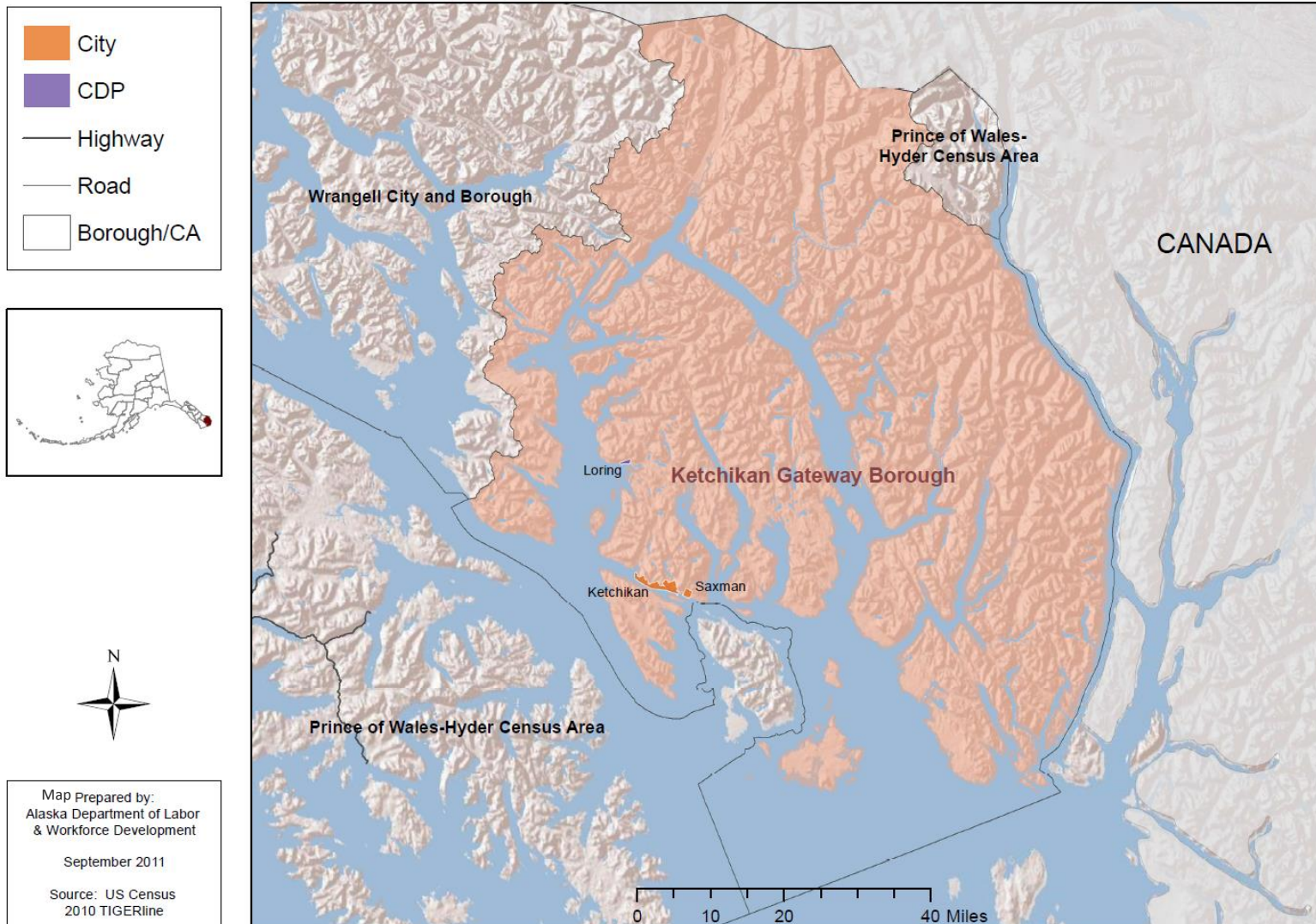


# Ketchikan Gateway Borough



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## ***Ketchikan Gateway Borough Dashboard***

**Population:** The Alaska Department of Labor and Workforce Development's current (2012) population estimate for the Ketchikan Gateway Borough is 13,938—a decrease of 1% from 2000.

**Housing Units:** There are currently 6,182 housing units in the Ketchikan Gateway Borough. Of these, 5,479 are occupied, 202 are for sale or rent, and the remaining 501 are seasonal or otherwise vacant units (Profile Figure C6).

**Energy:** The average home in the Ketchikan Gateway Borough is 1,629 square feet and uses 115,000 BTUs of energy per square foot annually, 16% 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 Ketchikan Gateway Borough is \$5,260, approximately 1.9 times more than the cost in Anchorage, and 2.5 times more than the national average (Profile Figure C13).

**Energy Programs:** Approximately 14% of occupied housing in the Ketchikan Gateway 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, compared to a current average rating of 3-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 before 1940 are 2.9 times leakier than those built since 2000 (Profile Figure C7).

**Ventilation:** An estimated 1,140 occupied housing units (or 21%) in the Ketchikan Gateway 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:** 2.5% of occupied units are estimated to be either overcrowded (1.8%) or severely overcrowded (0.7%). This is roughly similar to the national average, and makes the Ketchikan Gateway Borough the 26th most overcrowded census area in the state.

**Affordability:** On average, approximately 32% of households in the Ketchikan Gateway 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 9% of census median area income for occupied housing.

## Ketchikan Gateway Borough Summary

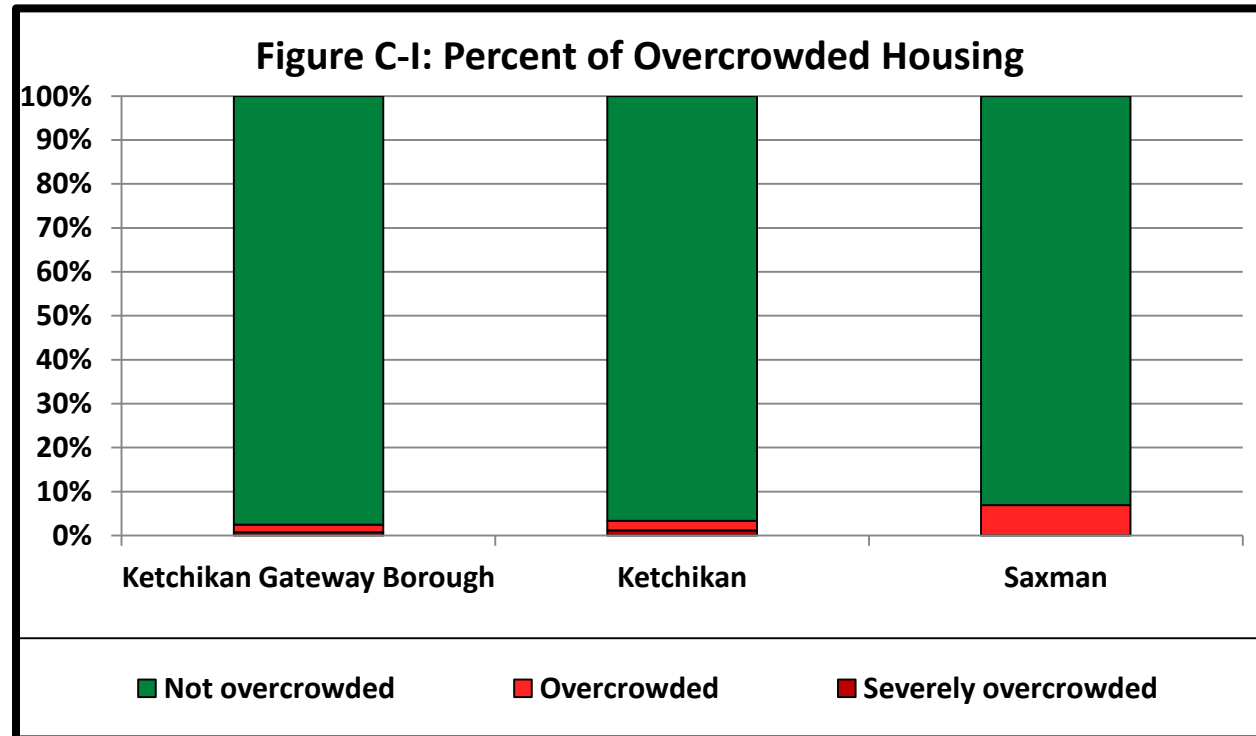
### Community

The Ketchikan Gateway Borough census area lies at the southern end of the Southeast panhandle of Alaska. It is in the Sealaska Native Corporation ANSCA region. The average home size in the census area is 1,629 square feet.

### Overcrowding

There is very little overcrowding in the Ketchikan Gateway census area. In the census area as a whole, 3% of housing units are overcrowded, or have more than one person per room. The city of Ketchikan has 3% overcrowding and the community of Saxman has 7% overcrowding.

Approximately 3% of housing in the Ketchikan Gateway census area is available for sale or rent. The community of Ketchikan has the highest percentage of available housing, 3%, and the lowest percentage of 1% is found in Saxman.



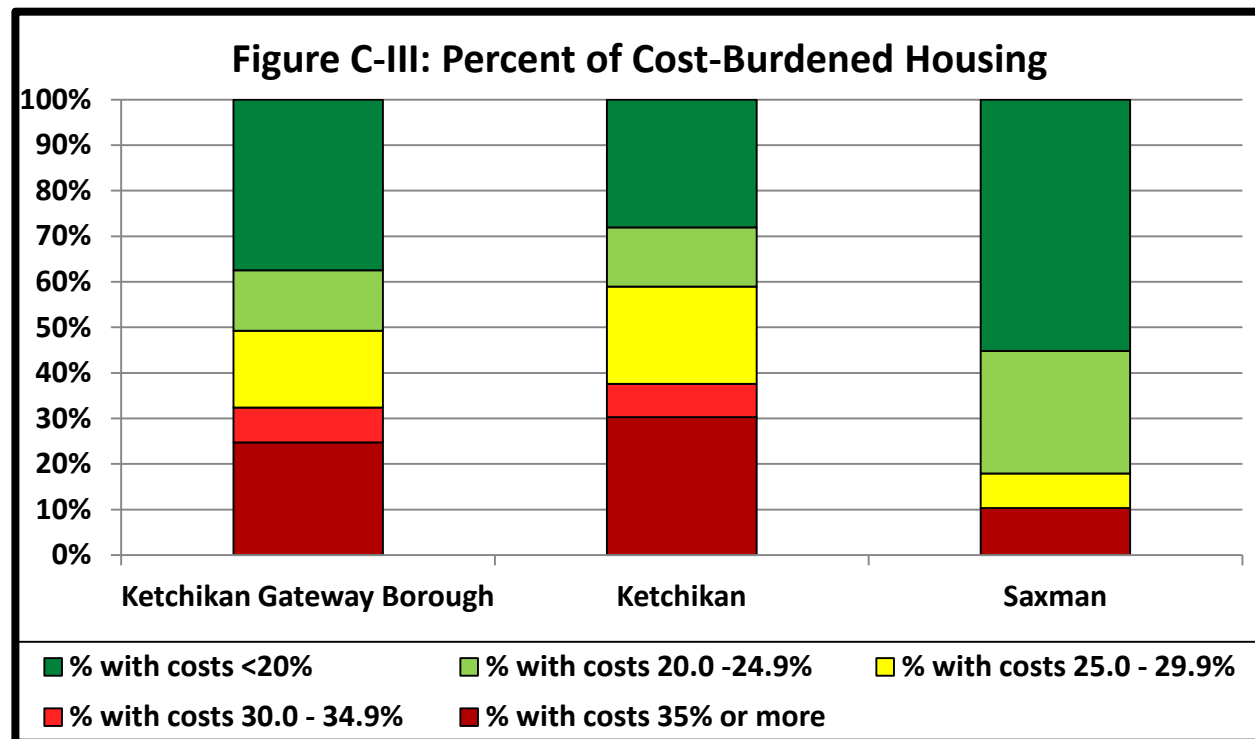
## Energy

The annual average energy cost for the census area is \$5,260. The average home heating index for Ketchikan Gateway is 11.7 BTUs/ft<sup>2</sup>/HDD.

Approximately 15% of housing units in the Ketchikan Gateway census area have completed the Home Energy Rebate, Weatherization, or a BEES program since 2003. The greatest community participation is found in the city of Ketchikan, where 22% of households have completed one of the programs, compared to 13% participation in Saxman.

## Affordability

The affordability of living in the two communities in the census area is quite different, despite their geographic proximity. According to ACS estimates<sup>1</sup>, nearly 40% of households in the city of Ketchikan are cost-burdened compared to only 10% of households in Saxman. Residents of Saxman have a higher median household income (\$55,250) than residents of Ketchikan (\$49,313).



<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.

---

## 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.

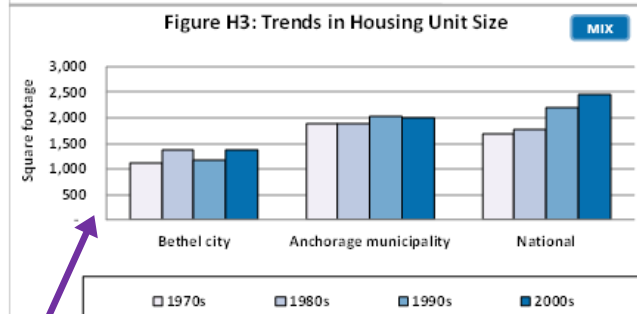
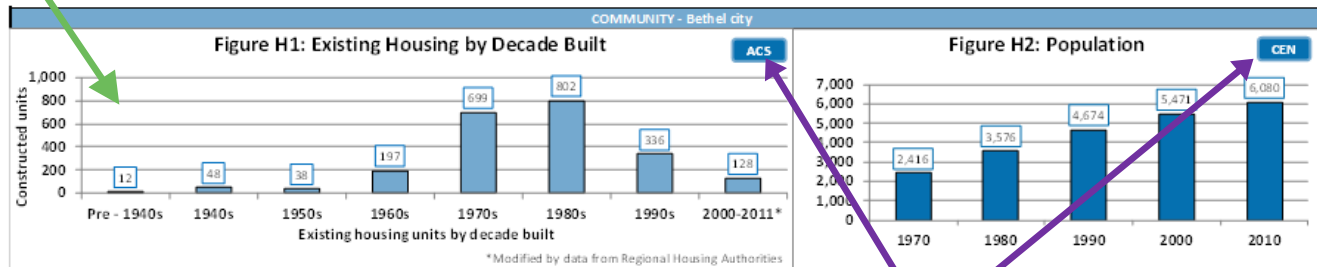
# How to Interpret the Profile: Data Sources, Definitions & Clarifications

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.

Community Profile for:	Bethel city	ANCSA Region	Calista
Regional Housing Authority:	AVCP Regional Housing Authority	BEES Climate Zone (Heating Degree Days)	Zone 8 (13,334 HDD)



**Data Source Key:**

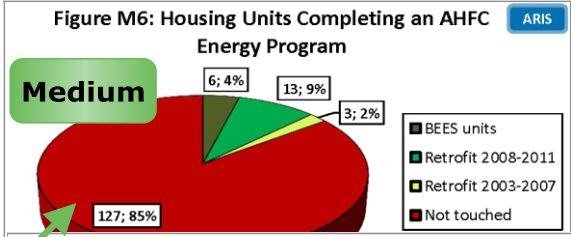
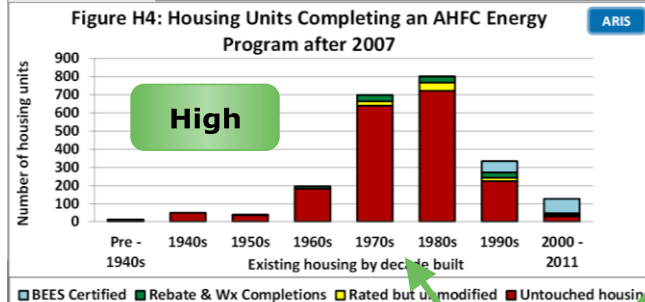
- 2011 American Community Survey 5 year estimates (ACS) **ACS**
- Alaska Retrofit Information System energy audits **ARIS**
- 2010 Decennial Census **CEN**
- Mixed data source; see individual graphs for details. **MIX**

**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.

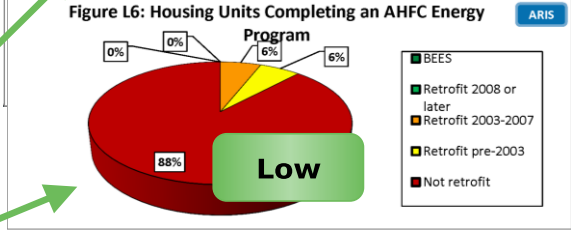
# How to Interpret the Profile: Data Sources, Definitions & Clarifications

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.

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	
All Housing	Nu
All Occupied Housing	
All Housing	
Vacant housing for Sale or Rent	

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

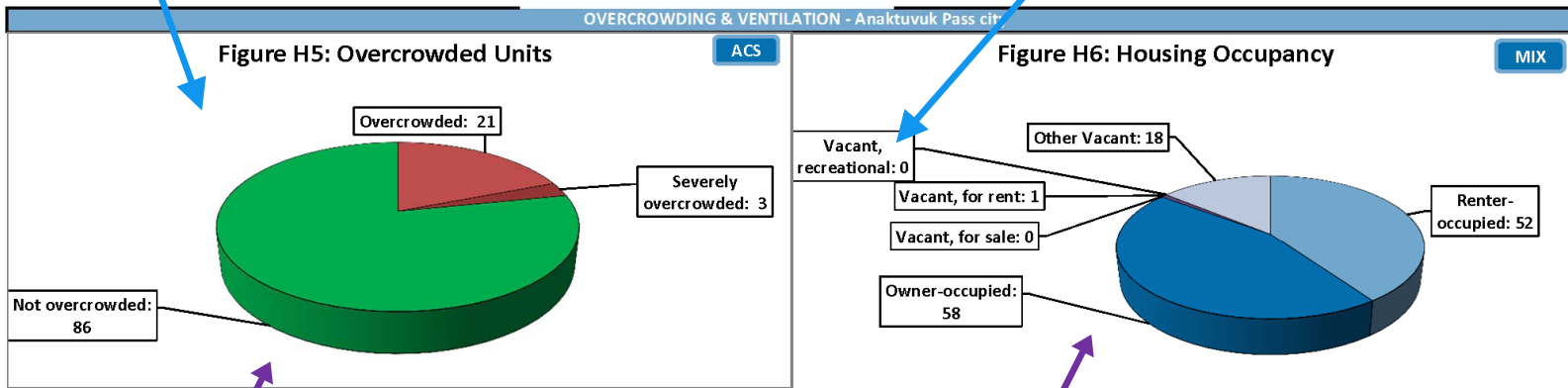


## How to Interpret the Profile: Data Sources, Definitions & Clarifications

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.

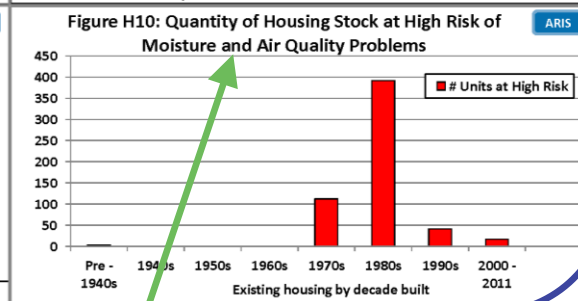
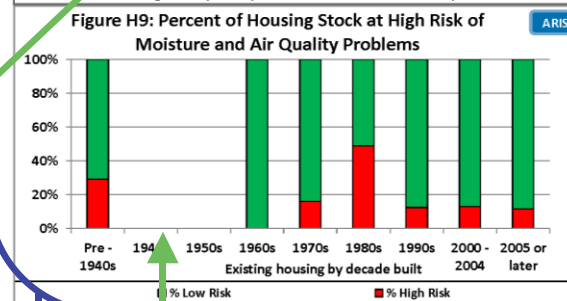
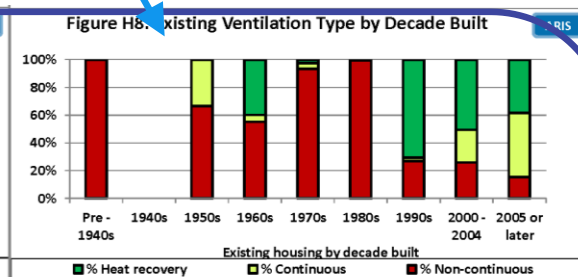
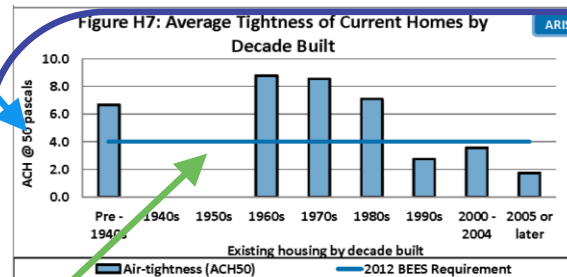
**Continuous:** Mechanical ventilation without heat recovery operated with automatic controls.

**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.

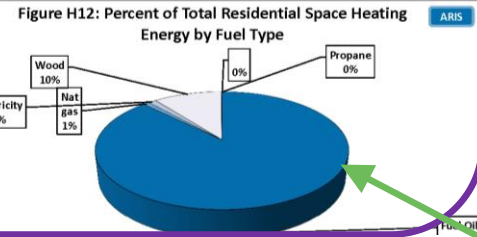
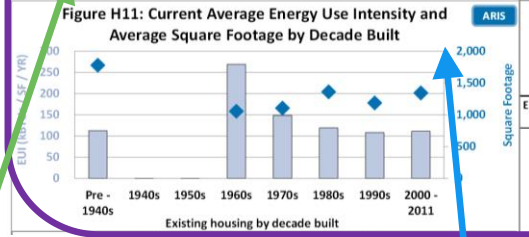
**Space Heating, DHW, Appliances:**  
Estimated annual energy for the end uses of: Space Heating, Domestic Hot Water, and all other energy including lights, appliances, and electronics.

**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 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 Use (million Btus)			Avg. EUI (kBtu/SqFt)	Avg. ECI (\$ / SqFt)	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	153	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 or 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

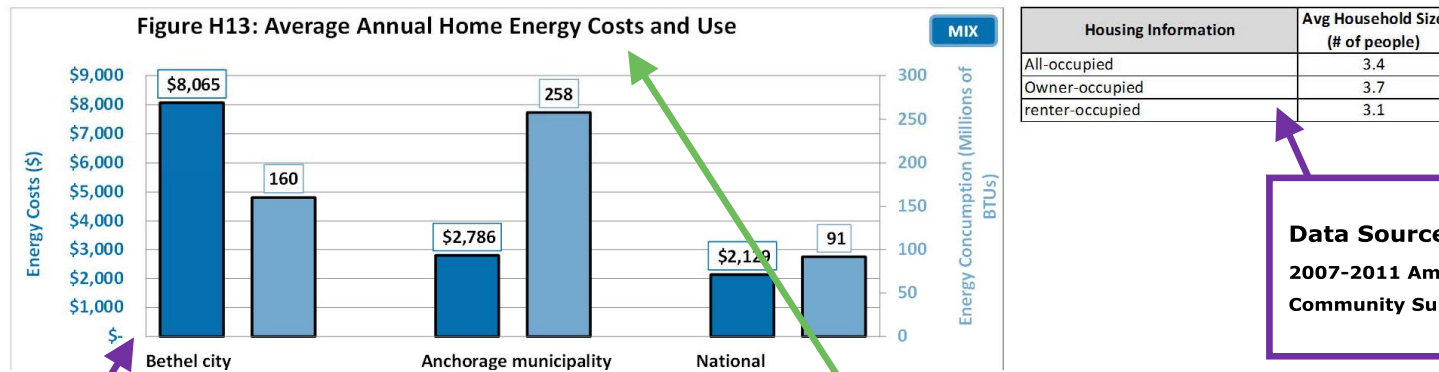
Communities are categorized in this report by the amount of ARIS data available, and reporting is more extensive for locations with more data. Data quantities are defined as--

**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



**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

## 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).

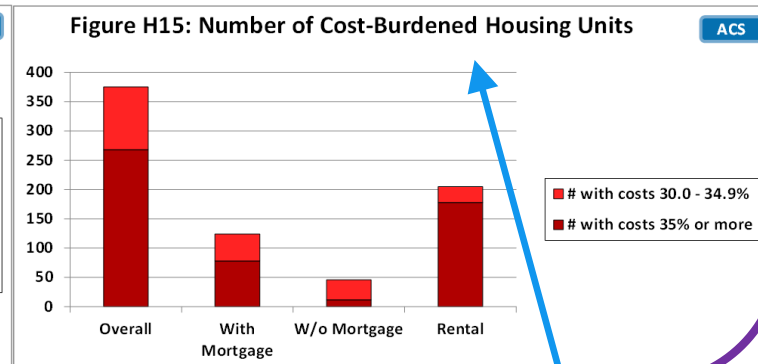
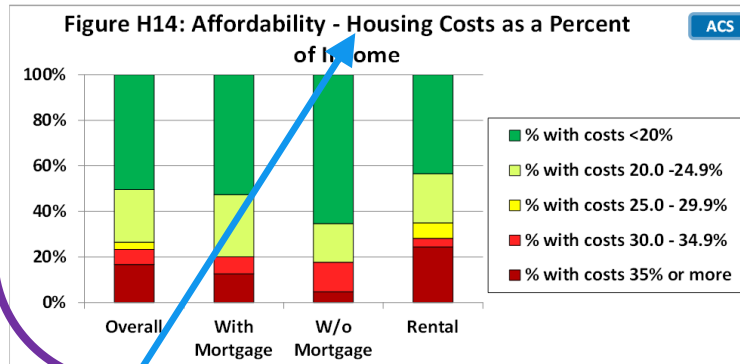
Owner-occupied House with Mortgage, Median Value
\$226,800
Owner-occupied House without a Mortgage, Median Value
\$119,600

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%
--	------



**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.

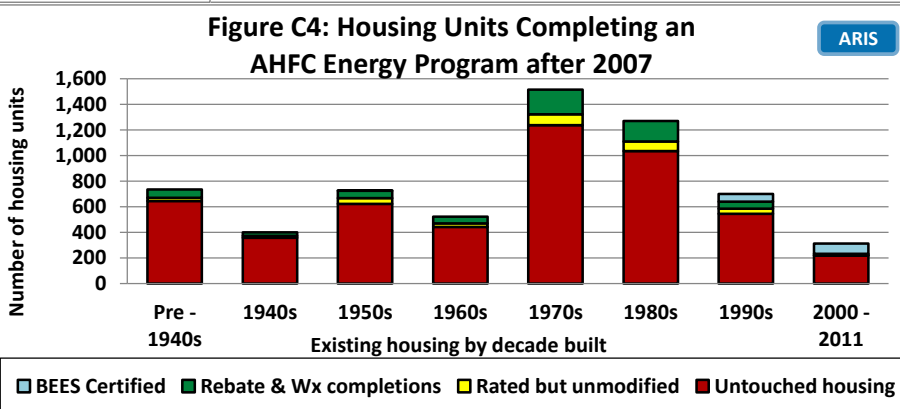
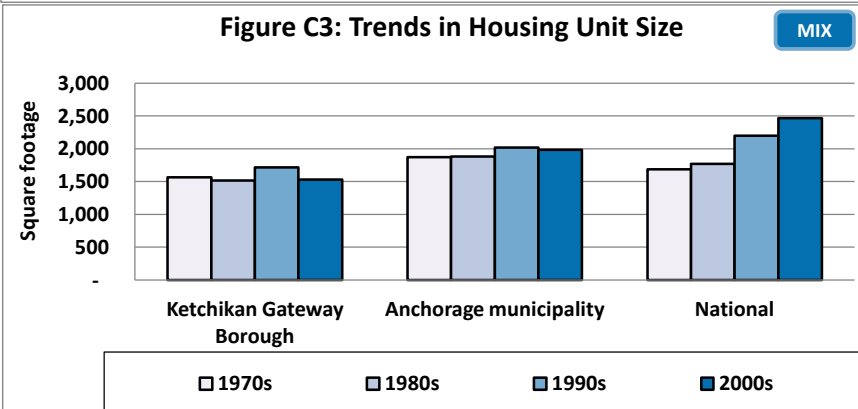
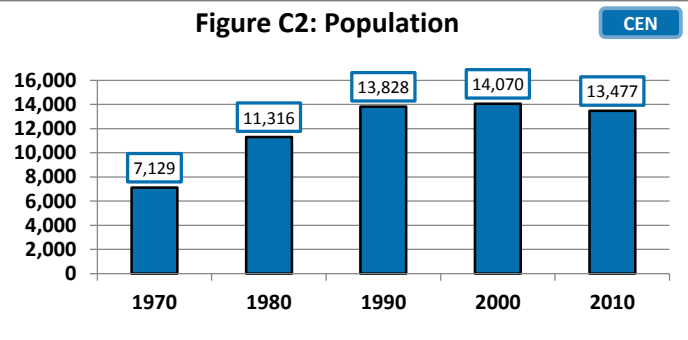
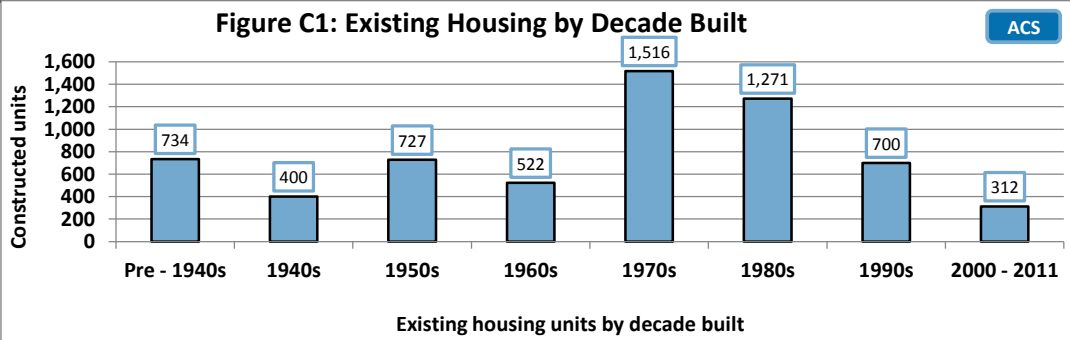
**Census Area Profile for:** Ketchikan Gateway Borough

**ANCSA Region:** Sealaska Corporation

**Regional Housing Authority:** Ketchikan Indian Community

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

**COMMUNITY - Ketchikan Gateway Borough**



Houses Lacking Complete Plumbing or Kitchen Facilities	Households	
	Number	Percent
Lack complete plumbing	71	1%
Lack complete kitchen	38	1%

Avg Annual Energy Cost with PCE	NO PCE
Avg Annual Energy Cost without PCE	\$5,264

Weatherization Retrofits (funding increased 2008)	
Date Range	Units
2008 - 2011	270
2003 - 2007	31
1990 - 2002	179

Estimated Total Annual Community Space Heating Fuel Use		
Fuel Oil	4,419,193	(gallons)
Natural Gas	-	(ccf)
Electricity	15,855,936	(kWh)
Wood	3,726	(cords)
Propane	268,898	(gallons)
Coal	-	(tons)

Housing Need Indicators	Number of Units	% Occupied Housing
Overcrowded	136	2%
Housing cost burdened	1,712	31%
1 Star Homes	1,815	33%

Housing Stock Estimates	Number of Units
All Housing	6,182
All Occupied Housing	5,479
All Vacant housing	703
Vacant Housing for Sale or Rent	202

OVERCROWDING & VENTILATION - Ketchikan Gateway Borough

Figure C5: Overcrowded Units

ACS

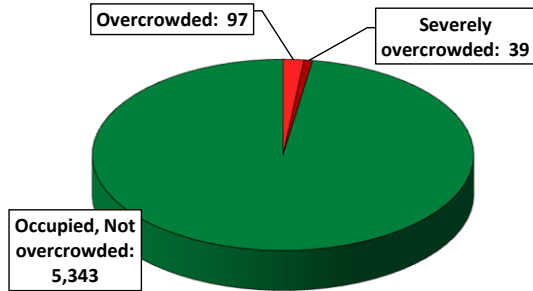


Figure C6: Housing Occupancy

MIX

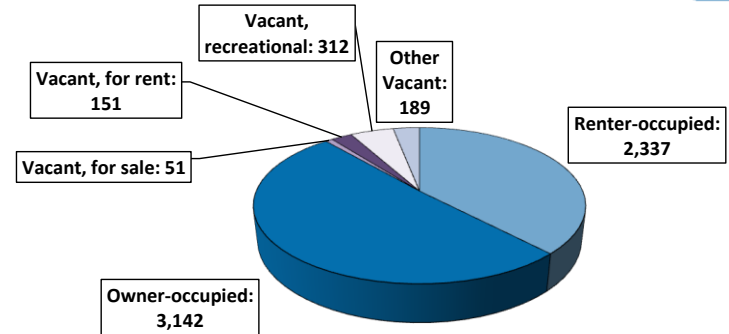


Figure C7: Average Air-Tightness of Current Homes by Decade Built

ARIS

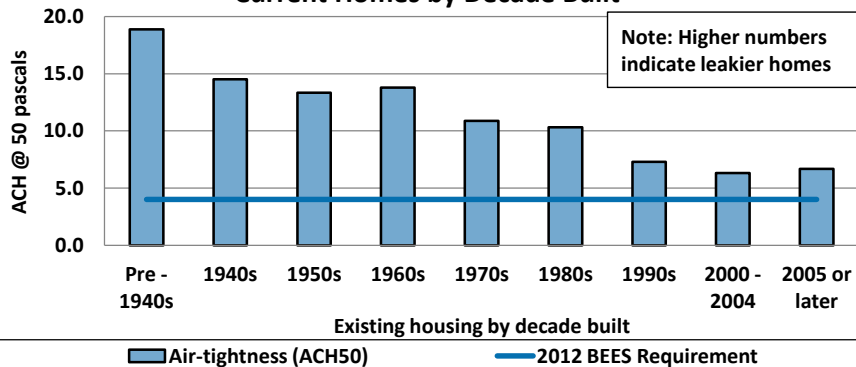


Figure C8: Existing Ventilation Type by Decade Built

ARIS

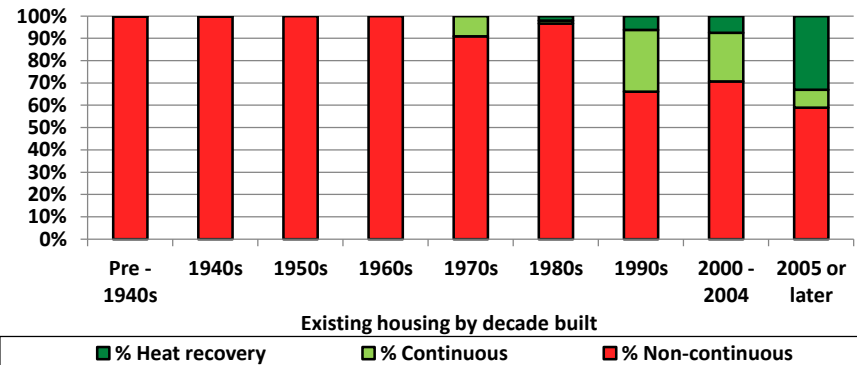


Figure C9: Percent of Housing Stock at High Risk of Moisture and Air Quality Problems

ARIS

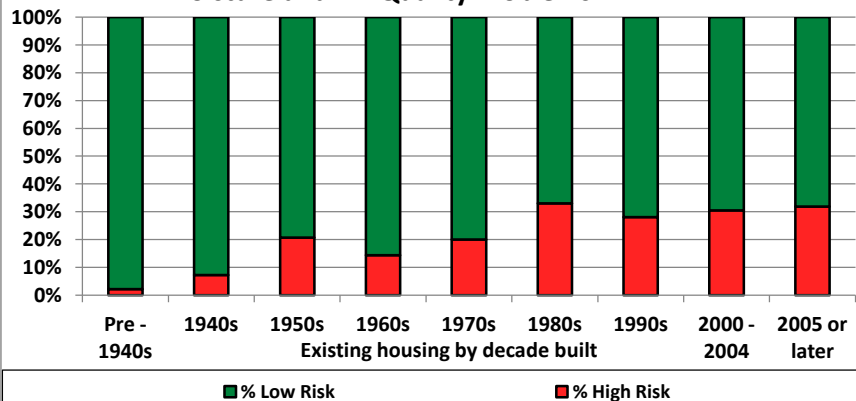
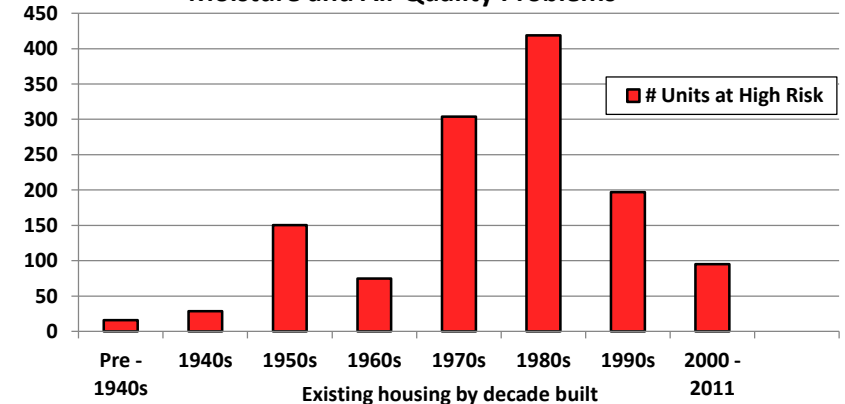


Figure C10: Quantity of Housing Stock at High Risk of Moisture and Air Quality Problems

ARIS





ENERGY - Ketchikan Gateway Borough												
Current Ketchikan Gateway 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	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	1,438	2-star	51.2	1,629	\$5,264	182	125	24	32	115	\$3.31	11.7
Pre- 1940	150	1-star	29.2	1,583	\$7,063	251	201	19	31	169	\$4.75	19.4
1940- 49	68	1-star	33.4	1,772	\$7,215	244	191	22	30	143	\$4.20	15.9
1950- 59	172	1-star plus	40.9	1,551	\$5,848	197	145	23	29	134	\$3.90	14.2
1960- 69	134	1-star plus	42.5	1,518	\$5,382	192	142	22	27	135	\$3.78	14.4
1970- 79	466	2-star	53.7	1,567	\$5,027	173	115	24	33	108	\$3.15	10.7
1980- 89	402	2-star	58.1	1,518	\$4,369	154	102	23	29	103	\$2.94	10.0
1990- 99	209	3-star	72.8	1,714	\$3,774	137	74	23	28	82	\$2.29	7.4
2000- 2004	76	3-star	71.5	1,529	\$3,411	112	64	20	27	84	\$2.61	7.3
2005 or later	31	4-star	79.6	3,504	\$6,923	205	120	29	56	53	\$1.79	4.6

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

ARIS

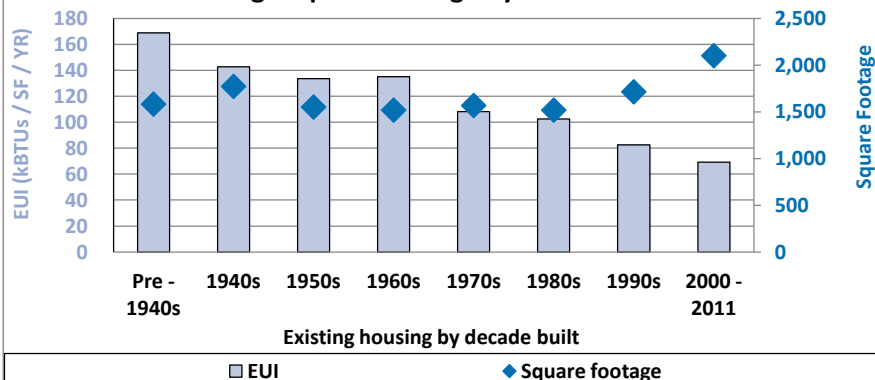
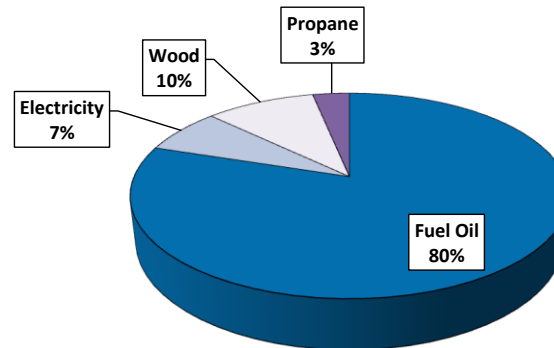


Figure C12: Percent of Total Residential Space Heating Energy by Fuel Type

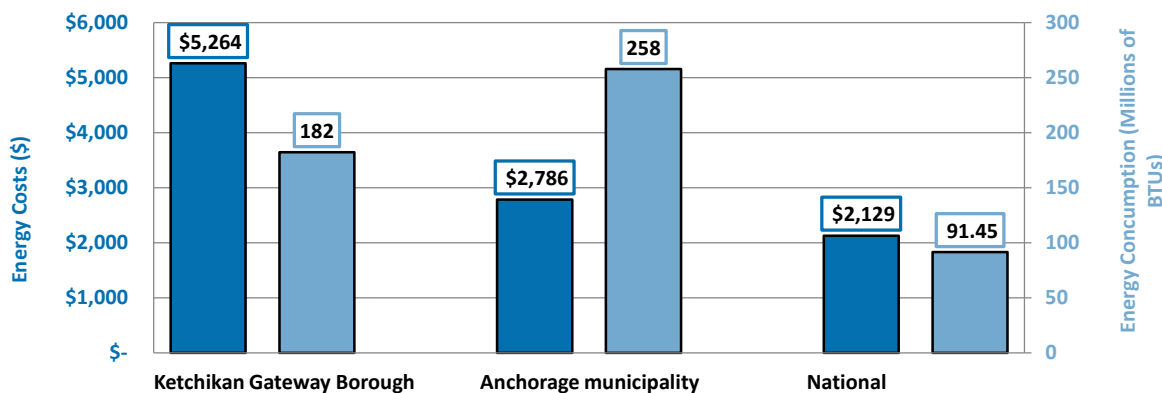
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Current Ketchikan Gateway Borough Housing Envelope Characteristics By Decade Built												
Current Residential Units by Year Built	# of AkWarm Records	ACH 50	Ceiling R	Above Grade Wall R	Below Grade Wall R	Above Grade Floor R	On Grade Floor R	Below Grade Floor R	Door U	Garage Door U	Window U	
OVERALL	1,438	11.6	15	11	3	15	3	3	0.37	0.36	0.61	
Pre- 1940	150	18.9	8	8	2	11	3	3	0.42	0.31	0.69	
1940- 49	68	14.5	9	9	2	12	3	NR	0.46	NR	0.62	
1950- 59	172	13.3	12	9	2	12	3	3	0.42	0.55	0.64	
1960- 69	134	13.8	11	10	3	11	3	NR	0.40	0.44	0.67	
1970- 79	466	10.9	19	11	3	16	3	2	0.38	0.41	0.62	
1980- 89	402	10.3	19	13	2	18	3	2	0.34	0.33	0.61	
1990- 99	209	7.3	29	17	4	25	3	NR	0.26	0.20	0.43	
2000- 2004	76	6.3	32	15	3	17	4	6	0.34	0.18	0.43	
2005 or later	31	6.7	15	16	21	41	3	NR	0.31	NR	0.39	
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	

AFFORDABILITY - Ketchikan Gateway Borough

Figure C13: Average Annual Home Energy Cost and Use



Housing Information	Avg Household Size (# of people)
All-occupied	2.3
Owner-occupied	2.5
Renter-occupied	2.1

Median Value of Owner-occupied House with Mortgage
\$273,700

Median Value of Owner-occupied House without a Mortgage
\$200,900

Median Annual Household Income	
Housing Units	Household Income
All-occupied	\$ 57,243
Renter-occupied	\$ 39,175
Owner-occupied	\$ 84,513
w/ mortgage	\$ 97,500
w/o mortgage	\$ 51,444

Median Housing Costs		
	Monthly	Annual
All-occupied	\$ 1,126	\$ 13,512
Gross rent	\$ 990	\$ 11,880
Owner-occupied	\$ 1,399	\$ 16,788
Housing units w/ mortgage	\$ 1,820	\$ 21,840
Housing units w/out a mortgage	\$ 499	\$ 5,988

Avg % of Median Income Spent on Energy	9.2%
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Figure C14: Affordability - Housing Costs as a Percent of Income

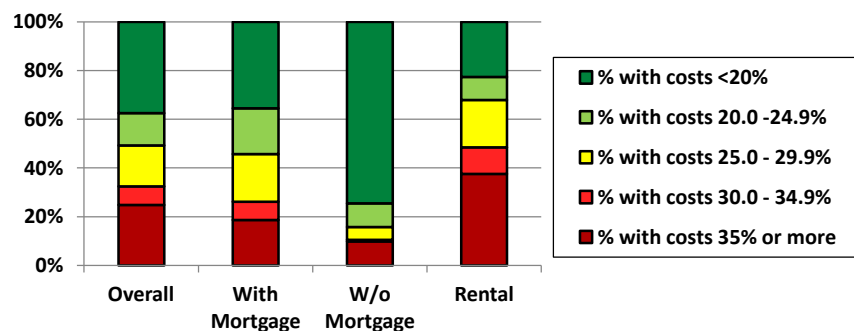
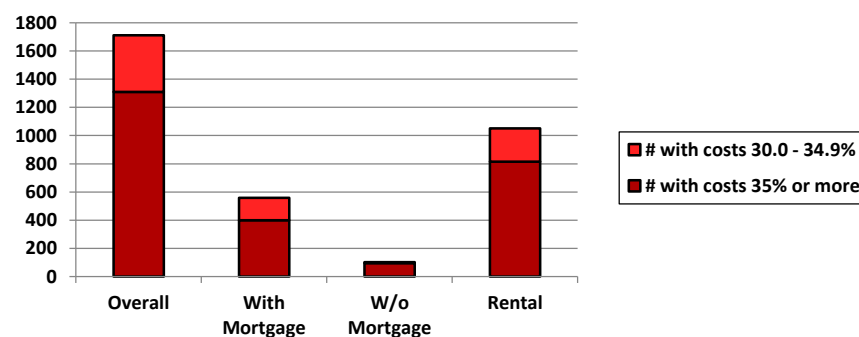


Figure C15: Number of Cost-Burdened Housing Units



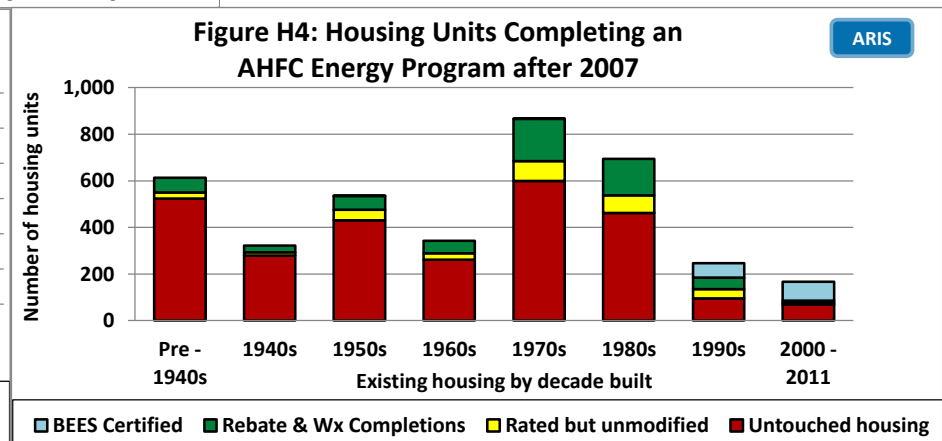
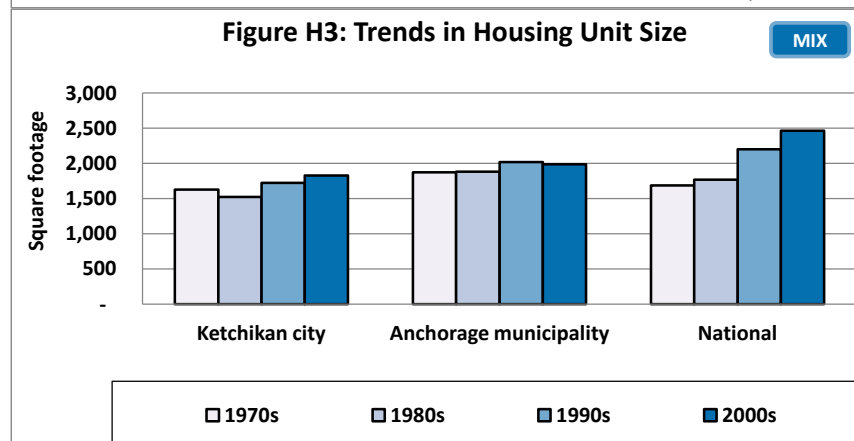
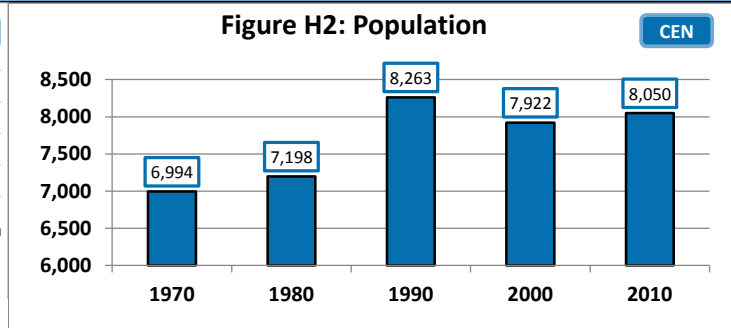
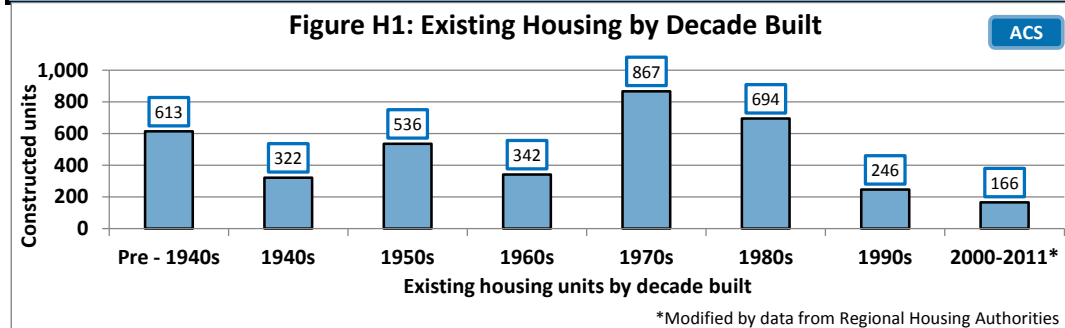
**Community Profile for:** Ketchikan city

**ANCSA Region:** Sealaska Corporation

**Regional Housing Authority:** Ketchikan Indian Community

**BEES Climate Zone (Heating Degree Days):** Zone 6 (7,165 HDD)

**COMMUNITY - Ketchikan city**



Houses Lacking Complete Plumbing or Kitchen Facilities	Households	
	Number	Percent
Lack complete plumbing	72	2%
Lack complete kitchen	41	1%

Avg Annual Energy Cost with PCE	NO PCE
Avg Annual Energy Cost without PCE	\$5,433

Weatherization Program Retrofits (funding increased in 2008)	
Date Range	Units
2008-2011	251
2003-2007	31
1990-2002	174

Estimated Total Annual Community Space Heating Fuel Use		
Fuel Oil	2,889,914	(gallons)
Nat Gas	-	(ccf)
Electricity	10,486,615	(kWh)
Wood	2,383	(cords)
Propane	180,146	(gallons)
Coal	-	(tons)

Estimated Energy Prices as of January 2013	
#1 Fuel oil cost (\$ / gallon)	\$4.12
Electricity with PCE (\$/kWh)	No PCE
Electricity cost without PCE (\$/kWh)	\$0.10

Housing Stock Estimates	Number of Units
All Housing	3786
All Occupied Housing	3444
All Vacant housing	342
Vacant Housing for Sale or Rent	122

OVERCROWDING & VENTILATION - Ketchikan city

Figure H5: Overcrowded Units

ACS

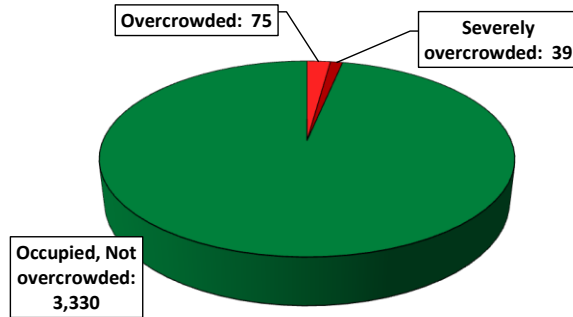


Figure H6: Housing Occupancy

MIX

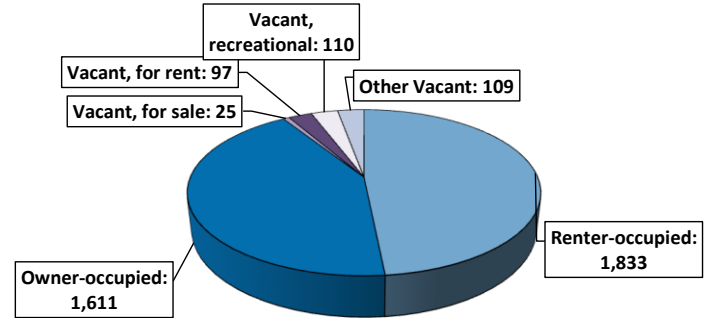


Figure H7: Average Air-Tightness of Current Homes by Decade Built

ARIS

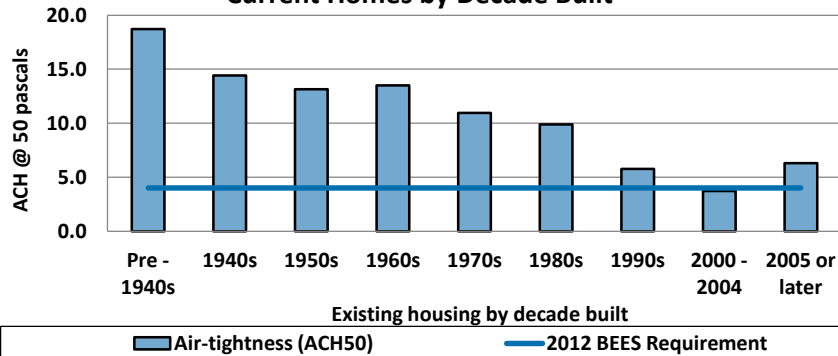


Figure H8: Existing Ventilation Type by Decade Built

ARIS

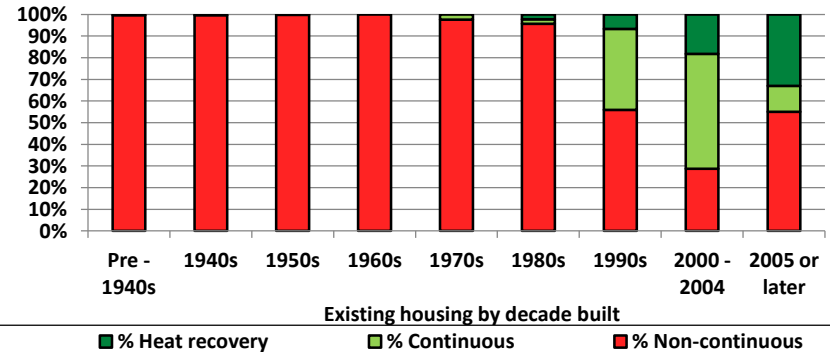


Figure H9: Percent of Housing Stock at High Risk of Moisture and Air Quality Problems

ARIS

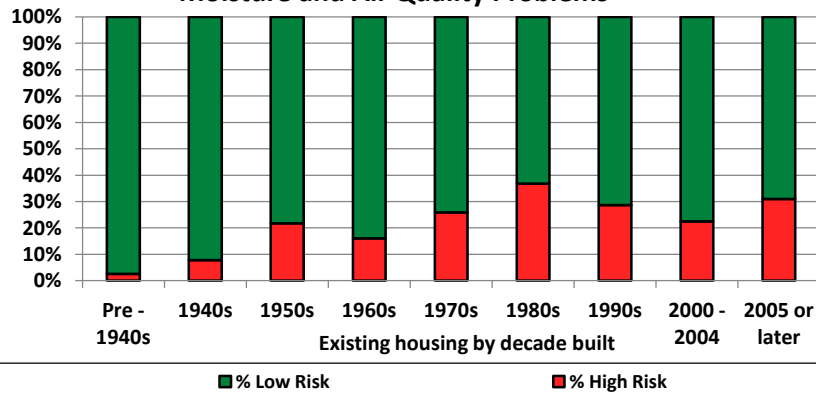
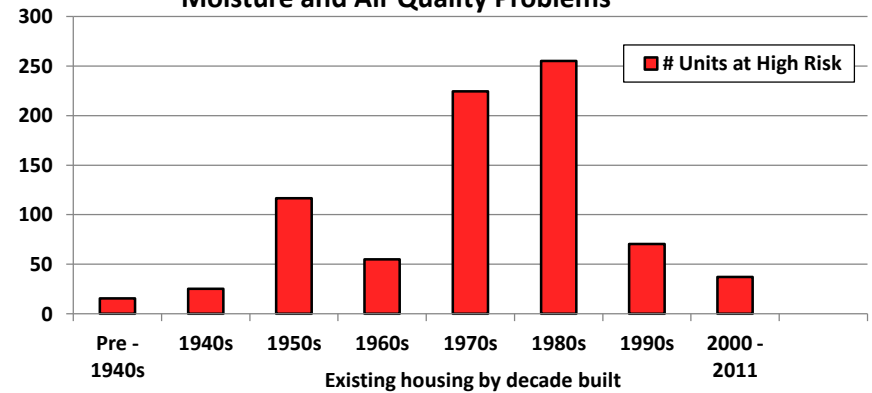


Figure H10: Quantity of Housing Stock at High Risk of Moisture and Air Quality Problems

ARIS



ENERGY - Ketchikan city

Current Ketchikan 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	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	1,419	1-star plus	49.5	1,647	\$ 5,433	188	130	24	31	113	\$ 3.25	11.5
Pre- 1940	150	1-star	29.8	1,584	\$ 7,023	249	200	19	31	168	\$ 4.72	19.2
1940- 49	68	1-star	34.0	1,776	\$ 7,169	242	189	23	30	142	\$ 4.17	15.8
1950- 59	172	1-star plus	42.0	1,548	\$ 5,770	194	142	23	29	132	\$ 3.85	14.0
1960- 69	134	1-star plus	44.0	1,514	\$ 5,264	188	138	22	28	133	\$ 3.71	14.0
1970- 79	447	2-star	53.4	1,627	\$ 5,122	176	120	25	30	109	\$ 3.16	10.9
1980- 89	393	2-star	59.8	1,522	\$ 4,265	150	98	23	29	100	\$ 2.86	9.6
1990- 99	199	3-star plus	77.1	1,723	\$ 3,436	124	55	17	21	74	\$ 2.09	6.3
2000- 2004	76	4-star plus	86.5	1,830	\$ 2,674	89	40	21	28	53	\$ 1.63	3.5
2005 or later	31	4-star	80.9	3,335	\$ 6,401	190	107	29	55	52	\$ 1.72	4.3

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

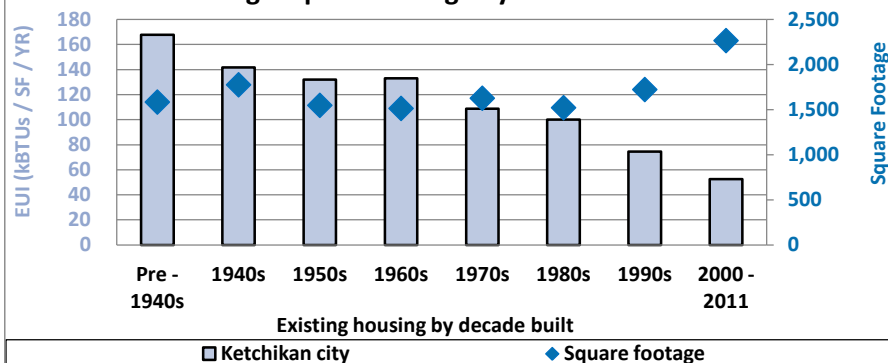
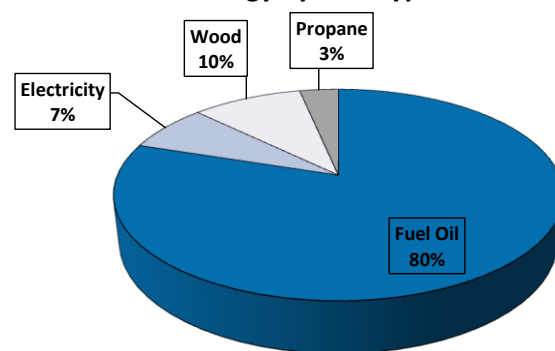


Figure H12: Percent of Total Residential Space Heating Energy by Fuel Type

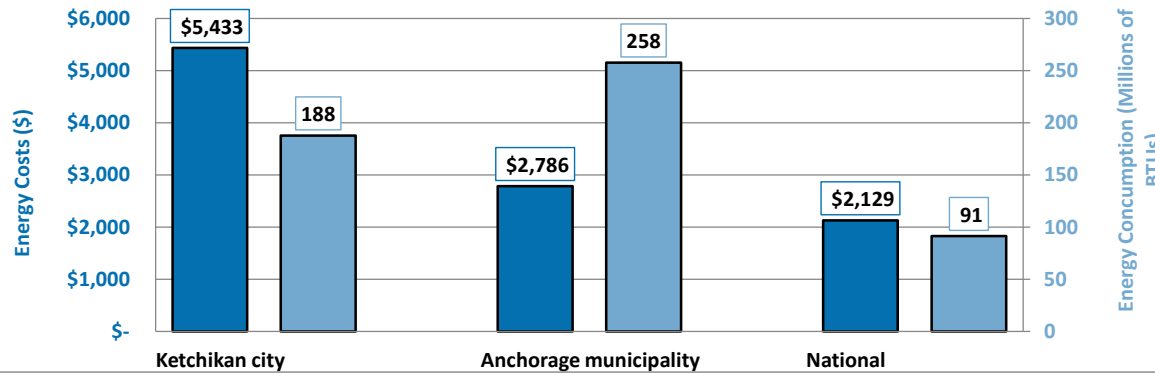


Current Ketchikan city Housing Envelope Characteristics By Decade Built

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	1,419	11.4	16	11	3	15	3	3	0.37	0.35	0.60
Pre- 1940	150	18.7	8	8	2	11	3	3	0.42	0.30	0.68
1940- 49	68	14.4	9	9	2	12	3	NR	0.46	NR	0.62
1950- 59	172	13.1	12	9	2	12	3	3	0.42	0.54	0.63
1960- 69	134	13.5	11	10	3	12	3	NR	0.39	0.42	0.66
1970- 79	447	11.0	19	11	3	16	3	3	0.38	0.40	0.61
1980- 89	393	9.9	20	13	2	18	3	2	0.33	0.31	0.60
1990- 99	199	5.8	37	21	5	31	4	NR	0.21	0.14	0.36
2000- 2004	76	3.7	39	18	7	34	8	16	0.26	0.17	0.37
2005 or later	31	6.3	17	17	20	40	3	NR	0.30	NR	0.38
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

AFFORDABILITY - Ketchikan city

Figure H13: Average Annual Home Energy Costs and Use



Housing Information	Avg Household Size (# of people)
All-occupied	2.2
Owner-occupied	2.3
renter-occupied	2.0

Owner-occupied House with Mortgage, Median Value
\$259,700

Owner-occupied House without a Mortgage, Median Value
\$179,100

Median Annual Household Income	
Housing Units	Household Income
All-occupied	\$ 49,313
Renter-occupied	\$ 34,276
Owner-occupied	\$ 76,434
w/ mortgage	\$ 87,548
w/o mortgage	\$ 37,167

Median Housing Costs		
	Monthly	Annual
All-occupied	\$ 1,067	\$ 12,804
Gross rent	\$ 963	\$ 11,556
Owner-occupied	\$ 1,470	\$ 17,640
Housing units w/ mortgage	\$ 1,870	\$ 22,440
Housing units w/out a mortgage	\$ 450	\$ 5,400

Avg % of Median Income Spent on Energy	<b>11.0%</b>
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Figure H14: Affordability - Housing Costs as a Percent of Income

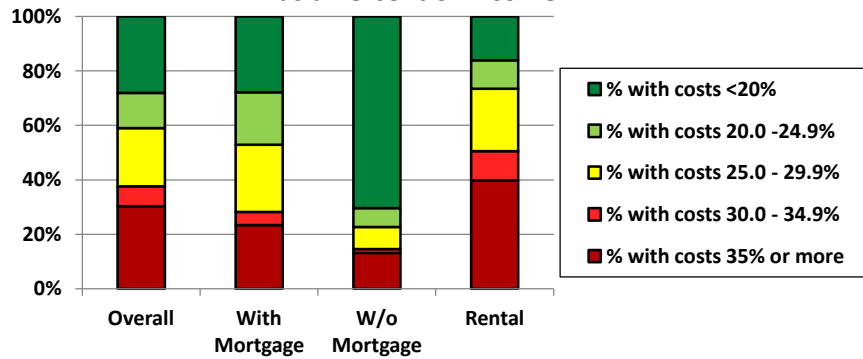
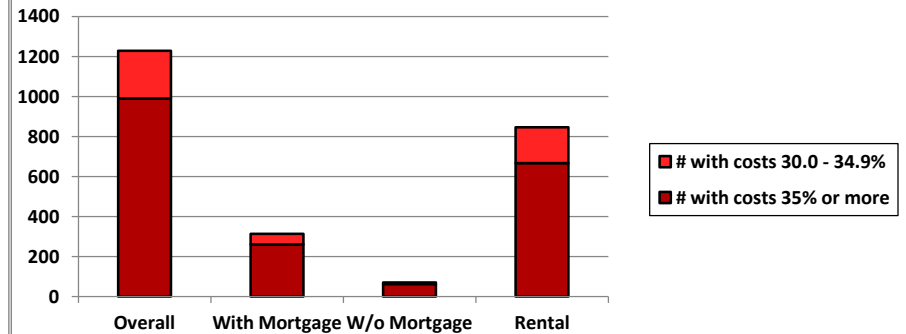


Figure H15: Number of Cost-Burdened Housing Units

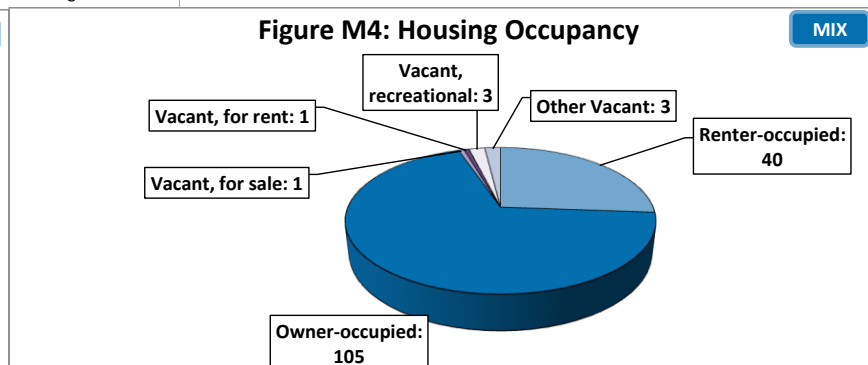
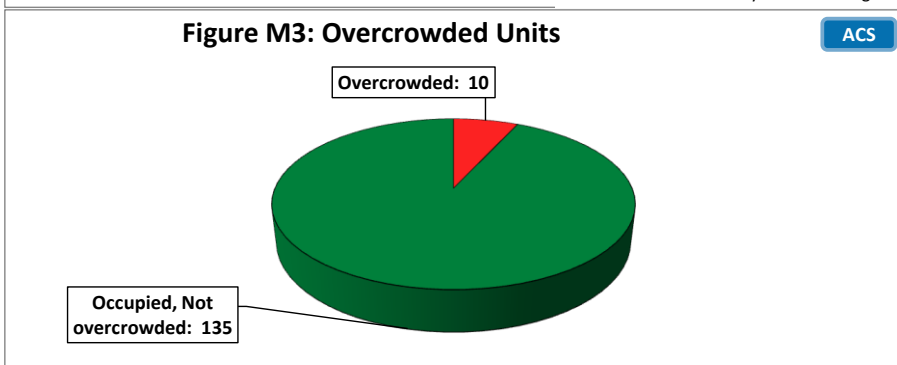
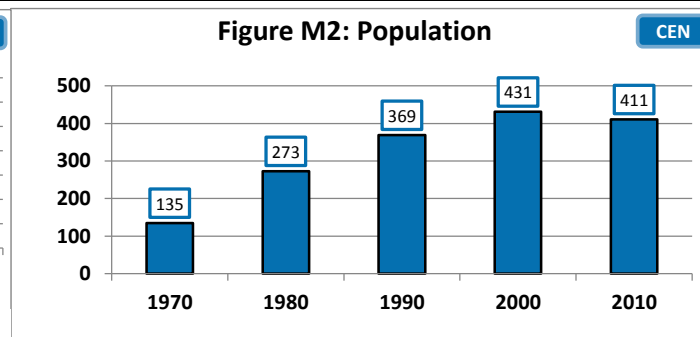
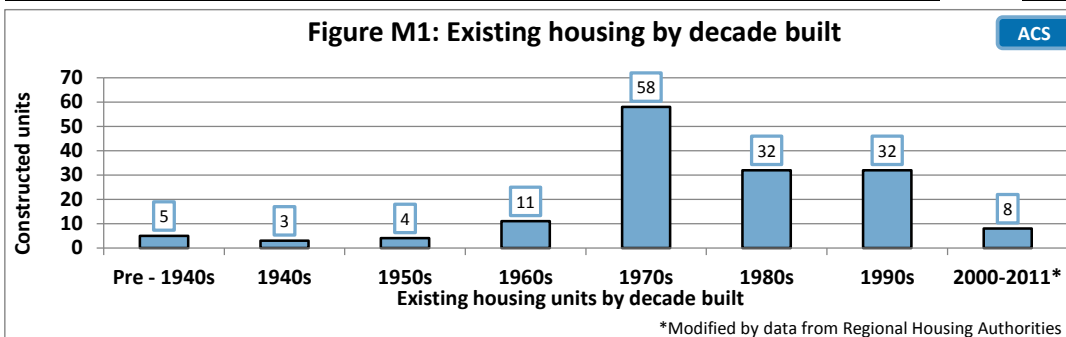


**Community Profile for:** Saxman city

**ANCSA Region:** Sealaska Corporation

**Regional Housing Authority:** Ketchikan Indian Community

**BEES Climate Zone (Heating Degree Days):** Zone 6 (7,165 HDD)



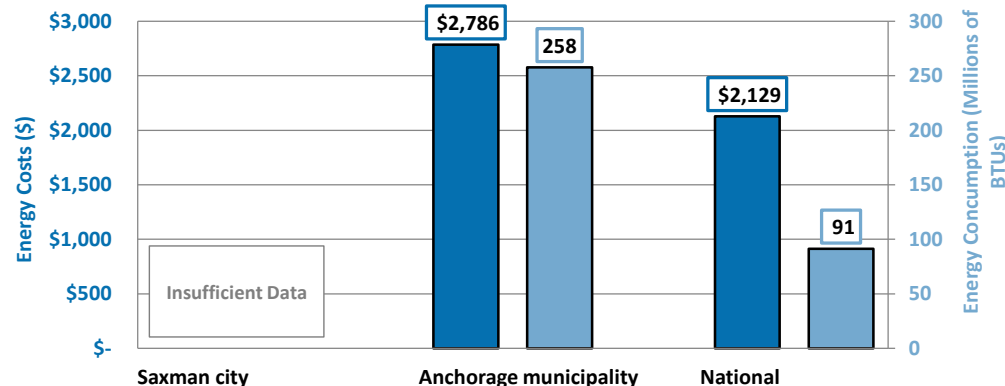
Residential Unit Categories	Number of records	Avg Energy Rating Stars	Avg Energy Rating Points	Avg Sq. Feet	Avg. Ann Energy Cost	Avg. Ann Energy Use (million BTUs)	Avg. EUI (kBtus/SF)	Avg. ECI	Avg. Home Heating Index	% Tight Homes, No Ventilation
Pre-retrofit units	19	4-star	80.7	368	\$ 1,783	59	65	\$1.95	3.4	0%
Retrofit units	19	4-star plus	87.1	368	\$ 1,386	46	54	\$1.62	1.9	20%
New construction	0	NR	NR	NR	NR	NR	NR	NR	NR	NR

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	19	6.5	31	10	NR	28	NR	NR	0.25	NR	0.52
Retrofit units	19	5.3	52	12	NR	43	NR	NR	0.23	NR	0.50
New construction	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

BEES 2009	7.0	38	21	15	30	15	15	0.33	0.33	0.33
BEES 2012	4.0	43	25	15	38	15	15	0.30	0.30	0.30

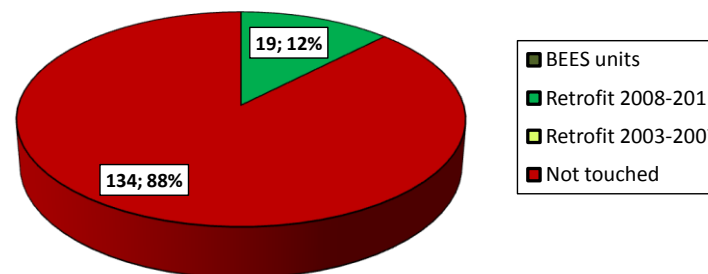
**Figure M5: Average Annual Home Energy Costs and Use**

MIX



**Figure M6: Housing Units Completing an AHFC Energy Program**

ARIS



**AFFORDABILITY - Saxman city**

Owner occupied House with Mortgage, Median Value
\$172,700

Owner-occupied House without a Mortgage, Median Value
\$118,800

Estimated Energy Prices as of January 2013	
#1 Fuel oil cost (\$ / gallon)	\$ 4.24
Electricity with PCE (\$/kWh)	No PCE
Electricity without PCE (\$/kWh)	\$ 0.10

Median Annual Household Income	
Housing Units	Household Income
All-occupied	\$ 55,250
Renter-occupied	\$ 41,429
Owner-occupied	\$ 83,750
w/ mortgage	\$ 92,000
w/o mortgage	\$ 40,625

Average Annual Energy Cost	
With PCE	NO PCE
Without PCE	\$1,733

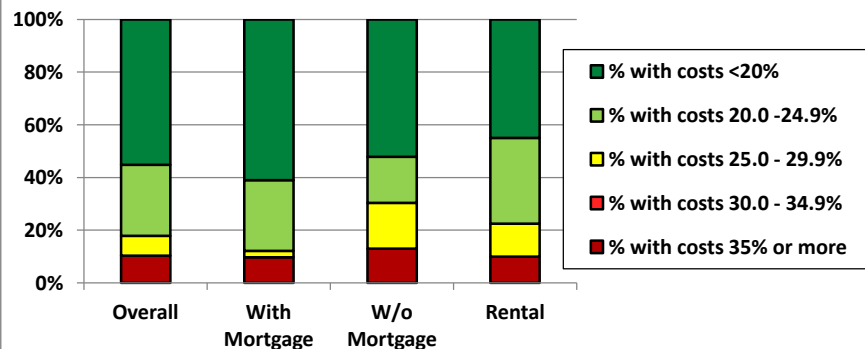
Avg % Median Income spent on Energy	3.1%
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Median Housing Costs		
	Monthly	Annual
All-occupied	\$ 792	\$ 9,504
Gross rent	\$ 663	\$ 7,956
Owner-occupied	\$ 969	\$ 11,628
Housing units w/ mortgage	\$ 1,300	\$ 15,600
Housing units w/out a mortgage	\$ 368	\$ 4,416

Housing Stock Estimates	Number of Units
All Housing	153
All Occupied Housing	145
All Vacant housing	8
Vacant Housing for Sale/Rent	2

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

ACS



**Figure M8: Number of Cost-Burdened Housing Units**

ACS

