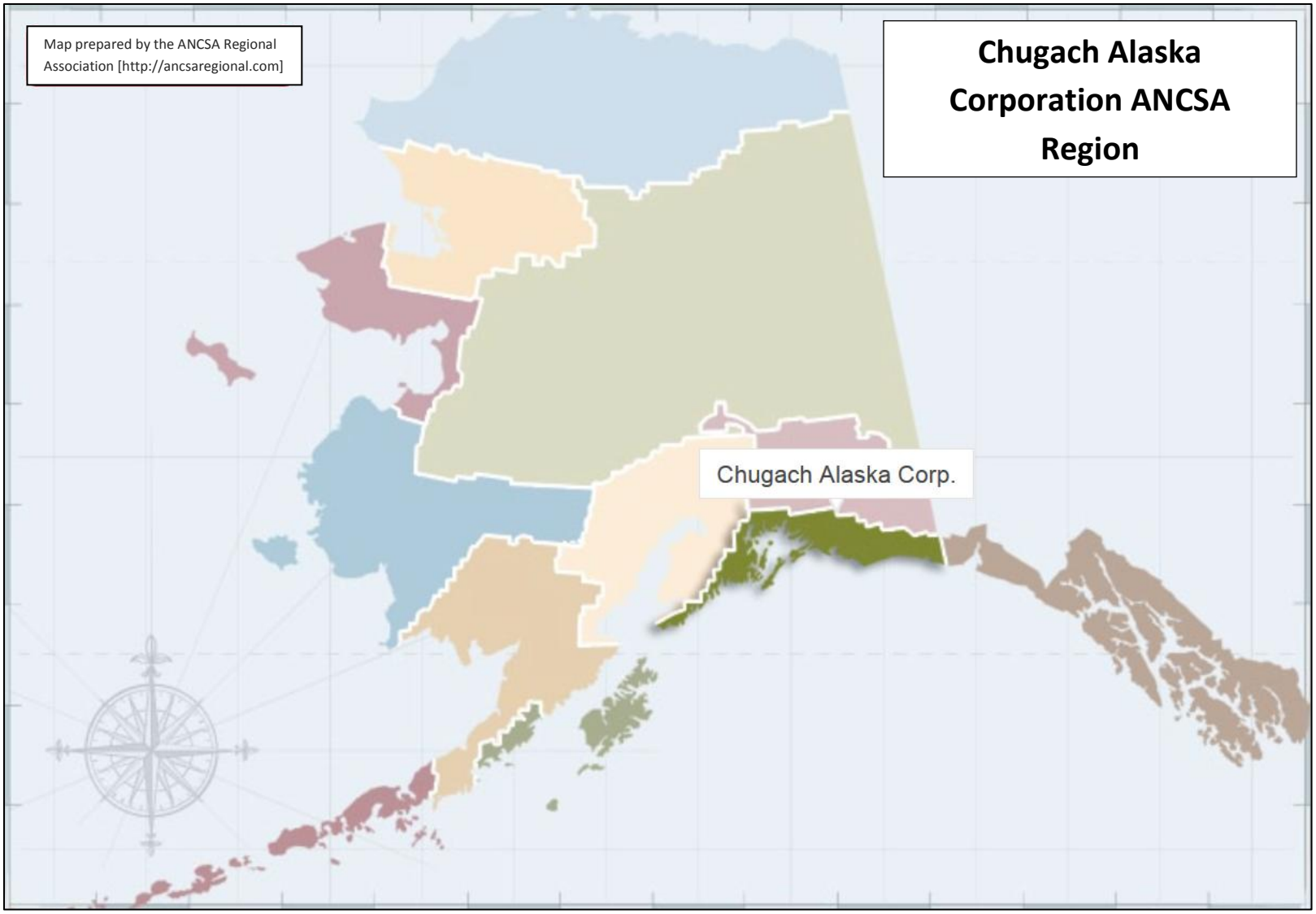
Map prepared by the ANCSA Regional Association [http://ancsaregional.com]
Chugach Alaska Corporation ANCSA Region
Chugach Alaska Corp.

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Chugach Alaska Corporation Profile 1-4

Chugach Alaska Corporation Dashboard[1]

Population: The Alaska Department of Labor and Workforce Development's current (2012) population estimate for the Chugach Alaska Corporation ANCSA region is 12,223, an increase of 1% from 2000.

Housing Units: There are currently 5,844 housing units in the Chugach Alaska Corporation ANCSA region. Of these, 4,555 are occupied, 289 vacant units are for sale or rent, and the remaining 1,000 are seasonal or otherwise vacant units (Profile Figure R6).

Energy: The average home in the Chugach Alaska Corporation ANCSA region is 1,804 square feet and uses 128,000 BTUs of energy per square foot annually. This is 7% less 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 Chugach Alaska Corporation ANCSA region is $7,740, which is approximately 2.8 times more than the cost in Anchorage, and 3.6 times more than the national average (Profile Figure R13).

Energy Programs: Approximately 15% of the occupied housing in the Chugach Alaska Corporation ANCSA region have completed the Home Energy Rebate or Weatherization programs, or have received BEES certification since 2008, compared to 21% statewide (Profile Figure R12).

Housing Quality: Within current housing stock, newer homes have better energy performance. On average, homes built in the 1940s are currently rated at 1-star-plus compared to a current average rating of 4-star-plus for homes built after 2000.

Air-tightness: Within current housing stock, newer homes are tighter. On average, homes built in the last decade exceed the 2012 BEES standard of 4 air-changes per hour at 50 Pascals (ACH50). In contrast, homes built before 1940 are 4 times leakier than those built since 2000 (Profile Figure R7).

Ventilation: An estimated 2,305 occupied housing units (or 51%) in the Chugach Alaska Corporation ANCSA region 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 R9-R10).

Overcrowding: Six percent of occupied units are estimated to be either overcrowded (5%) or severely overcrowded (1%). This is roughly 2 times the national average, and makes the Chugach Alaska Corporation region the fourth least overcrowded ANCSA region in the state.

Affordability: According to American Community Survey (ACS) data, approximately 23% of households in the Chugach Alaska Corporation region spend 30% or more of total income on reported housing costs, including rent, water and sewer utilities, and energy costs. Using AKWarm estimates, the region's average annual energy costs constitute approximately 12% of census median area income for occupied housing.

[1] Figures referenced in the Dashboard are located in the ANCSA Region profile.

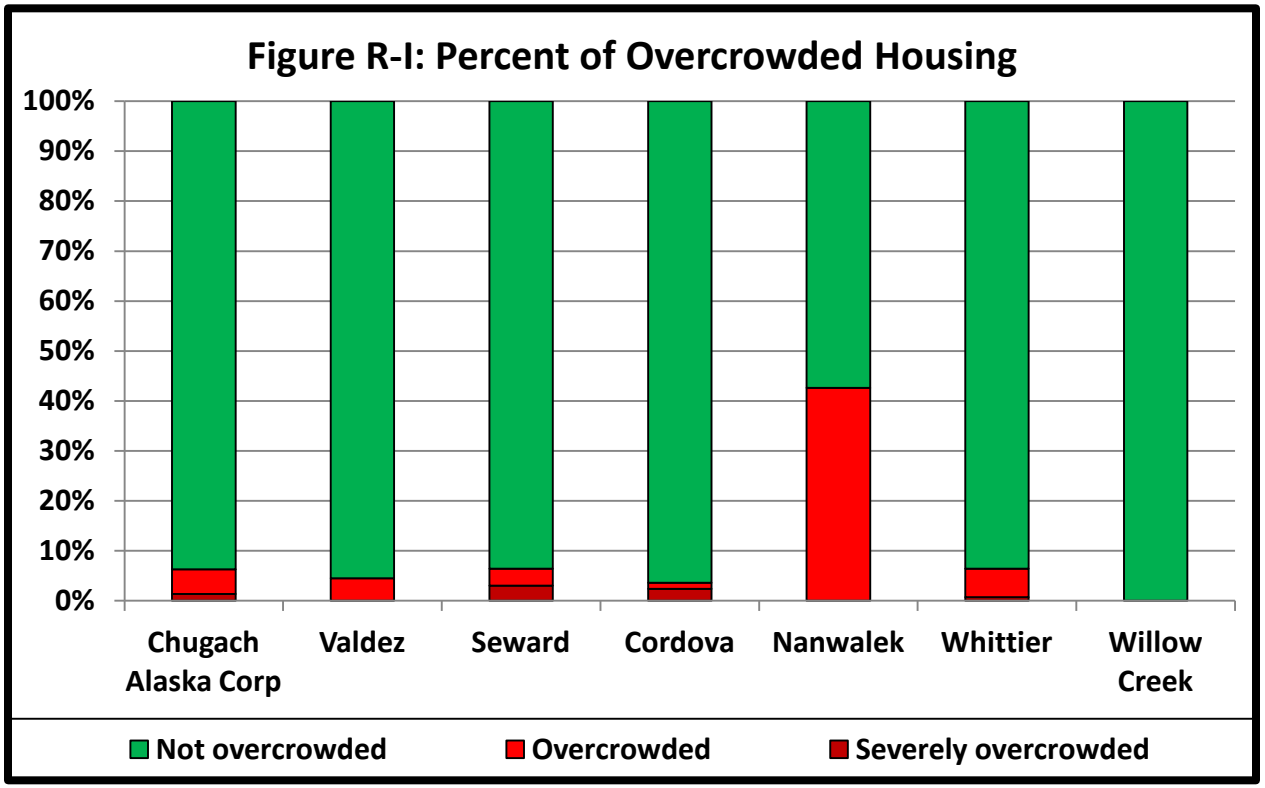
Chugach Alaska Corporation Summary

Community

The Chugach Alaska Corporation region is located in the southeast corner of mainland Alaska, just south of the Ahtna region and at the northern edge of the Southeast panhandle. The average home size in the region is 1,804 square feet, the second largest in the state, behind the Cook Inlet region. Average home sizes in individual communities range from a low of 1,036 square feet in Nanwalek to a high of 1,975 square feet in Valdez.

Overcrowding

Figure R-I shows the overcrowding in the Chugach region and its six most populous communities. These communities have between an estimated zero overcrowded households in Willow Creek to a high of 43% of households in Nanwalek with more than one person per room. The community with the highest percentage of overcrowding in the region (100%) is found in Nelchina.

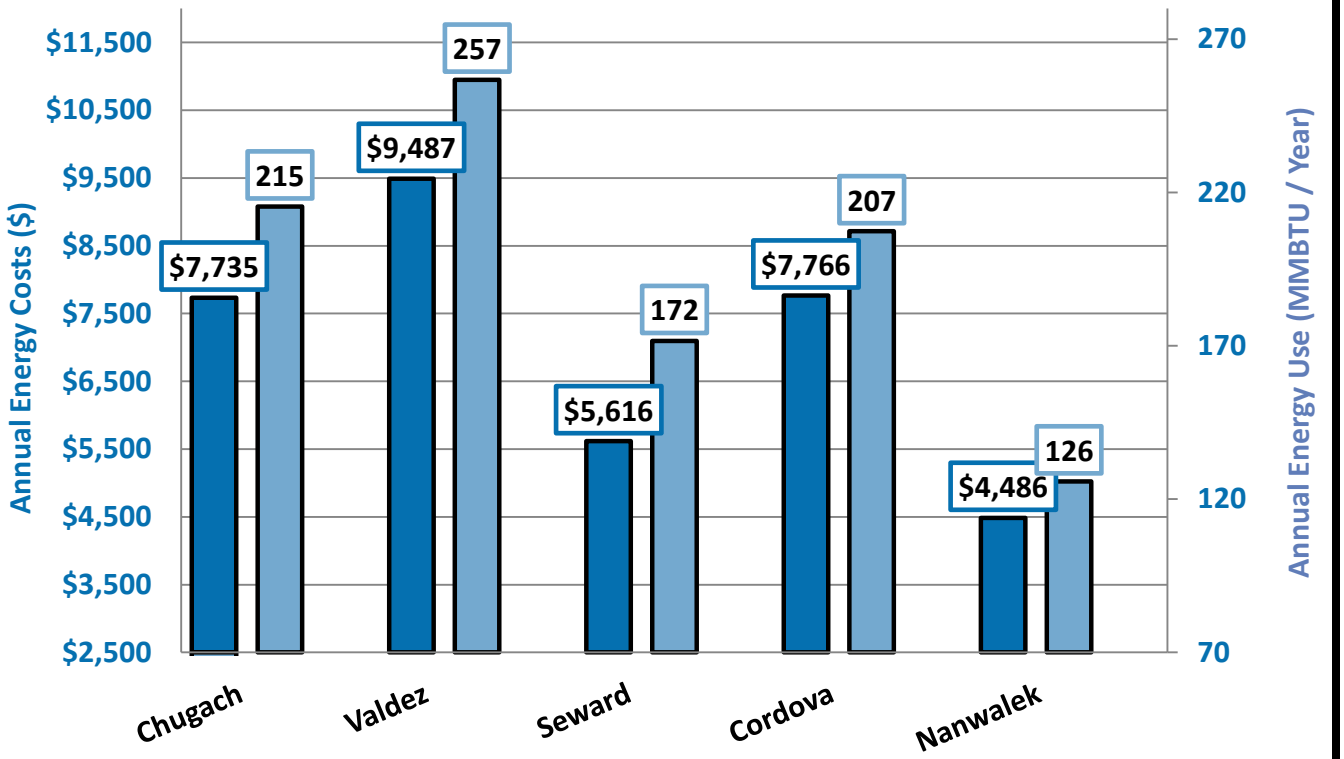


Approximately 5% of housing units in the region are vacant and available for sale or rent. Nelchina, with the highest percentage of overcrowded households, has the most available housing, with 54% of housing units for sale or rent. Port Graham has the region's lowest percentage (2%) of available housing.

Energy[2]

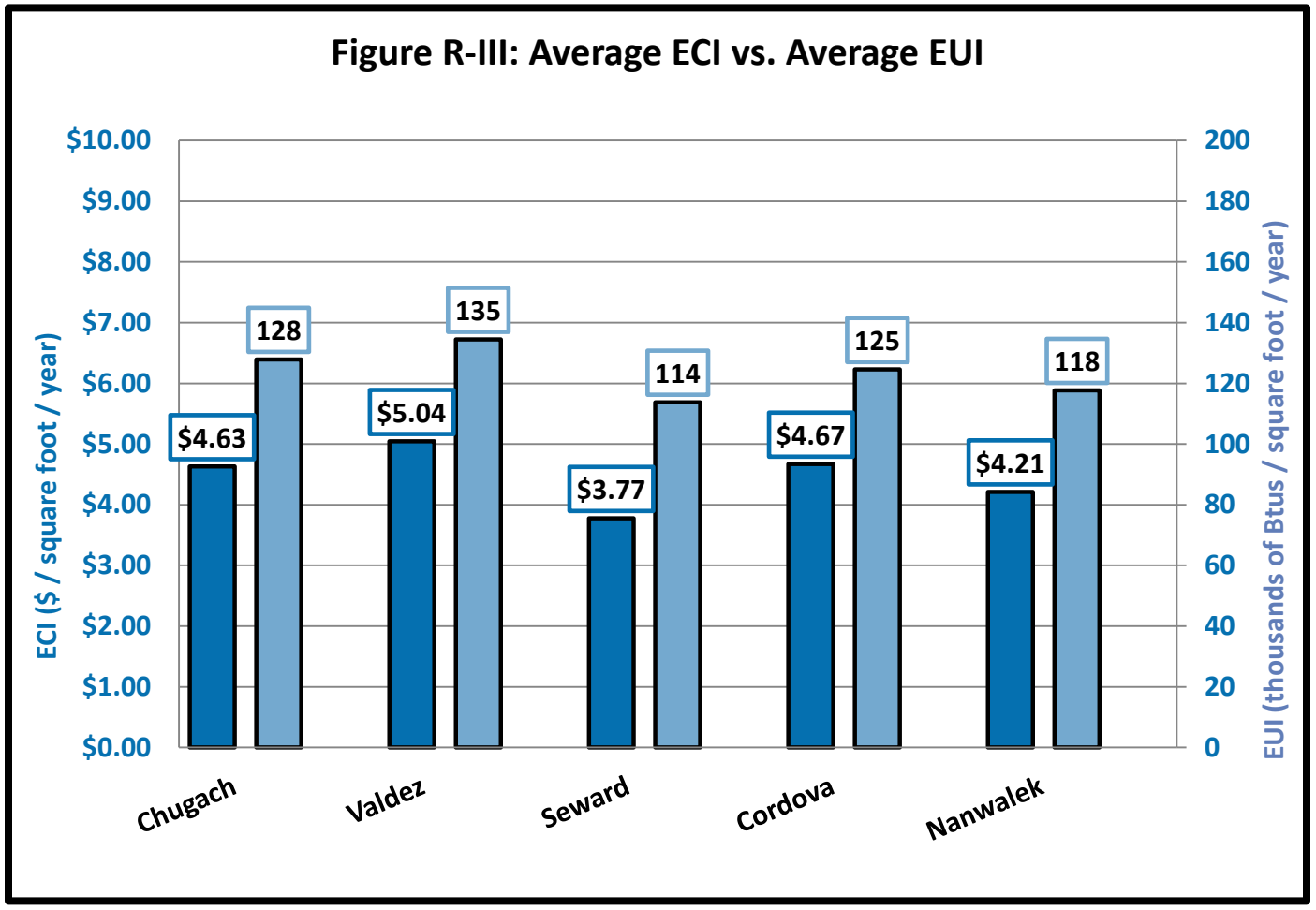
Regionally, the average annual energy cost per household is $7,735. The highest average annual energy use and costs in the Chugach region are found in Valdez, with an average energy cost of $9,487, and an average energy use of 257 million BTUs (Figure R-II). The lowest average annual energy use and costs are found in Nanwalek, with an average annual energy cost of $4,486, and an average energy use of 126 million BTUs.

Figure R-II: Average Annual Home Energy Costs vs Energy Consumption



[2] Regional data appearing in this section are based on communities with sufficient levels of ARIS data, so not all communities were included in the analysis.

The Chugach region has the fourth lowest energy use per square foot[3] of any of the ANCSA regions using an estimated 128 kBTUs/ft^2/yr. Figure R-III shows the energy use and cost per square foot for communities in the Chugach region.[4] Of the communities in the Chugach region Valdez has both the highest ECI ($5.04/ft^2) and EUI (135 kBTU/ft^2). Seward and Nanwalek use the least energy, 114 and 118 kBTU/ft^2 per year respectively. Nanwalek and Valdez also have the lowest and highest average home heating indices of communities in the Chugach region, with Nanwalek at 6.8 BTUs/ft^2/HDD and Valdez at 10.5.



[3] Energy use per square foot is also known as Energy Use Intensity, or EUI and is given in kBTUs per square foot, per year.
[4] Energy cost per square foot is also known as the Energy Cost Index, or ECI and is given in dollars per square foot, per year.

Understanding the variations between communities participating in energy efficiency programs is essential to targeting work and resource allocation in the region. Approximately 15% of housing units in the Chugach region have participated in either the Weatherization or Home Energy Rebate programs, or have received BEES certification since 2008. Participation rates vary by community (Figure R-IV). The greatest participation occurred in Nanwalek, with approximately 44% of homes completing one of the AHFC programs. Nanwalek had the highest participation rate for two of the individual programs: 14% of homes have been certified to meet BEES and approximately 11% have completed Weatherization retrofits. The highest participation in the Home Energy Rebate Program occurred in Valdez and Cordova, both with approximately 8% of homes completing the program. The lowest participation for all programs in the region is in Whittier, where an estimated zero households have participated in an AHFC energy program.

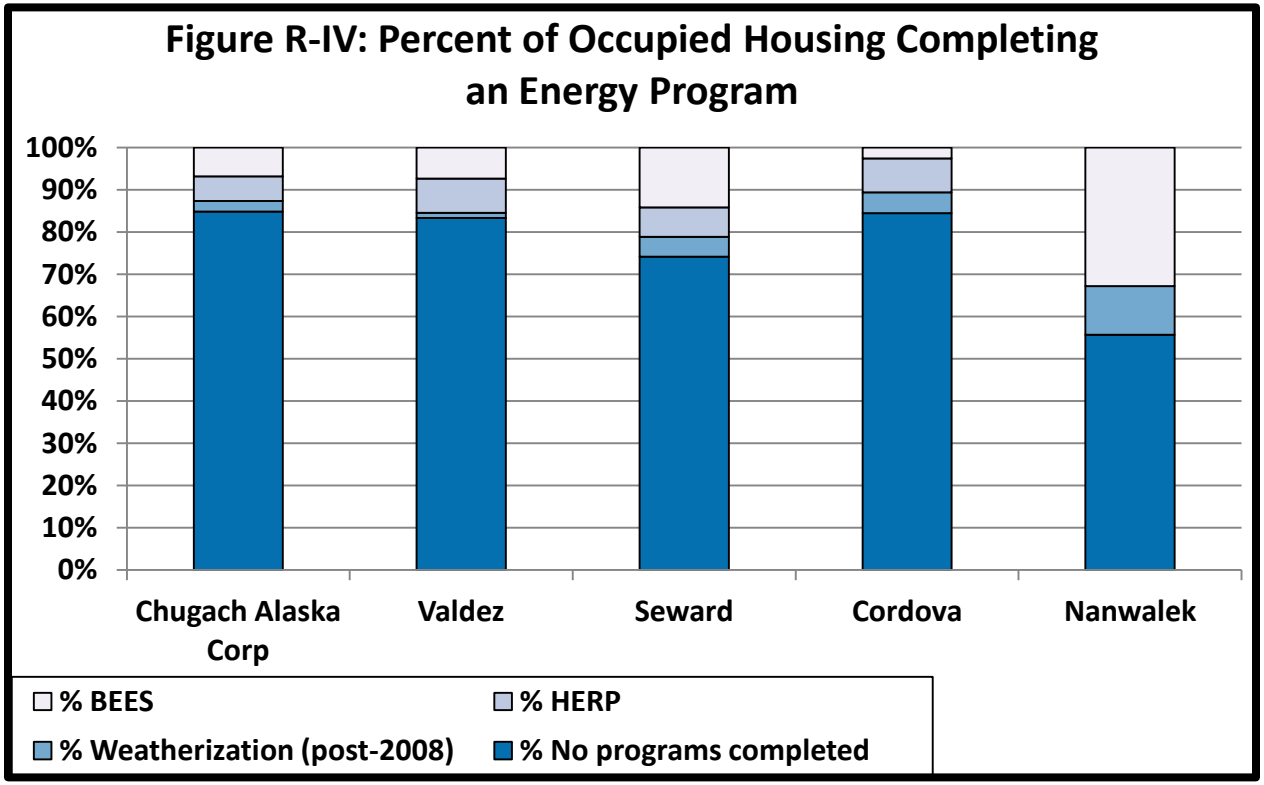


Figure R-V gives the fuel types used for space heating in the Chugach region where fuel oil is the predominant fuel. Wood also contributes significantly to the space heating energy and is used for at least 10% of space heating needs in all communities with sufficient energy data for reporting except for Cordova, where residents use wood for only 5% of space heating needs. The highest use of wood occurs in Nanwalek, where residents use wood for approximately 20% of space heating energy.

Figure R-V: Percent Space Heating Energy Used by Fuel Type

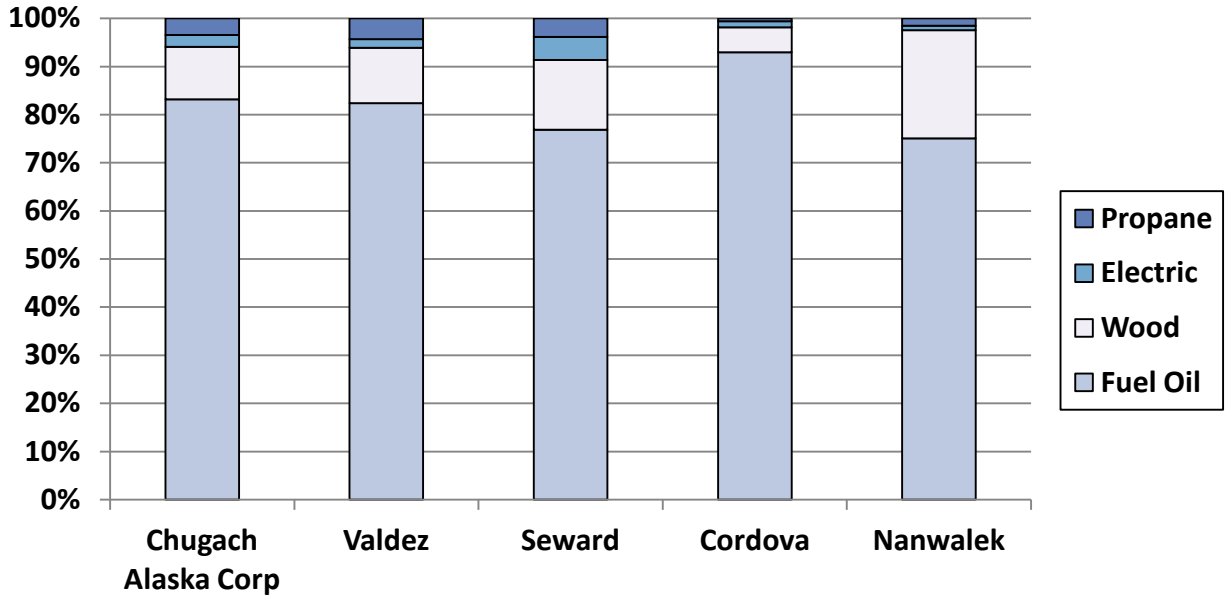
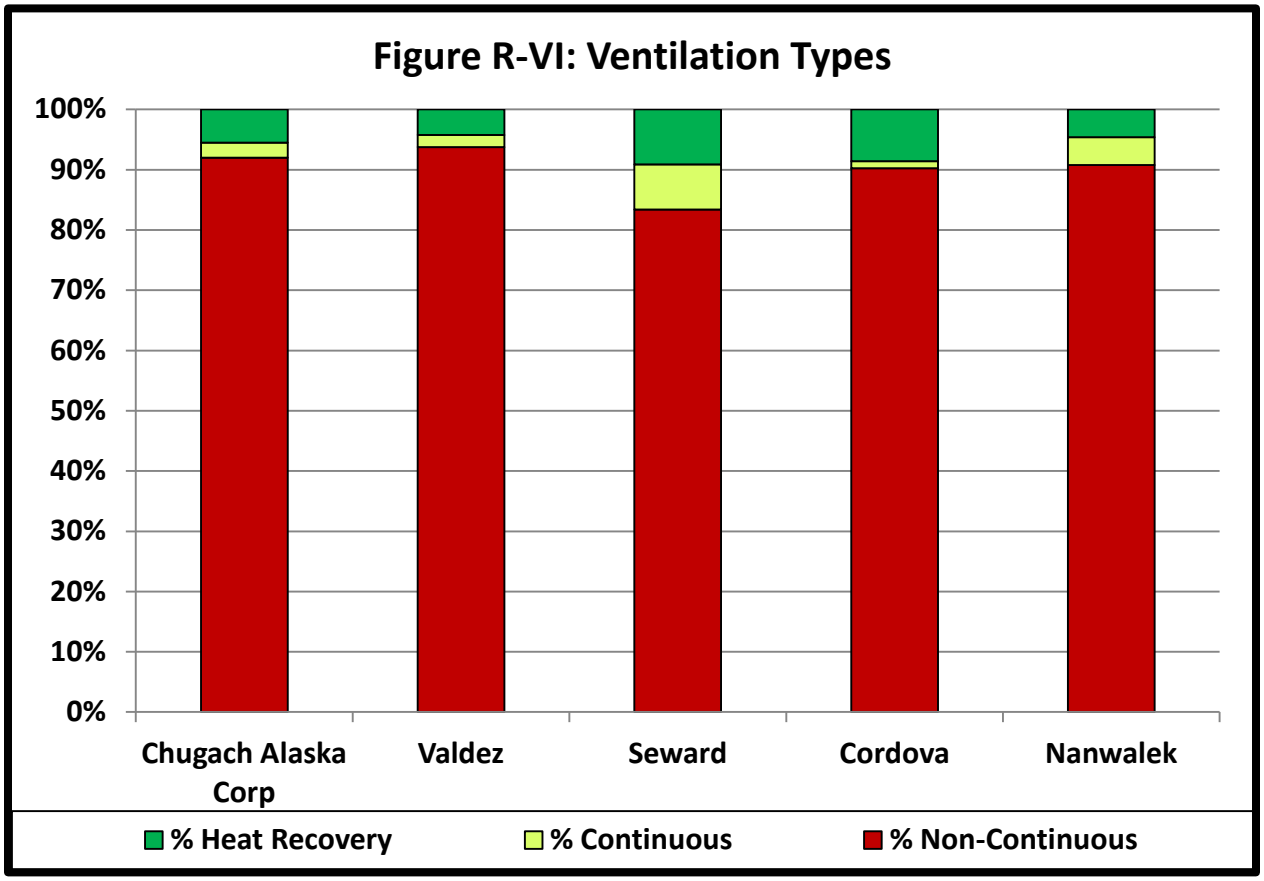
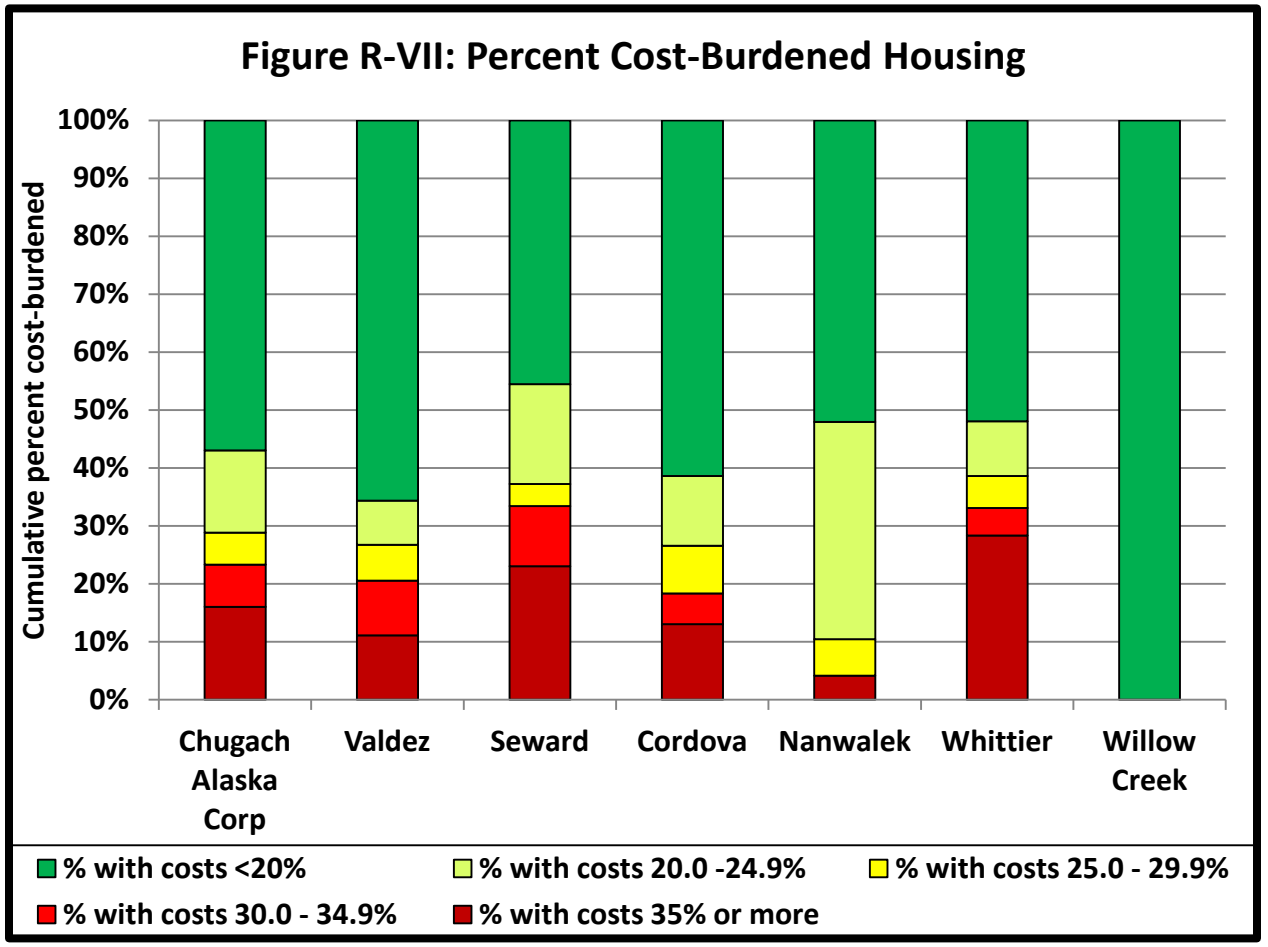


Figure R-VI shows that the Chugach region has a relatively low percentage (10%) of homes with continuous mechanical ventilation, either with or without heat recovery, installed. Only the Aleut and Ahtna regions have lower rates of utilization. The community of Seward has 16% of homes with an HRV or continuous ventilation, the highest of any community in the region. The lowest occurrence is found in Valdez at 6%.



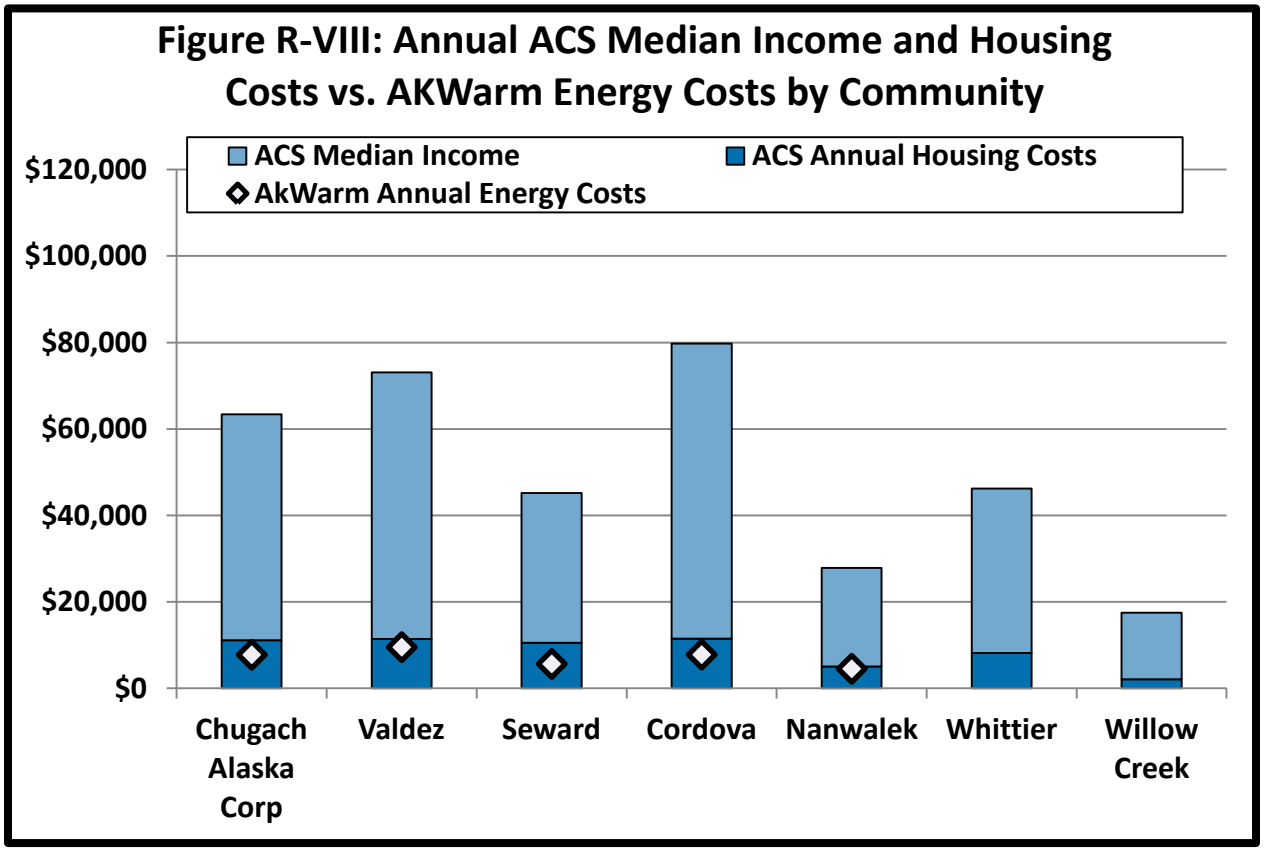
Affordability

According to ACS estimates, approximately 25% households in the Chugach region are considered cost-burdened, spending 30% or more of total household income on housing costs.[5] Affordability varies widely among the region's communities, from a low of approximately zero cost-burdened households in Willow Creek to a high of 39% of households in Port Graham. Figure R-VII shows the percent of cost-burdened households for the Chugach region and its most populous communities. The percent of cost-burdened home in the six most populous communities have a slightly smaller range with Willow Creek at an estimated 0% cost-burdened and Seward at an estimated 33% of households cost-burdened.



[5]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.

Figure R-VIII shows the median household incomes and housing costs for the Chugach region and six of its communities.[6] Regional median household income is approximately $63,373. The six most populous communities have median household incomes ranging from a low of $17,500 in Willow Creek to a high of $79,750 in Cordova. The highest median income, $87,679, is found outside the six most populous communities in Silver Springs.



Community, Regional, and Statewide Housing Characteristics

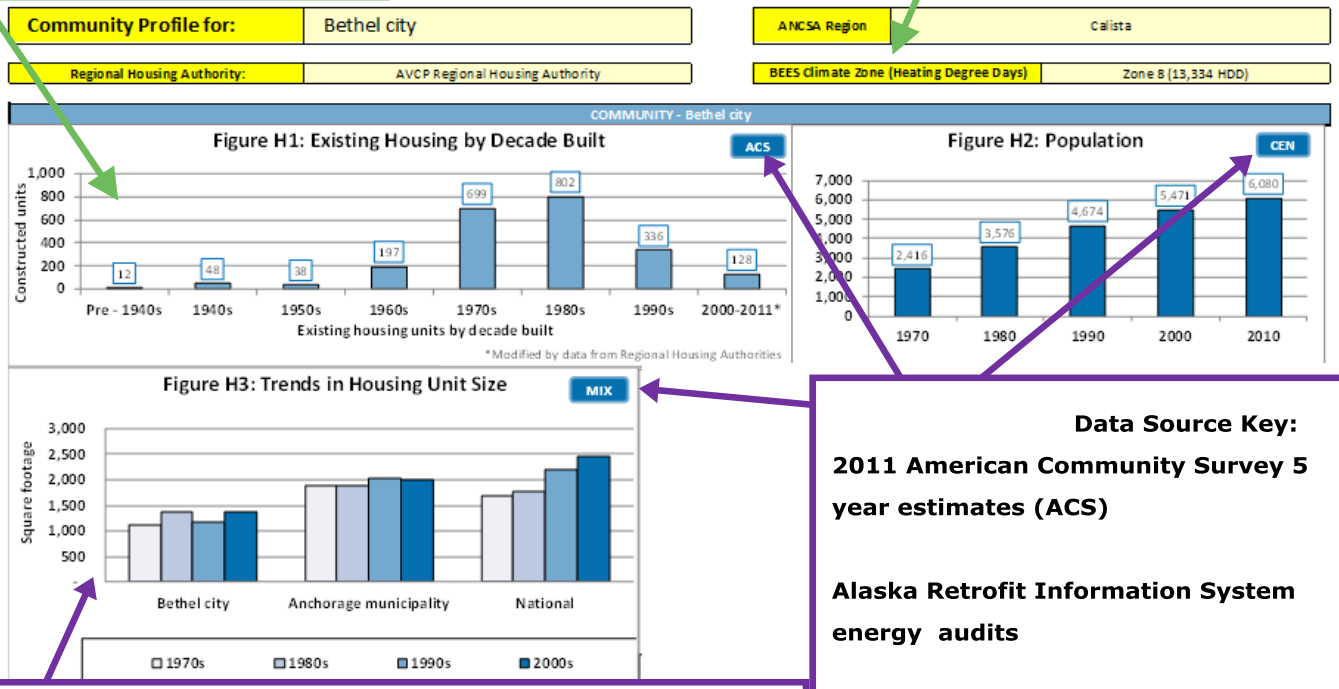
This ANCSA region summary only includes the highlights of housing characteristics at the ANCSA regional level. A detailed data profile with charts and tables for this region follows. The 2014 Alaska Housing Assessment provides a significant amount of data and analysis at statewide, ANCSA region, census 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 Source Key:

2011 American Community Survey 5 year estimates (ACS) — ACS

Alaska Retrofit Information System energy audits — ARIS

2010 Decennial Census — CEN

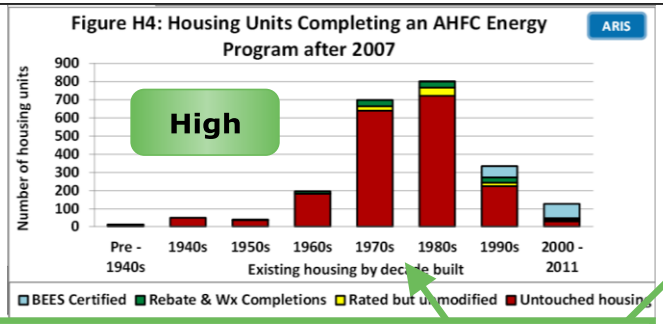
Mixed data source; see individual graphs for details. — MIX

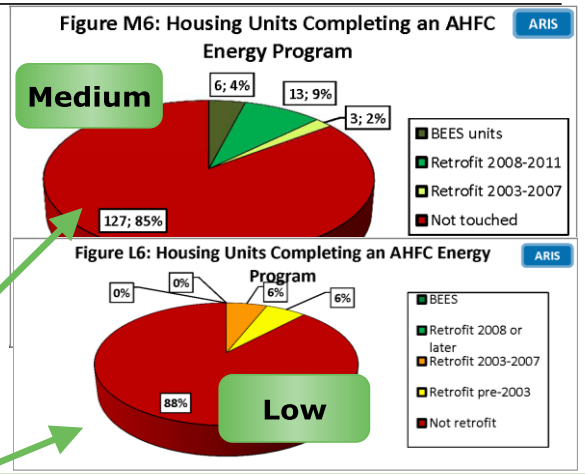
Data Sources: National trends come from the 2009 Residential Energy Consumption Statistics published by the U.S. Energy Information Administration. Anchorage and census area data come from the Alaska Retrofit Information System.

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.

ACS

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

ARIS

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)

ARIS

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

ARIS

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 200	
Date Range	Units
2008-2011	17
2003-2007	-
1990-2002	10

CEN

Housing Stock Estimates	Nu
All Housing	
All Occupied Housing	
A sing	
Vacant Housing for Sale or Rent	

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

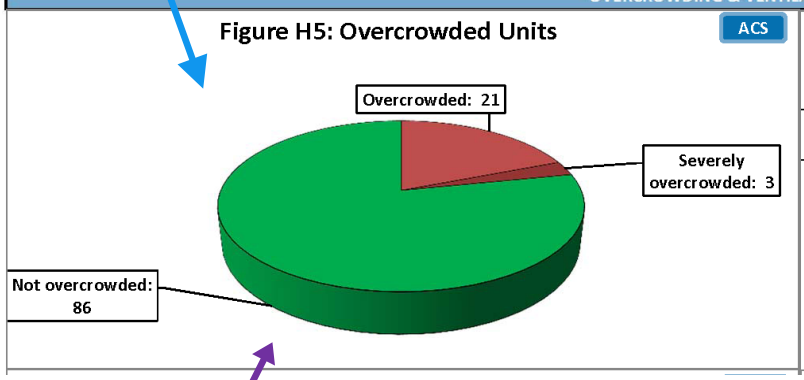
How to Interpret the Profile: Data Sources, Definitions & Clarifications

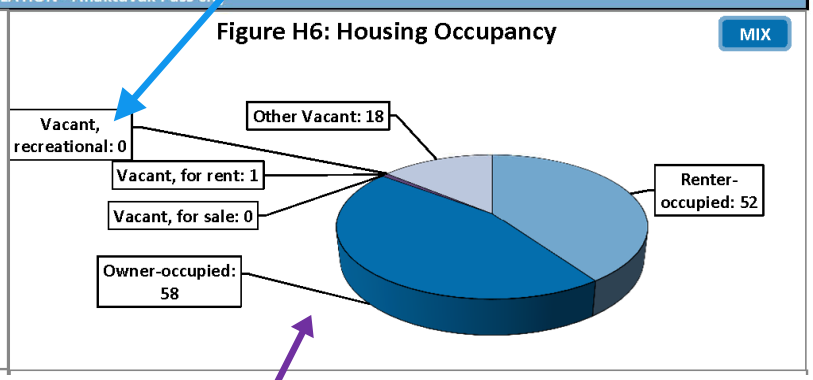
2

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.

OVERCROWDING & VENTILATION - Anaktuvuk Pass cit





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

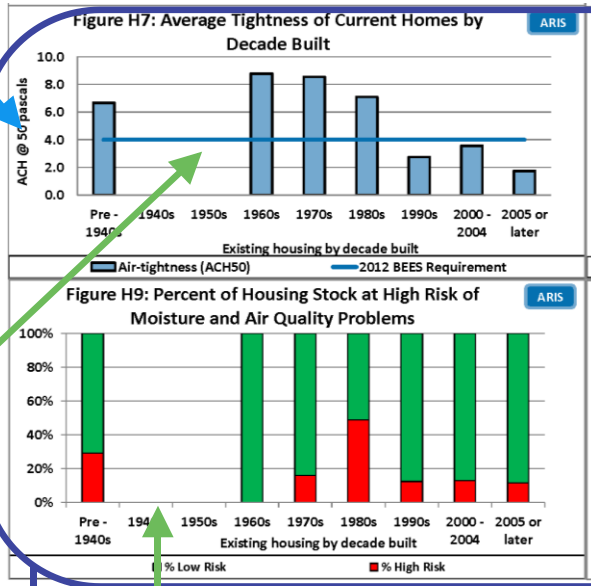
2

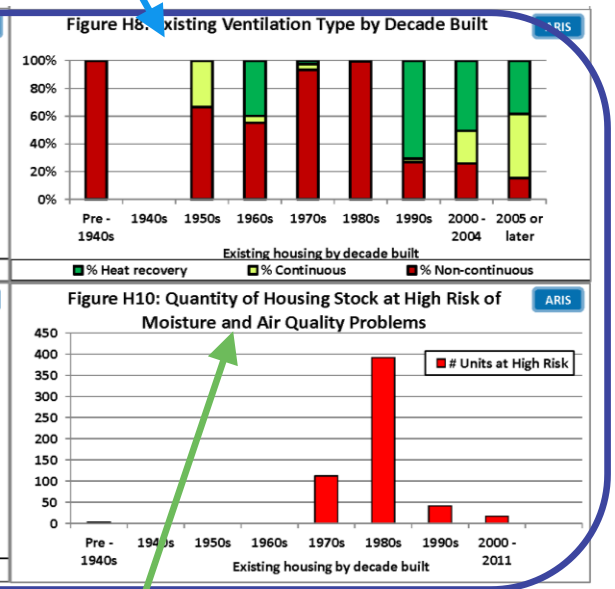
Heat Recovery: Continuous mechanical ventilation with heat recovery operated with automatic controls.

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.

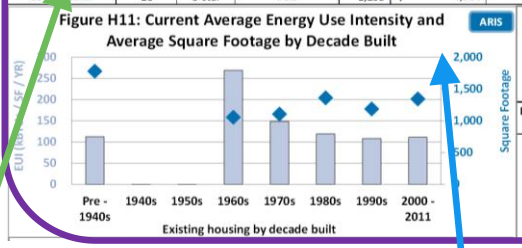
ECI: Energy Cost Index, the amount of money spent on energy per year divided by square footage.

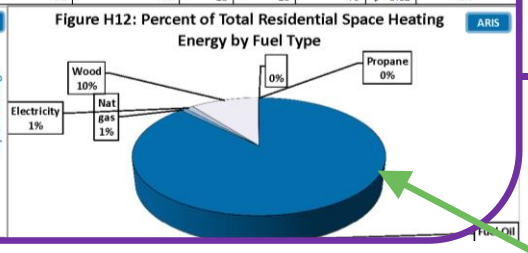
Home Heating Index: The energy used per square foot per year divided by the area's heating degree days.

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

Current Fairbanks 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 ($ / SF)	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





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.

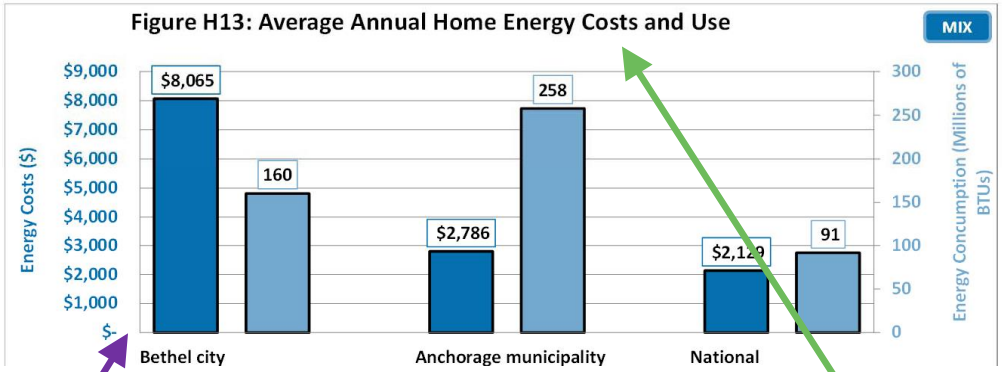
Red: value is less than 75% of the 2012 BEES requirement.

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 (# 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).

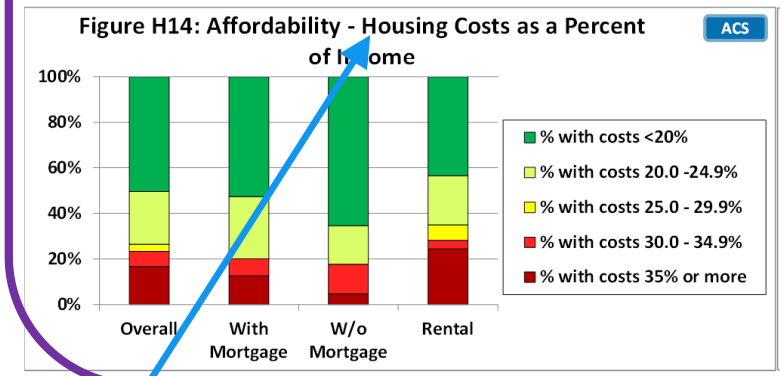
Owner-occupied House with Mortgage, Median Value
$226,800

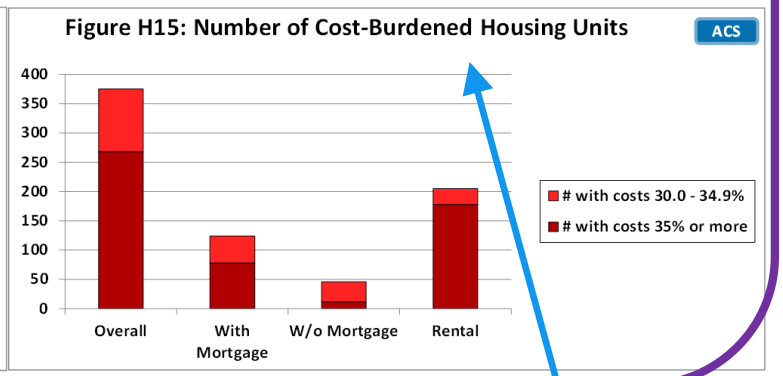
Owner-ocupied House without a Mortgage, Median Value
$119,600

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%





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.

ANCSA Region Profile for:	Chugach Alaska Corp

Climate Zone (Heating Degree Day Range)	Zone 7 (9,000 - 12,600 HDD)

COMMUNITY - Chugach Alaska Corp

Figure R1: Existing Housing by Decade Built

ACS

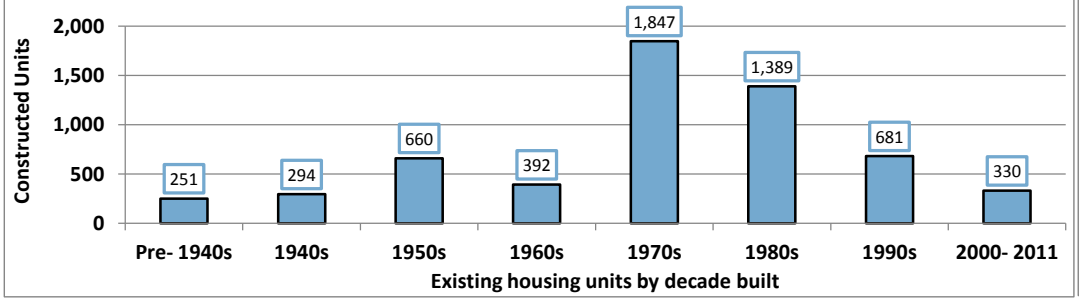


Figure R2: Population

CEN

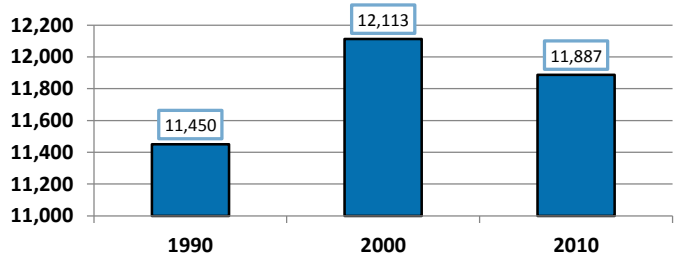


Figure R3: Trends in Housing Unit Size

MIX

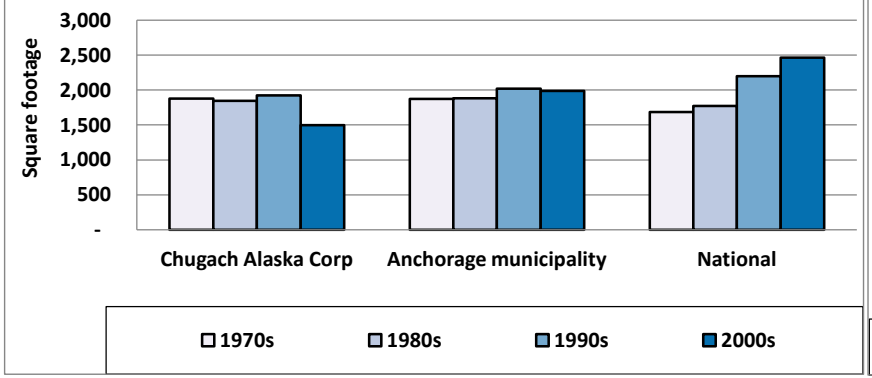
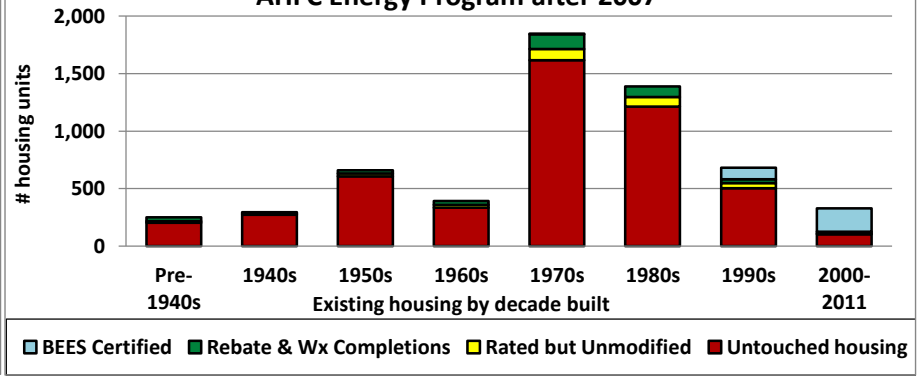


Figure R4: Housing Completing an AHFC Energy Program after 2007

ARIS



Houses Lacking Complete Plumbing or Kitchen Facilities	Households	
	Number	Percent
Lack complete plumbing	178	4%
Lack complete kitchen	150	3%

Avg Annual Energy Cost with PCE	$7,735
Avg Annual Energy Cost without PCE	$7,930

Weatherization Retrofits (funding increased 2008)	
Date Range	Units
2008-2011	114
2003-2007	27
1990-2002	79

Estimated Total Annual Community Space Heating Fuel Use		
Fuel Oil	4,565,984	(gallons)
Natural Gas	-	(ccf)
Electricity	5,284,148	(kWh)
Wood	4,321	(cords)
Propane	280,095	(gallons)
Coal	73	(tons)

Housing Need Indicators	Number of units	% Occupied Housing
Overcrowded	287	6%
Housing cost burdened	1,019	22%
1 Star Homes	576	13%

Housing Stock Estimates	Number of Units
All Housing	5,844
All Occupied Housing	4,555
All Vacant housing	1,289
Vacant Housing for Sale or Rent	289

OVERCROWDING & VENTILATION - Chugach Alaska Corp

Figure R5: Overcrowded Units

ACS

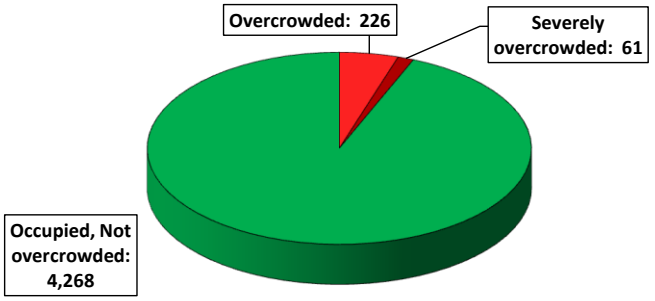


Figure R6: Housing Occupancy

MIX

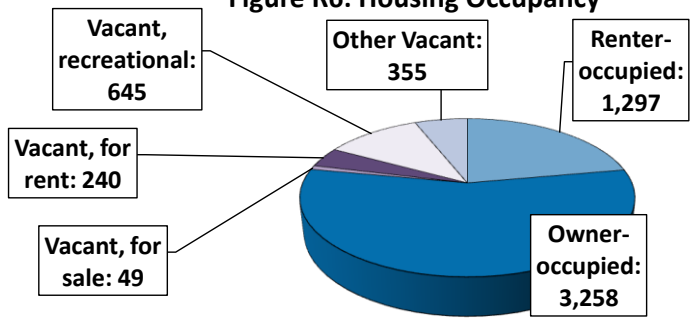


Figure R7: Average Air-Tightness of Current Homes by Decade Built

ARIS

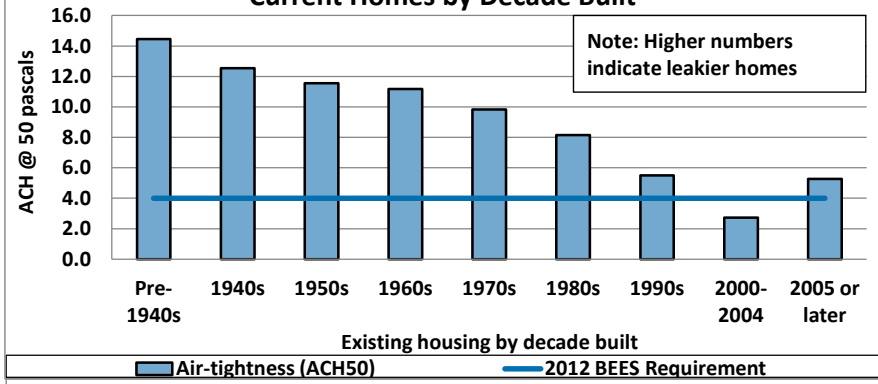


Figure R8: Existing Ventilation Type by Decade Built

ARIS

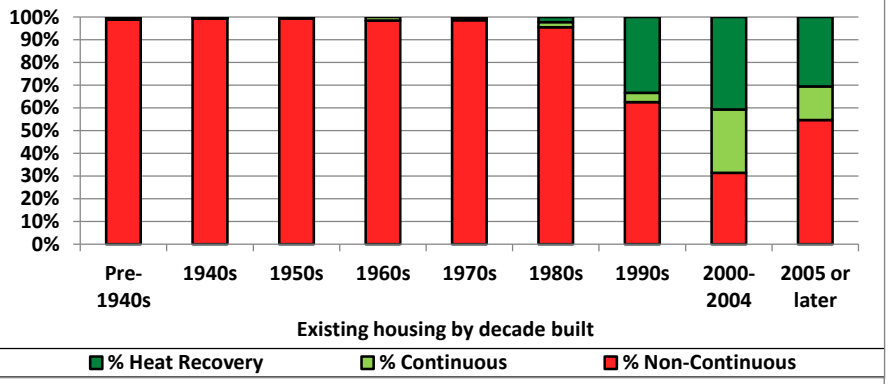


Figure R9: Percent of Housing Stock at High Risk of Moisture and Air Quality Problems

ARIS

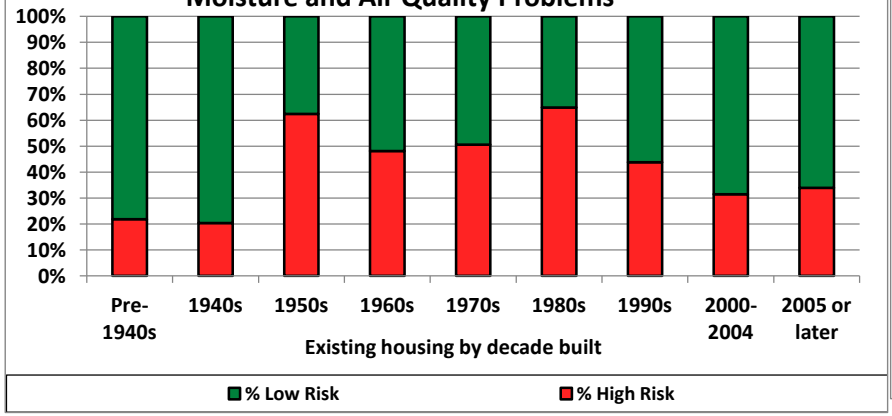
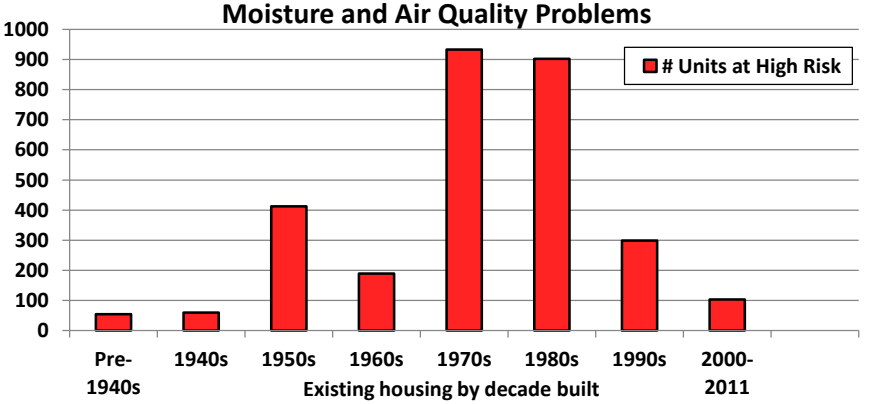


Figure R10: Quantity of Housing Stock at High Risk of Moisture and Air Quality Problems

ARIS



ENERGY - Chugach Alaska Corp												
Current Chugach Alaska Corp 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 Annual Energy / End Use (million Btus)			Avg. EUI (kBTUS /SF)	Avg. ECI	Avg. Home Heating Index
							Space Heating	DHW	Appliances			
OVERALL	1,251	2-star plus	64.6	1,804	$7,735	215	153	29	30	128	$4.63	10.2
Pre- 1940	69	2-star	52.9	1,784	$8,392	237	180	27	30	143	$5.12	12.2
1940- 49	31	1-star plus	49.3	1,416	$6,569	182	134	19	28	136	$4.83	11.3
1950- 59	73	2-star	56.5	1,641	$7,110	205	151	24	30	140	$4.91	11.3
1960- 69	78	2-star	59.7	1,768	$8,601	251	193	28	30	152	$5.19	12.8
1970- 79	325	2-star plus	60.8	1,877	$8,947	249	189	29	30	143	$5.21	11.8
1980- 89	238	3-star	68.3	1,845	$7,591	210	150	30	31	120	$4.35	9.3
1990- 99	201	4-star	78.9	1,921	$6,326	171	95	25	26	94	$3.60	6.6
2000- 2004	153	5-star	89.1	1,497	$4,184	107	51	30	26	78	$3.00	3.9
2005 or later	83	4-star	82.2	1,882	$5,998	155	94	31	31	83	$3.27	5.6

Figure R11: Current Average Energy Use Intensity and Average Square Footage by Decade Built

ARIS

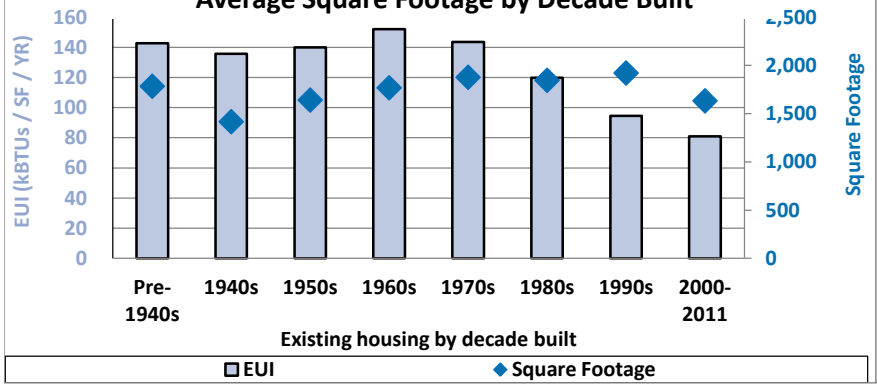
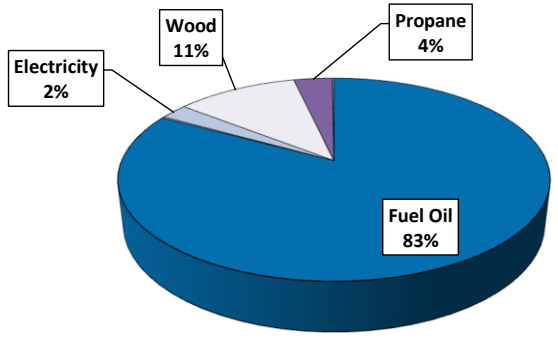


Figure R12: Percent of Total Residential Space Heating Energy by Fuel Type

ARIS



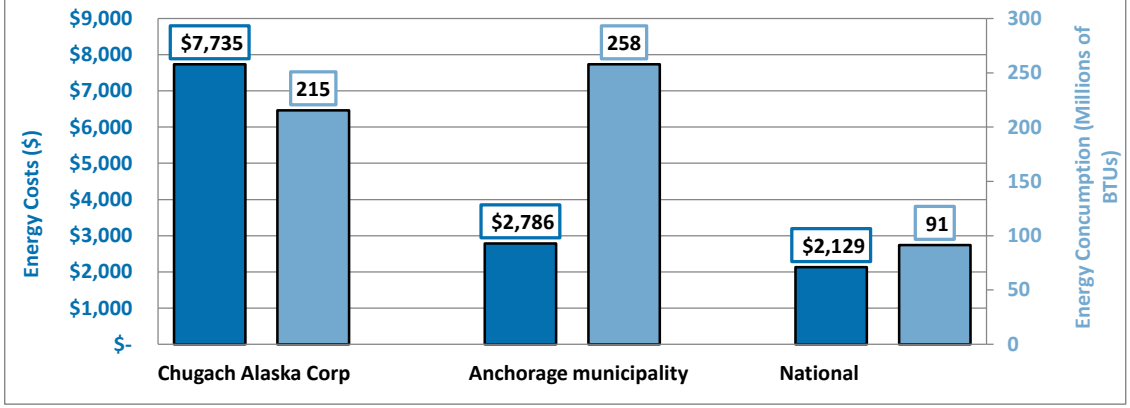
Current Chugach Alaska Corp Housing Envelope Characteristics By Decade Built											
Current Residential Units by Year Built	# of AkWarm Records	ACH 50	Ceiling R	Above Grade Wall R	Below Grade Wall R	Above Grade Floor R	On Grade Floor R	Below Grade Floor R	Door U	Garage Door U	Window U
OVERALL	1,251	9.2	21	12	4	18	3	3	0.36	0.36	0.54
Pre- 1940	69	14.4	13	9	3	13	3	3	0.43	0.43	0.57
1940- 49	31	12.5	13	10	5	10	2	2	0.32	0.32	0.55
1950- 59	73	11.6	17	11	3	13	3	3	0.44	0.44	0.61
1960- 69	78	11.2	18	11	3	19	3	3	0.41	0.41	0.60
1970- 79	325	9.8	21	11	4	18	3	3	0.38	0.38	0.61
1980- 89	238	8.2	25	14	4	21	3	3	0.33	0.33	0.52
1990- 99	201	5.5	33	18	7	21	4	3	0.24	0.24	0.38
2000- 2004	153	2.7	42	18	16	31	3	3	0.23	0.23	0.33
2005 or later	83	5.3	41	14	7	32	5	3	0.27	0.27	0.34

BEES 2009 - Climate Zone 7	7.0	38	21	15	38	15	15	0.33	0.33	0.33
BEES 2012 - Climate Zone 7	4.0	43	25	15	38	15	15	0.30	0.30	0.30

AFFORDABILITY - Chugach Alaska Corp

Figure R13: Average Annual Home Energy Cost and Use

MIX



Housing Information	Avg Household Size (# of people)
All-occupied	2.5
Owner-occupied	2.7
Renter-occupied	2.0

Median value of owner-occupied house with mortgage
$191,300

Median value of owner-occupied house without a mortgage
$106,500

Median Household Income	
Housing Units	Annual Household Income
All-occupied	$ 63,373
Renter-occupied	$ 35,737
Owner-occupied	$ 85,114
w/ mortgage	$ 105,458
w/o mortgage	$ 52,306

Median Housing Costs		
	Monthly	Annual
All-occupied	$ 931	$ 11,172
Gross rent	$ 829	$ 9,948
Owner-occupied	$ 981	$ 11,772
Housing units w/ mortgage	$ 1,520	$ 18,240
Housing units w/out a mortgage	$ 475	$ 5,700

Avg % of Median Income Spent on Energy	12.2%

Figure R14: Affordability - Housing Costs as a Percent of Income

ACS

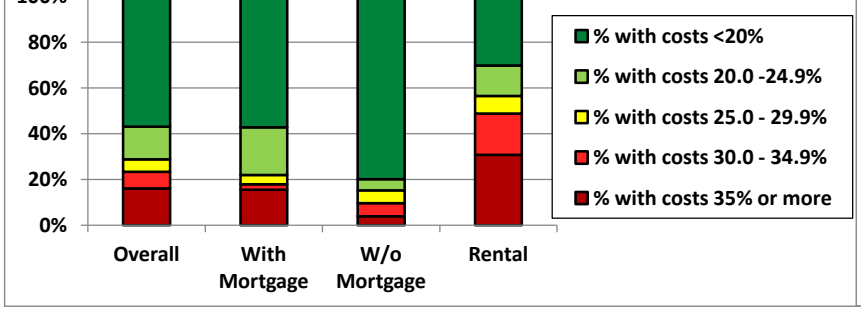


Figure R15: Number of Cost-Burdened Housing Units

ACS