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## Juneau City and Borough Dashboard

**Population:** The Alaska Department of Labor and Workforce Development's current (2012) population estimate for the Juneau City and Borough is 32,832—an increase of 7% from 2000.

**Housing Units:** There are currently 13,049 housing units in the Juneau City and Borough. Of these, 12,379 are occupied, 213 are for sale or rent, and the remaining 457 are seasonal or otherwise vacant units (Profile Figure C6).

**Energy:** The average home in the Juneau City and Borough is 1,646 square feet and uses 118,000 BTUs of energy per square foot annually, 14% 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 Juneau City and Borough is \$5,740, approximately 2.1 times more than the cost in Anchorage, and 2.7 times more than the national average (Profile Figure C13).

**Energy Programs:** Approximately 17% of the occupied housing in the Juneau City and 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 before 1940 are currently rated at 1-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 40's are 3 times leakier than those built since 2000 (Profile Figure C7).

**Ventilation:** An estimated 5,777 occupied housing units (or 47%) in the Juneau City and 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:** 4.2% of occupied units are estimated to be either overcrowded (3.5%) or severely overcrowded (0.7%). This is roughly similar to the national average, and makes the Juneau City and Borough the 20th most overcrowded census area in the state.

**Affordability**: On average, approximately 32% of households in the Juneau City and 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 7% of census median area income for occupied housing.



## Juneau City and Borough Summary

#### **Community**

The City and Borough of Juneau is located in the Southeast panhandle of Alaska, and the Sealaska Native Corporation ANCSA region. The city of Juneau is the state capitol. Homes in the census area are on average 1,646 square feet, and the average size of new construction is over 500 square feet more than homes built in the 1980s.

#### **Overcrowding**

Approximately 4% of occupied units in Juneau are considered either overcrowded or severely overcrowded, roughly the same as the national average. Juneau also has the second lowest vacancy rate of the 29 census areas (behind only Wade Hampton) with only 1.6% of homes vacant and for sale or rent.

#### Energy

Homes in the census area built since 2000 use less than half of the energy per square foot as homes that were built prior to 1970. Additionally, total annual energy use has steadily decreased since the 1970s, even as the average home size has been increasing. Though energy use in Juneau's homes has been steadily improving, on average newly constructed homes still do not meet BEES standards for shell components other than doors.

More than 50% of housing units built between 1970 and 2004 are relatively air-tight and lack a continuous ventilation system. In fact, less than 10% of homes built in the 1980s have continuous mechanical ventilation. These units are at higher risk of moisture- and indoor air quality-related issues. In contrast, 45% of homes built from 2005 to 2011 have continuous ventilation systems installed.

#### Affordability

More than 32% of Juneau's households are cost-burdened, or spend more than 30% or more of their income on housing costs. The affordability of renter-occupied units is lower, with 40% of renters considered cost-burdened and the median income of renter-occupied households around half of the median income of owner-occupied homes. Estimated energy costs for Juneau are lower than three-quarters of all census areas, suggesting that other housing costs are higher than other areas.



#### Community, Regional, and Statewide Housing Characteristics

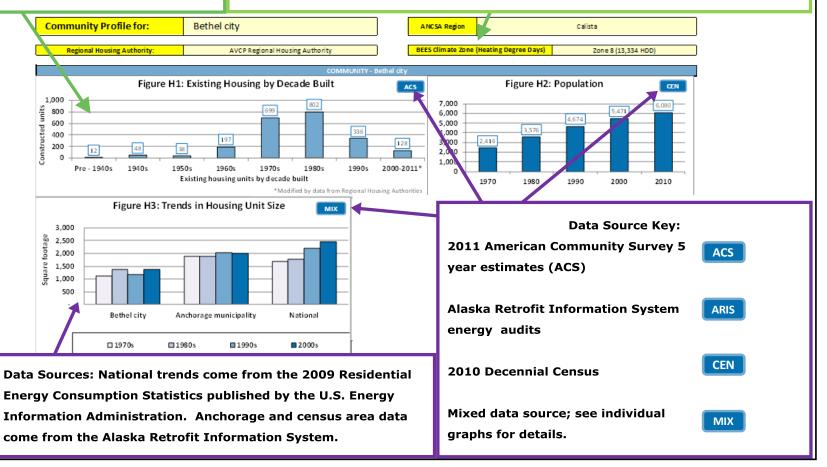
This census area summary only includes the highlights of housing characteristics at the census area level. Detailed data profile with charts and tables for both the census area and for each of the communities within it follow. The 2014 Alaska Housing Assessment provides a significant amount of data and 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.





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.

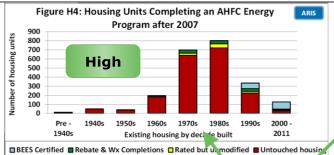
The Alaska Building Energy Efficiency Standard (BEES) was established by AHFC for the State of Alaska to promote the construction of energy efficient buildings. The standards for specific building components are divided into four climate zones, from Zone 6 in Southeast AK to Zone 9 on the North Slope.







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.

American Community Survey (ACS) Data:

# House-

20,816

15,459

ACS

Estimated Total Community Space Heating Fuel Use by Ty

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.

% House-

holds

10%

0%

(gallons)

(ccf)

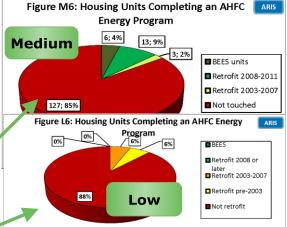
(kWh)

(cords)

(gallons)

(tons)

	K
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



- 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.

Weatherization Prog	
(funding increase	ed in 200′
Date Range	Units
2008-2011	17
2003-2007	-
1990-2002	10
	•
Housing Stock Estimat	:es
All Housing	

LOccupied Housing

using

incriousing for Sale or Rent

CEN

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

Houses Lacking Complete

Plumbing or Kitchen Facilities

Lack complete plumbing

Lack complete kitchen

Fuel Oil

Nat Gas

Electricity

Wood

Propane

Coal

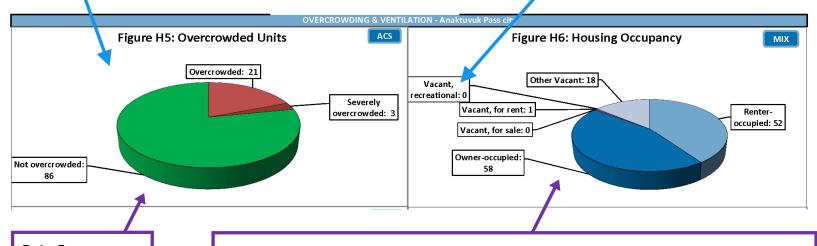




Overcrowded: Housing units with more than 1 person per room Severely Overcrowded: Housing units with more than 1.5 people per room.

"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.





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.

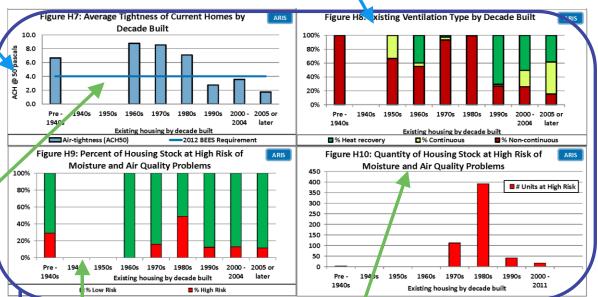
The 2012 Building Energy
Efficiency Standard
(BEES) for air-tightness is
for reference only, as it
was implemented after
the majority of homes in
Alaska were built.

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.





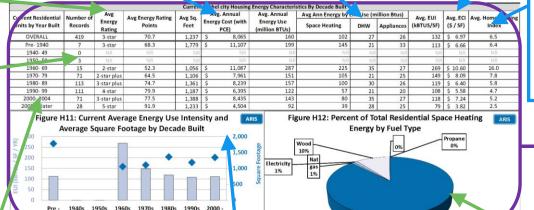


Rating stars and points are based on AHFC's AkWarm energy rating system. Average annual energy cost:
Includes all end uses. Costs
are estimated using January
2013 energy prices, and
include reductions from the
PCE program.

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.



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.

Existing housing by decade built

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.





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 Er ve	lope Characteristic	s By Decade Built				
Current Residential Units by Year Built	Number of	ACH 50	Ceiling R	Above Grade Wall R	Below Graue 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 - Clima	te Zone 8	7.0	38	30	15	38	15	15	0.22	0.22	0.22
BEES 2012 Clima	te 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.



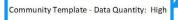


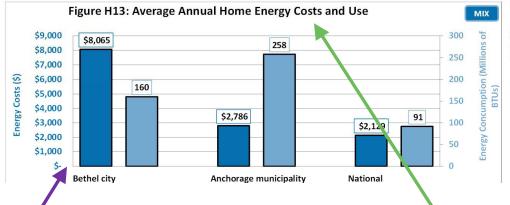
Communities are categorized in this report by the amount of ARIS data available, and reporting is more extensive for locations with more data. Data quantities are defined as--

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.





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.

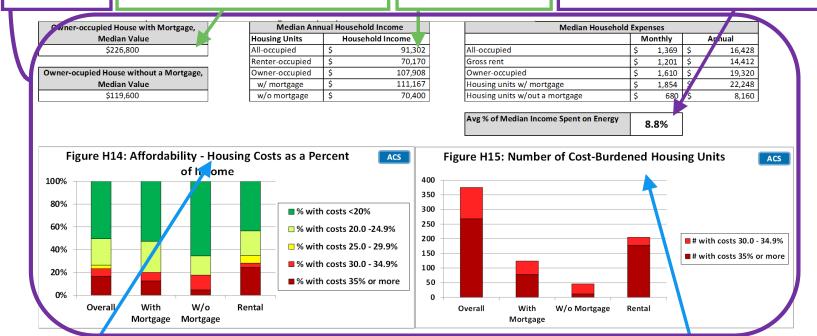
National figures come from the U.S. Energy Information Administration's 2009 Residential Energy Consumption Statistics (RECS) for "cold"/"very cold" climate regions. Average annual home energy costs and usage estimates are for all end uses, including space heating, domestic hot water, lighting and appliances. Costs are estimated using January 2013 energy prices and include reductions from the PCE program.





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).



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:** 

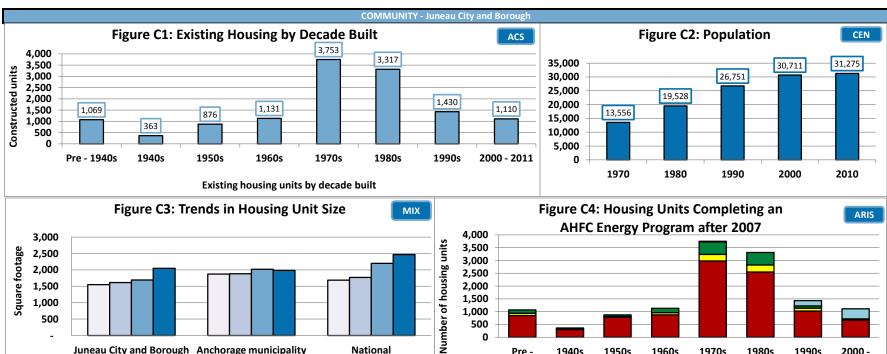
Juneau City and Borough

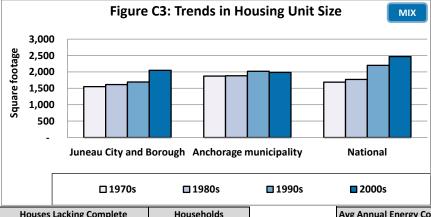
**ANCSA Region:** Sealaska Corporation

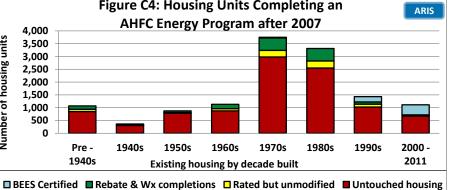
**Regional Housing Authority:** 

Tlingit-Haida Regional Housing Authority

**BEES Climate Zone (Heating Degree Day Range)** Zone 6 (7,200 - 9,000 HDD)







Houses Lacking Complete	Households			
Plumbing or Kitchen Facilities	Number	Percent		
Lack complete plumbing	149	1%		
Lack complete kitchen	210	2%		

Estimated Total Annual Community Space Heating Fuel Use									
Fuel Oil	9,629,258	(gallons)							
Natural Gas	-	(ccf)							
Electricity	39,588,915	(kWh)							
Wood	15,651	(cords)							
Propane	266,307	(gallons)							
Coal	-	(tons)							

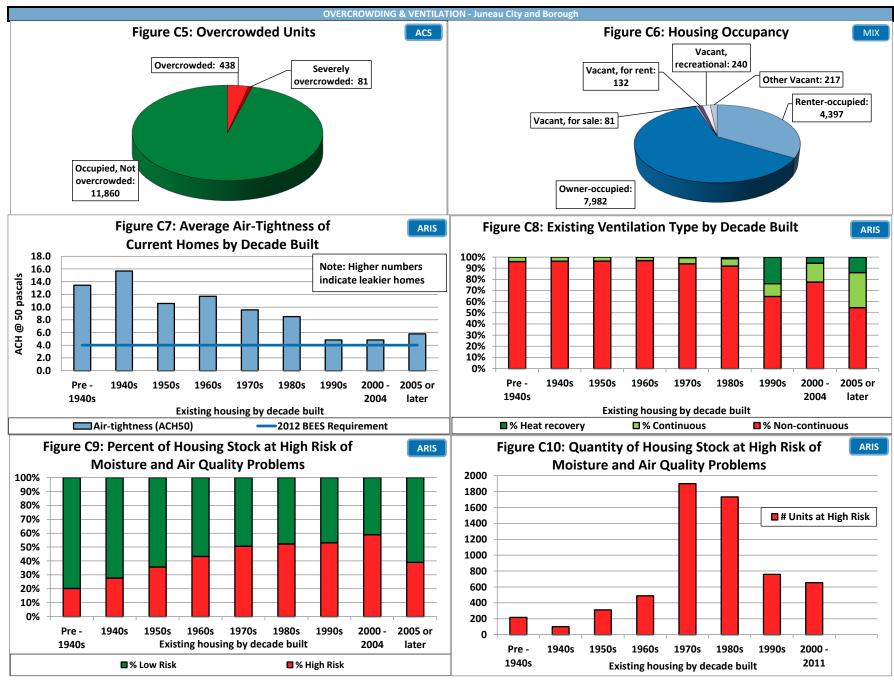
Avg Annual Energy Cost with PCE	NO PCE		
Avg Annual Energy Cost without PCE	\$5,737		

Housing Need Indicators	Number of Units	% Occupied Housing
Overcrowded	519	4%
Housing cost burdened	3,918	32%
1 Star Homes	1,386	11%

Weatherization Retrofits (funding							
increased 2008)							
Date Range Units							
2008 -2011	422						
2003-2007	184						
1990-2002	628						

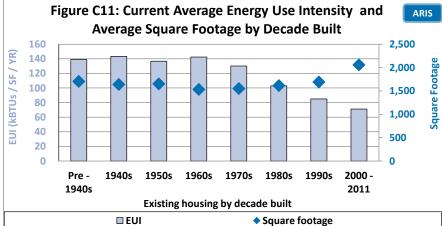
Housing Stock Estimates	Number of Units
All Housing	13,049
All Occupied Housing	12,379
All Vacant housing	670
Vacant Housing for Sale or Rent	213

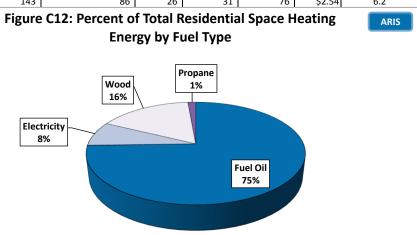






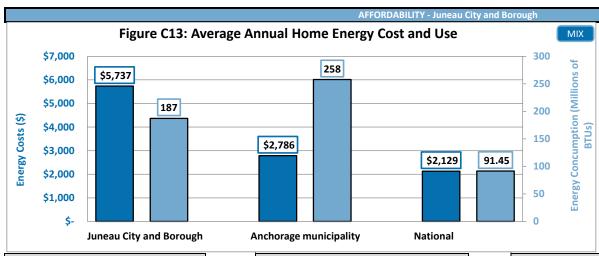
	ENERGY - Juneau City and Borough											
	Current Juneau City and Borough Housing Energy Characteristics By Decade Built											
Current Residential	# of Avg E	# of Avg Energy	Avg Energy Rating	Avg Sq.	Avg. Annual	Avg. Annual	Avg Ann Energy by	End Use (m	illion Btus)	Avg. EUI	Avg. ECI	Avg. Home
Units by Year Built	AkWarm Records	Rating Stars	Points	Feet	Energy Cost	Energy Use (million BTUs)	Space Heating	DHW	Appliances	(kBTUS /SF)	(\$ / SF)	Heating Index
OVERALL	4,082	2-star plus	63.5	1,646	\$5,737	187	129	24	30	118	\$3.65	10.8
Pre- 1940	352	1-star plus	45.2	1,704	\$7,022	226	173	22	31	139	\$4.37	13.8
1940- 49	101	2-star	52.0	1,639	\$6,349	220	164	24	32	143	\$4.33	14.0
1950- 59	165	2-star	54.0	1,651	\$6,593	222	166	25	31	137	\$4.13	13.2
1960- 69	431	2-star	56.2	1,532	\$6,390	220	163	26	31	142	\$4.25	13.8
1970- 79	1,259	2-star plus	60.6	1,551	\$6,132	204	147	26	30	130	\$3.98	12.2
1980- 89	1,254	2-star plus	65.8	1,615	\$5,234	167	116	22	30	103	\$3.24	9.2
1990- 99	493	4-star	79.2	1,691	\$4,570	142	77	20	24	85	\$2.77	6.7
2000- 2004	287	4-star plus	83.5	2,046	\$4,540	137	80	26	31	69	\$2.31	5.1
2005 or later	164	4-star	82.3	2,077	\$4,798	143	86	26	31	76	\$2.54	6.2





Current Juneau City and 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	4,082	9.4	21	12	3	17	3	3	0.42	0.40	0.54
Pre- 1940	352	13.4	13	8	2	13	2	3	0.47	0.47	0.58
1940- 49	101	15.7	18	9	2	14	2	2	0.47	0.44	0.59
1950- 59	165	10.6	18	10	3	14	3	2	0.42	0.50	0.57
1960- 69	431	11.7	19	11	3	15	3	3	0.44	0.40	0.56
1970- 79	1,259	9.6	21	11	3	16	2	3	0.43	0.39	0.58
1980- 89	1,254	8.5	24	14	2	18	3	3	0.42	0.43	0.55
1990- 99	493	4.8	36	19	5	29	4	3	0.29	0.26	0.38
2000- 2004	287	4.8	34	17	13	26	4	3	0.28	0.30	0.38
2005 or later	164	5.8	26	16	10	23	4	3	0.27	0.35	0.36
BEES 2009 - Climate Zone 6		7.0	38	21	15	30	15	15	0.33	0.33	0.33
BEES 2012 - Climate Zone 6		4.0	43	25	15	38	15	15	0.30	0.30	0.30





Housing Information	Avg Household Size (# of people)			
All-occupied	2.5			
Owner-occupied	2.7			
Renter-occupied	2.1			

Median Value of Owner-occupied House with

Mortgage
\$315,500

Median Value of Owner-occupied House without a Mortgage \$263,500

Median Annual Household Income						
<b>Housing Units</b>		Household Income				
All-occupied	\$	77,465				
Renter-occupied	\$	51,628				
Owner-occupied	\$	94,821				
w/ mortgage	\$	106,338				
w/o mortgage	\$	71,800				

Median Housing Costs						
		Monthly		Annual		
All-occupied	\$	1,369	\$	16,428		
Gross rent	\$	1,135	\$	13,620		
Owner-occupied	\$	1,708	\$	20,496		
Housing units w/ mortgage	\$	2,176	\$	26,112		
Housing units w/out a mortgage	\$	718	\$	8,616		

Avg % of Median Income Spent on Energy 7.4%

