale?"

Household income includes all earnings from salaries, stocks, gifts, public assistance, etc.

**Data Source:** Median income comes from 2007-2011 ACS estimates; energy costs come from AHFC's Alaska Retrofit Information System (ARIS).

| Owner-occupied House with Mortgage, Median Value      |
|---|
| \$226,800   |
| Owner-occupied House without a Mortgage, Median Value |
| \$119,600   |

| Median Annual Household Income |                  |
|--------------------------------|------------------|
| Housing Units                  | Household Income |
| All-occupied                   | \$ 91,302        |
| Renter-occupied                | \$ 70,170        |
| Owner-occupied                 | \$ 107,908       |
| w/ mortgage                    | \$ 111,167       |
| w/o mortgage                   | \$ 70,400        |

| Median Household Expenses      |          |           |
|--------------------------------|----------|-----------|
|                                | Monthly  | Annual    |
| All-occupied                   | \$ 1,369 | \$ 16,428 |
| Gross rent                     | \$ 1,201 | \$ 14,412 |
| Owner-occupied                 | \$ 1,610 | \$ 19,320 |
| Housing units w/ mortgage      | \$ 1,854 | \$ 22,248 |
| Housing units w/out a mortgage | \$ 680   | \$ 8,160  |

| Avg % of Median Income Spent on Energy | 8.8% |
|--|------|
|--|------|

Figure H14: Affordability - Housing Costs as a Percent of Income

ACS

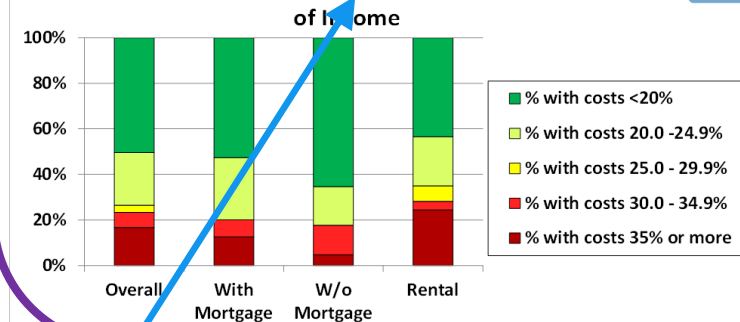
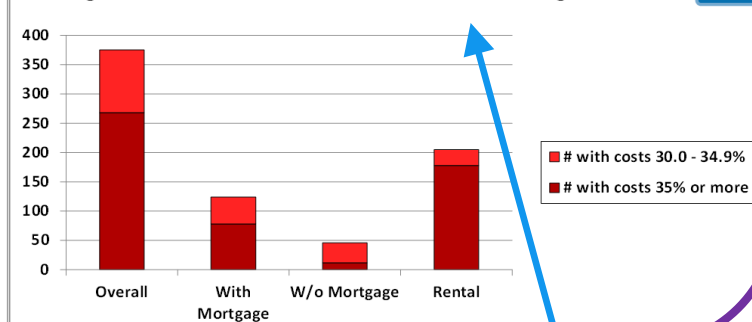


Figure H15: Number of Cost-Burdened Housing Units

ACS



**Rental housing costs:** Contract rent, fuels, utilities.

**Owner housing costs:** Mortgage payments, property taxes, insurance, fuels, utilities, condo fees.

Households are considered "cost burdened" if they spend 30% or more of total household income on housing costs. Households spending more than this amount on housing costs may have difficulty affording basic necessities such as food, transportation, and medical care.



**Census Area Profile for:** North Slope Borough

**ANCSA Region:** Arctic Slope Regional Corporation

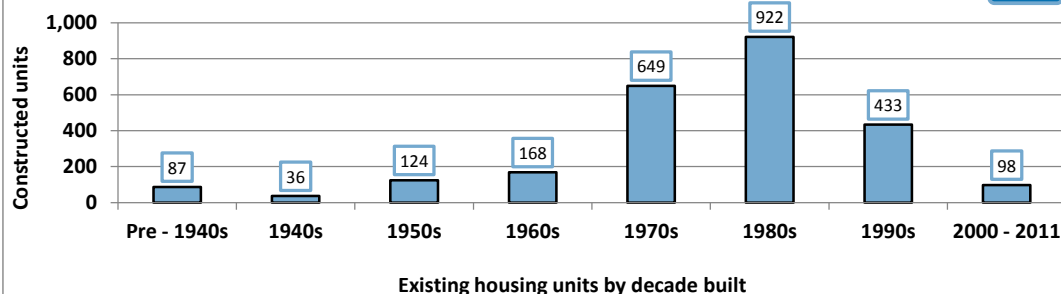
**Regional Housing Authority:** Tagiugmiullu Nunamiullu Housing Authority

**BEES Climate Zone (Heating Degree Day Range)** Zone 9 (16,800 - 21,000 HDD)

COMMUNITY - North Slope Borough

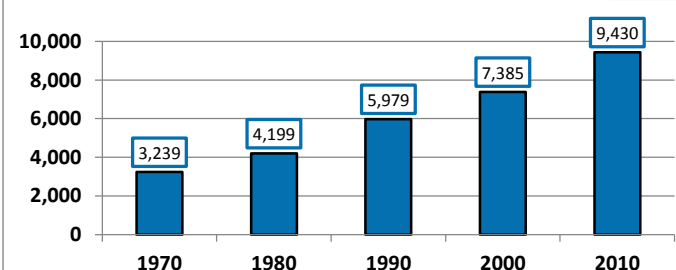
**Figure C1: Existing Housing by Decade Built**

ACS



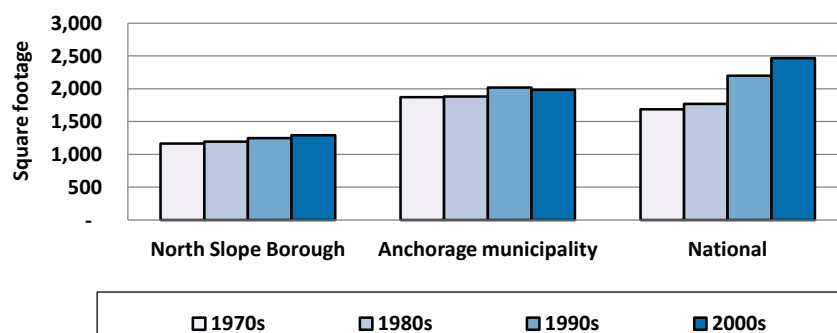
**Figure C2: Population**

CEN



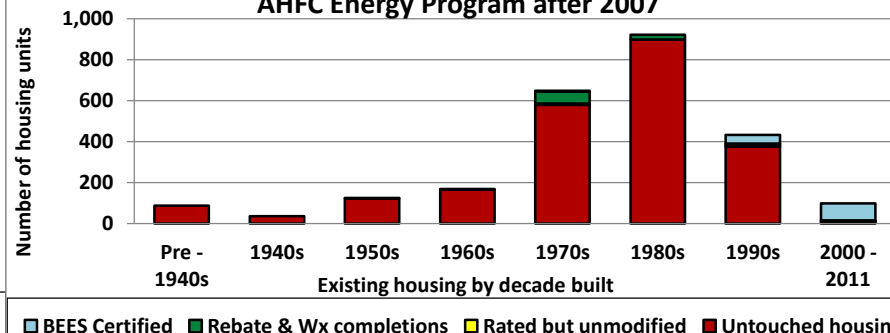
**Figure C3: Trends in Housing Unit Size**

MIX



**Figure C4: Housing Units Completing an AHFC Energy Program after 2007**

ARIS



| Houses Lacking Complete Plumbing or Kitchen Facilities | Households |         |
|--|------------|---------|
|  | Number     | Percent |
| Lack complete plumbing                                 | 246        | 13%     |
| Lack complete kitchen                                  | 177        | 9%      |

|                                    |         |
|------------------------------------|---------|
| Avg Annual Energy Cost with PCE    | \$3,219 |
| Avg Annual Energy Cost without PCE | \$3,244 |

| Weatherization Retrofits (funding increased 2008) |       |
|---|-------|
| Date Range  | Units |
| 2008 - 2011                                       | 94    |
| 2003 - 2007                                       | 17    |
| 1990 - 2002                                       | 7     |

| Estimated Total Annual Community Space Heating Fuel Use |           |           |
|---|-----------|-----------|
| Fuel Oil  | 1,197,427 | (gallons) |
| Natural Gas   | 1,180,597 | (ccf)     |
| Electricity   | 1,434,824 | (kWh)     |
| Wood  | 7         | (cords)   |
| Propane   | 1,178     | (gallons) |
| Coal  | -         | (tons)    |

| Housing Need Indicators | Number of Units | % Occupied Housing |
|-------------------------|-----------------|--------------------|
| Overcrowded             | 421             | 21%                |
| Housing cost burdened   | 215             | 11%                |
| 1 Star Homes            | 138             | 7%                 |

| Housing Stock Estimates         | Number of Units |
|---------------------------------|-----------------|
| All Housing                     | 2,517           |
| All Occupied Housing            | 1,966           |
| All Vacant housing              | 551             |
| Vacant Housing for Sale or Rent | 139             |



OVERCROWDING & VENTILATION - North Slope Borough

Figure C5: Overcrowded Units

ACS

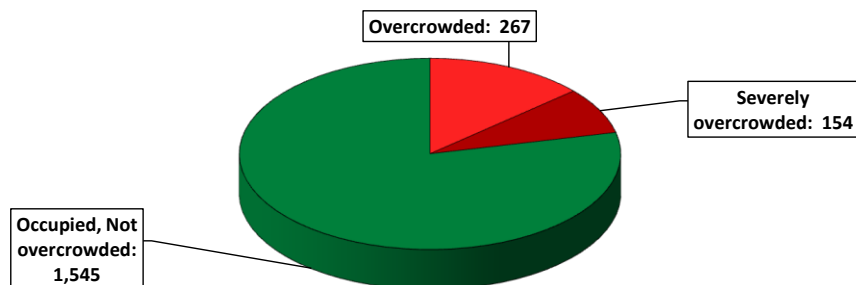


Figure C6: Housing Occupancy

MIX

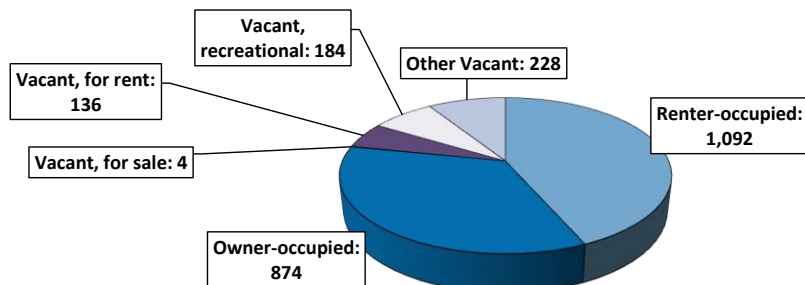


Figure C7: Average Air-Tightness of Current Homes by Decade Built

ARIS

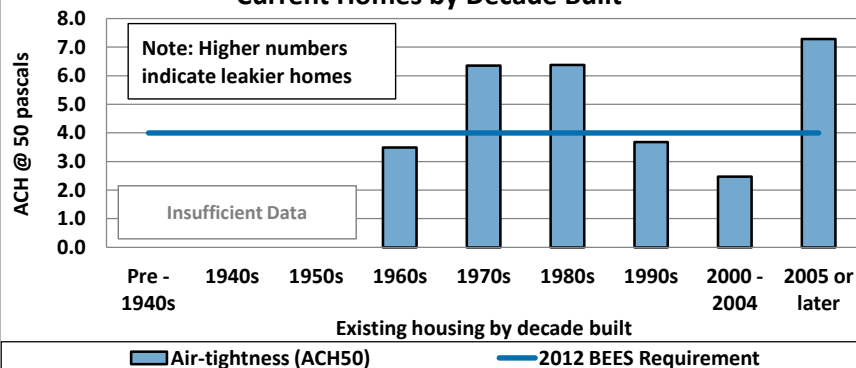


Figure C8: Existing Ventilation Type by Decade Built

ARIS

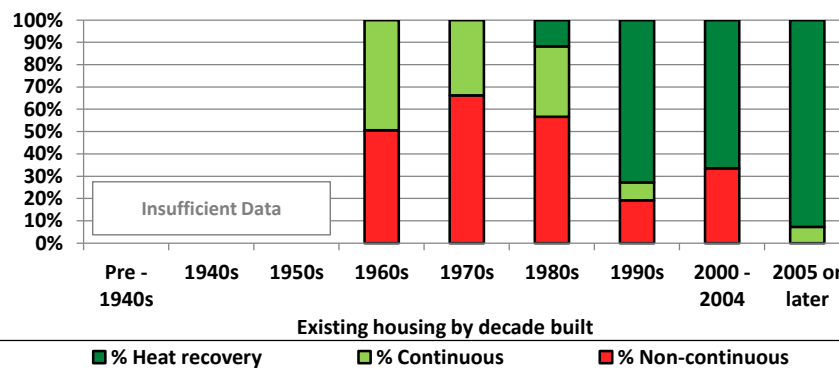


Figure C9: Percent of Housing Stock at High Risk of Moisture and Air Quality Problems

ARIS

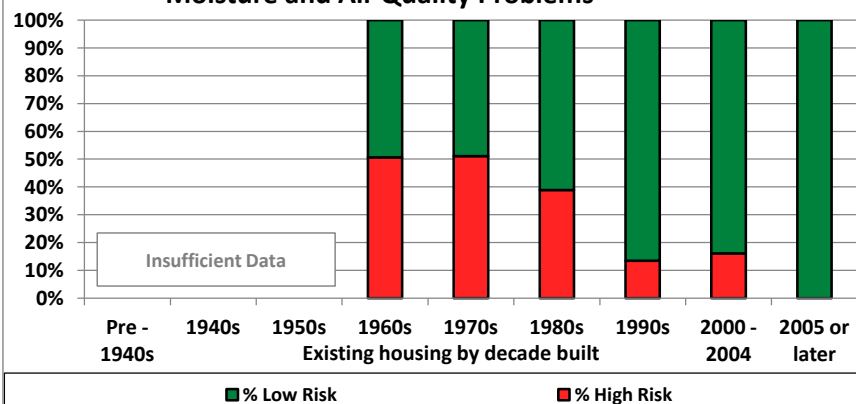
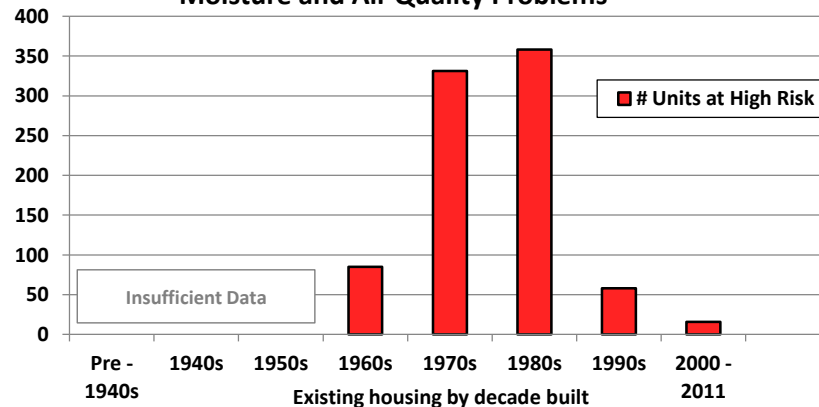


Figure C10: Quantity of Housing Stock at High Risk of Moisture and Air Quality Problems

ARIS



| ENERGY - North Slope Borough   |                     |                         |                          |              |                                    |                                       |  |     |            |                       |                    |                         |
|--|---------------------|-------------------------|--------------------------|--------------|------------------------------------|---------------------------------------|--|-----|------------|-----------------------|--------------------|-------------------------|
| Current North Slope Borough Housing Energy Characteristics By Decade Built |                     |                         |                          |              |                                    |                                       |  |     |            |                       |                    |                         |
| Current Residential Units by Year Built                                    | # of AkWarm Records | Avg Energy Rating Stars | Avg Energy Rating Points | Avg Sq. Feet | Avg. Annual Energy Cost (with PCE) | Avg. Annual Energy Use (million BTUs) | Avg Ann Energy by End Use (million Btus) |     |            | Avg. EUI (kBtus / SF) | Avg. ECI (\$ / SF) | Avg. Home Heating Index |
|  |                     |                         |                          |              |                                    |                                       | Space Heating                            | DHW | Appliances |                       |                    |                         |
| OVERALL  | 249                 | 3-star                  | 68.8                     | 1,135        | \$3,219                            | 195                                   | 135                                      | 27  | 29         | 175                   | \$3.16             | 6.7                     |
| Pre- 1940  | 0                   | NR                      | NR                       | NR           | NR                                 | NR                                    | NR                                       | NR  | NR         | NR                    | NR                 | NR                      |
| 1940- 49   | 0                   | NR                      | NR                       | NR           | NR                                 | NR                                    | NR                                       | NR  | NR         | NR                    | NR                 | NR                      |
| 1950- 59   | 2                   | NR                      | NR                       | NR           | NR                                 | NR                                    | NR                                       | NR  | NR         | NR                    | NR                 | NR                      |
| 1960- 69   | 7                   | 2-star plus             | 64.7                     | 801          | \$2,637                            | 140                                   | 115                                      | 7   | 18         | 174                   | \$3.36             | 7.4                     |
| 1970- 79   | 125                 | 2-star plus             | 64.0                     | 1,167        | \$3,964                            | 215                                   | 159                                      | 26  | 29         | 188                   | \$3.60             | 7.5                     |
| 1980- 89   | 49                  | 3-star                  | 69.8                     | 1,196        | \$3,512                            | 205                                   | 147                                      | 28  | 31         | 175                   | \$3.02             | 6.6                     |
| 1990- 99   | 67                  | 4-star                  | 81.0                     | 1,248        | \$2,602                            | 177                                   | 98                                       | 33  | 29         | 135                   | \$2.20             | 4.3                     |
| 2000- 2004   | 41                  | 4-star plus             | 84.6                     | 1,292        | \$2,445                            | 167                                   | 91                                       | 47  | 29         | 119                   | \$2.11             | 3.7                     |
| 2005 or later  | 56                  | 4-star plus             | 87.3                     | 788          | \$2,059                            | 88                                    | 55                                       | 13  | 20         | 116                   | \$2.71             | 3.8                     |

Figure C11: Current Average Energy Use Intensity and Average Square Footage by Decade Built

ARIS

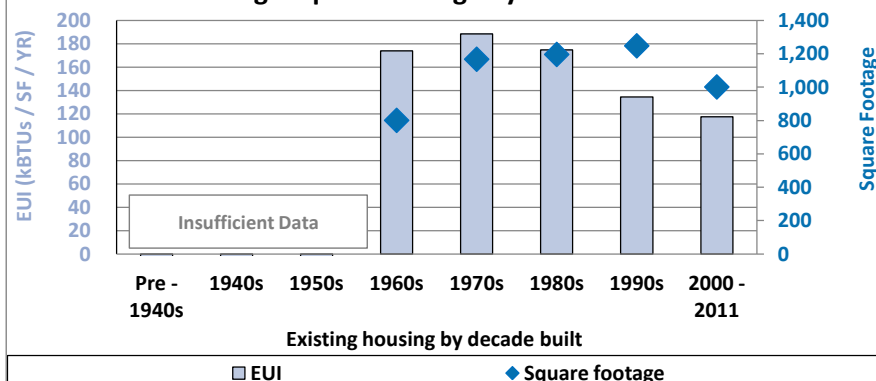
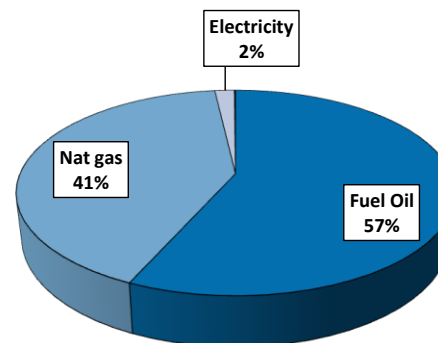


Figure C12: Percent of Total Residential Space Heating Energy by Fuel Type

ARIS



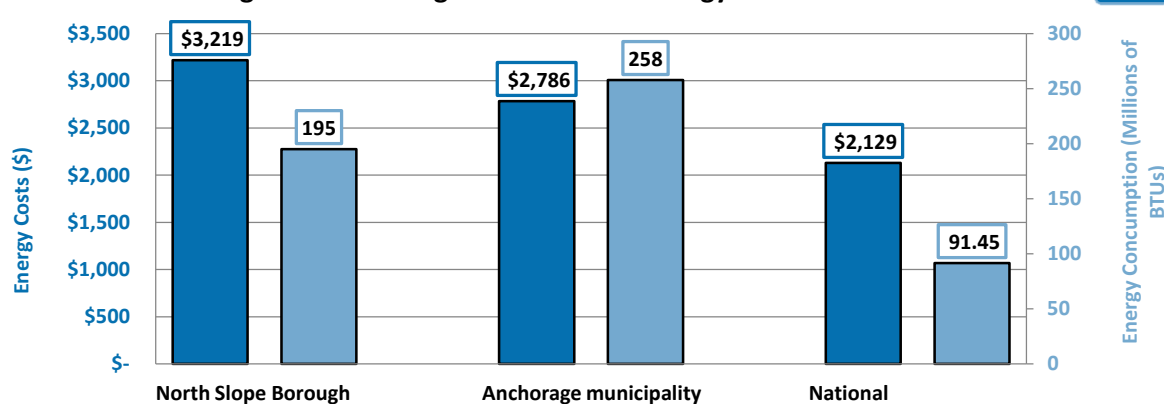
| Current North Slope Borough Housing Envelope Characteristics By Decade Built |                     |        |           |                    |                    |                     |                  |                     |        |               |          |
|--|---------------------|--------|-----------|--------------------|--------------------|---------------------|------------------|---------------------|--------|---------------|----------|
| Current Residential Units by Year Built                                      | # of AkWarm Records | ACH 50 | Ceiling R | Above Grade Wall R | Below Grade Wall R | Above Grade Floor R | On Grade Floor R | Below Grade Floor R | Door U | Garage Door U | Window U |
| OVERALL  | 249                 | 5.9    | 30        | 17                 | NR                 | 27                  | 3                | NR                  | 0.26   | 0.14          | 0.49     |
| Pre- 1940  | 0                   | NR     | NR        | NR                 | NR                 | NR                  | NR               | NR                  | NR     | NR            | NR       |
| 1940- 49   | 0                   | NR     | NR        | NR                 | NR                 | NR                  | NR               | NR                  | NR     | NR            | NR       |
| 1950- 59   | 2                   | NR     | NR        | NR                 | NR                 | NR                  | NR               | NR                  | NR     | NR            | NR       |
| 1960- 69   | 7                   | 3.5    | 21        | 12                 | NR                 | 23                  | NR               | NR                  | 0.30   | NR            | 0.51     |
| 1970- 79   | 125                 | 6.4    | 29        | 15                 | NR                 | 24                  | NR               | NR                  | 0.26   | NR            | 0.51     |
| 1980- 89   | 49                  | 6.4    | 27        | 15                 | NR                 | 28                  | NR               | NR                  | 0.29   | NR            | 0.51     |
| 1990- 99   | 67                  | 3.7    | 41        | 29                 | NR                 | 44                  | NR               | NR                  | 0.23   | NR            | 0.42     |
| 2000- 2004   | 41                  | 2.5    | 39        | 27                 | NR                 | 38                  | NR               | NR                  | 0.24   | NR            | 0.40     |
| 2005 or later  | 56                  | 7.3    | 50        | 31                 | NR                 | 52                  | NR               | NR                  | 0.25   | NR            | 0.25     |

|                            |     |    |    |    |    |    |    |    |      |      |      |
|----------------------------|-----|----|----|----|----|----|----|----|------|------|------|
| BEES 2009 - Climate Zone 9 | 7.0 | 52 | 35 | NR | 43 | NR | NR | NR | 0.20 | 0.20 | 0.20 |
| BEES 2012 - Climate Zone 9 | 4.0 | 52 | 35 | NR | 43 | NR | NR | NR | 0.20 | 0.20 | 0.20 |

AFFORDABILITY - North Slope Borough

Figure C13: Average Annual Home Energy Cost and Use



| Housing Information | Avg Household Size (# of people) |
|---------------------|----------------------------------|
| All-occupied        | 4.0                              |
| Owner-occupied      | 4.6                              |
| Renter-occupied     | 3.6                              |

| Median Value of Owner-occupied House with Mortgage |
|--|
| \$175,700  |

| Median Value of Owner-occupied House without a Mortgage |
|---|
| \$114,200   |

| Median Annual Household Income |                  |
|--------------------------------|------------------|
| Housing Units                  | Household Income |
| All-occupied                   | \$ 76,667        |
| Renter-occupied                | \$ 70,330        |
| Owner-occupied                 | \$ 86,964        |
| w/ mortgage                    | \$ 88,977        |
| w/o mortgage                   | \$ 75,938        |

| Median Housing Costs           |          |           |
|--------------------------------|----------|-----------|
|                                | Monthly  | Annual    |
| All-occupied                   | \$ 829   | \$ 9,948  |
| Gross rent                     | \$ 936   | \$ 11,232 |
| Owner-occupied                 | \$ 673   | \$ 8,076  |
| Housing units w/ mortgage      | \$ 1,143 | \$ 13,716 |
| Housing units w/out a mortgage | \$ 511   | \$ 6,132  |

| Avg % of Median Income Spent on Energy | 4.2% |
|--|------|
|--|------|

Figure C14: Affordability - Housing Costs as a Percent of Income

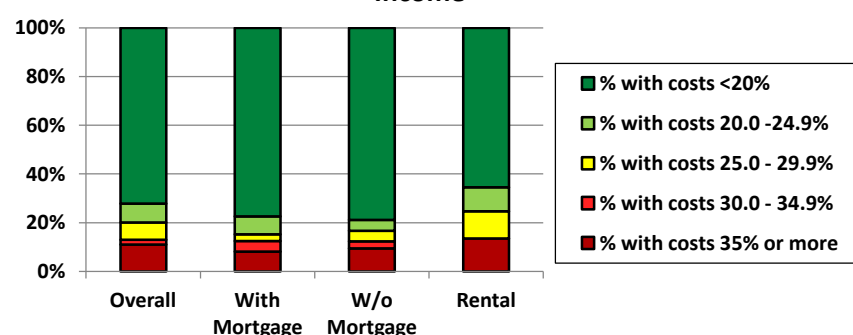
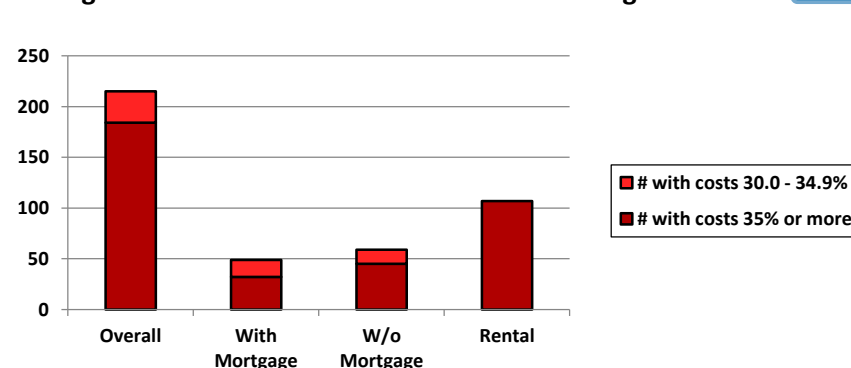


Figure C15: Number of Cost-Burdened Housing Units



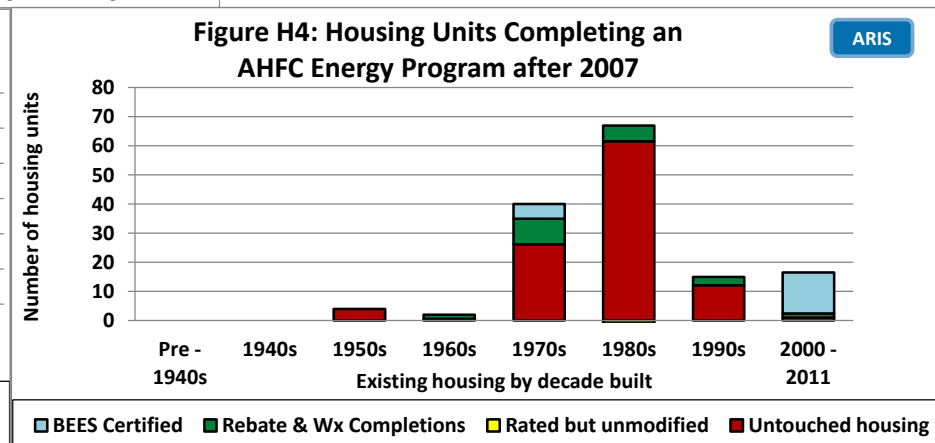
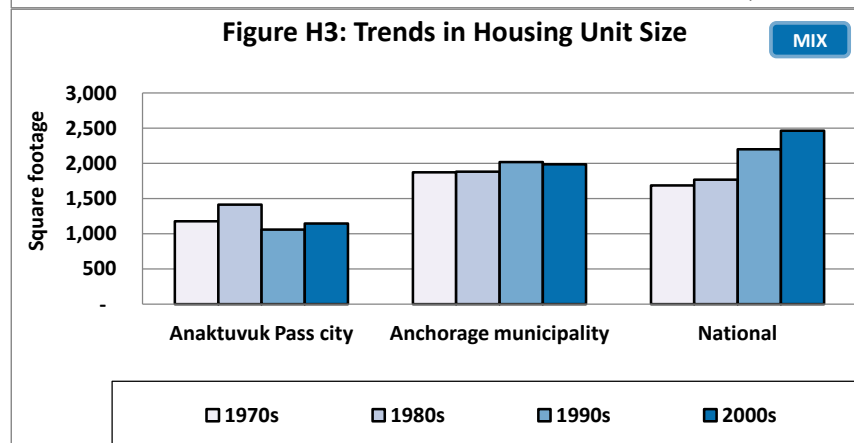
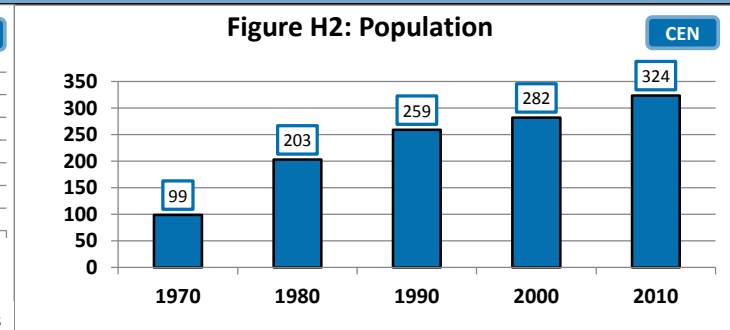
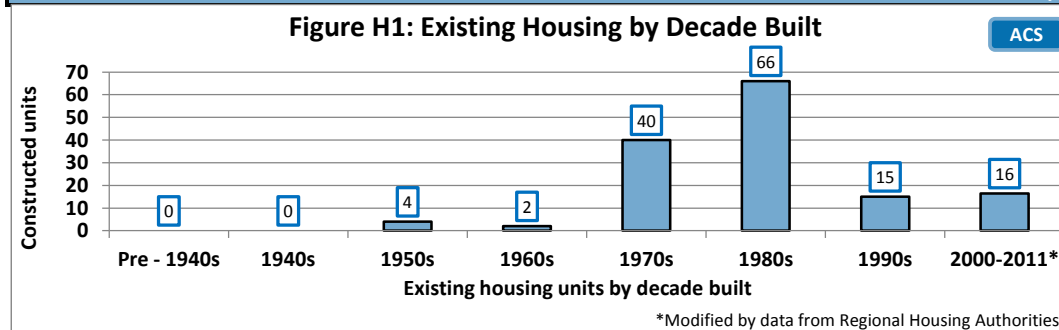
|                               |                     |
|-------------------------------|---------------------|
| <b>Community Profile for:</b> | Anaktuvuk Pass city |
|-------------------------------|---------------------|

|                     |                                   |
|---------------------|-----------------------------------|
| <b>ANCSA Region</b> | Arctic Slope Regional Corporation |
|---------------------|-----------------------------------|

|                                    |   |
|------------------------------------|---|
| <b>Regional Housing Authority:</b> | Tagiugmiullu Nunamiullu Housing Authority |
|------------------------------------|---|

|  |                     |
|--|---------------------|
| <b>BEES Climate Zone (Heating Degree Days)</b> | Zone 9 (18,873 HDD) |
|--|---------------------|

**COMMUNITY - Anaktuvuk Pass city**



| Houses Lacking Complete Plumbing or Kitchen Facilities | Households |         |
|--|------------|---------|
|  | Number     | Percent |
| Lack complete plumbing                                 | 15         | 14%     |
| Lack complete kitchen                                  | 18         | 16%     |

|                                    |         |
|------------------------------------|---------|
| Avg Annual Energy Cost with PCE    | \$4,351 |
| Avg Annual Energy Cost without PCE | \$4,403 |

| Weatherization Program Retrofits (funding increased in 2008) |       |
|--|-------|
| Date Range   | Units |
| 2008-2011  | 19    |
| 2003-2007  | NR    |
| 1990-2002  | NR    |

| Estimated Total Annual Community Space Heating Fuel Use |         |           |
|---|---------|-----------|
| Fuel Oil  | 102,757 | (gallons) |
| Nat Gas   | -       | (ccf)     |
| Electricity   | 93,091  | (kWh)     |
| Wood  | 6       | (cords)   |
| Propane   | -       | (gallons) |
| Coal  | -       | (tons)    |

| Estimated Energy Prices as of January 2013 |        |
|--|--------|
| #1 Fuel oil cost (\$ / gallon)             | \$1.55 |
| Electricity with PCE (\$/kWh)              | \$0.14 |
| Electricity cost without PCE (\$/kWh)      | \$0.15 |

| Housing Stock Estimates         | Number of Units |
|---------------------------------|-----------------|
| All Housing                     | 129             |
| All Occupied Housing            | 110             |
| All Vacant housing              | 19              |
| Vacant Housing for Sale or Rent | 1               |

OVERCROWDING & VENTILATION - Anaktuvuk Pass city

Figure H5: Overcrowded Units

ACS

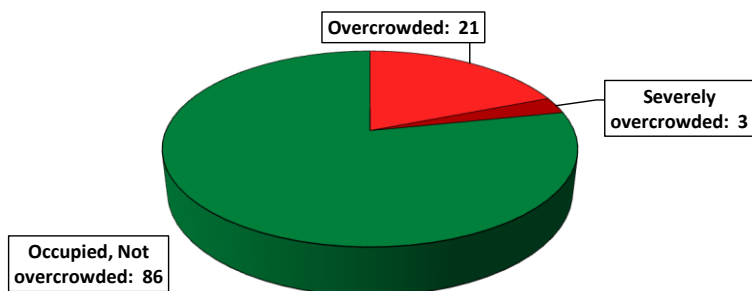


Figure H6: Housing Occupancy

MIX

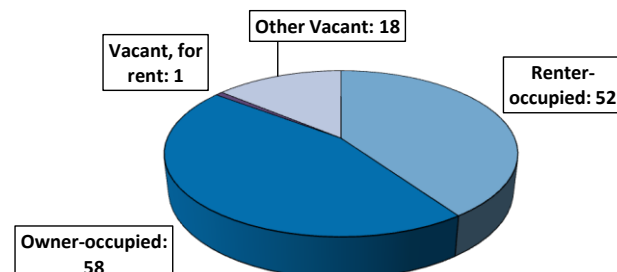


Figure H7: Average Air-Tightness of Current Homes by Decade Built

ARIS

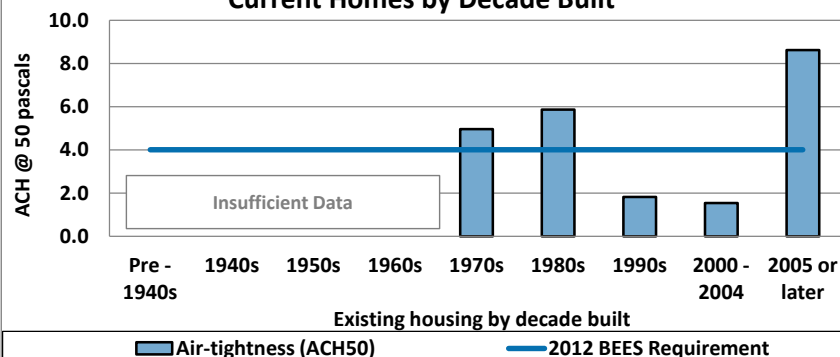


Figure H8: Existing Ventilation Type by Decade Built

ARIS

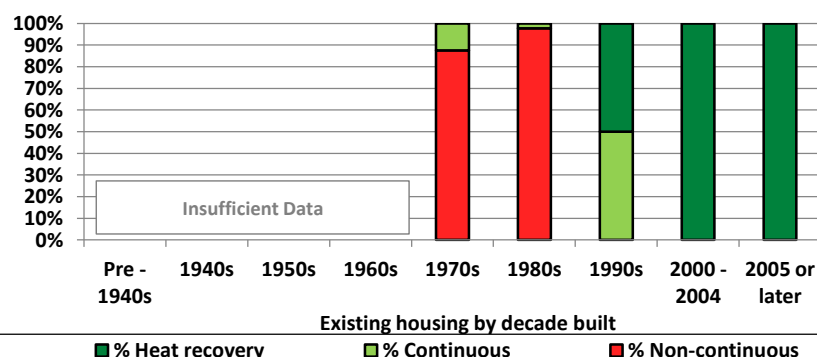


Figure H9: Percent of Housing Stock at High Risk of Moisture and Air Quality Problems

ARIS

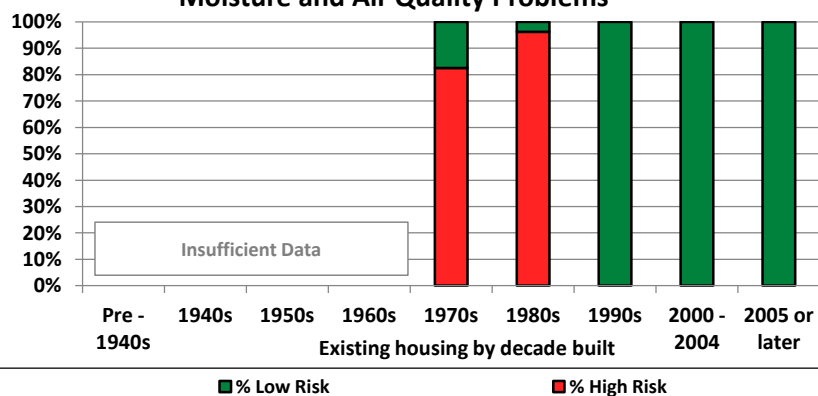
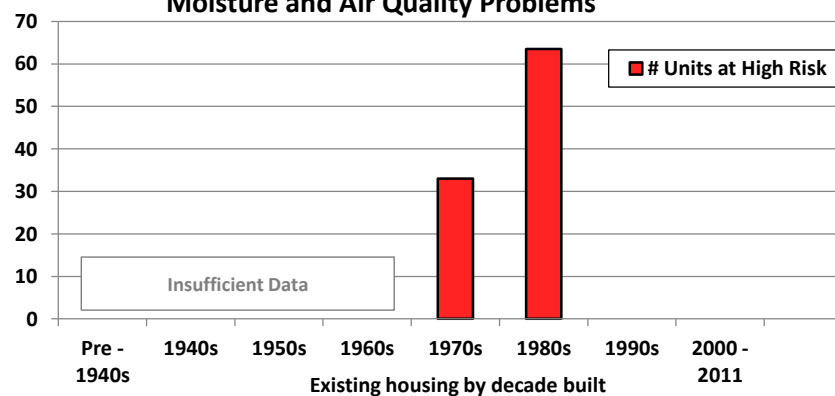


Figure H10: Quantity of Housing Stock at High Risk of Moisture and Air Quality Problems

ARIS



ENERGY - Anaktuvuk Pass city

Current Anaktuvuk Pass city Housing Energy Characteristics By Decade Built

| Current Residential Units by Year Built | Number of Records | Avg Energy Rating Stars | Avg Energy Rating Points | Avg Sq. Feet | Avg. Annual Energy Cost (with PCE) | Avg. Annual Energy Use (million BTUs) | Avg Ann Energy by End Use (million Btus) |     |            | Avg. EUI (kBtus/SF) | Avg. ECI (\$ / SF) | Avg. Home Heating Index |
|---|-------------------|-------------------------|--------------------------|--------------|------------------------------------|---------------------------------------|--|-----|------------|---------------------|--------------------|-------------------------|
|   |                   |                         |                          |              |                                    |                                       | Space Heating                            | DHW | Appliances |                     |                    |                         |
| OVERALL                                 | 40                | 3-star plus             | 74.6                     | 1,237        | \$ 4,351                           | 186                                   | 122                                      | 32  | 28         | 156                 | \$ 3.84            | 5.5                     |
| Pre- 1940                               | 0                 | NR                      | NR                       | NR           | NR                                 | NR                                    | NR                                       | NR  | NR         | NR                  | NR                 | NR                      |
| 1940- 49                                | 0                 | NR                      | NR                       | NR           | NR                                 | NR                                    | NR                                       | NR  | NR         | NR                  | NR                 | NR                      |
| 1950- 59                                | 0                 | NR                      | NR                       | NR           | NR                                 | NR                                    | NR                                       | NR  | NR         | NR                  | NR                 | NR                      |
| 1960- 69                                | 3                 | NR                      | NR                       | NR           | NR                                 | NR                                    | NR                                       | NR  | NR         | NR                  | NR                 | NR                      |
| 1970- 79                                | 24                | 2-star plus             | 65.4                     | 1,178        | \$ 5,410                           | 222                                   | 140                                      | 41  | 24         | 193                 | \$ 4.86            | 7.2                     |
| 1980- 89                                | 8                 | 3-star plus             | 74.7                     | 1,416        | \$ 4,617                           | 206                                   | 148                                      | 26  | 31         | 145                 | \$ 3.23            | 5.6                     |
| 1990- 99                                | 6                 | 4-star plus             | 83.8                     | 1,060        | \$ 3,364                           | 117                                   | 62                                       | 30  | 25         | 111                 | \$ 3.31            | 3.1                     |
| 2000- 2004                              | 8                 | 5-star                  | 90.8                     | 1,144        | \$ 2,182                           | 111                                   | 47                                       | 41  | 23         | 98                  | \$ 1.92            | 2.2                     |
| 2005 or later                           | 10                | 4-star plus             | 87.8                     | 743          | \$ 1,685                           | 83                                    | 52                                       | 11  | 20         | 114                 | \$ 2.35            | 3.8                     |

Figure H11: Current Average Energy Use Intensity and Average Square Footage by Decade Built

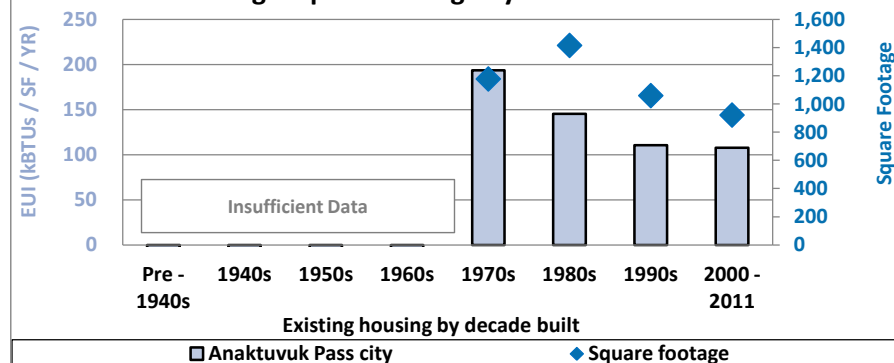
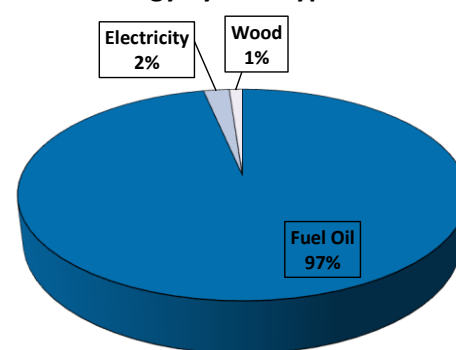


Figure H12: Percent of Total Residential Space Heating Energy by Fuel Type



Current Anaktuvuk Pass city Housing Envelope Characteristics By Decade Built

| Current Residential Units by Year Built | Number of Records | ACH 50 | Ceiling R | Above Grade Wall R | Below Grade Wall R | Above Grade Floor R | On Grade Floor R | Below Grade Floor R | Door U | Garage Door U | Window U |
|---|-------------------|--------|-----------|--------------------|--------------------|---------------------|------------------|---------------------|--------|---------------|----------|
| OVERALL                                 | 40                | 4.8    | 29        | 16                 | NR                 | 31                  | NR               | NR                  | 0.31   | NR            | 0.47     |
| Pre- 1940                               | 0                 | NR     | NR        | NR                 | NR                 | NR                  | NR               | NR                  | NR     | NR            | NR       |
| 1940- 49                                | 0                 | NR     | NR        | NR                 | NR                 | NR                  | NR               | NR                  | NR     | NR            | NR       |
| 1950- 59                                | 0                 | NR     | NR        | NR                 | NR                 | NR                  | NR               | NR                  | NR     | NR            | NR       |
| 1960- 69                                | 3                 | NR     | NR        | NR                 | NR                 | NR                  | NR               | NR                  | NR     | NR            | NR       |
| 1970- 79                                | 24                | 5.0    | 27        | 14                 | NR                 | 30                  | NR               | NR                  | 0.31   | NR            | 0.45     |
| 1980- 89                                | 8                 | 5.9    | 26        | 16                 | NR                 | 30                  | NR               | NR                  | 0.25   | NR            | 0.51     |
| 1990- 99                                | 6                 | 1.8    | NR        | NR                 | NR                 | NR                  | NR               | NR                  | NR     | NR            | NR       |
| 2000- 2004                              | 8                 | 1.5    | 45        | 32                 | NR                 | 47                  | NR               | NR                  | 0.26   | NR            | 0.36     |
| 2005 or later                           | 10                | 8.6    | 49        | 31                 | NR                 | 53                  | NR               | NR                  | 0.26   | NR            | 0.23     |

|                            |     |    |    |    |    |    |    |      |      |      |
|----------------------------|-----|----|----|----|----|----|----|------|------|------|
| BEES 2009 - Climate Zone 9 | 7.0 | 52 | 35 | NR | 43 | NR | NR | 0.20 | 0.20 | 0.20 |
| BEES 2012 - Climate Zone 9 | 4.0 | 52 | 35 | NR | 43 | NR | NR | 0.20 | 0.20 | 0.20 |

AFFORDABILITY - Anaktuvuk Pass city

Figure H13: Average Annual Home Energy Costs and Use

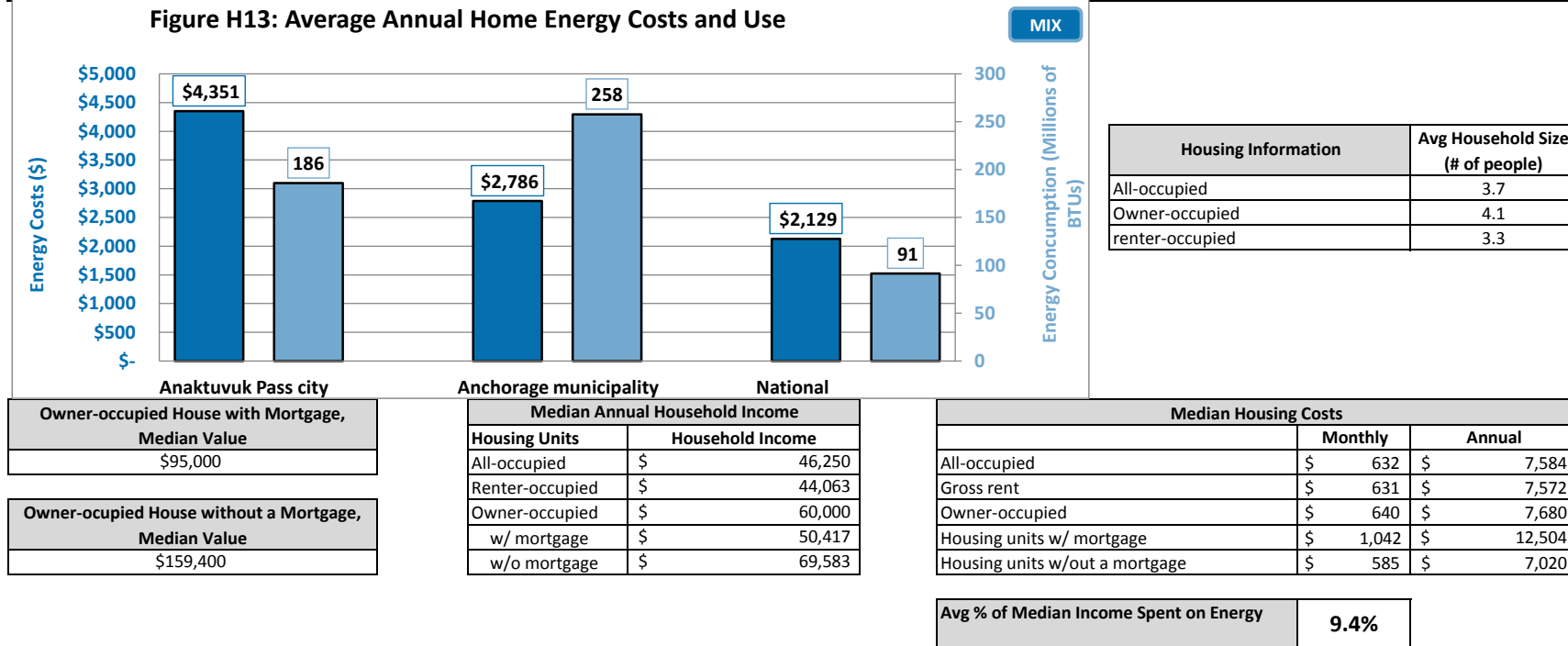


Figure H14: Affordability - Housing Costs as a Percent of Income

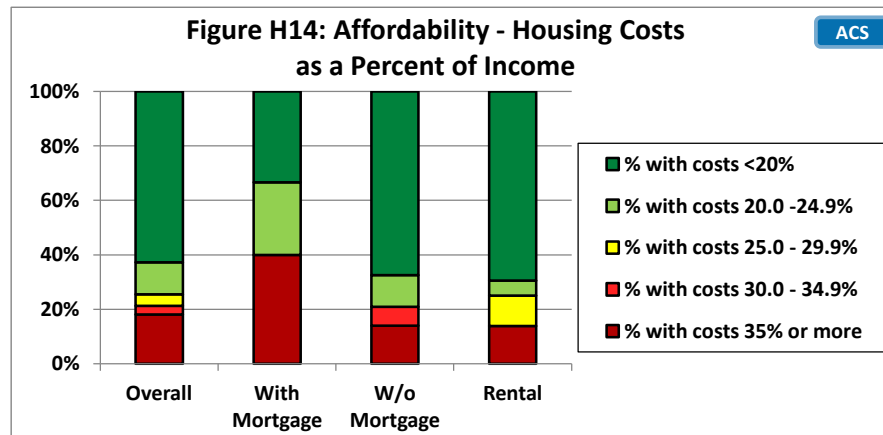
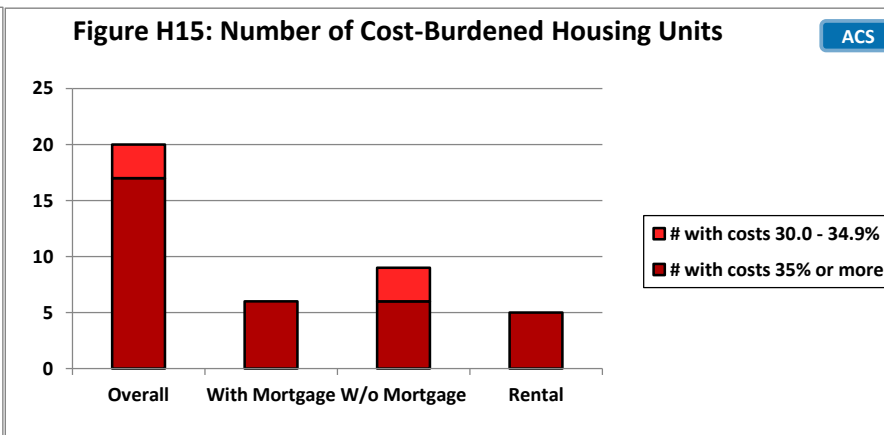


Figure H15: Number of Cost-Burdened Housing Units



**Community Profile for:** Atqasuk city

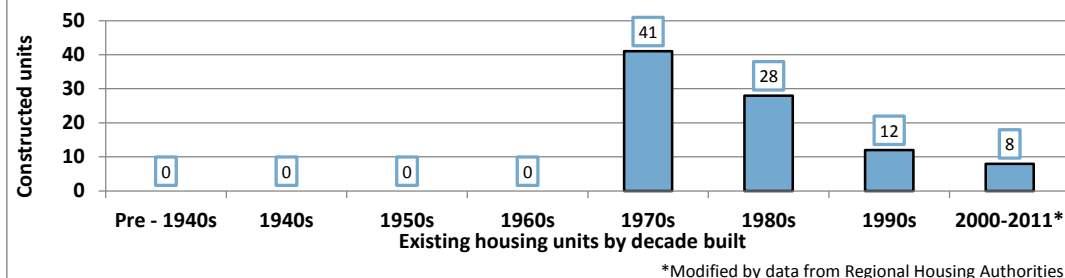
**ANCSA Region** Arctic Slope Regional Corporation

**Regional Housing Authority** Tagiugmiullu Nunamiullu Housing Authority

**BEES Climate Zone (Heating Degree Days)** Zone 9 (20,370 HDD)

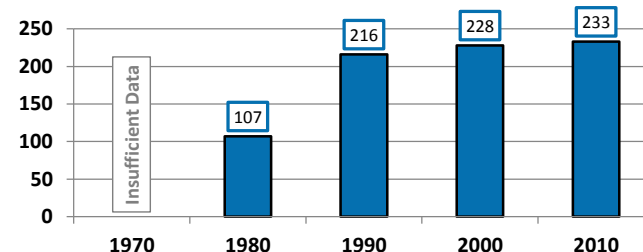
**Figure M1: Existing housing by decade built**

ACS



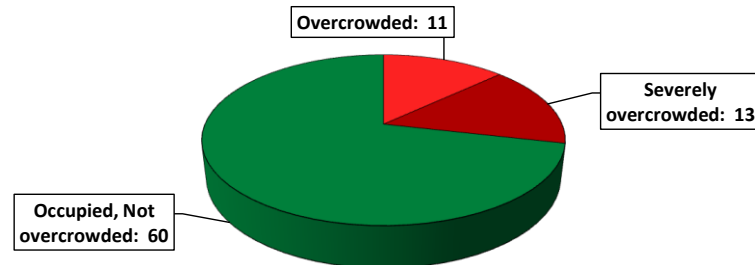
**Figure M2: Population**

CEN



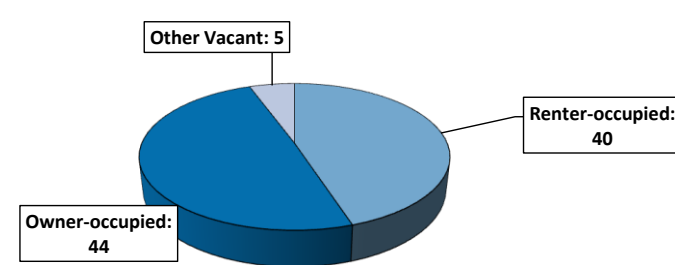
**Figure M3: Overcrowded Units**

ACS



**Figure M4: Housing Occupancy**

MIX



**Atqasuk city Housing Energy Characteristics**

| Residential Unit Categories | Number of records | Avg Energy Rating Stars | Avg Energy Rating Points | Avg Sq. Feet | Avg. Ann Energy Cost | Avg. Ann Energy Use (million BTUs) | Avg. EUI (kBtus/SF) | Avg. ECI | Avg. Home Heating Index | % Tight Homes, No Ventilation |
|-----------------------------|-------------------|-------------------------|--------------------------|--------------|----------------------|------------------------------------|---------------------|----------|-------------------------|-------------------------------|
| Pre-retrofit units          | 7                 | 2-star plus             | 62.0                     | 1,330        | \$ 4,974             | 276                                | 207                 | \$3.80   | 8.2                     | 57%                           |
| Retrofit units              | 6                 | 3-star plus             | 75.1                     | 1,329        | \$ 3,750             | 203                                | 152                 | \$2.87   | 5.9                     | 50%                           |
| New construction            | 6                 | 5-star                  | 90.9                     | 1,115        | \$ 2,640             | 98                                 | 87                  | \$2.47   | 1.9                     | 0%                            |

**Atqasuk city Housing Envelope Characteristics**

| Residential Unit Categories | Number of Records | ACH 50 | Ceiling R | Above Grade Wall R | Below Grade Wall R | Above Grade Floor R | On Grade Floor R | Below Grade Floor R | Door U | Garage Door U | Window U |
|-----------------------------|-------------------|--------|-----------|--------------------|--------------------|---------------------|------------------|---------------------|--------|---------------|----------|
| Pre-retrofit units          | 7                 | 4.5    | 24        | 12                 | NR                 | 24                  | NR               | NR                  | 0.28   | NR            | 0.52     |
| Retrofit units              | 6                 | 4.1    | 35        | 27                 | NR                 | 36                  | NR               | NR                  | 0.30   | NR            | 0.52     |
| New construction            | 6                 | 2.1    | 50        | 37                 | NR                 | 50                  | NR               | NR                  | 0.19   | NR            | 0.25     |

|           |     |    |    |    |    |    |    |      |      |      |
|-----------|-----|----|----|----|----|----|----|------|------|------|
| BEES 2009 | 7.0 | 52 | 35 | NR | 43 | NR | NR | 0.20 | 0.20 | 0.20 |
| BEES 2012 | 4.0 | 52 | 35 | NR | 43 | NR | NR | 0.20 | 0.20 | 0.20 |



Figure M5: Average Annual Home Energy Costs and Use

MIX

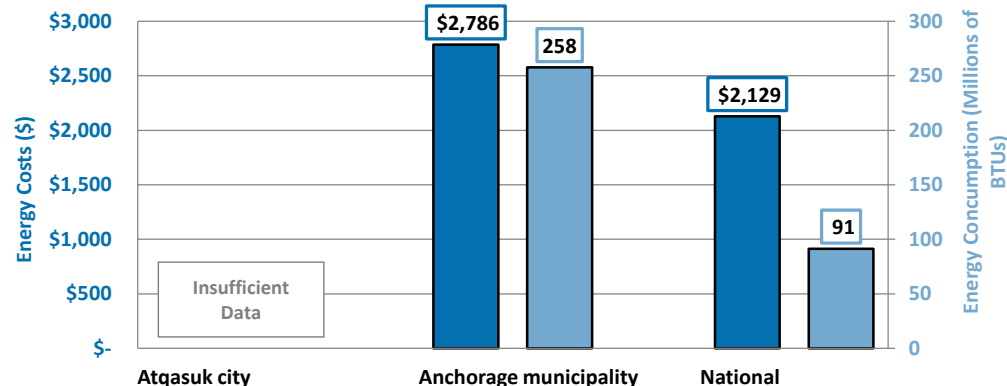
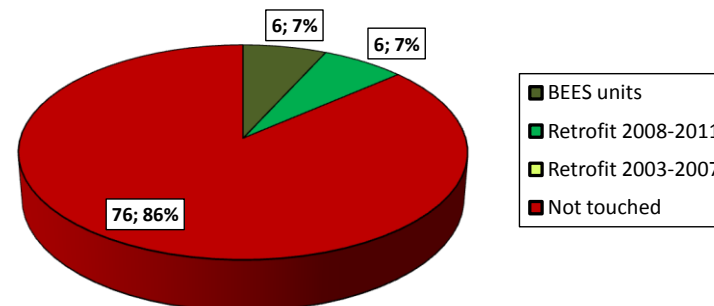


Figure M6: Housing Units Completing an AHFC Energy Program

ARIS



AFFORDABILITY - Atqasuk city

| Owner occupied House with Mortgage,<br>Median Value |
|---|
| \$162,500   |

| Owner-occupied House without a Mortgage,<br>Median Value |
|--|
| \$133,300  |

| Estimated Energy Prices as of January 2013 |         |
|--|---------|
| #1 Fuel oil cost (\$ / gallon)             | \$ 1.40 |
| Electricity with PCE (\$/kWh)              | \$ 0.14 |
| Electricity without PCE (\$/kWh)           | \$ 0.15 |

| Median Annual Household Income |                  |        |
|--------------------------------|------------------|--------|
| Housing Units                  | Household Income |        |
| All-occupied                   | \$               | 56,500 |
| Renter-occupied                | \$               | 63,750 |
| Owner-occupied                 | \$               | 48,333 |
| w/ mortgage                    | \$               | 33,750 |
| w/o mortgage                   | \$               | 53,750 |

| Average Annual Energy Cost |         |
|----------------------------|---------|
| With PCE                   | NO PCE  |
| Without PCE                | \$4,787 |

|                                     |      |
|-------------------------------------|------|
| Avg % Median Income spent on Energy | 8.5% |
|-------------------------------------|------|

| Median Housing Costs           |          |           |
|--------------------------------|----------|-----------|
|                                | Monthly  | Annual    |
| All-occupied                   | \$ 733   | \$ 8,796  |
| Gross rent                     | \$ 725   | \$ 8,700  |
| Owner-occupied                 | \$ 730   | \$ 8,760  |
| Housing units w/ mortgage      | \$ 1,591 | \$ 19,092 |
| Housing units w/out a mortgage | \$ 540   | \$ 6,480  |

| Housing Stock Estimates      | Number of Units |
|------------------------------|-----------------|
| All Housing                  | 89              |
| All Occupied Housing         | 84              |
| All Vacant housing           | 5               |
| Vacant Housing for Sale/Rent | 0               |

Figure M7: Affordability - Housing Costs as a Percent of Income

ACS

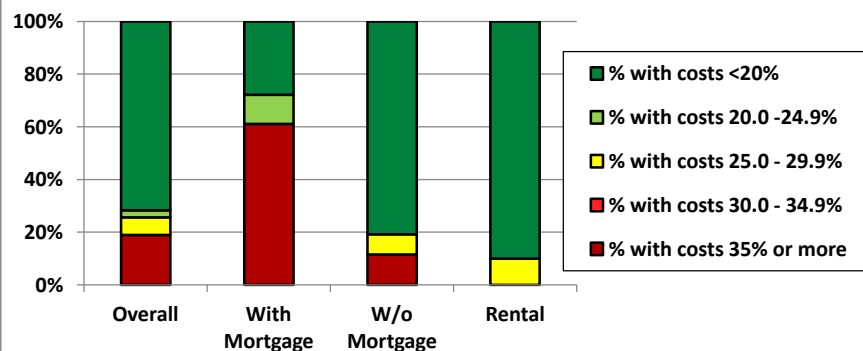
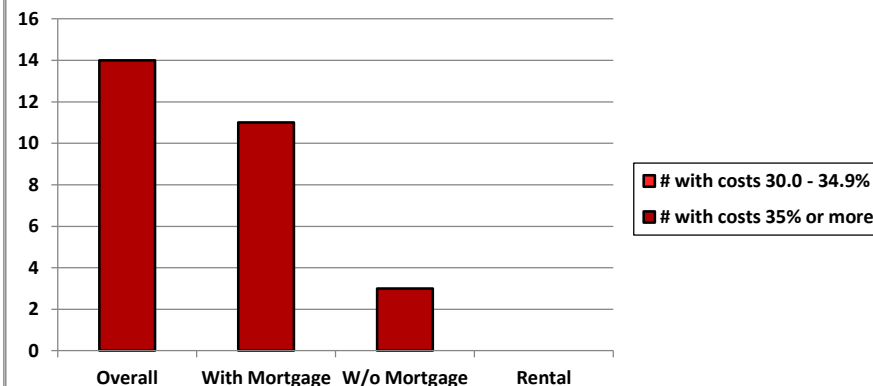


Figure M8: Number of Cost-Burdened Housing Units

ACS



|                               |             |
|-------------------------------|-------------|
| <b>Community Profile for:</b> | Barrow city |
|-------------------------------|-------------|

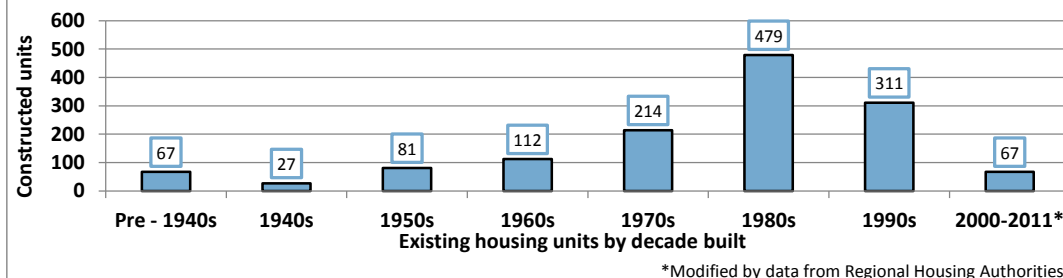
|                     |                                   |
|---------------------|-----------------------------------|
| <b>ANCSA Region</b> | Arctic Slope Regional Corporation |
|---------------------|-----------------------------------|

|                                   |   |
|-----------------------------------|---|
| <b>Regional Housing Authority</b> | Tagiugmiullu Nunamiullu Housing Authority |
|-----------------------------------|---|

|  |                     |
|--|---------------------|
| <b>BEES Climate Zone (Heating Degree Days)</b> | Zone 9 (20,370 HDD) |
|--|---------------------|

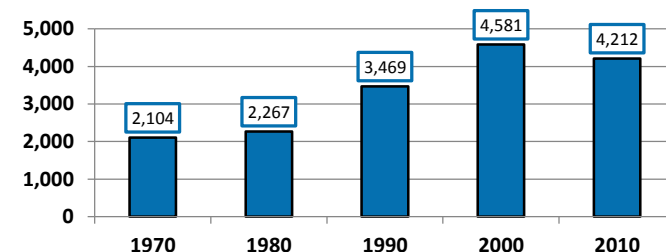
**Figure M1: Existing housing by decade built**

ACS



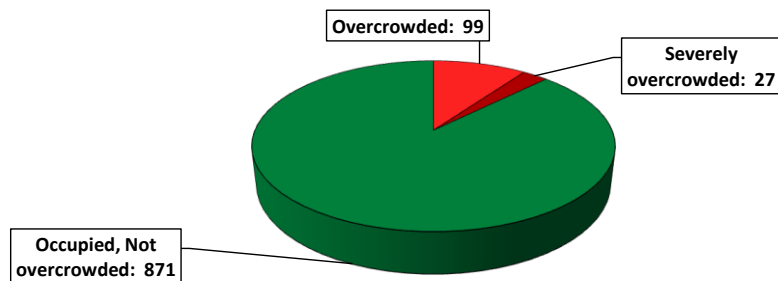
**Figure M2: Population**

CEN



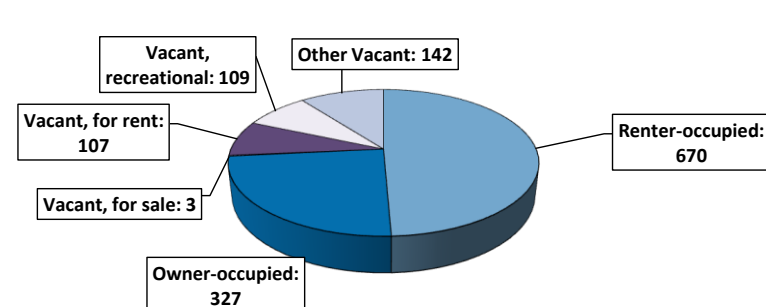
**Figure M3: Overcrowded Units**

ACS



**Figure M4: Housing Occupancy**

MIX



**Barrow city Housing Energy Characteristics**

| Residential Unit Categories | Number of records | Avg Energy Rating Stars | Avg Energy Rating Points | Avg Sq. Feet | Avg. Ann Energy Cost | Avg. Ann Energy Use (million BTUs) | Avg. EUI (kBtus/SF) | Avg. ECI | Avg. Home Heating Index | % Tight Homes, No Ventilation |
|-----------------------------|-------------------|-------------------------|--------------------------|--------------|----------------------|------------------------------------|---------------------|----------|-------------------------|-------------------------------|
| Pre-retrofit units          | 34                | 2-star plus             | 64.5                     | 1,182        | \$ 1,739             | 269                                | 214                 | \$1.46   | 8.1                     | 35%                           |
| Retrofit units              | 19                | 3-star plus             | 73.5                     | 1,292        | \$ 1,580             | 238                                | 177                 | \$1.28   | 6.5                     | 50%                           |
| New construction            | 45                | 5-star                  | 88.4                     | 1,134        | \$ 1,208             | 130                                | 108                 | \$1.04   | 3.1                     | 4%                            |

**Barrow city Housing Envelope Characteristics**

| Residential Unit Categories | Number of Records | ACH 50 | Ceiling R | Above Grade Wall R | Below Grade Wall R | Above Grade Floor R | On Grade Floor R | Below Grade Floor R | Door U | Garage Door U | Window U |
|-----------------------------|-------------------|--------|-----------|--------------------|--------------------|---------------------|------------------|---------------------|--------|---------------|----------|
| Pre-retrofit units          | 34                | 7.0    | 30        | 16                 | NR                 | 27                  | NR               | NR                  | 0.37   | NR            | 0.50     |
| Retrofit units              | 19                | 5.6    | 27        | 20                 | NR                 | 29                  | NR               | NR                  | 0.29   | NR            | 0.61     |
| New construction            | 45                | 2.2    | 46        | 27                 | NR                 | 41                  | NR               | NR                  | 0.19   | 0.14          | 0.32     |
|                             |                   | NR     | NR        | NR                 | NR                 | NR                  | NR               | NR                  | NR     | NR            | NR       |

|           |     |    |    |    |    |    |    |      |      |      |
|-----------|-----|----|----|----|----|----|----|------|------|------|
| BEES 2009 | 7.0 | 52 | 35 | NR | 43 | NR | NR | 0.20 | 0.20 | 0.20 |
| BEES 2012 | 4.0 | 52 | 35 | NR | 43 | NR | NR | 0.20 | 0.20 | 0.20 |

Figure M5: Average Annual Home Energy Costs and Use

MIX

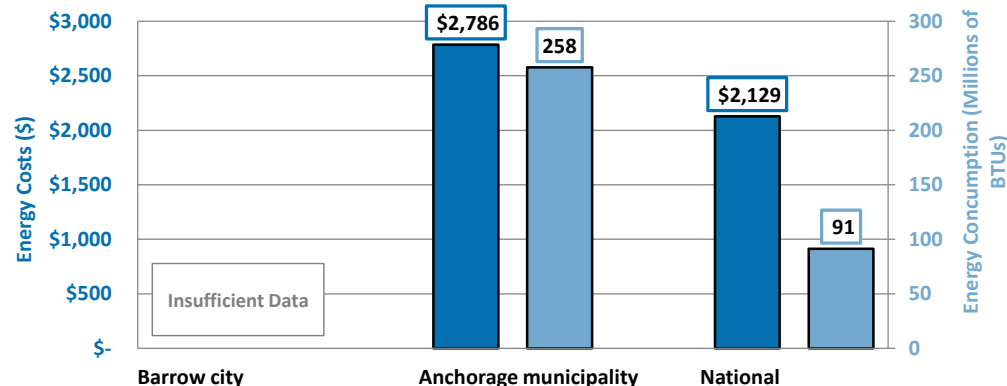
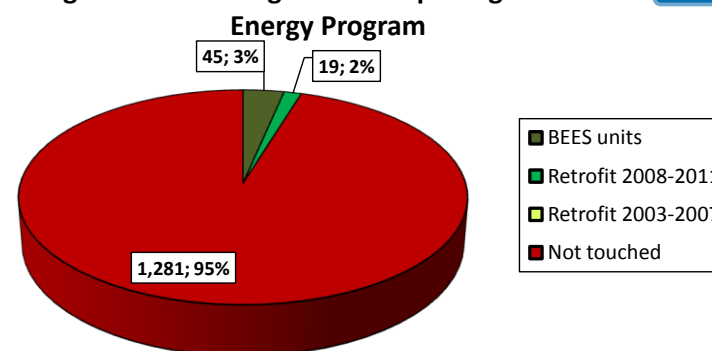


Figure M6: Housing Units Completing an AHFC

ARIS



AFFORDABILITY - Barrow city

| Owner occupied House with Mortgage,<br>Median Value |
|---|
| \$190,400   |

| Owner-occupied House without a Mortgage,<br>Median Value |
|--|
| \$156,500  |

| Estimated Energy Prices as of January 2013 |         |
|--|---------|
| #1 Fuel oil cost (\$ / gallon)             | \$ 1.00 |
| Electricity with PCE (\$/kWh)              | No PCE  |
| Electricity without PCE (\$/kWh)           | \$ 0.11 |
| Natural gas base rate                      | \$ -    |
| Natural gas fuel charge                    | \$ -    |

| Median Annual Household Income |                  |
|--------------------------------|------------------|
| Housing Units                  | Household Income |
| All-occupied                   | \$ 89,153        |
| Renter-occupied                | \$ 72,500        |
| Owner-occupied                 | \$ 100,521       |
| w/ mortgage                    | \$ 102,083       |
| w/o mortgage                   | \$ 59,453        |

| Average Annual Energy Cost |         |
|----------------------------|---------|
| With PCE                   | NO PCE  |
| Without PCE                | \$1,719 |

|                                     |      |
|-------------------------------------|------|
| Avg % Median Income spent on Energy | 1.9% |
|-------------------------------------|------|

| Median Housing Costs           |          |           |
|--------------------------------|----------|-----------|
|                                | Monthly  | Annual    |
| All-occupied                   | \$ 1,025 | \$ 12,300 |
| Gross rent                     | \$ 1,100 | \$ 13,200 |
| Owner-occupied                 | \$ 923   | \$ 11,076 |
| Housing units w/ mortgage      | \$ 1,333 | \$ 15,996 |
| Housing units w/out a mortgage | \$ 389   | \$ 4,668  |

| Housing Stock Estimates      | Number of Units |
|------------------------------|-----------------|
| All Housing                  | 1358            |
| All Occupied Housing         | 997             |
| All Vacant housing           | 361             |
| Vacant Housing for Sale/Rent | 109             |

Figure M7: Affordability - Housing Costs  
as a Percent of Income

ACS

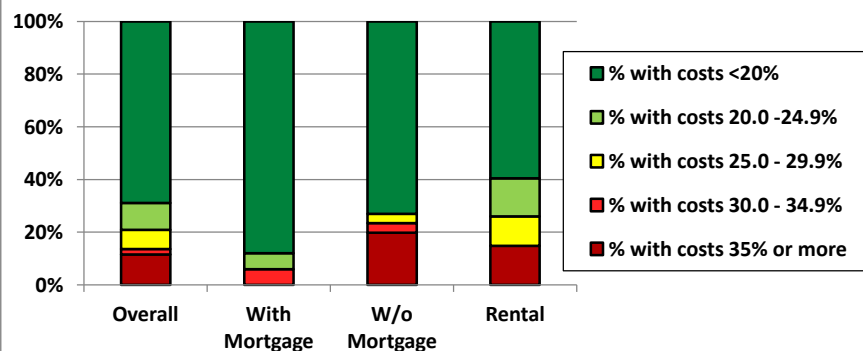
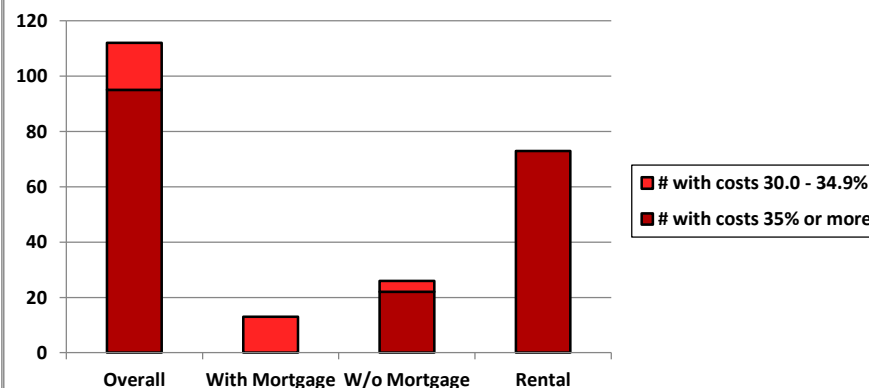


Figure M8: Number of Cost-Burdened Housing Units

ACS



**Community Profile for:** Kaktovik city

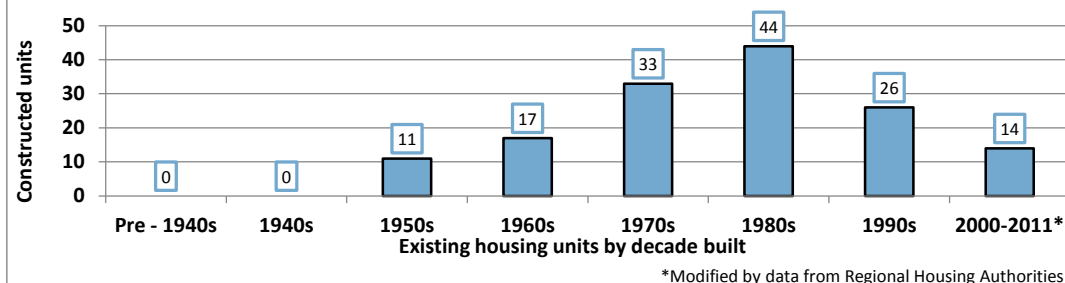
**ANCSA Region** Arctic Slope Regional Corporation

**Regional Housing Authority** Tagiugmiullu Nunamiullu Housing Authority

**BEES Climate Zone (Heating Degree Days)** Zone 9 (20,370 HDD)

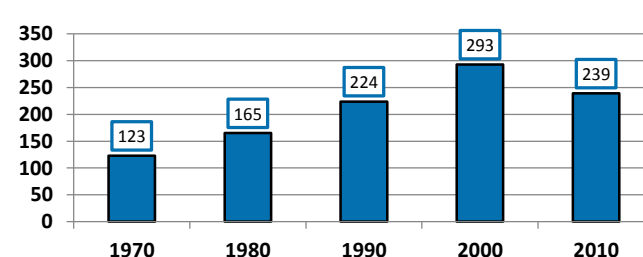
**Figure M1: Existing housing by decade built**

ACS



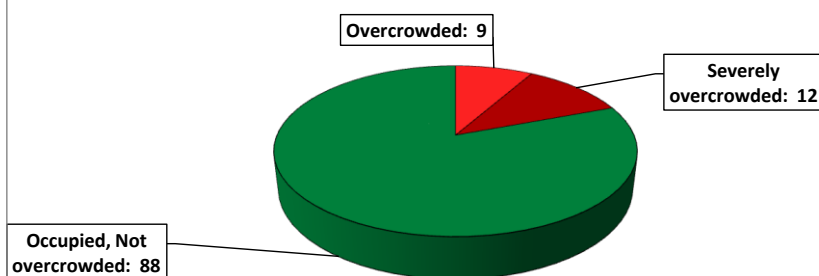
**Figure M2: Population**

CEN



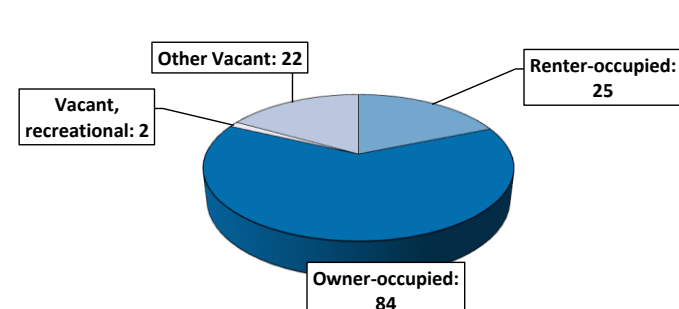
**Figure M3: Overcrowded Units**

ACS



**Figure M4: Housing Occupancy**

MIX



**Kaktovik city Housing Energy Characteristics**

| Residential Unit Categories | Number of records | Avg Energy Rating Stars | Avg Energy Rating Points | Avg Sq. Feet | Avg. Ann Energy Cost | Avg. Ann Energy Use (million BTUs) | Avg. EUI (kBtus/SF) | Avg. ECI | Avg. Home Heating Index | % Tight Homes, No Ventilation |
|-----------------------------|-------------------|-------------------------|--------------------------|--------------|----------------------|------------------------------------|---------------------|----------|-------------------------|-------------------------------|
| Pre-retrofit units          | 6                 | 3-star                  | 68.7                     | 1,422        | \$ 6,694             | 241                                | 172                 | \$4.98   | 6.9                     | 50%                           |
| Retrofit units              | 8                 | 4-star                  | 82.5                     | 1,316        | \$ 4,335             | 141                                | 106                 | \$3.43   | 3.7                     | 25%                           |
| New construction            | 14                | 4-star plus             | 87.7                     | 618          | \$ 2,575             | 100                                | 122                 | \$3.15   | 3.8                     | 0%                            |

**Kaktovik city Housing Envelope Characteristics**

| Residential Unit Categories | Number of Records | ACH 50 | Ceiling R | Above Grade Wall R | Below Grade Wall R | Above Grade Floor R | On Grade Floor R | Below Grade Floor R | Door U | Garage Door U | Window U |
|-----------------------------|-------------------|--------|-----------|--------------------|--------------------|---------------------|------------------|---------------------|--------|---------------|----------|
| Pre-retrofit units          | 6                 | 4.1    | 28        | 20                 | NR                 | 29                  | NR               | NR                  | 0.20   | NR            | 0.51     |
| Retrofit units              | 8                 | 3.0    | 32        | 24                 | NR                 | 38                  | NR               | NR                  | 0.20   | NR            | 0.51     |
| New construction            | 14                | 6.7    | 49        | 32                 | NR                 | 52                  | NR               | NR                  | 0.23   | NR            | 0.25     |
|                             |                   | NR     | NR        | NR                 | NR                 | NR                  | NR               | NR                  | NR     | NR            | NR       |

|           |     |    |    |    |    |    |    |      |      |      |
|-----------|-----|----|----|----|----|----|----|------|------|------|
| BEES 2009 | 7.0 | 52 | 35 | NR | 43 | NR | NR | 0.20 | 0.20 | 0.20 |
| BEES 2012 | 4.0 | 52 | 35 | NR | 43 | NR | NR | 0.20 | 0.20 | 0.20 |

Figure M5: Average Annual Home Energy Costs and Use

MIX

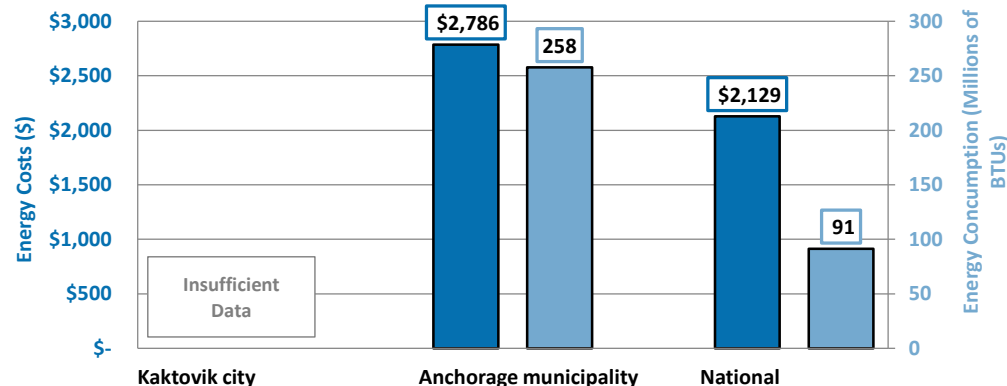
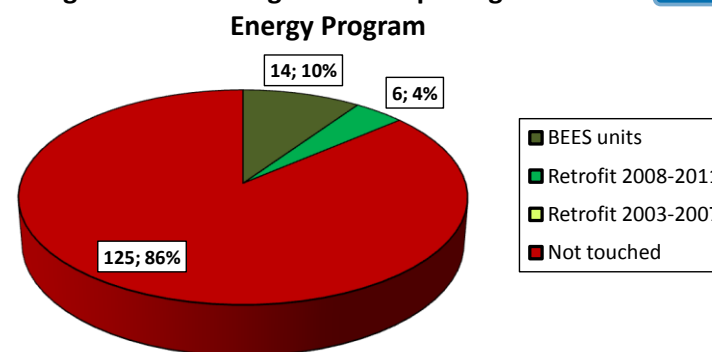


Figure M6: Housing Units Completing an AHFC Energy Program

ARIS



AFFORDABILITY - Kaktovik city

| Owner occupied House with Mortgage,<br>Median Value |
|---|
| \$117,200   |

| Owner-occupied House without a Mortgage,<br>Median Value |
|--|
| \$138,800  |

| Estimated Energy Prices as of January 2013 |         |
|--|---------|
| #1 Fuel oil cost (\$ / gallon)             | \$ 2.60 |
| Electricity with PCE (\$/kWh)              | \$ 0.14 |
| Electricity without PCE (\$/kWh)           | \$ 0.15 |

| Median Annual Household Income |                  |
|--------------------------------|------------------|
| Housing Units                  | Household Income |
| All-occupied                   | \$ 51,607        |
| Renter-occupied                | \$ 49,063        |
| Owner-occupied                 | \$ 52,143        |
| w/ mortgage                    | \$ 109,375       |
| w/o mortgage                   | \$ 51,607        |

| Average Annual Energy Cost |         |
|----------------------------|---------|
| With PCE                   | NO PCE  |
| Without PCE                | \$6,171 |

|                                     |       |
|-------------------------------------|-------|
| Avg % Median Income spent on Energy | 12.0% |
|-------------------------------------|-------|

| Median Housing Costs           |          |           |
|--------------------------------|----------|-----------|
|                                | Monthly  | Annual    |
| All-occupied                   | \$ 702   | \$ 8,424  |
| Gross rent                     | \$ 778   | \$ 9,336  |
| Owner-occupied                 | \$ 646   | \$ 7,752  |
| Housing units w/ mortgage      | \$ 1,094 | \$ 13,128 |
| Housing units w/out a mortgage | \$ 575   | \$ 6,900  |

| Housing Stock Estimates      | Number of Units |
|------------------------------|-----------------|
| All Housing                  | 133             |
| All Occupied Housing         | 109             |
| All Vacant housing           | 24              |
| Vacant Housing for Sale/Rent | 0               |

Figure M7: Affordability - Housing Costs as a Percent of Income

ACS

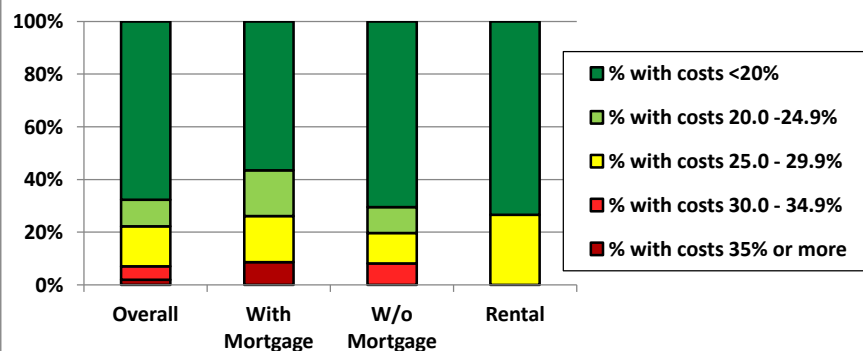
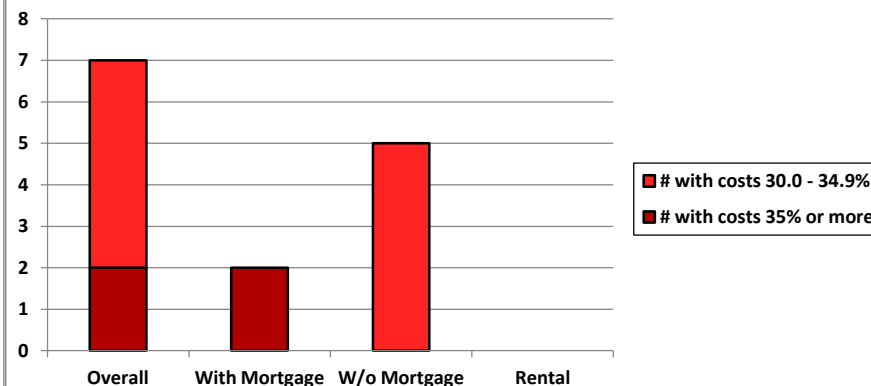


Figure M8: Number of Cost-Burdened Housing Units

ACS



|                               |              |
|-------------------------------|--------------|
| <b>Community Profile for:</b> | Nuiqsut city |
|-------------------------------|--------------|

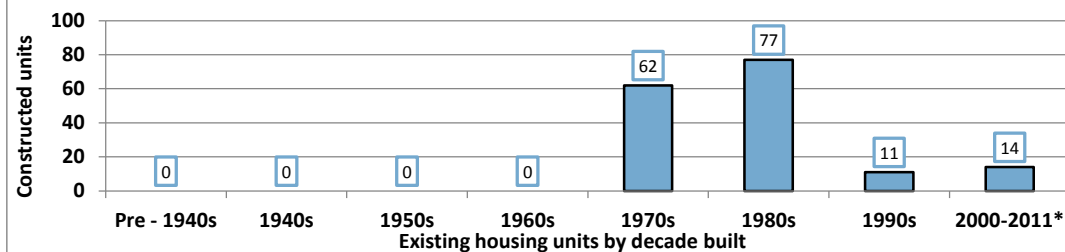
|                     |                                   |
|---------------------|-----------------------------------|
| <b>ANCSA Region</b> | Arctic Slope Regional Corporation |
|---------------------|-----------------------------------|

|                                   |   |
|-----------------------------------|---|
| <b>Regional Housing Authority</b> | Tagiugmiullu Nunamiullu Housing Authority |
|-----------------------------------|---|

|  |                     |
|--|---------------------|
| <b>BEES Climate Zone (Heating Degree Days)</b> | Zone 9 (20,370 HDD) |
|--|---------------------|

**Figure M1: Existing housing by decade built**

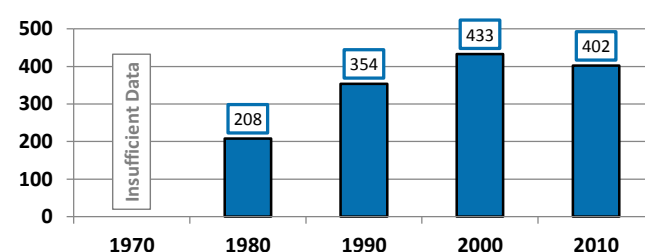
ACS



\*Modified by data from Regional Housing Authorities

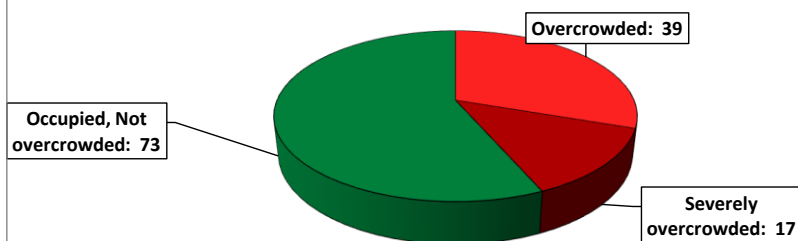
**Figure M2: Population**

CEN



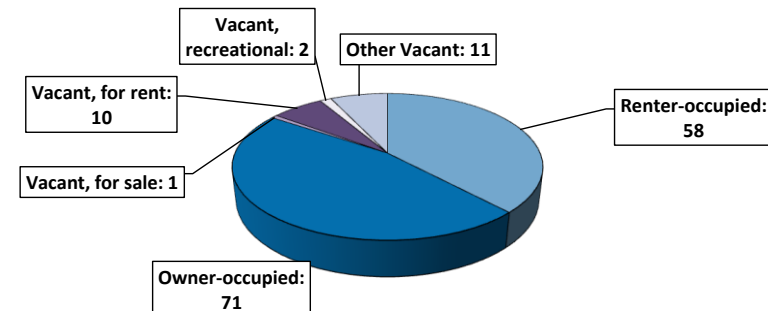
**Figure M3: Overcrowded Units**

ACS



**Figure M4: Housing Occupancy**

MIX



**Nuiqsut city Housing Energy Characteristics**

| Residential Unit Categories | Number of records | Avg Energy Rating Stars | Avg Energy Rating Points | Avg Sq. Feet | Avg. Ann Energy Cost | Avg. Ann Energy Use (million BTUs) | Avg. EUI (kBtus/SF) | Avg. ECI | Avg. Home Heating Index | % Tight Homes, No Ventilation |
|-----------------------------|-------------------|-------------------------|--------------------------|--------------|----------------------|------------------------------------|---------------------|----------|-------------------------|-------------------------------|
| Pre-retrofit units          | 0                 | NR                      | NR                       | NR           | NR                   | NR                                 | NR                  | NR       | NR                      | NR                            |
| Retrofit units              | 4                 | 4-star                  | 78.8                     | 1,132        | \$ 4,735             | 167                                | 146                 | \$4.14   | 4.8                     | 0%                            |
| New construction            | 14                | 4-star plus             | 87.7                     | 661          | \$ 2,581             | 104                                | 120                 | \$2.98   | 3.6                     | 0%                            |

**Nuiqsut city Housing Envelope Characteristics**

| Residential Unit Categories | Number of Records | ACH 50 | Ceiling R | Above Grade Wall R | Below Grade Wall R | Above Grade Floor R | On Grade Floor R | Below Grade Floor R | Door U | Garage Door U | Window U |
|-----------------------------|-------------------|--------|-----------|--------------------|--------------------|---------------------|------------------|---------------------|--------|---------------|----------|
| Pre-retrofit units          | 0                 | NR     | NR        | NR                 | NR                 | NR                  | NR               | NR                  | NR     | NR            | NR       |
| Retrofit units              | 4                 | 5.5    | 63        | 31                 | NR                 | 42                  | NR               | NR                  | 0.20   | NR            | 0.50     |
| New construction            | 14                | 5.5    | 48        | 32                 | NR                 | 52                  | NR               | NR                  | 0.23   | NR            | 0.25     |
|                             |                   | NR     | NR        | NR                 | NR                 | NR                  | NR               | NR                  | NR     | NR            | NR       |

|           |     |    |    |    |    |    |    |      |      |      |
|-----------|-----|----|----|----|----|----|----|------|------|------|
| BEES 2009 | 7.0 | 52 | 35 | NR | 43 | NR | NR | 0.20 | 0.20 | 0.20 |
| BEES 2012 | 4.0 | 52 | 35 | NR | 43 | NR | NR | 0.20 | 0.20 | 0.20 |

Figure M5: Average Annual Home Energy Costs and Use

MIX

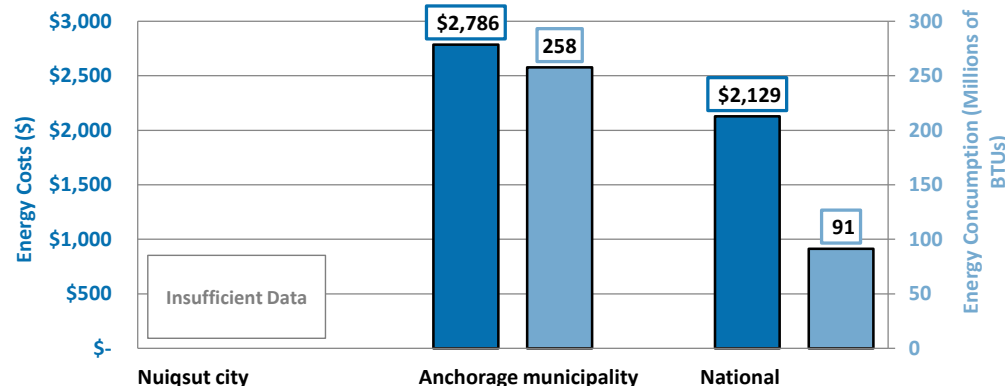
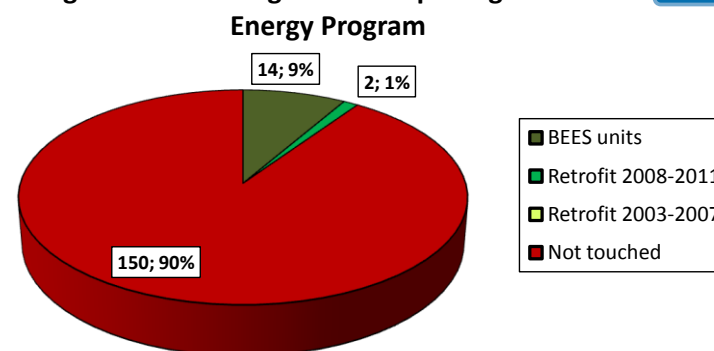


Figure M6: Housing Units Completing an AHFC

ARIS



AFFORDABILITY - Nuiqsut city

| Owner occupied House with Mortgage,<br>Median Value |
|---|
| \$79,000  |

| Owner-occupied House without a Mortgage,<br>Median Value |
|--|
| \$105,400  |

| Estimated Energy Prices as of January 2013 |         |
|--|---------|
| #1 Fuel oil cost (\$ / gallon)             | \$ 2.05 |
| Electricity with PCE (\$/kWh)              | No PCE  |
| Electricity without PCE (\$/kWh)           | \$ 0.15 |
| Natural gas base rate                      | \$ -    |
| Natural gas fuel charge                    | \$ -    |

| Median Annual Household Income |                  |
|--------------------------------|------------------|
| Housing Units                  | Household Income |
| All-occupied                   | \$ 93,750        |
| Renter-occupied                | \$ 100,357       |
| Owner-occupied                 | \$ 92,917        |
| w/ mortgage                    | \$ 81,875        |
| w/o mortgage                   | \$ 93,333        |

| Average Annual Energy Cost |        |
|----------------------------|--------|
| With PCE                   | NO PCE |
| Without PCE                | \$360  |

|                                     |      |
|-------------------------------------|------|
| Avg % Median Income spent on Energy | 0.4% |
|-------------------------------------|------|

| Median Housing Costs           |         |           |
|--------------------------------|---------|-----------|
|                                | Monthly | Annual    |
| All-occupied                   | \$ 806  | \$ 9,672  |
| Gross rent                     | \$ 919  | \$ 11,028 |
| Owner-occupied                 | \$ 717  | \$ 8,604  |
| Housing units w/ mortgage      | \$ 950  | \$ 11,400 |
| Housing units w/out a mortgage | \$ 560  | \$ 6,720  |

| Housing Stock Estimates      | Number of Units |
|------------------------------|-----------------|
| All Housing                  | 153             |
| All Occupied Housing         | 129             |
| All Vacant housing           | 24              |
| Vacant Housing for Sale/Rent | 11              |

Figure M7: Affordability - Housing Costs as a Percent of Income

ACS

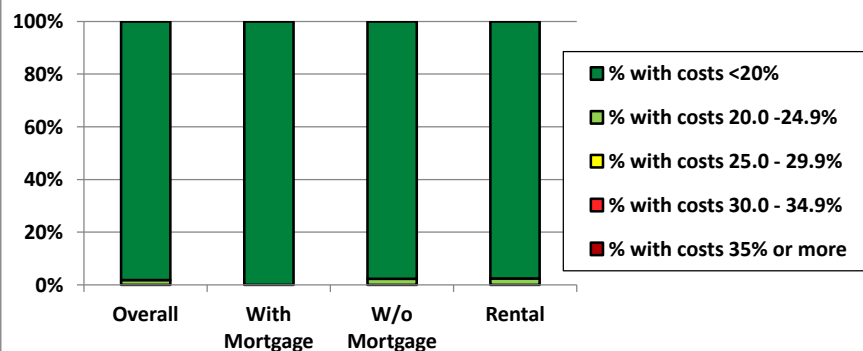
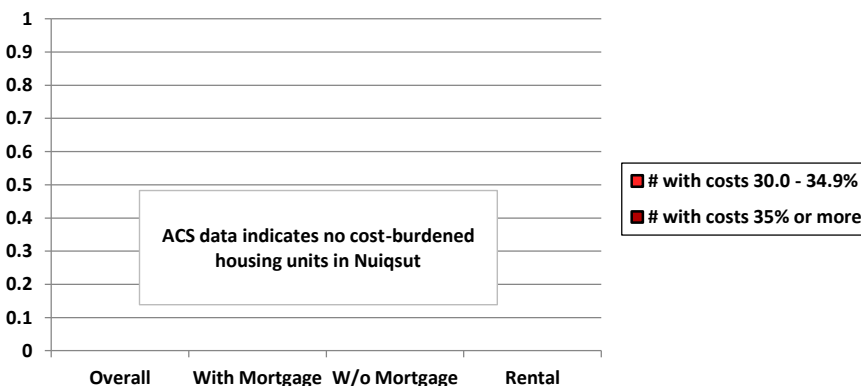


Figure M8: Number of Cost-Burdened Housing Units

ACS

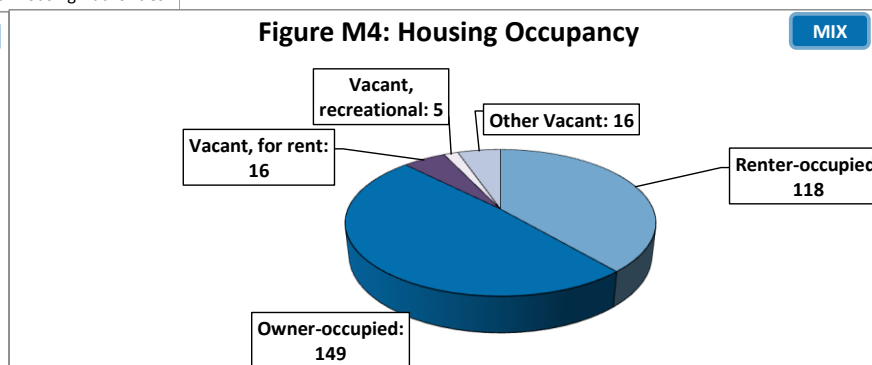
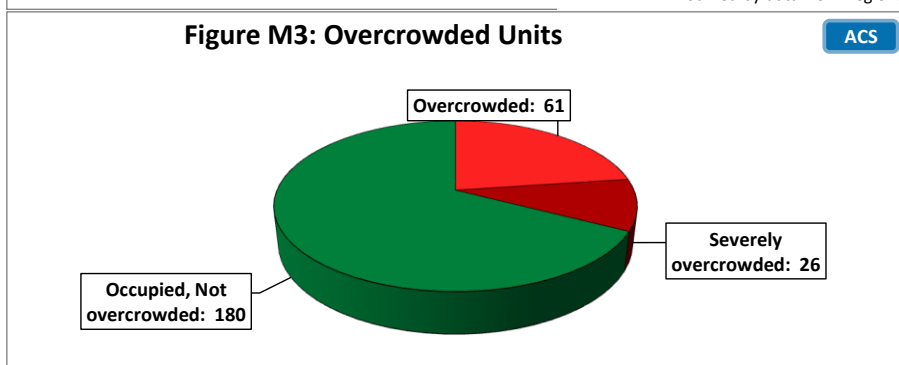
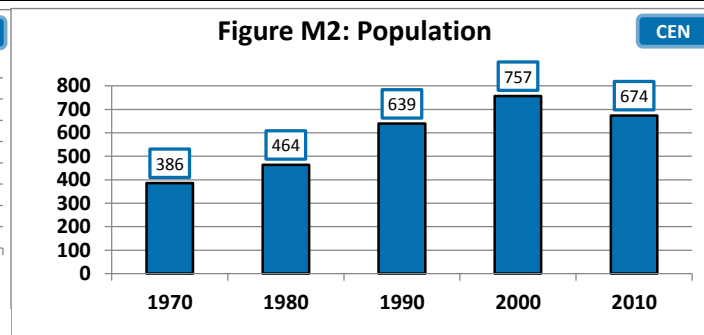
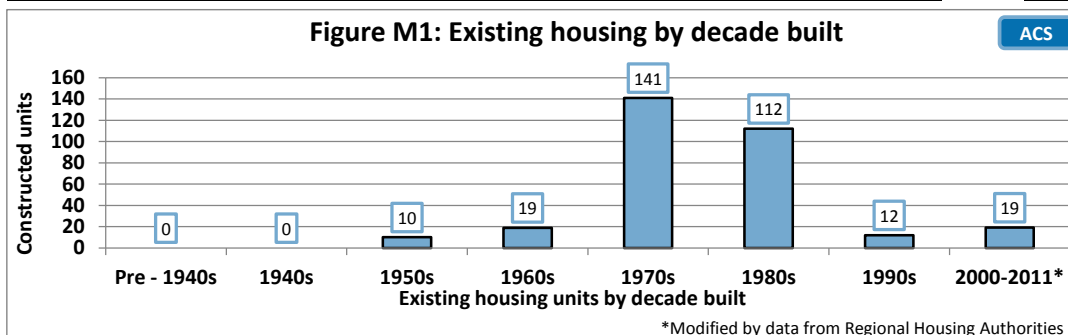


|                               |                 |
|-------------------------------|-----------------|
| <b>Community Profile for:</b> | Point Hope city |
|-------------------------------|-----------------|

|                     |                                   |
|---------------------|-----------------------------------|
| <b>ANCSA Region</b> | Arctic Slope Regional Corporation |
|---------------------|-----------------------------------|

|                                   |   |
|-----------------------------------|---|
| <b>Regional Housing Authority</b> | Tagiugmiullu Nunamiullu Housing Authority |
|-----------------------------------|---|

|  |                     |
|--|---------------------|
| <b>BEES Climate Zone (Heating Degree Days)</b> | Zone 9 (16,501 HDD) |
|--|---------------------|



| Point Hope city Housing Energy Characteristics |                   |                         |                          |              |                      |                                    |                     |          |                         |                               |  |
|--|-------------------|-------------------------|--------------------------|--------------|----------------------|------------------------------------|---------------------|----------|-------------------------|-------------------------------|--|
| Residential Unit Categories                    | Number of records | Avg Energy Rating Stars | Avg Energy Rating Points | Avg Sq. Feet | Avg. Ann Energy Cost | Avg. Ann Energy Use (million BTUs) | Avg. EUI (kBtus/SF) | Avg. ECI | Avg. Home Heating Index | % Tight Homes, No Ventilation |  |
| Pre-retrofit units                             | 22                | 3-star plus             | 74.9                     | 1,188        | \$ 3,238             | 151                                | 127                 | \$2.78   | 4.9                     | 22%                           |  |
| Retrofit units                                 | 19                | 4-star plus             | 83.8                     | 1,290        | \$ 2,483             | 126                                | 98                  | \$1.95   | 3.4                     | 0%                            |  |
| New construction                               | 16                | 5-star                  | 89.7                     | 672          | \$ 1,758             | 83                                 | 96                  | \$2.06   | 3.0                     | 0%                            |  |

| Point Hope city Housing Envelope Characteristics |                   |        |           |                    |                    |                     |                  |                     |        |               |          |
|--|-------------------|--------|-----------|--------------------|--------------------|---------------------|------------------|---------------------|--------|---------------|----------|
| Residential Unit Categories                      | Number of Records | ACH 50 | Ceiling R | Above Grade Wall R | Below Grade Wall R | Above Grade Floor R | On Grade Floor R | Below Grade Floor R | Door U | Garage Door U | Window U |
| Pre-retrofit units                               | 22                | 4.8    | 38        | 20                 | NR                 | 36                  | NR               | NR                  | 0.20   | NR            | 0.47     |
| Retrofit units                                   | 19                | 4.7    | 49        | 25                 | NR                 | 44                  | NR               | NR                  | 0.19   | NR            | 0.51     |
| New construction                                 | 16                | 5.0    | 46        | 34                 | NR                 | 53                  | NR               | NR                  | 0.22   | NR            | 0.26     |
|  |                   | NR     | NR        | NR                 | NR                 | NR                  | NR               | NR                  | NR     | NR            | NR       |

|           |     |    |    |    |    |    |    |      |      |      |
|-----------|-----|----|----|----|----|----|----|------|------|------|
| BEES 2009 | 7.0 | 52 | 35 | NR | 43 | NR | NR | 0.20 | 0.20 | 0.20 |
| BEES 2012 | 4.0 | 52 | 35 | NR | 43 | NR | NR | 0.20 | 0.20 | 0.20 |



Figure M5: Average Annual Home Energy Costs and Use

MIX

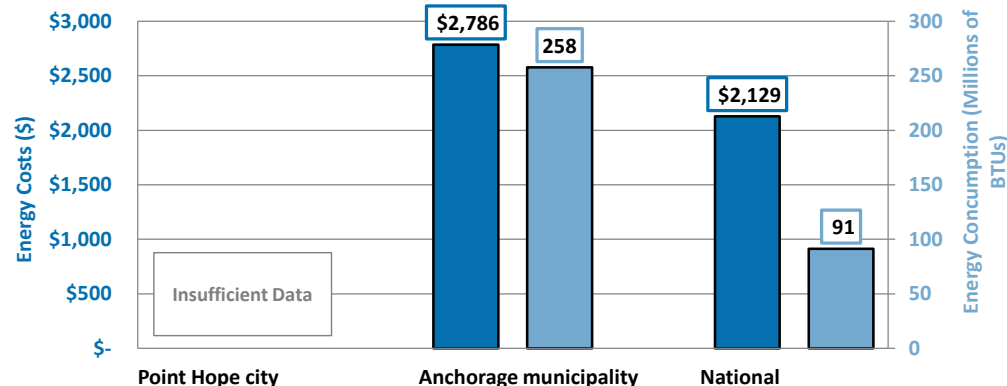
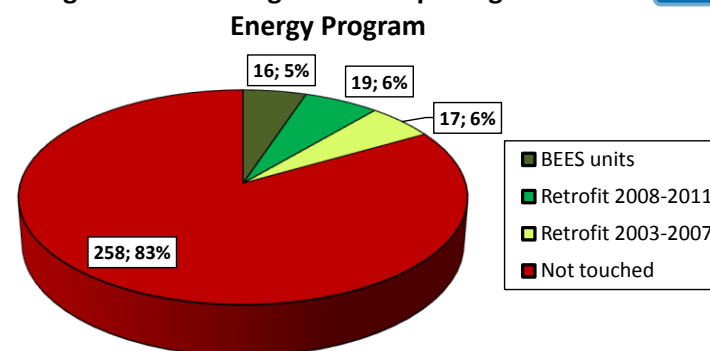


Figure M6: Housing Units Completing an AHFC

ARIS



AFFORDABILITY - Point Hope city

| Owner occupied House with Mortgage,<br>Median Value |
|---|
| \$95,000  |

| Owner-occupied House without a Mortgage,<br>Median Value |
|--|
| \$96,700   |

| Estimated Energy Prices as of January 2013 |         |
|--|---------|
| #1 Fuel oil cost (\$ / gallon)             | \$ 1.69 |
| Electricity with PCE (\$/kWh)              | No PCE  |
| Electricity without PCE (\$/kWh)           | \$ 0.11 |

| Median Annual Household Income |                  |
|--------------------------------|------------------|
| Housing Units                  | Household Income |
| All-occupied                   | \$ 76,250        |
| Renter-occupied                | \$ 70,625        |
| Owner-occupied                 | \$ 85,750        |
| w/ mortgage                    | \$ 52,250        |
| w/o mortgage                   | \$ 102,500       |

| Average Annual Energy Cost |         |
|----------------------------|---------|
| With PCE                   | NO PCE  |
| Without PCE                | \$3,114 |

|                                     |      |
|-------------------------------------|------|
| Avg % Median Income spent on Energy | 4.1% |
|-------------------------------------|------|

| Median Housing Costs           |         |           |
|--------------------------------|---------|-----------|
|                                | Monthly | Annual    |
| All-occupied                   | \$ 725  | \$ 8,700  |
| Gross rent                     | \$ 783  | \$ 9,396  |
| Owner-occupied                 | \$ 638  | \$ 7,656  |
| Housing units w/ mortgage      | \$ 883  | \$ 10,596 |
| Housing units w/out a mortgage | \$ 546  | \$ 6,552  |

| Housing Stock Estimates      | Number of Units |
|------------------------------|-----------------|
| All Housing                  | 305             |
| All Occupied Housing         | 267             |
| All Vacant housing           | 38              |
| Vacant Housing for Sale/Rent | 16              |

Figure M7: Affordability - Housing Costs as a Percent of Income

ACS

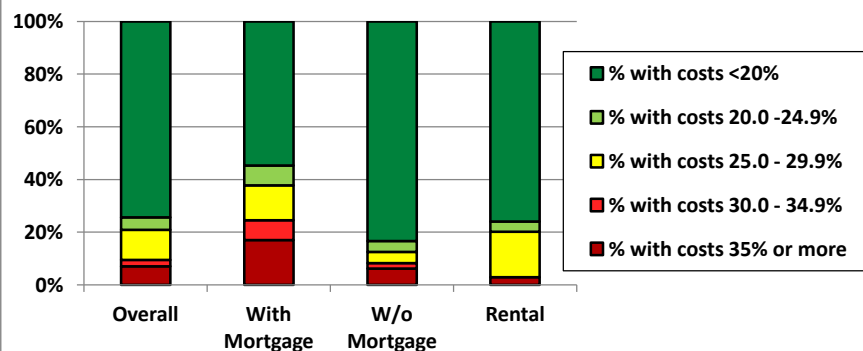
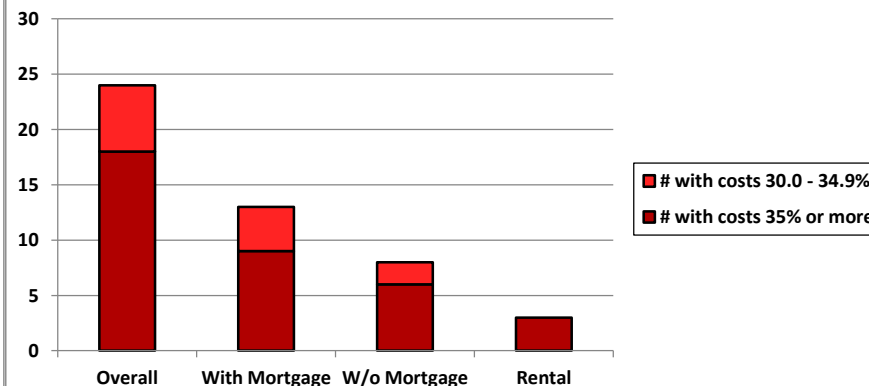


Figure M8: Number of Cost-Burdened Housing Units

ACS



|                               |               |
|-------------------------------|---------------|
| <b>Community Profile for:</b> | Point Lay CDP |
|-------------------------------|---------------|

|                     |                                   |
|---------------------|-----------------------------------|
| <b>ANCSA Region</b> | Arctic Slope Regional Corporation |
|---------------------|-----------------------------------|

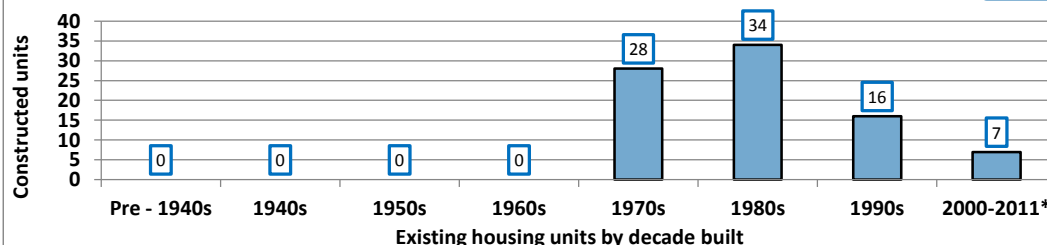
|                                    |   |
|------------------------------------|---|
| <b>Regional Housing Authority:</b> | Tagiugmiullu Nunamiullu Housing Authority |
|------------------------------------|---|

|  |                     |
|--|---------------------|
| <b>BEES Climate Zone (Heating Degree Days)</b> | Zone 9 (19,109 HDD) |
|--|---------------------|

#### COMMUNITY - Point Lay CDP

**Figure H1: Existing Housing by Decade Built**

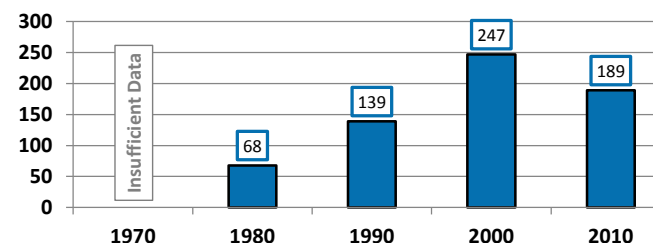
ACS



\*Modified by data from Regional Housing Authorities

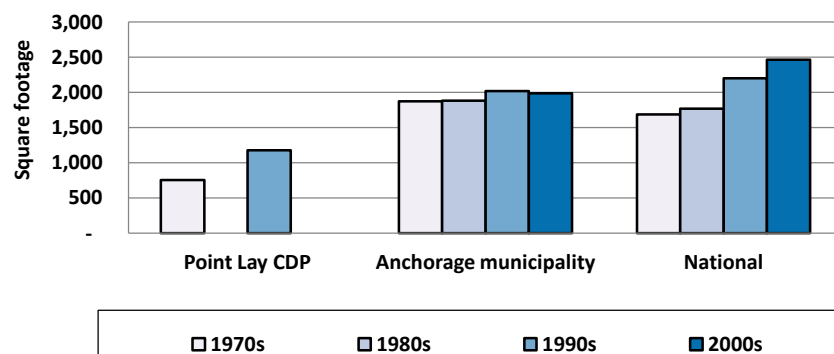
**Figure H2: Population**

CEN



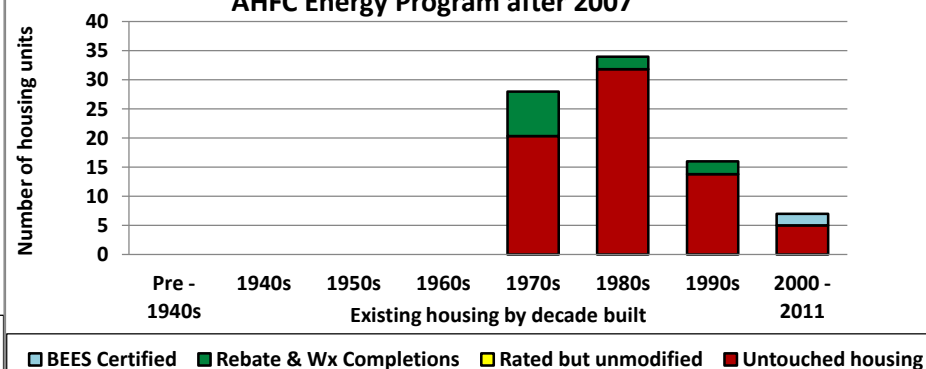
**Figure H3: Trends in Housing Unit Size**

MIX



**Figure H4: Housing Units Completing an AHFC Energy Program after 2007**

ARIS



| Houses Lacking Complete Plumbing or Kitchen Facilities | Households |         |
|--|------------|---------|
|  | Number     | Percent |
| Lack complete plumbing                                 | 23         | 33%     |
| Lack complete kitchen                                  | 18         | 26%     |

|                                    |         |
|------------------------------------|---------|
| Avg Annual Energy Cost with PCE    | \$4,293 |
| Avg Annual Energy Cost without PCE | \$4,345 |

| Weatherization Program Retrofits (funding increased in 2008) |       |
|--|-------|
| Date Range   | Units |
| 2008-2011  | 12    |
| 2003-2007  | -     |
| 1990-2002  | 6     |

| Estimated Total Annual Community Space Heating Fuel Use |        |           |
|---|--------|-----------|
| Fuel Oil  | 68,492 | (gallons) |
| Nat Gas   | -      | (ccf)     |
| Electricity   | 53,974 | (kWh)     |
| Wood  | -      | (cords)   |
| Propane   | -      | (gallons) |
| Coal  | -      | (tons)    |

| Estimated Energy Prices as of January 2013 |        |
|--|--------|
| #1 Fuel oil cost (\$ / gallon)             | \$1.45 |
| Electricity with PCE (\$/kWh)              | \$0.14 |
| Electricity cost without PCE (\$/kWh)      | \$0.15 |

| Housing Stock Estimates         | Number of Units |
|---------------------------------|-----------------|
| All Housing                     | 79              |
| All Occupied Housing            | 69              |
| All Vacant housing              | 10              |
| Vacant Housing for Sale or Rent | 4               |

OVERCROWDING & VENTILATION - Point Lay CDP

Figure H5: Overcrowded Units

ACS

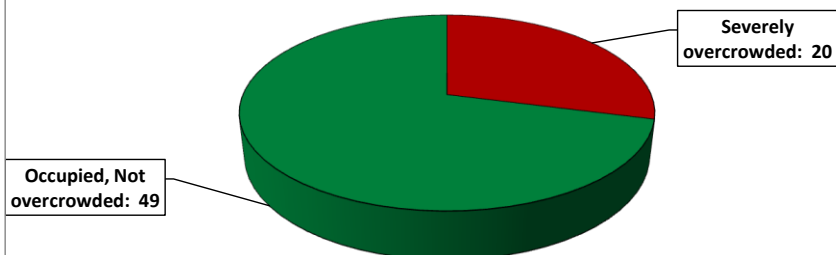


Figure H6: Housing Occupancy

MIX

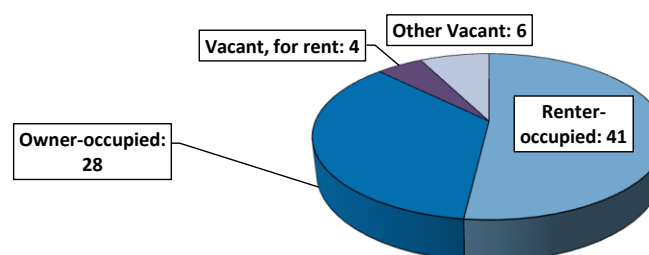


Figure H7: Average Air-Tightness of Current Homes by Decade Built

ARIS

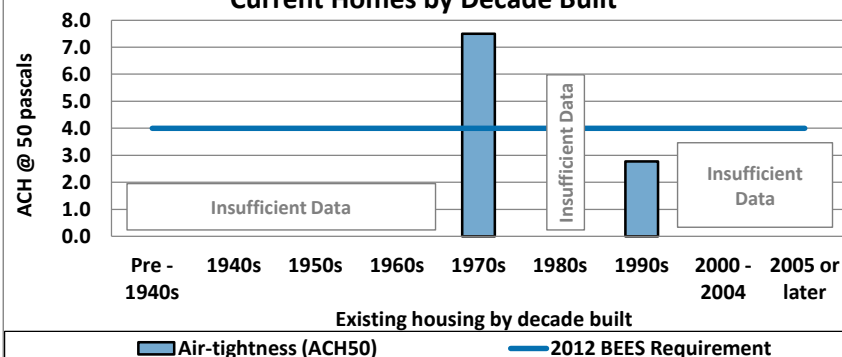


Figure H8: Existing Ventilation Type by Decade Built

ARIS

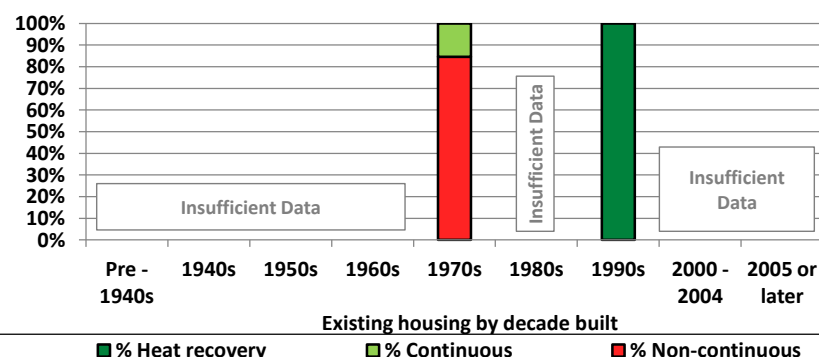


Figure H9: Percent of Housing Stock at High Risk of Moisture and Air Quality Problems

ARIS

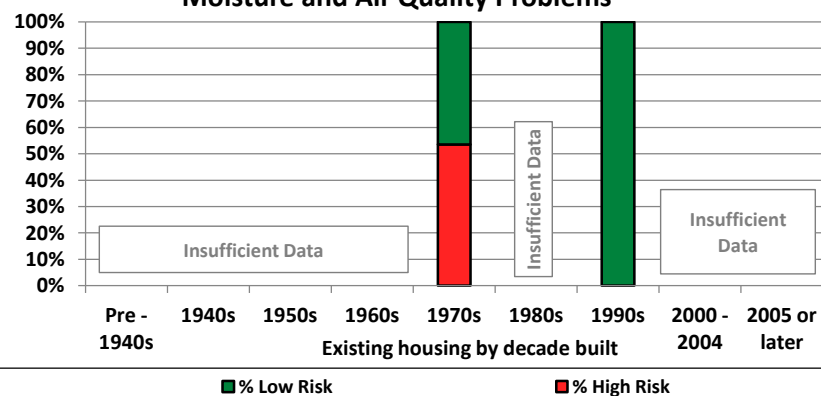
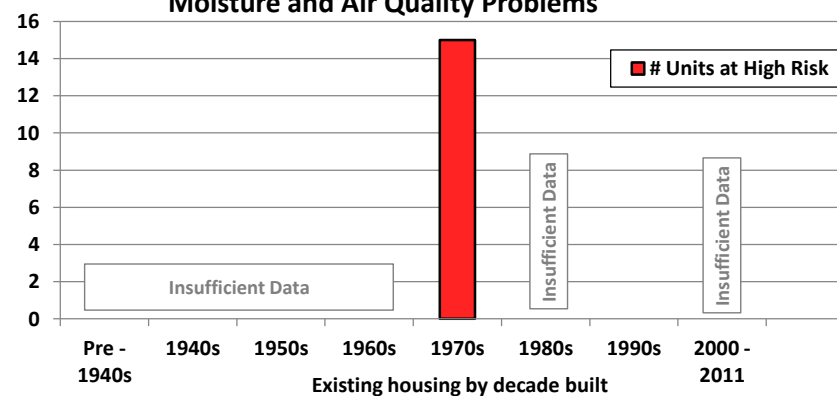


Figure H10: Quantity of Housing Stock at High Risk of Moisture and Air Quality Problems

ARIS



ENERGY - Point Lay CDP

Current Point Lay CDP Housing Energy Characteristics By Decade Built

| Current Residential Units by Year Built | Number of Records | Avg Energy Rating Stars | Avg Energy Rating Points | Avg Sq. Feet | Avg. Annual Energy Cost (with PCE) | Avg. Annual Energy Use (million BTUs) | Avg Ann Energy by End Use (million Btus) |     |            | Avg. EUI (kBtus/SF) | Avg. ECI (\$ / SF) | Avg. Home Heating Index |
|---|-------------------|-------------------------|--------------------------|--------------|------------------------------------|---------------------------------------|--|-----|------------|---------------------|--------------------|-------------------------|
|   |                   |                         |                          |              |                                    |                                       | Space Heating                            | DHW | Appliances |                     |                    |                         |
| OVERALL                                 | 14                | 2-star plus             | 64.1                     | 1,013        | \$ 4,293                           | 185                                   | 138                                      | 20  | 27         | 179                 | \$ 3.72            | 7.2                     |
| Pre- 1940                               | 0                 | NR                      | NR                       | NR           | NR                                 | NR                                    | NR                                       | NR  | NR         | NR                  | NR                 | NR                      |
| 1940- 49                                | 0                 | NR                      | NR                       | NR           | NR                                 | NR                                    | NR                                       | NR  | NR         | NR                  | NR                 | NR                      |
| 1950- 59                                | 0                 | NR                      | NR                       | NR           | NR                                 | NR                                    | NR                                       | NR  | NR         | NR                  | NR                 | NR                      |
| 1960- 69                                | 0                 | NR                      | NR                       | NR           | NR                                 | NR                                    | NR                                       | NR  | NR         | NR                  | NR                 | NR                      |
| 1970- 79                                | 16                | 2-star plus             | 63.6                     | 756          | \$ 2,557                           | 130                                   | 101                                      | 6   | 23         | 173                 | \$ 3.39            | 7.1                     |
| 1980- 89                                | 4                 | NR                      | NR                       | NR           | NR                                 | NR                                    | NR                                       | NR  | NR         | NR                  | NR                 | NR                      |
| 1990- 99                                | 5                 | 3-star plus             | 74.4                     | 1,176        | \$ 3,753                           | 204                                   | 138                                      | 37  | 29         | 173                 | \$ 3.20            | 6.2                     |
| 2000- 2004                              | 2                 | NR                      | NR                       | NR           | NR                                 | NR                                    | NR                                       | NR  | NR         | NR                  | NR                 | NR                      |
| 2005 or later                           | 0                 | NR                      | NR                       | NR           | NR                                 | NR                                    | NR                                       | NR  | NR         | NR                  | NR                 | NR                      |

Figure H11: Current Average Energy Use Intensity and Average Square Footage by Decade Built

ARIS

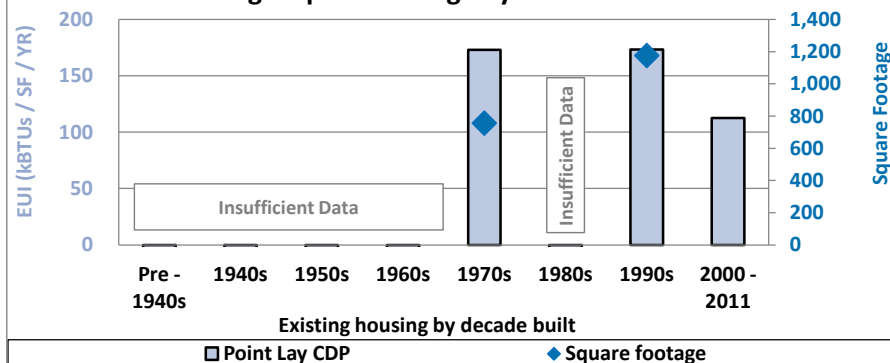
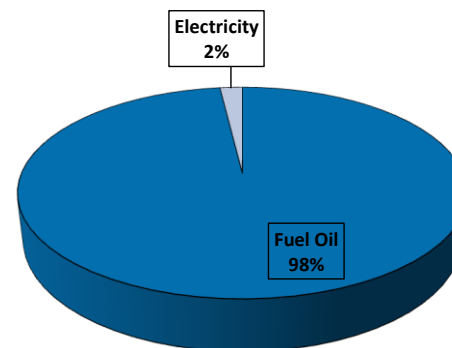


Figure H12: Percent of Total Residential Space Heating Energy by Fuel Type

ARIS



Current Point Lay CDP Housing Envelope Characteristics By Decade Built

| Current Residential Units by Year Built | Number of Records | ACH 50 | Ceiling R | Above Grade Wall R | Below Grade Wall R | Above Grade Floor R | On Grade Floor R | Below Grade Floor R | Door U | Garage Door U | Window U |
|---|-------------------|--------|-----------|--------------------|--------------------|---------------------|------------------|---------------------|--------|---------------|----------|
| OVERALL                                 | 14                | 7.5    | 30        | 16                 | NR                 | 25                  | NR               | NR                  | 0.23   | NR            | 0.53     |
| Pre- 1940                               | 0                 | NR     | NR        | NR                 | NR                 | NR                  | NR               | NR                  | NR     | NR            | NR       |
| 1940- 49                                | 0                 | NR     | NR        | NR                 | NR                 | NR                  | NR               | NR                  | NR     | NR            | NR       |
| 1950- 59                                | 0                 | NR     | NR        | NR                 | NR                 | NR                  | NR               | NR                  | NR     | NR            | NR       |
| 1960- 69                                | 0                 | NR     | NR        | NR                 | NR                 | NR                  | NR               | NR                  | NR     | NR            | NR       |
| 1970- 79                                | 16                | 7.5    | 34        | 15                 | NR                 | 22                  | NR               | NR                  | 0.22   | NR            | 0.54     |
| 1980- 89                                | 4                 | NR     | NR        | NR                 | NR                 | NR                  | NR               | NR                  | NR     | NR            | NR       |
| 1990- 99                                | 5                 | 2.8    | 30        | 29                 | NR                 | 45                  | NR               | NR                  | 0.20   | NR            | 0.51     |
| 2000- 2004                              | 2                 | NR     | NR        | NR                 | NR                 | NR                  | NR               | NR                  | NR     | NR            | NR       |
| 2005 or later                           | 0                 | NR     | NR        | NR                 | NR                 | NR                  | NR               | NR                  | NR     | NR            | NR       |

|                            |     |    |    |    |    |    |    |      |      |      |
|----------------------------|-----|----|----|----|----|----|----|------|------|------|
| BEES 2009 - Climate Zone 9 | 7.0 | 52 | 35 | NR | 43 | NR | NR | 0.20 | 0.20 | 0.20 |
| BEES 2012 - Climate Zone 9 | 4.0 | 52 | 35 | NR | 43 | NR | NR | 0.20 | 0.20 | 0.20 |

AFFORDABILITY - Point Lay CDP

Figure H13: Average Annual Home Energy Costs and Use

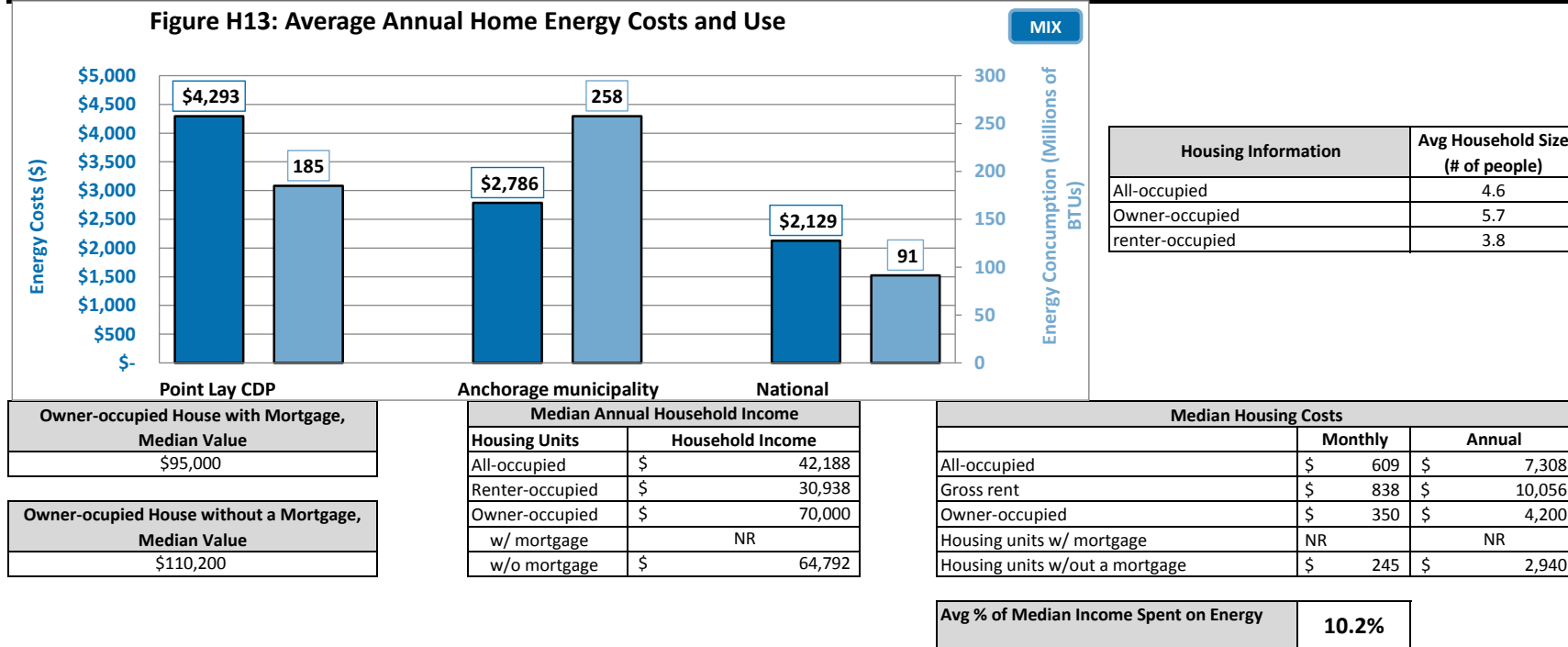


Figure H14: Affordability - Housing Costs as a Percent of Income

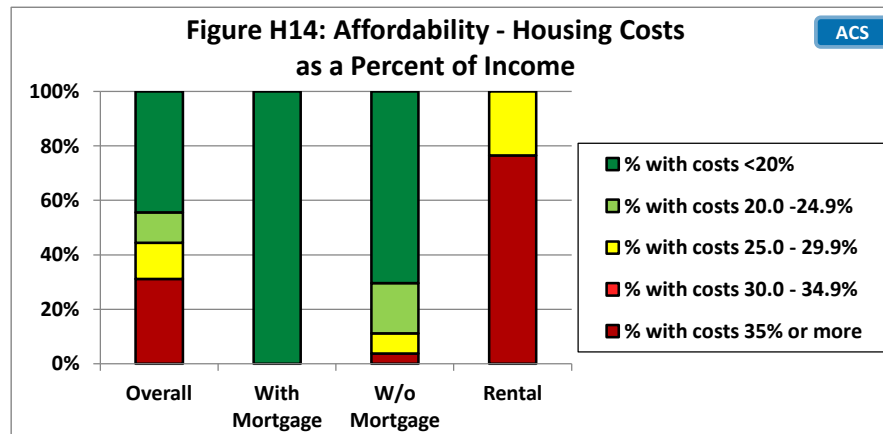
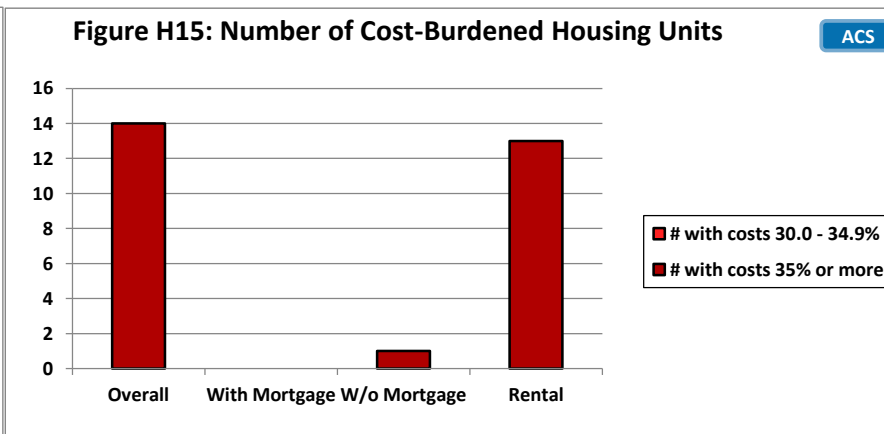


Figure H15: Number of Cost-Burdened Housing Units



**Community Profile for:** Wainwright city

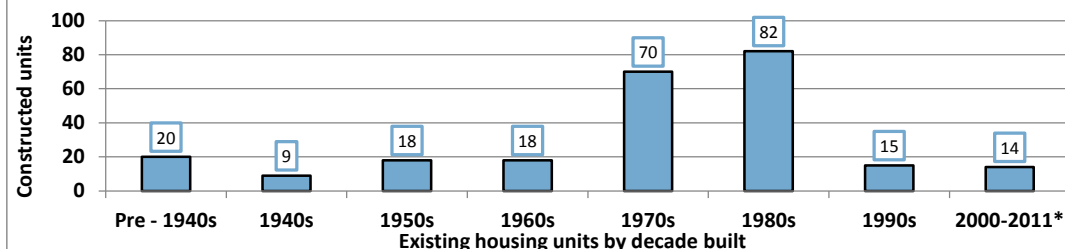
**ANCSA Region** Arctic Slope Regional Corporation

**Regional Housing Authority** Tagiugmiullu Nunamiullu Housing Authority

**BEES Climate Zone (Heating Degree Days)** Zone 9 (19,824 HDD)

**Figure M1: Existing housing by decade built**

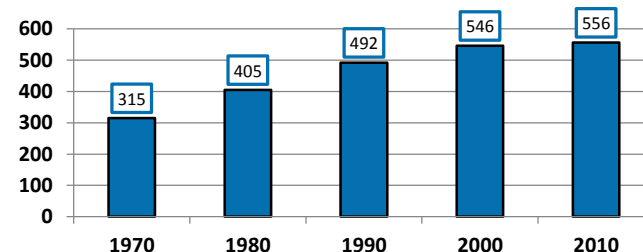
ACS



\*Modified by data from Regional Housing Authorities

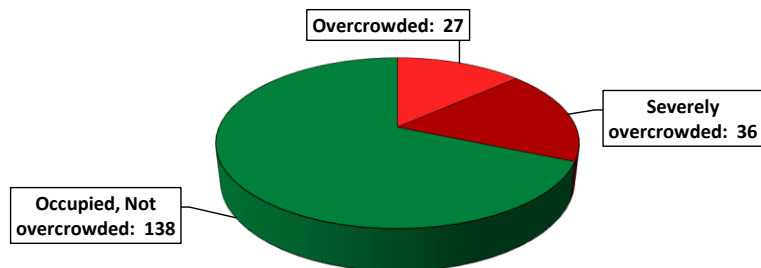
**Figure M2: Population**

CEN



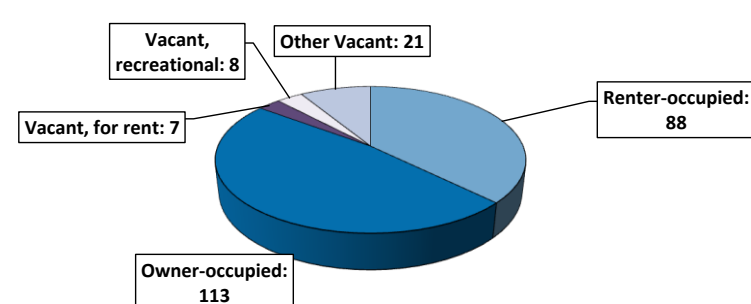
**Figure M3: Overcrowded Units**

ACS



**Figure M4: Housing Occupancy**

MIX



**Wainwright city Housing Energy Characteristics**

| Residential Unit Categories | Number of records | Avg Energy Rating Stars | Avg Energy Rating Points | Avg Sq. Feet | Avg. Ann Energy Cost | Avg. Ann Energy Use (million BTUs) | Avg. EUI (kBtus/SF) | Avg. ECI | Avg. Home Heating Index | % Tight Homes, No Ventilation |
|-----------------------------|-------------------|-------------------------|--------------------------|--------------|----------------------|------------------------------------|---------------------|----------|-------------------------|-------------------------------|
| Pre-retrofit units          | 14                | 2-star plus             | 62.8                     | 1,030        | \$ 4,869             | 198                                | 201                 | \$4.86   | 7.9                     | 30%                           |
| Retrofit units              | 14                | 3-star plus             | 75.4                     | 1,030        | \$ 3,132             | 159                                | 163                 | \$3.34   | 5.9                     | 70%                           |
| New construction            | 14                | 5-star                  | 89.4                     | 618          | \$ 1,818             | 92                                 | 110                 | \$2.19   | 3.2                     | 0%                            |

**Wainwright city Housing Envelope Characteristics**

| Residential Unit Categories | Number of Records | ACH 50 | Ceiling R | Above Grade Wall R | Below Grade Wall R | Above Grade Floor R | On Grade Floor R | Below Grade Floor R | Door U | Garage Door U | Window U |
|-----------------------------|-------------------|--------|-----------|--------------------|--------------------|---------------------|------------------|---------------------|--------|---------------|----------|
| Pre-retrofit units          | 14                | 6.2    | 24        | 19                 | NR                 | 17                  | NR               | NR                  | 0.23   | NR            | 0.51     |
| Retrofit units              | 14                | 5.3    | 29        | 22                 | NR                 | 19                  | NR               | NR                  | 0.23   | NR            | 0.51     |
| New construction            | 14                | 5.5    | 49        | 32                 | NR                 | 52                  | NR               | NR                  | 0.23   | NR            | 0.25     |
|                             |                   | NR     | NR        | NR                 | NR                 | NR                  | NR               | NR                  | NR     | NR            | NR       |

|           |     |    |    |    |    |    |    |      |      |      |
|-----------|-----|----|----|----|----|----|----|------|------|------|
| BEES 2009 | 7.0 | 52 | 35 | NR | 43 | NR | NR | 0.20 | 0.20 | 0.20 |
| BEES 2012 | 4.0 | 52 | 35 | NR | 43 | NR | NR | 0.20 | 0.20 | 0.20 |

Figure M5: Average Annual Home Energy Costs and Use

MIX

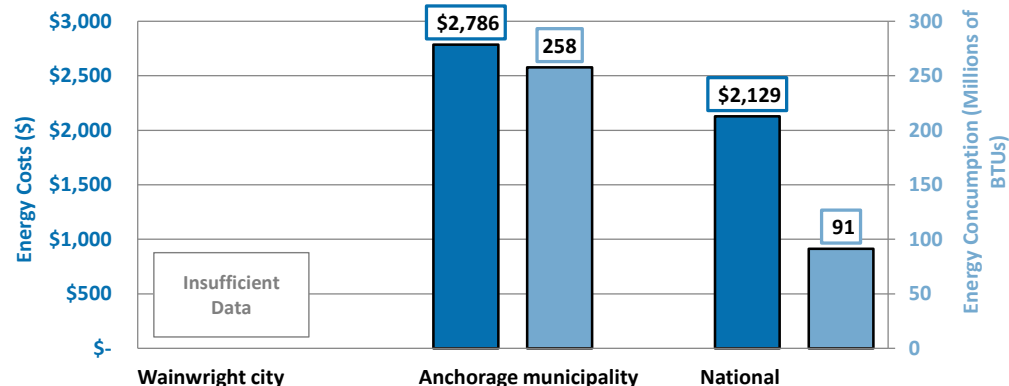
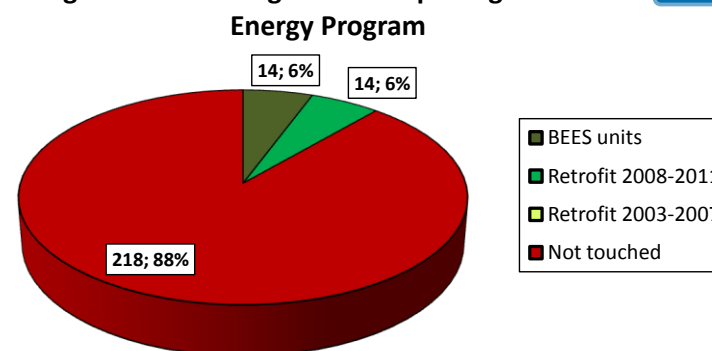


Figure M6: Housing Units Completing an AHFC

ARIS



AFFORDABILITY - Wainwright city

| Owner occupied House with Mortgage,<br>Median Value |
|---|
| \$113,500   |

| Owner-occupied House without a Mortgage,<br>Median Value |
|--|
| \$121,900  |

| Estimated Energy Prices as of January 2013 |         |
|--|---------|
| #1 Fuel oil cost (\$ / gallon)             | \$ 1.50 |
| Electricity with PCE (\$/kWh)              | \$ 0.14 |
| Electricity without PCE (\$/kWh)           | \$ 0.15 |

| Median Annual Household Income |                  |
|--------------------------------|------------------|
| Housing Units                  | Household Income |
| All-occupied                   | \$ 67,596        |
| Renter-occupied                | \$ 67,813        |
| Owner-occupied                 | \$ 67,375        |
| w/ mortgage                    | \$ 73,125        |
| w/o mortgage                   | \$ 66,250        |

| Average Annual Energy Cost |         |
|----------------------------|---------|
| With PCE                   | NO PCE  |
| Without PCE                | \$4,638 |

|                                     |      |
|-------------------------------------|------|
| Avg % Median Income spent on Energy | 6.9% |
|-------------------------------------|------|

| Median Housing Costs           |         |           |
|--------------------------------|---------|-----------|
|                                | Monthly | Annual    |
| All-occupied                   | \$ 775  | \$ 9,300  |
| Gross rent                     | \$ 896  | \$ 10,752 |
| Owner-occupied                 | \$ 650  | \$ 7,800  |
| Housing units w/ mortgage      | \$ 950  | \$ 11,400 |
| Housing units w/out a mortgage | \$ 465  | \$ 5,580  |

| Housing Stock Estimates      | Number of Units |
|------------------------------|-----------------|
| All Housing                  | 236             |
| All Occupied Housing         | 201             |
| All Vacant housing           | 35              |
| Vacant Housing for Sale/Rent | 7               |

Figure M7: Affordability - Housing Costs as a Percent of Income

ACS

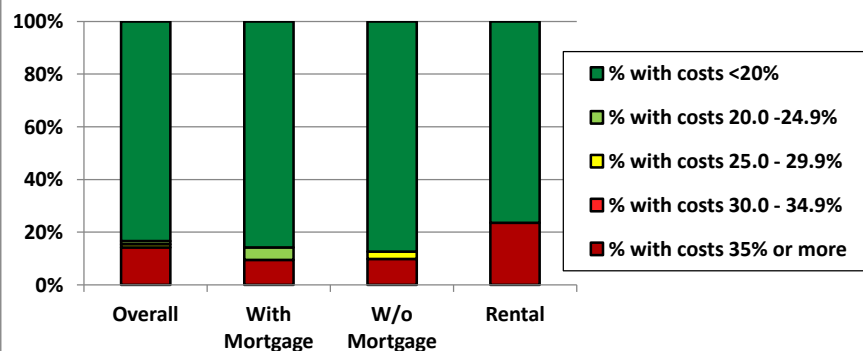


Figure M8: Number of Cost-Burdened Housing Units

ACS

