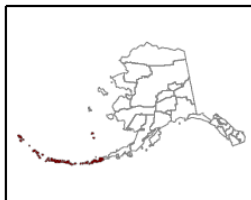
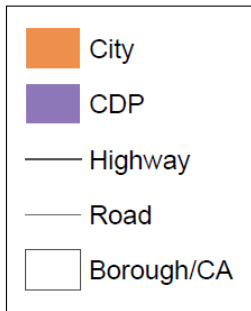


Aleutians West Census Area



Report prepared by:
Wiltse, N., D. Madden,
B. Valentine. Cold
Climate Housing
Research Center.



Map Prepared by:
Alaska Department of Labor
& Workforce Development

September 2011

Source: US Census
2010 TIGERline

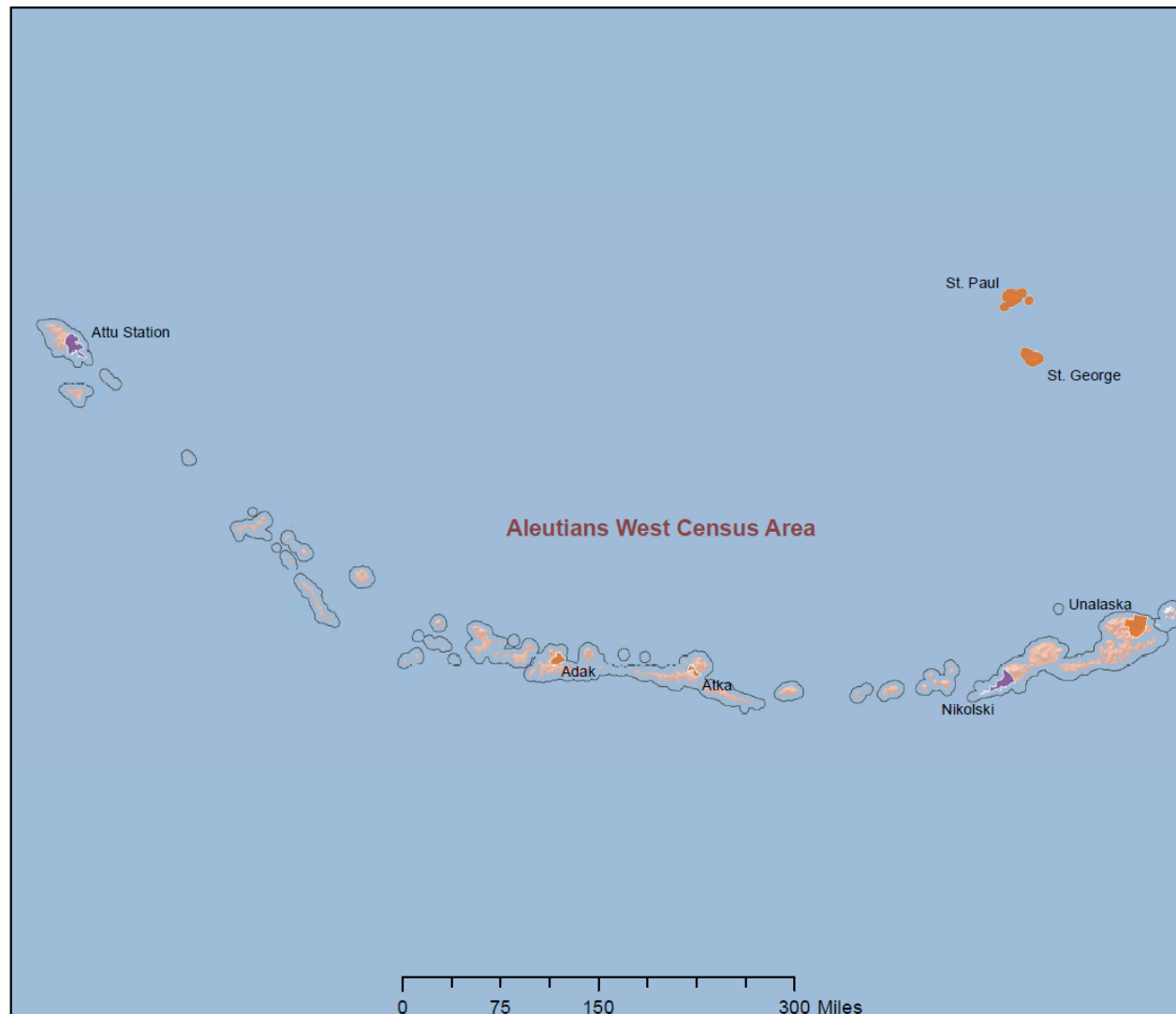


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Aleutians West Census Area Dashboard

Population: The current population of the Aleutians West Census Area is 5,881—an increase of 8% from 2000.

Housing Units: There are currently 2,268 housing units in the Aleutians West Census Area. Of these, 1,255 are occupied, 184 are for sale or rent, and the remaining 829 are seasonal or otherwise vacant units (Profile Figure C6).

Overcrowding: Nine percent of occupied units are estimated to be either overcrowded (4%) or severely overcrowded (5%). This is roughly 3 times the national average, and makes the Aleutians West Census Area the 11th most overcrowded census area in the state.

Energy: The average home in the Aleutians West Census Area is 966 square feet and uses 120,000 BTUs of energy per square foot annually, 13% less than the statewide average of 137,000 BTUs per square foot per year.

Energy Costs: Using AKWarm estimates, the average annual energy cost for homes in the Aleutians West Census Area is \$6,620, which is approximately 2.4 times more than the cost in Anchorage, and 3.1 times more than the national average (Profile Figure C13).

Energy Programs: Approximately 4% of occupied housing in the Aleutians West Census Area has completed either the Home Energy Rebate, Weatherization, or BEES programs since 2008, compared to 21% statewide (Profile Figure C12).

Housing Quality: Within the current housing stock, older and newer homes have similar energy performance, with homes built in the 1990s currently rated at 4-star on average compared to a current average rating of 4-star plus for houses built after 2000.

Air-tightness: Within the current housing stock, newer homes are tighter, with homes built in the last decade on average exceeding the 2012 BEES standard of 4 air-changes per hour at 50 pascals (ACH50). In contrast, homes built in the 1990s are 3 times leakier than those built since 2000 (Profile Figure C7).

Ventilation: There are an estimated 523 occupied housing units (or 42%) in the Aleutians West Census Area that 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).

Affordability: On average, approximately 26% of households in the Aleutians West Census Area spend more than 30% of total household 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.

Aleutians West Census Area Summary

Community

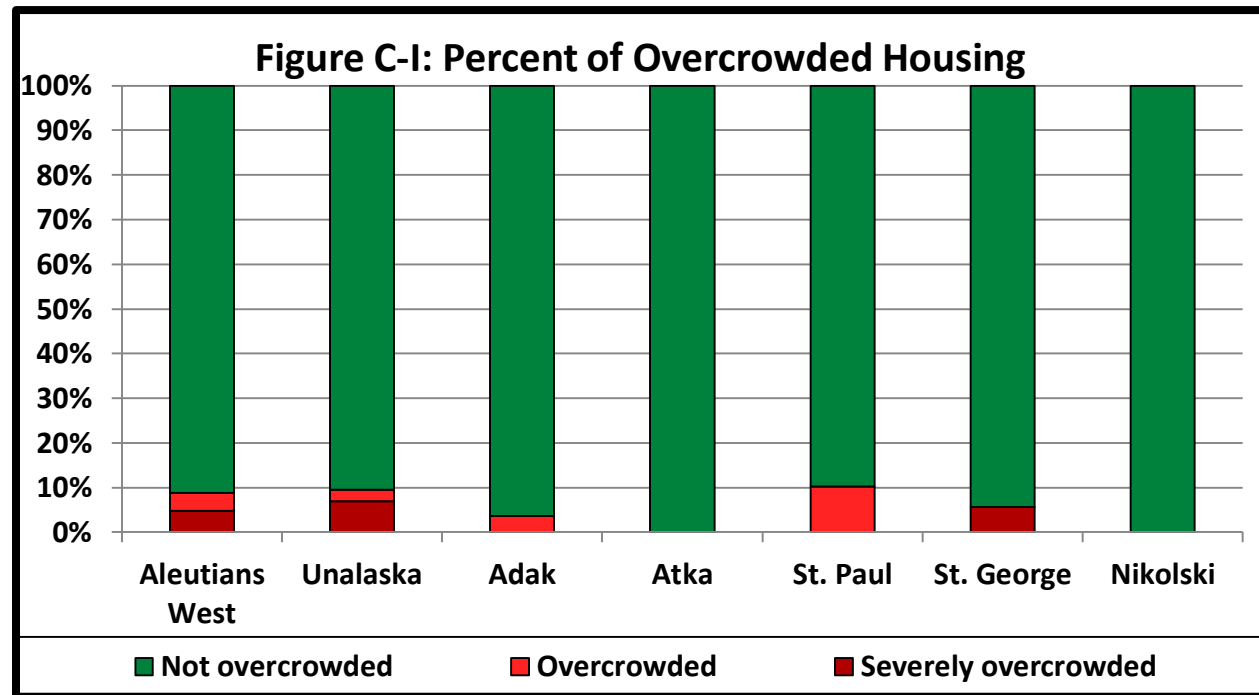
The Aleutians West census area is located off the southwest coast of Alaska. Its seven communities are all in the Aleutian Islands in the Pacific Ocean. The census area is located in the Aleut Native Corporation ANCSA region. Average homes in Aleutians West range in size from 1,018 square feet in Atka to 1,469 square feet in Unalaska.

Overcrowding

Less than 10% of households are overcrowded in the Aleutians West census area. Overcrowding in individual communities varies from virtually no overcrowding to 10%. The lowest percentage of overcrowding is found in Atka (see Figure C-I) and Nikolski, where an estimated zero households are overcrowded. The highest percentage of overcrowding is found in St. Paul, where 10% of households have more than one person per room.

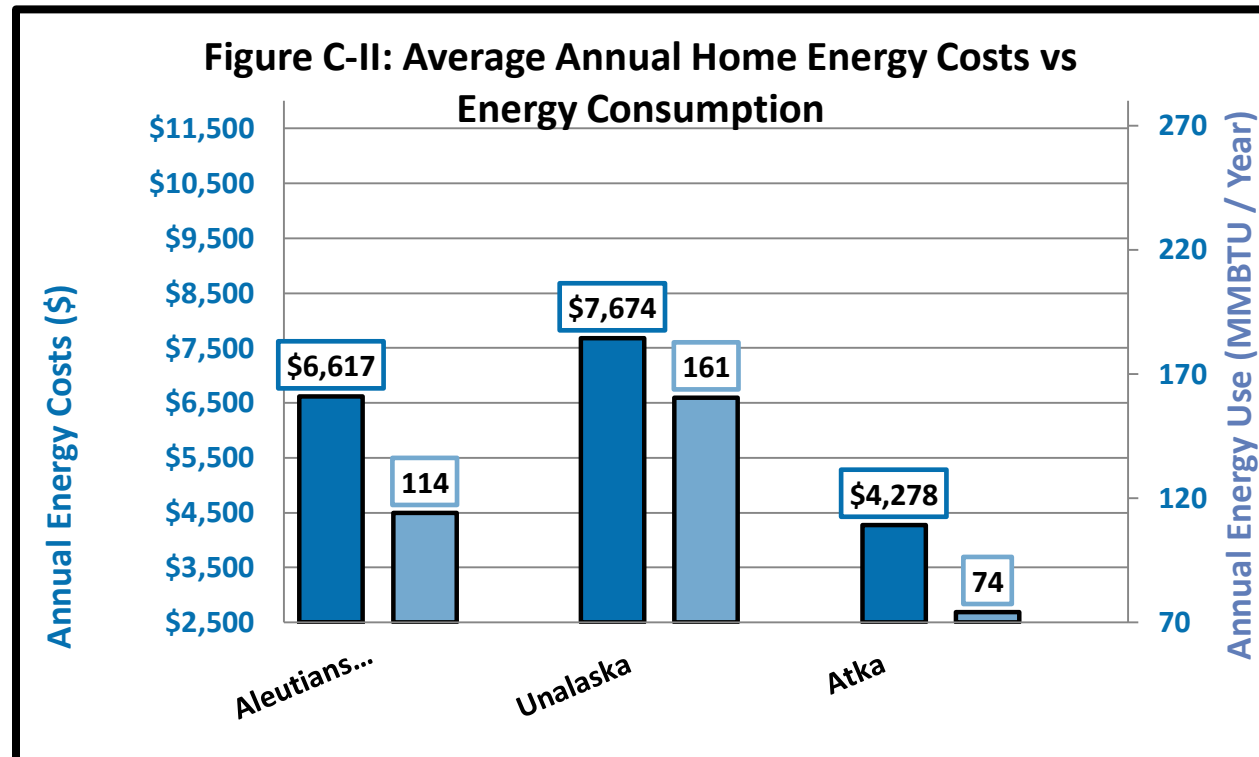
Approximately 8% of housing in Aleutians West is available for sale or rent. Unalaska has the lowest

percentage of available housing at 3%, and St. George has the highest percentage at 18%. Over one third (37%) of housing in the census area is considered vacant, because it is used for seasonal, recreational, or “other” non-year-round purposes.



Energy

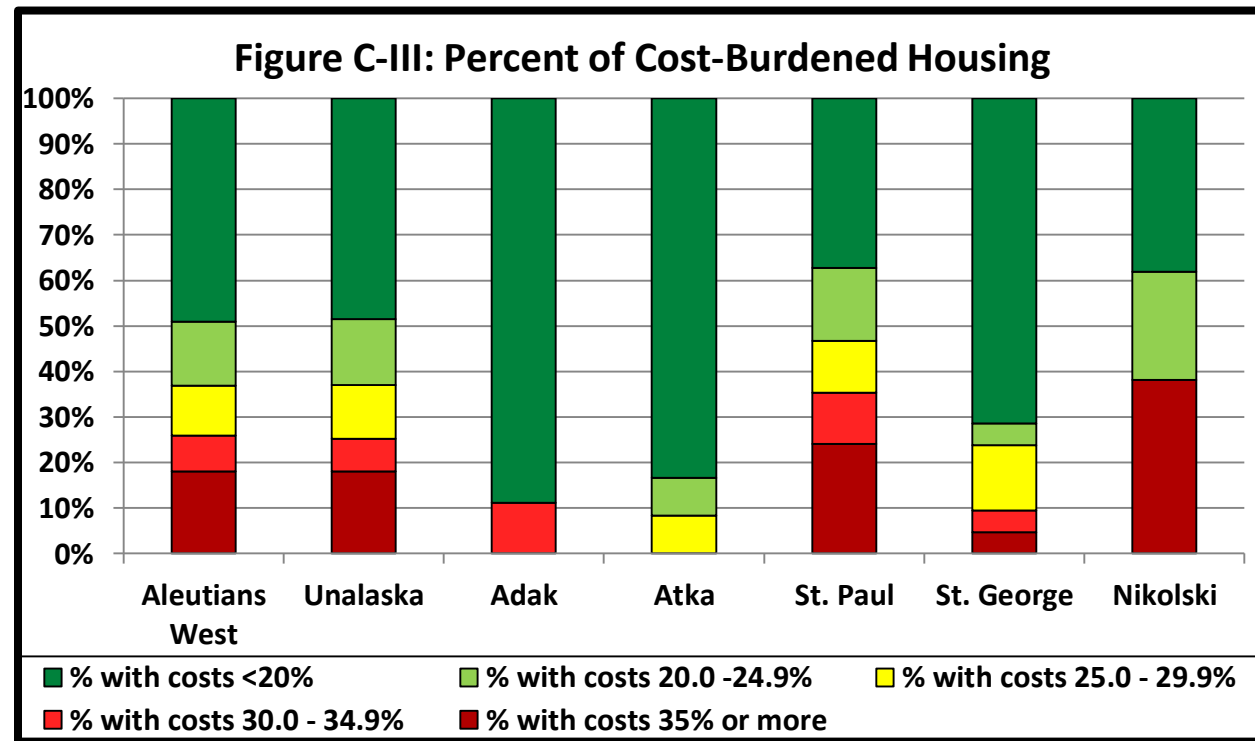
The average home in the Aleutians West census area uses 114 million BTUs of energy each year, and pays an average annual cost of \$6,617 for the energy. The lowest energy costs are found in Atka, where residents pay an average of \$4,278 and also live in homes that have the lowest average home heating index in the census area, 3.1 BTUs/square foot/Heating Degree Day. This is less than half the heating index in Unalaska, 9.9 BTUs/sqft/HDD. With this heating index, Unalaskans pay the highest energy costs in the Aleutians West, \$7,674 annually. Factors contributing to this discrepancy may include that the average home in Atka is 400 square feet smaller than the average home in Unalaska, and Atka has had the highest participation in energy programs in the census area.



Approximately 5% of housing units in Aleutians West have completed the Home Energy Rebate, Weatherization or a BEES program since 2003. However, participation in these programs varies widely by community, and the six most populous communities saw up to 50% participation in one of the programs. The greatest participation is found in Atka, where half of the housing units have completed a program. In Adak, on the other hand, zero households have completed an energy program. Since the 1990s, the percentage of homes with a continuous mechanical ventilation system or HRV in the census area has increased by roughly 80%.

Affordability

According to ACS estimates¹, roughly 1 in 4 households in the Aleutians West census area are cost-burdened, as shown in Figure C-III. The most cost-burdened community is Nikolski, where more than one third (38%) of residents pay over 30% of their household income to housing costs. Nikolski's median income is the lowest in the census area, at \$16,125. The highest median income of \$96,071 is found in Atka, where an estimated zero households are considered cost-burdened.



¹ Our analysis of ACS energy costs indicates systematic underestimations for rural Alaska, which suggests that ACS-based cost-burdened housing estimates would be low. See Appendix A, "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 and for communities within the area. Detailed data profiles with charts and tables for both the census area and for each of the communities within it follow this summary in the census area and community profiles. Additionally, a significant amount of data and analysis is available at other spatial scales within Alaska. Within this assessment, written summaries and data profiles are available for each individual ANCSA region, characterizing the housing stock from the perspective of community, overcrowding, energy and affordability. A statewide analysis of housing characteristics, how they compare to national numbers, and what the estimated housing needs are is also available. These different tiers of information and analysis allow researchers, housing authorities, policy makers and the public to generate answers to specific questions from the local to the statewide level.

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

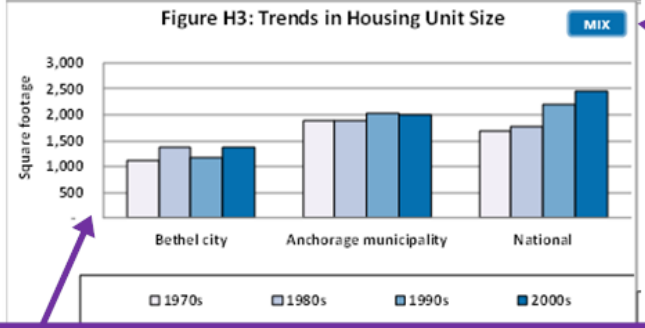
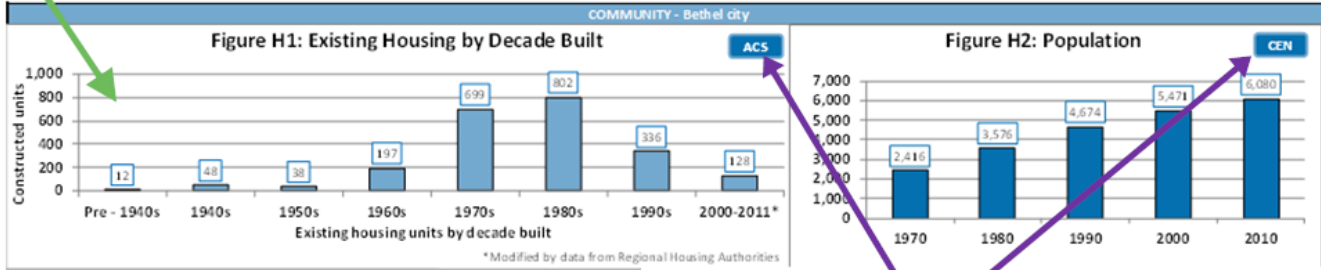
1

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:

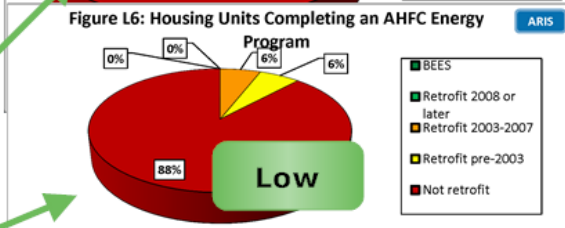
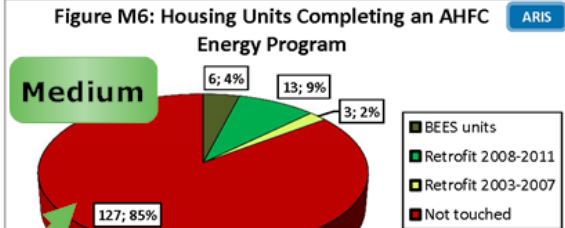
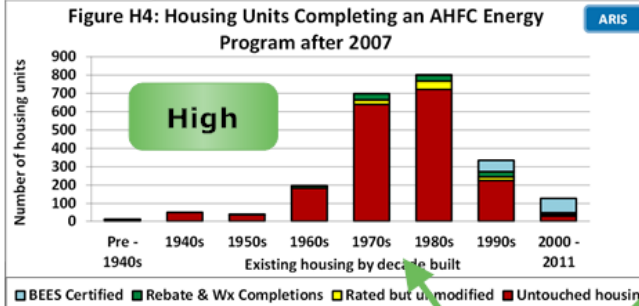
- 2011 American Community Survey 5 year estimates **ACS**
- Alaska Retrofit Information System energy audits **ARIS**
- 2010 Decennial Census **CEN**
- Mixed data source; see individual graphs for details. **MIX**

Data Sources: National trends come from the 2009 Residential Energy Consumption Statistics published by the 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 page 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:

- 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.

- 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.

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 2015	
#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	
All Occupied Housing	
All Housing for Sale or Rent	

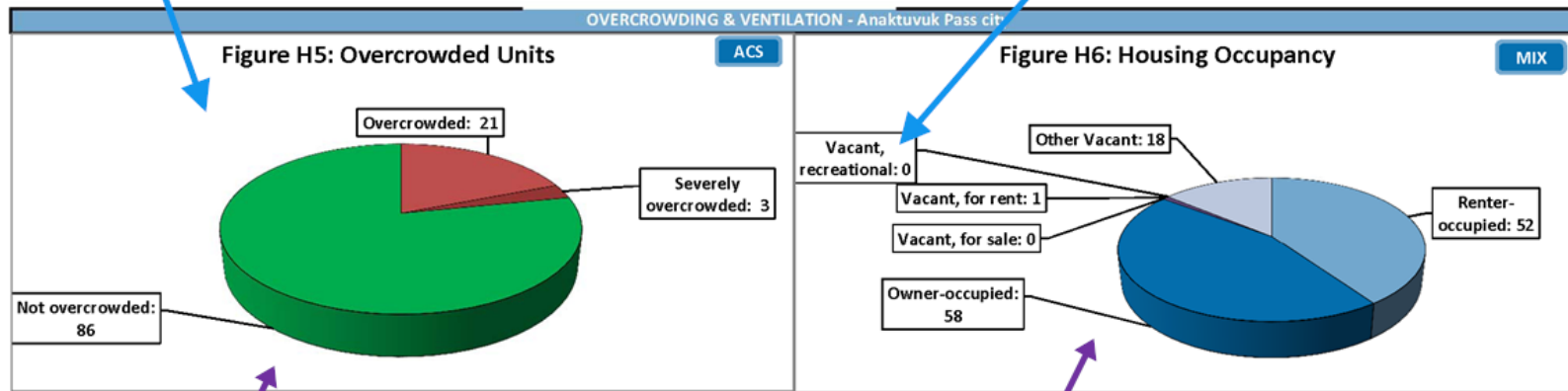
Units weatherized before 2008 are eligible to participate in the program again. (Data source: Alaska Housing Finance Corporation).

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.

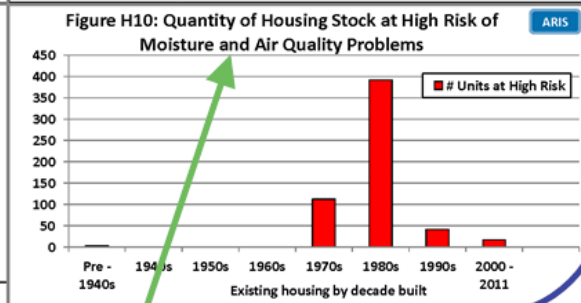
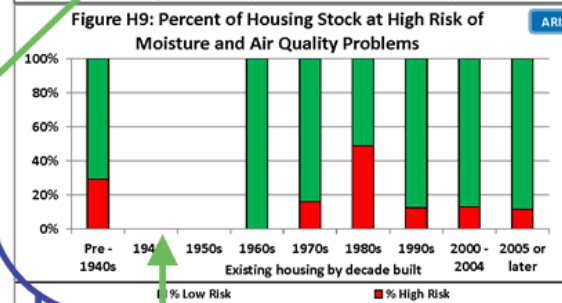
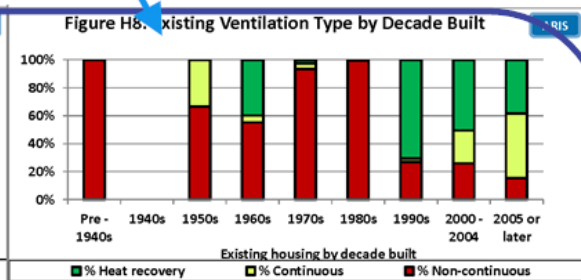
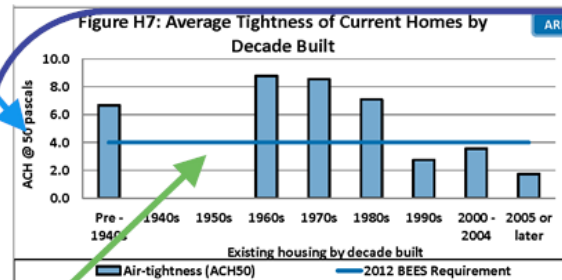
Continuous: Mechanical ventilation without heat recovery operated with automatic controls.

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 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

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:
The 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,
which is the amount of money spent on energy per year divided by the 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 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	\$ 6,305	122	57	21	20	108	\$ 5.58	4.7
2000-2004	71	3-star plus	77.5	1,388	\$ 8,435	143	80	35	27	118	\$ 7.24	5.2
2005-later	28	5-star	91.9	1,233	\$ 4,504	92	39	28	25	79	\$ 3.82	2.5

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

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

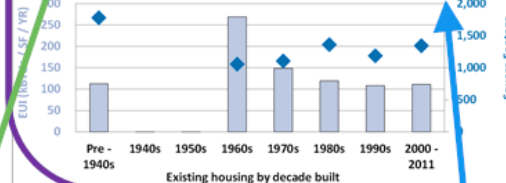
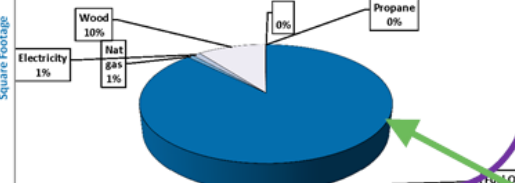


Figure H12: Percent of Total Residential Space Heating Energy by Fuel Type



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--

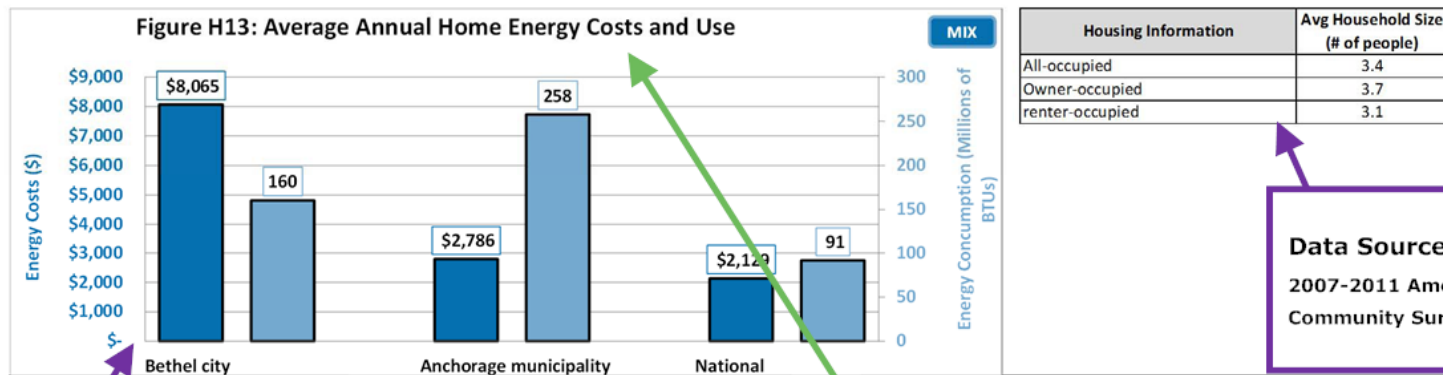
Green: the average value meets or exceeds the 2012 BEES requirement.
Yellow: value is 75-99% of the 2012 BEES requirement.
Red: value is less than 75% of the 2012 BEES requirement.

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 in 7 of the 9 decade ranges, 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 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 Energy Information Administration's 2009 Residential Energy Consumption Statistics (RECS) for Cold/Very Cold Climate regions.

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

How to Interpret the Profile: Data Sources, Definitions & Clarifications 4

Data Source:
2007-2011
American
Community
Survey.

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

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

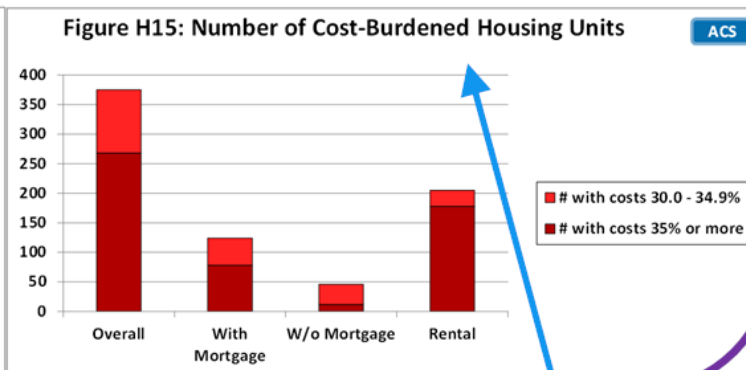
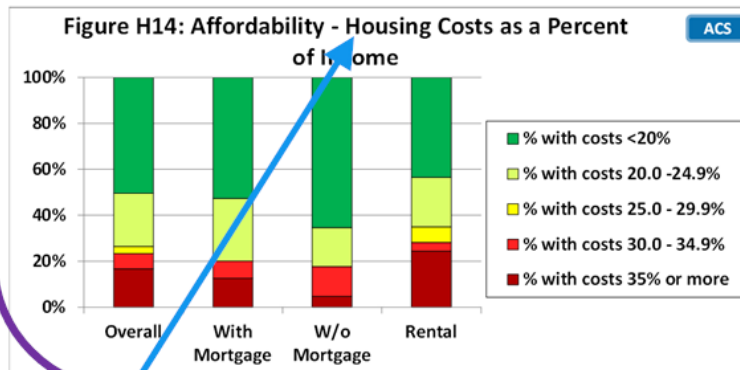
Data Source: Median income comes from 2007-2011 ACS estimates; energy costs come from AHFC's Alaska Retrofit Information System (ARIS).

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

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

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

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



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.

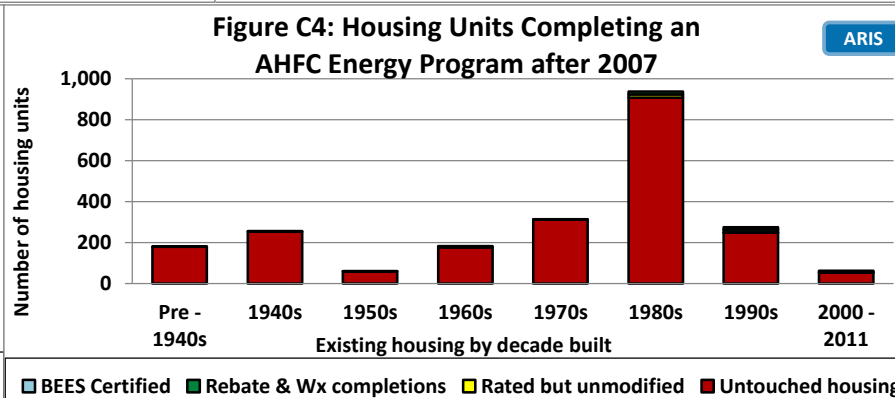
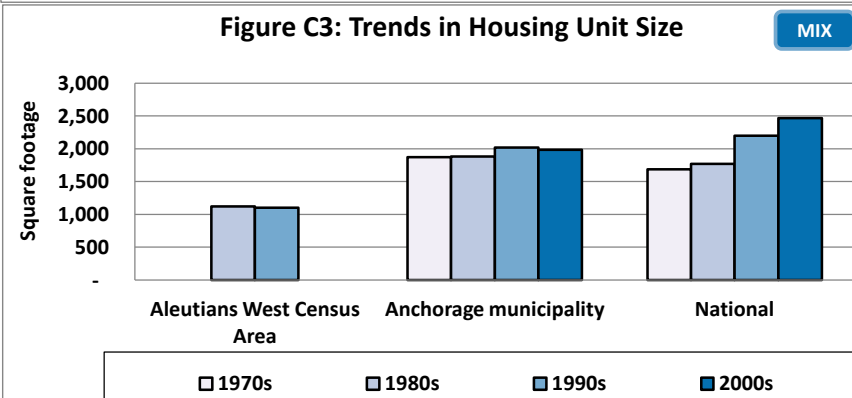
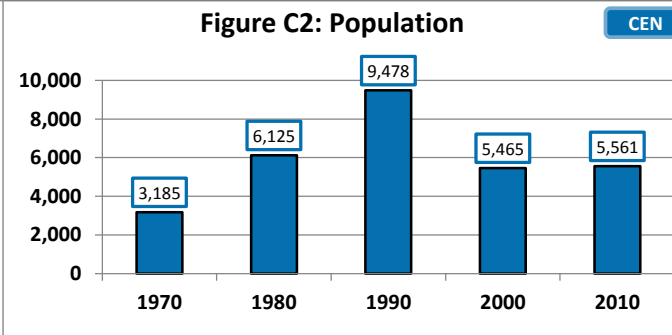
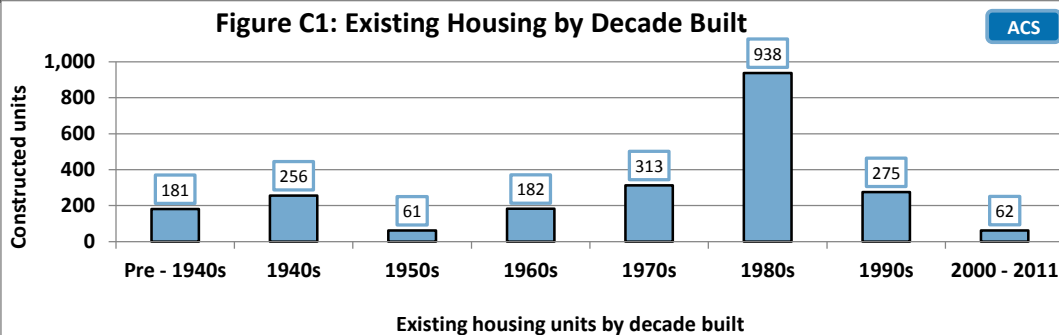
Census Area Profile for: Aleutians West Census Area

ANCSA Region: Aleut

Regional Housing Authority: Aleutian Housing Authority

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

COMMUNITY - Aleutians West Census Area



Houses Lacking Complete Plumbing or Kitchen Facilities	Households	
	Number	Percent
Lack complete plumbing	60	5%
Lack complete kitchen	56	5%

Avg Annual Energy Cost with PCE	\$6,617
Avg Annual Energy Cost without PCE	\$8,269

Weatherization Retrofits (funding increased 2008)	
Date Range	Units
2008 - 2011	22
2003 - 2007	18
1990 - 2002	1

Estimated Total Annual Community Space Heating Fuel Use		
Fuel Oil	805,924	(gallons)
Natural Gas	-	(ccf)
Electricity	660,132	(kWh)
Wood	0	(cords)
Propane	501	(gallons)
Coal	-	(tons)

Housing Need Indicators	Number of Units	% Occupied Housing
Overcrowded	111	9%
Housing cost burdened	253	20%
1 Star Homes	245	20%

Housing Stock Estimates	Number of Units
All Housing	2,268
All Occupied Housing	1,255
All Vacant housing	1,013
Vacant Housing for Sale or Rent	184

OVERCROWDING & VENTILATION - Aleutians West Census Area

Figure C5: Overcrowded Units

ACS

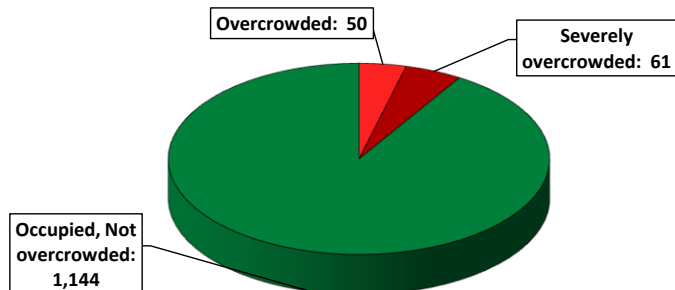


Figure C6: Housing Occupancy

MIX

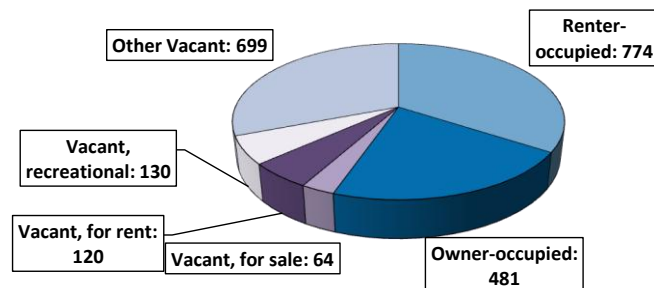


Figure C7: Average Air-Tightness of Current Homes by Decade Built

ARIS

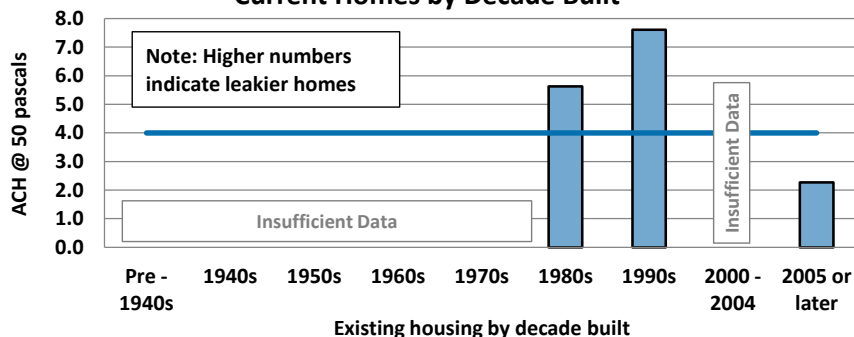


Figure C8: Existing Ventilation Type by Decade Built

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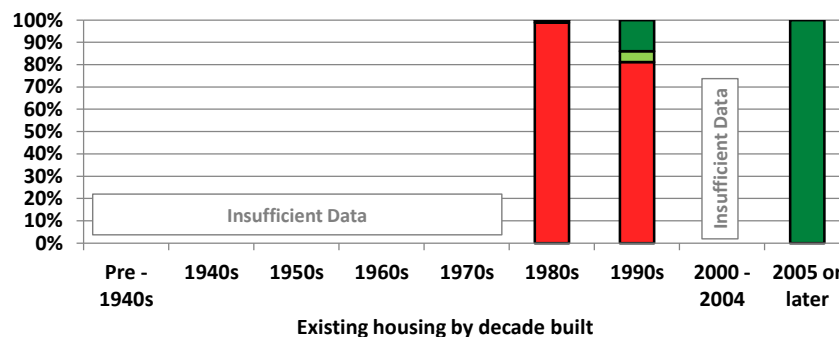


Figure C9: Percent of Housing Stock at High Risk of Moisture and Air Quality Problems

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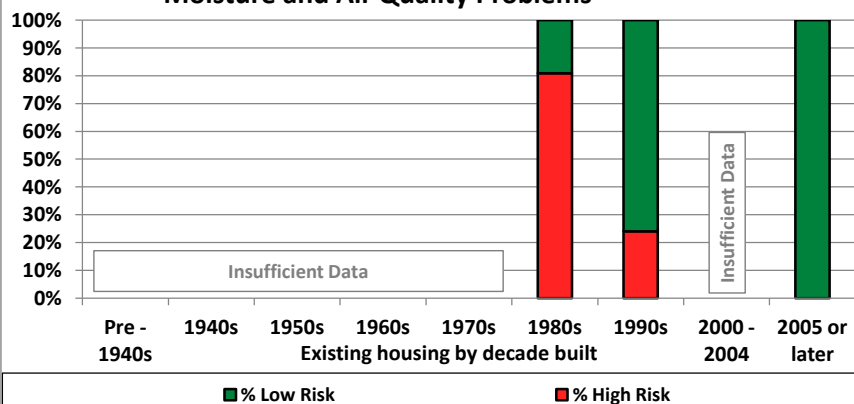
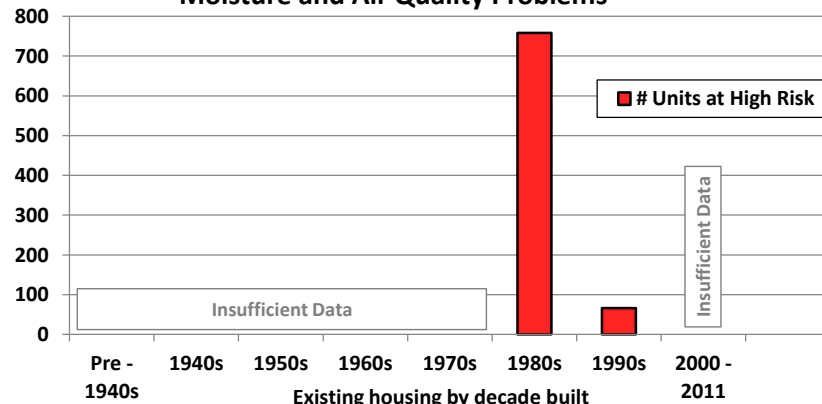


Figure C10: Quantity of Housing Stock at High Risk of Moisture and Air Quality Problems

ARIS



ENERGY - Aleutians West Census Area												
Current Aleutians West Census Area Housing Energy Characteristics By Decade Built												
Current Residential Units by Year Built	# of AkWarm Records	Avg Energy Rating Stars	Avg Energy Rating Points	Avg Sq. Feet	Avg. Annual Energy Cost (with PCE)	Avg. Annual Energy Use (million BTUs)	Avg Ann Energy by End Use (million Btus)			Avg. EUI (kBtUs / SF)	Avg. ECI (\$ / SF)	Avg. Home Heating Index
							Space Heating	DHW	Appliances			
OVERALL	88	3-star	71.4	966	\$6,617	114	65	28	21	120	\$5.74	8.1
Pre- 1940	2	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1940- 49	4	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1950- 59	2	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1960- 69	6	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1970- 79	1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1980- 89	61	4-star plus	85.8	1,123	\$5,079	93	38	36	19	80	\$4.46	3.8
1990- 99	54	4-star	80.8	1,100	\$5,421	120	72	24	19	125	\$5.58	7.5
2000- 2004	3	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
2005 or later	7	5-star plus	92.6	1,033	\$4,906	100	51	27	22	97	\$4.75	4.5

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

ARIS

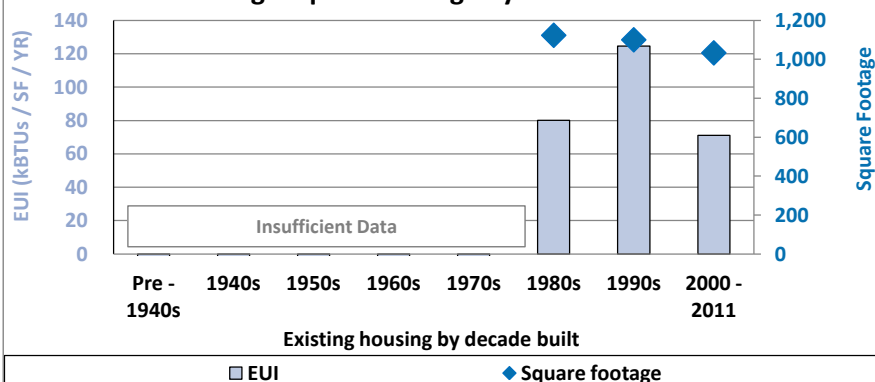
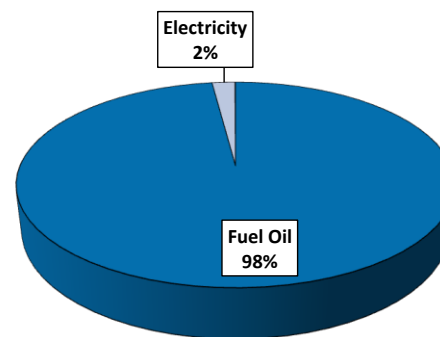


Figure C12: Percent of Total Residential Space Heating Energy by Fuel Type

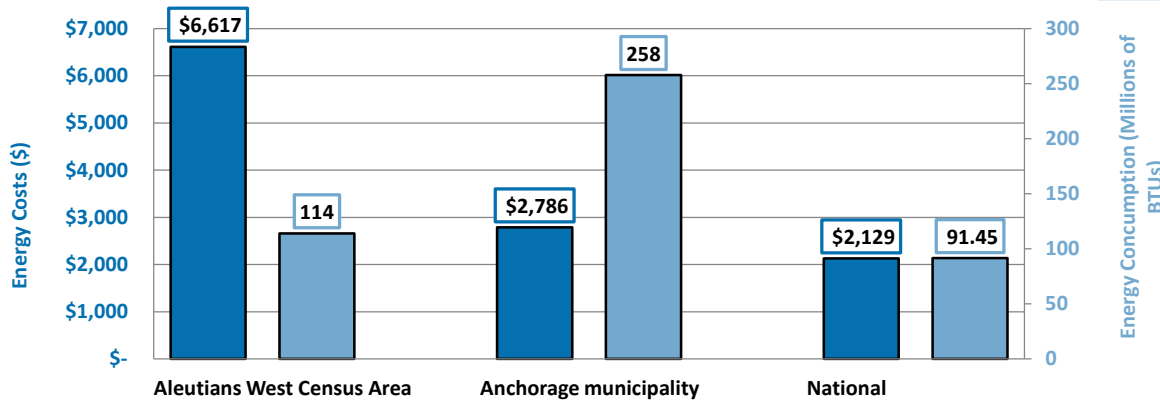
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Current Aleutians West Census Area Housing Envelope Characteristics By Decade Built											
Current Residential Units by Year Built	# of AkWarm Records	ACH 50	Ceiling R	Above Grade Wall R	Below Grade Wall R	Above Grade Floor R	On Grade Floor R	Below Grade Floor R	Door U	Garage Door U	Window U
OVERALL	88	8.3	23	16	15	16	3	2	0.26	0.34	0.46
Pre- 1940	2	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1940- 49	4	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1950- 59	2	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1960- 69	6	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1970- 79	1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1980- 89	61	5.6	37	23	NR	31	NR	NR	0.23	NR	0.35
1990- 99	54	7.6	36	20	21	14	3	3	0.24	NR	0.41
2000- 2004	3	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
2005 or later	7	2.3	40	24	20	NR	NR	2	0.25	NR	0.29
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 - Aleutians West Census Area

Figure C13: Average Annual Home Energy Cost and Use



Housing Information	Avg Household Size (# of people)
All-occupied	2.4
Owner-occupied	2.7
Renter-occupied	2.3

Median Value of Owner-occupied House with Mortgage
\$249,000

Median Value of Owner-occupied House without a Mortgage
\$103,800

Median Annual Household Income	
Housing Units	Household Income
All-occupied	\$ 75,179
Renter-occupied	\$ 69,853
Owner-occupied	\$ 79,417
w/ mortgage	\$ 110,000
w/o mortgage	\$ 55,625

Median Housing Costs		
	Monthly	Annual
All-occupied	\$ 1,098	\$ 13,176
Gross rent	\$ 1,197	\$ 14,364
Owner-occupied	\$ 878	\$ 10,536
Housing units w/ mortgage	\$ 1,700	\$ 20,400
Housing units w/out a mortgage	\$ 548	\$ 6,576

Avg % of Median Income Spent on Energy **8.8%**

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

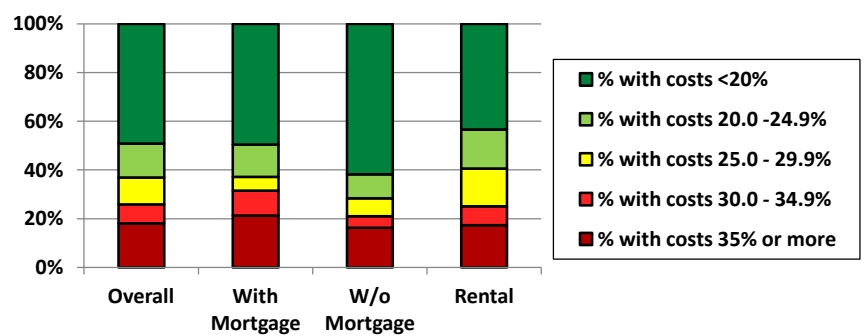
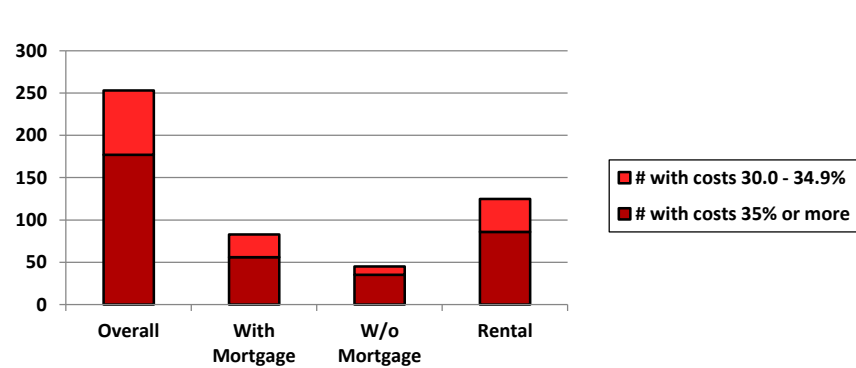


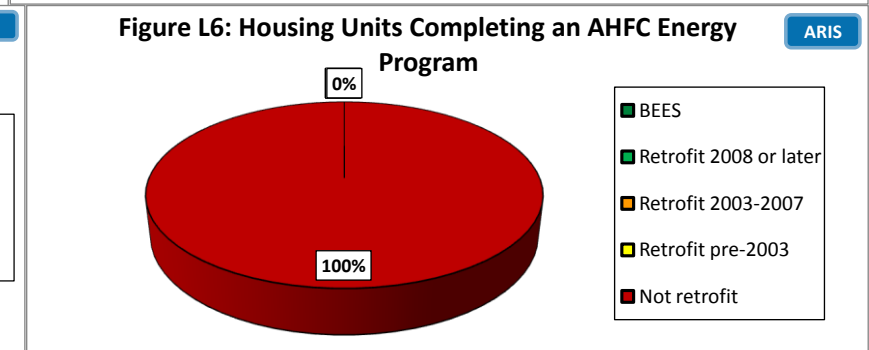
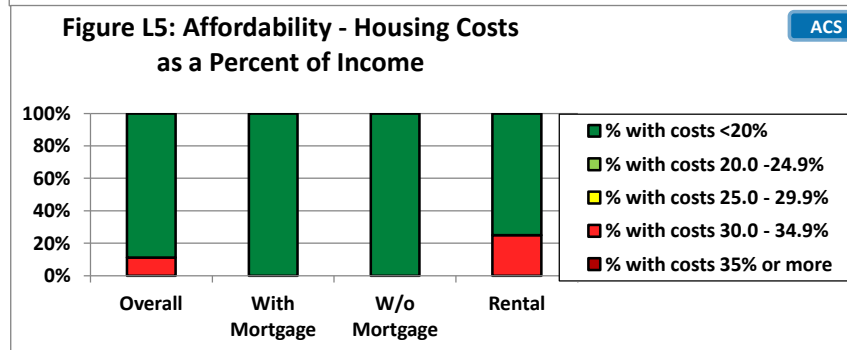
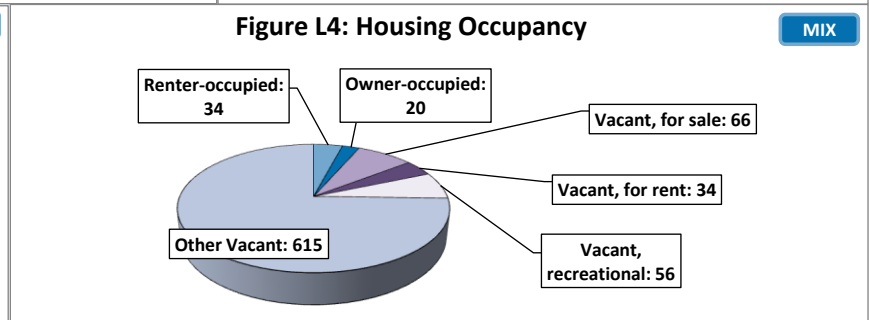
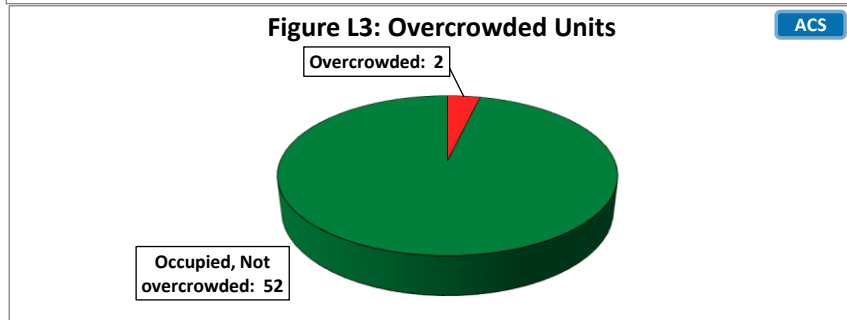
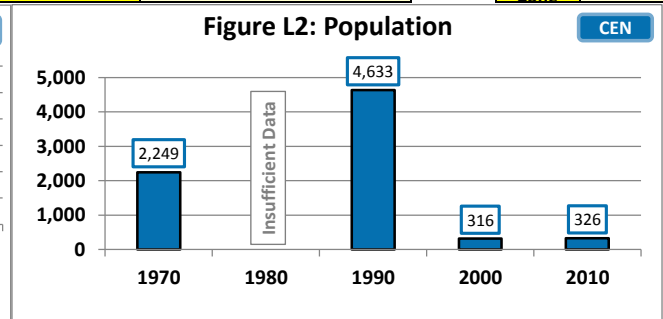
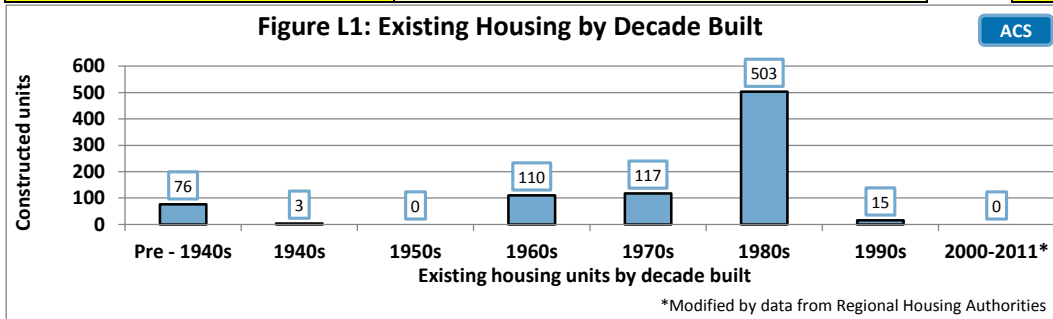
Figure C15: Number of Cost-Burdened Housing Units



Community Profile for: Adak city

ANCSA Region: Aleut

Climate Zone: 7



Owner-occupied House with Mortgage, Median Value
NR

Owner-occupied House without a Mortgage, Median Value
\$20,500

Estimated Energy Prices as of January 2013	
#1 Fuel oil cost (\$ / gallon)	\$ 4.62
Electricity with PCE (\$/kWh)	No PCE
Electricity without PCE (\$/kWh)	\$ 1.00

Median Annual Household Income	
Housing Units	Household Income
All-occupied	\$ 66,667
Renter-occupied	\$ 53,125
Owner-occupied	\$ 73,750
w/ mortgage	NR
w/o mortgage	\$ 95,313

Housing Stock Estimates	
Housing Stock Estimates	Number of Units
All Housing	824
All Occupied Housing	54
All Vacant housing	770

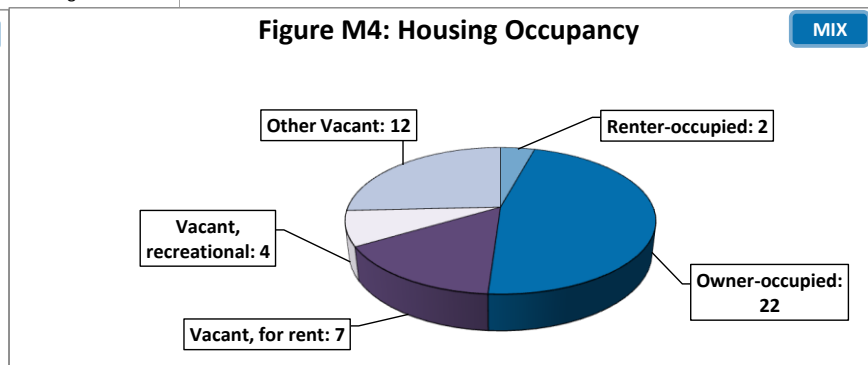
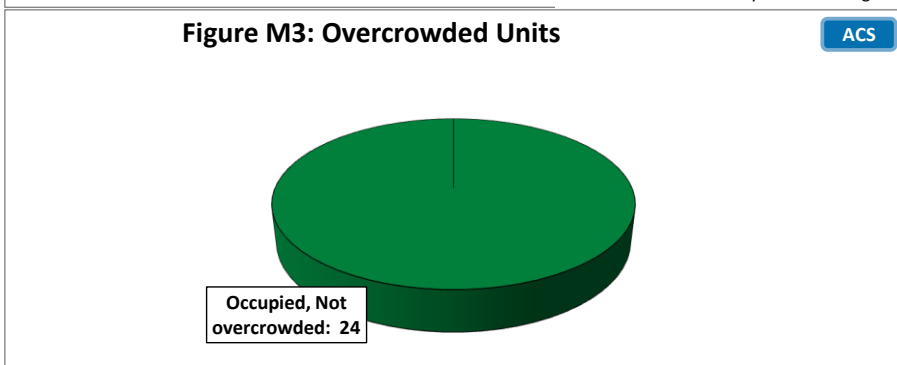
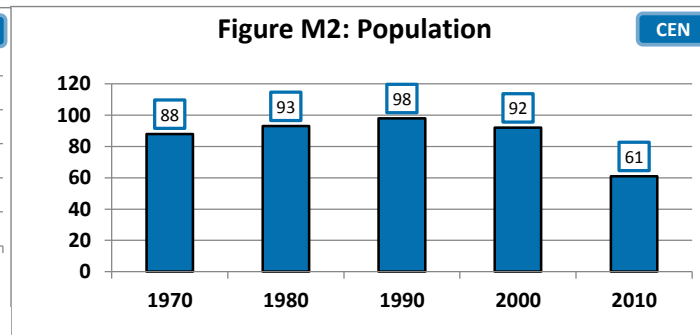
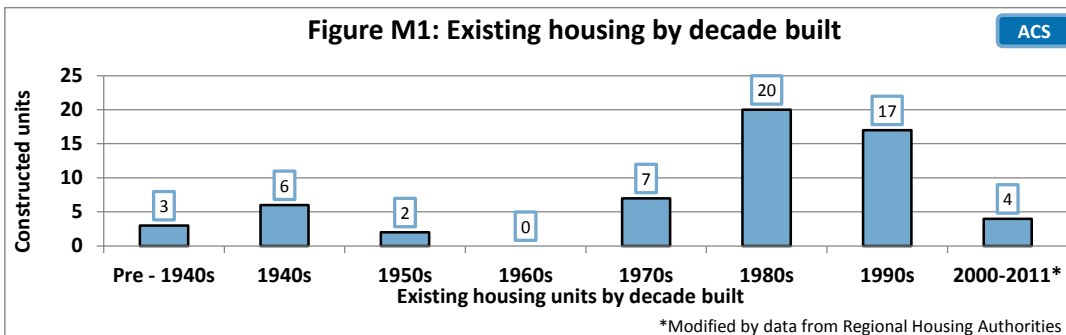
Median Housing Costs		
	Monthly	Annual
All-occupied	\$ 650	\$ 7,800
Gross rent	\$ 771	\$ 9,252
Owner-occupied	\$ 477	\$ 5,724
Housing units w/ mortgage	NR	NR
Housing units w/out a mortgage	\$ 465	\$ 5,580

Community Profile for: Atka city

ANCSA Region: Aleut

Regional Housing Authority: Aleutian Housing Authority

BEES Climate Zone (Heating Degree Days): Zone 7 (9,054 HDD)



Atka city Housing Energy Characteristics

Residential Unit Categories	Number of records	Avg Energy Rating Stars	Avg Energy Rating Points	Avg Sq. Feet	Avg. Ann Energy Cost w/ PCE	Avg. Ann Energy Use (million BTUs)	Avg. EUI (kBtus/SF)	Avg. ECI	Avg. Home Heating Index	% Tight Homes, No Ventilation
Pre-retrofit units	23	4-star plus	87.0	1,023	\$ 4,593	80	79	\$4.54	3.4	91%
Retrofit units	12	5-star plus	92.2	1,002	\$ 3,360	57	57	\$3.35	2.1	100%
New construction	0	NR	NR	NR	NR	NR	NR	NR	NR	NR
Overall	35	5-star	88.3	1,018	\$ 4,278	74	73	\$4.23	3.1	94%

Atka city Housing Envelope Characteristics

Residential Unit Categories	Number of Records	ACH 50	Ceiling R	Above Grade Wall R	Below Grade Wall R	Above Grade Floor R	On Grade Floor R	Below Grade Floor R	Door U	Garage Door U	Window U
Pre-retrofit units	23	6.7	31	21	NR	33	NR	NR	0.19	NR	0.38
Retrofit units	12	3.4	46	22	NR	35	NR	NR	0.16	NR	0.47
New construction	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Overall	35	5.9	34	21	NR	33	NR	NR	0.18	NR	0.40

BEES 2009	7.0	38	21	15	38	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

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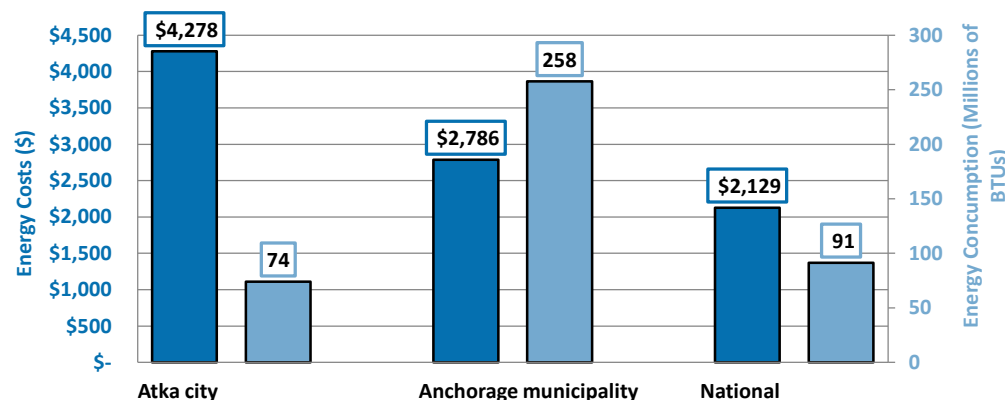
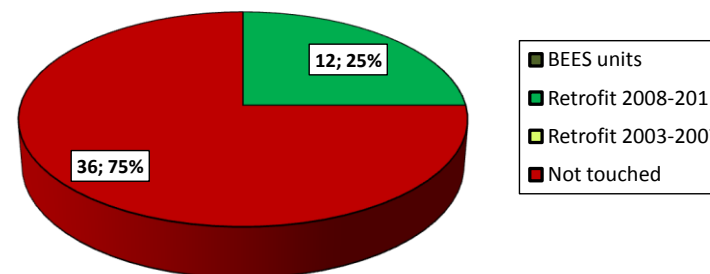


Figure M6: Housing Units Completing an AHFC Energy Program

ARIS



AFFORDABILITY - Atka city

Owner occupied House with Mortgage, Median Value
\$112,500

Owner-occupied House without a Mortgage, Median Value
\$111,100

Estimated Energy Prices as of January 2013	
#1 Fuel oil cost (\$ / gallon)	\$ 7.43
Electricity with PCE (\$/kWh)	\$ 0.21
Electricity without PCE (\$/kWh)	\$ 0.66

Median Annual Household Income	
Housing Units	Household Income
All-occupied	\$ 96,071
Renter-occupied	NR
Owner-occupied	\$ 96,429
w/ mortgage	NR
w/o mortgage	\$ 96,071

Average Annual Energy Cost	
With PCE	\$4,278
Without PCE	\$6,608

Avg % Median Income spent on Energy	4.5%
-------------------------------------	------

Median Housing Costs		
	Monthly	Annual
All-occupied	\$ 713	\$ 8,556
Gross rent	NR	NR
Owner-occupied	\$ 494	\$ 5,928
Housing units w/ mortgage	NR	NR
Housing units w/out a mortgage	\$ 481	\$ 5,772

Housing Stock Estimates	Number of Units
All Housing	47
All Occupied Housing	24
All Vacant housing	23
Vacant Housing for Sale/Rent	7

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

ACS

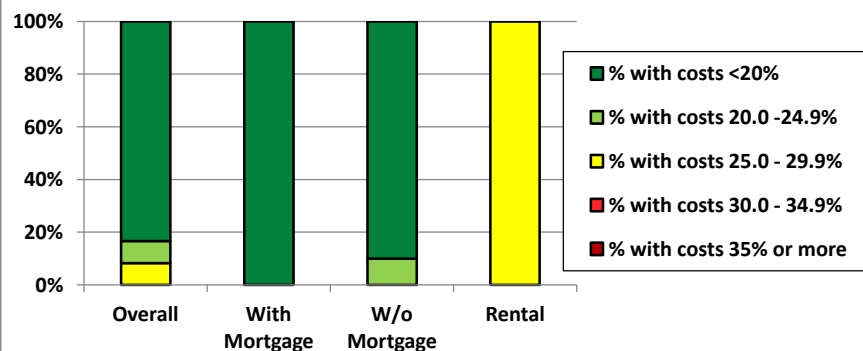
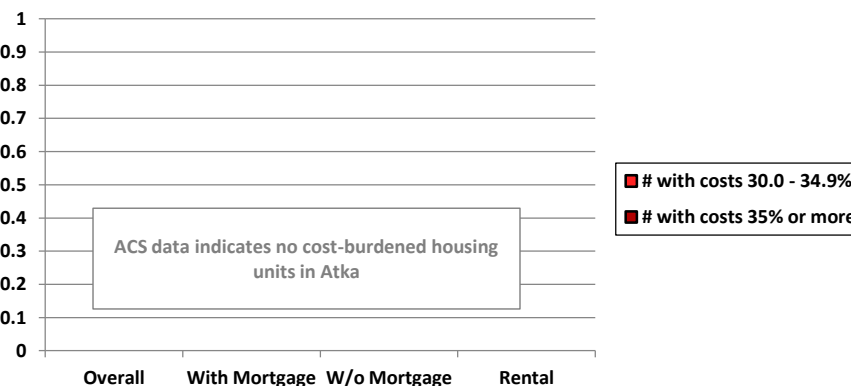


Figure M8: Number of Cost-Burdened Housing Units

ACS

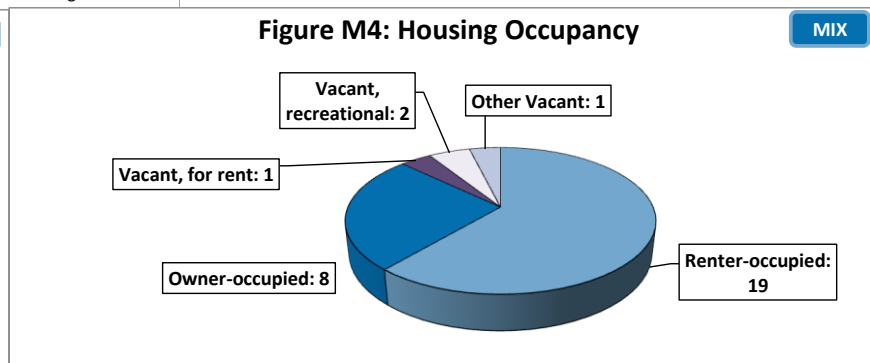
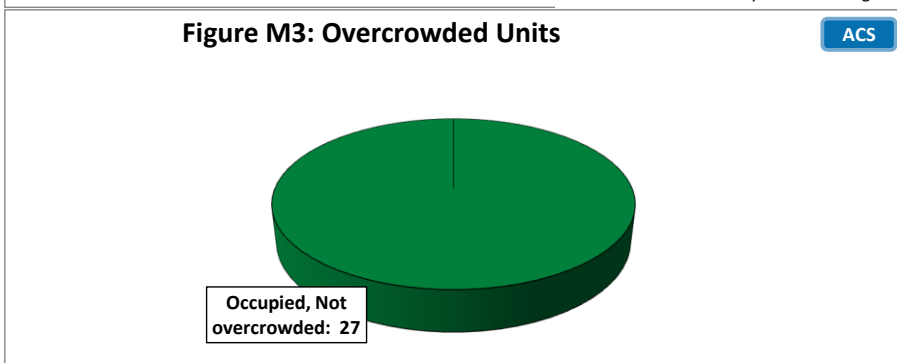
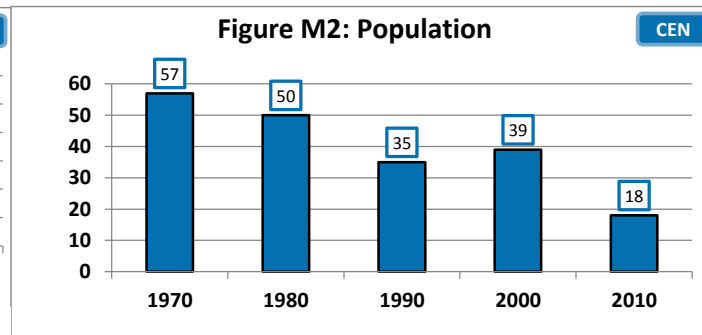
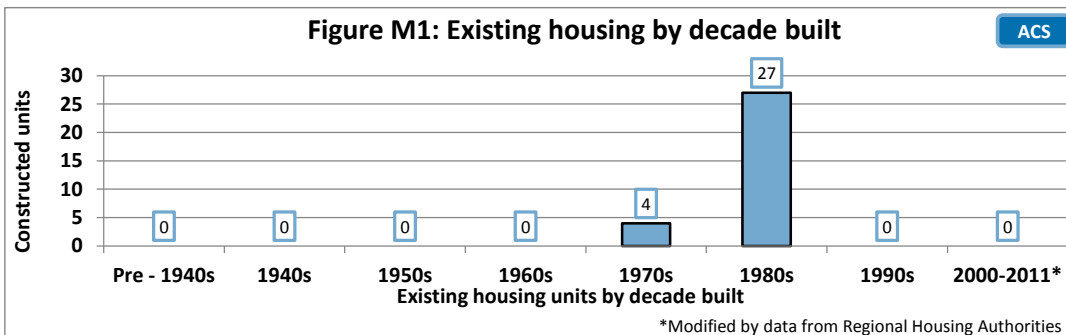


Community Profile for: Nikolski CDP

ANCSA Region: Aleut

Regional Housing Authority: Aleutian Housing Authority

BEES Climate Zone (Heating Degree Days): Zone 7 (9,555 HDD)



Nikolski CDP Housing Energy Characteristics

Residential Unit Categories	Number of records	Avg Energy Rating Stars	Avg Energy Rating Points	Avg Sq. Feet	Avg. Ann Energy Cost	Avg. Ann Energy Use (million BTUs)	Avg. EUI (kBtus/SF)	Avg. ECI	Avg. Home Heating Index	% Tight Homes, No Ventilation
Pre-retrofit units	0	NR	NR	NR	NR	NR	NR	NR	NR	NR
Retrofit units	13	5-star	90.4	886	\$ 3,722	66	74	\$4.20	2.4	0%
New construction	0	NR	NR	NR	NR	NR	NR	NR	NR	NR

Nikolski CDP Housing Envelope Characteristics

Residential Unit Categories	Number of Records	ACH 50	Ceiling R	Above Grade Wall R	Below Grade Wall R	Above Grade Floor R	On Grade Floor R	Below Grade Floor R	Door U	Garage Door U	Window U
Pre-retrofit units	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Retrofit units	13	5.2	46	16	NR	35	NR	NR	0.31	NR	0.42
New construction	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

BEES 2009	7.0	38	21	15	38	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

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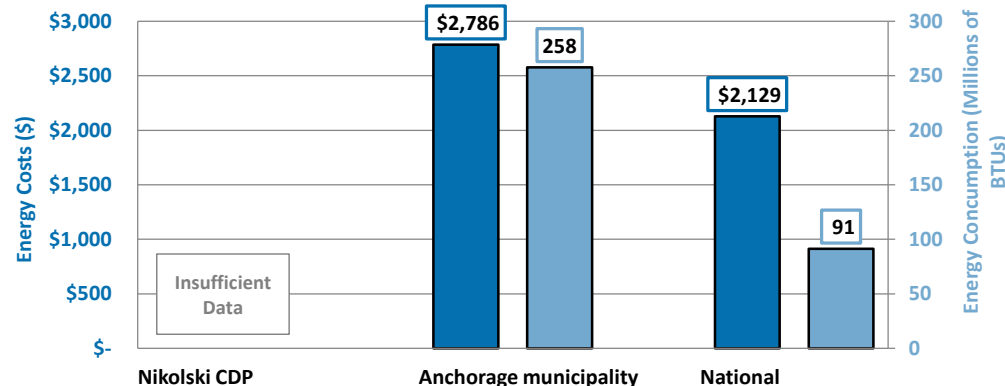
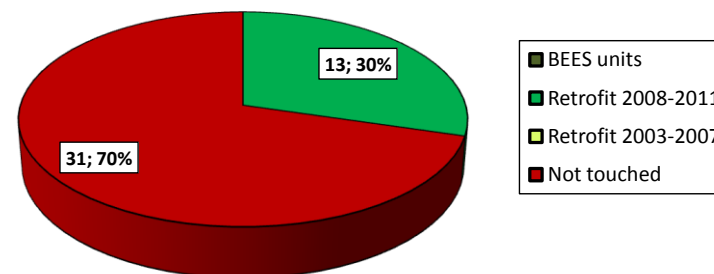


Figure M6: Housing Units Completing an AHFC Energy Program

ARIS



AFFORDABILITY - Nikolski CDP

Owner occupied House with Mortgage, Median Value
\$34,000

Median Annual Household Income	
Housing Units	Household Income
All-occupied	\$ 16,125
Renter-occupied	\$ 15,250
Owner-occupied	\$ 17,000
w/ mortgage	\$ 17,000
w/o mortgage	NR

Median Housing Costs		
	Monthly	Annual
All-occupied	\$ 655	\$ 7,860
Gross rent	\$ 665	\$ 7,980
Owner-occupied	\$ 580	\$ 6,960
Housing units w/ mortgage	\$ 580	\$ 6,960
Housing units w/out a mortgage	NR	NR

Owner-occupied House without a Mortgage, Median Value
NR

Estimated Energy Prices as of January 2013	
Electricity with PCE (\$/kWh)	\$ 0.19
Electricity without PCE (\$/kWh)	\$ 0.60

Average Annual Energy Cost	
With PCE	NO PCE
Without PCE	\$2,588
Avg % Median Income spent on Energy 16.1%	

Housing Stock Estimates	Number of Units
All Housing	31
All Occupied Housing	27
All Vacant housing	4
Vacant Housing for Sale/Rent	1

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

ACS

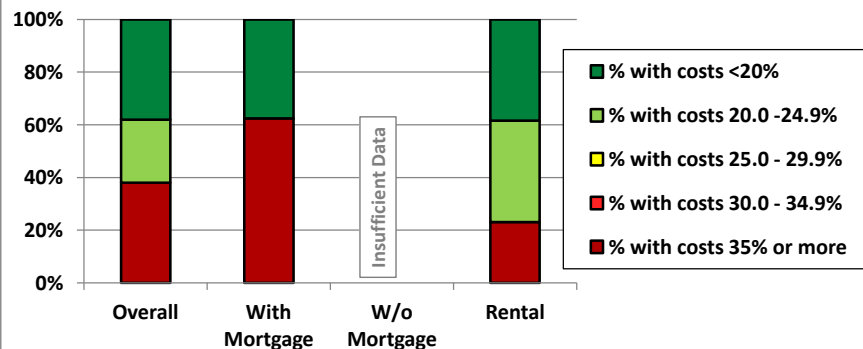
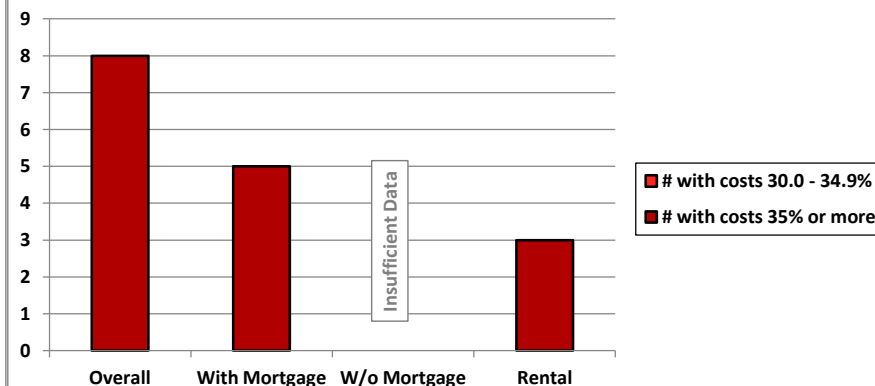


Figure M8: Number of Cost-Burdened Housing Units

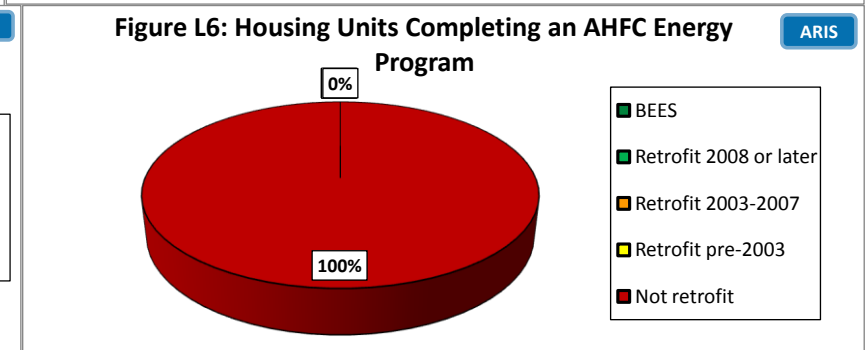
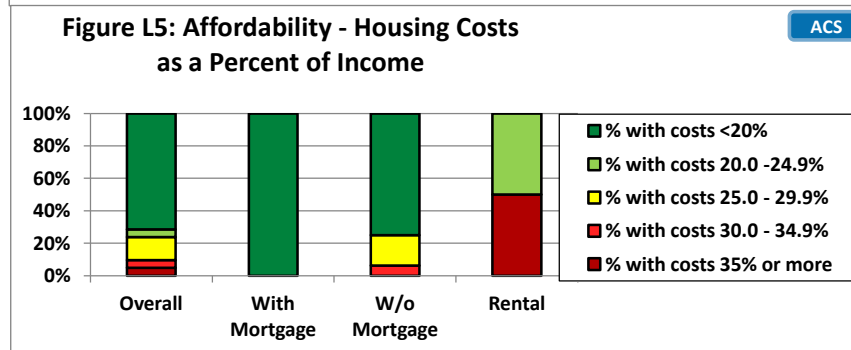
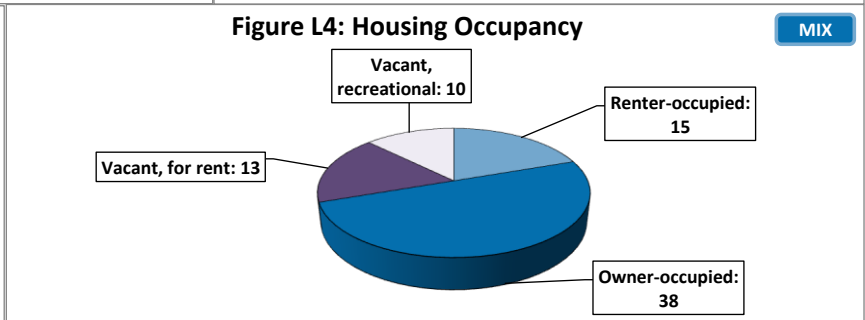
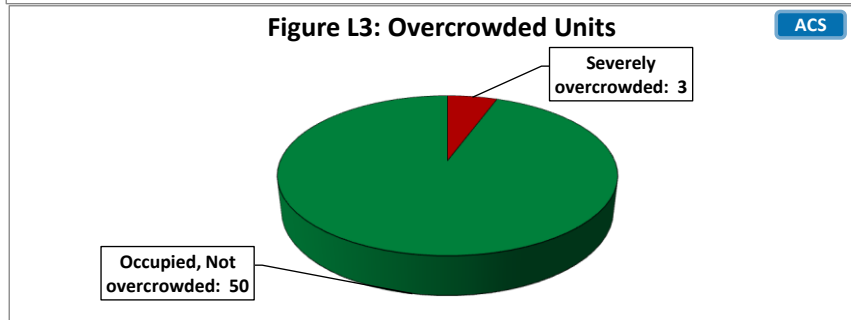
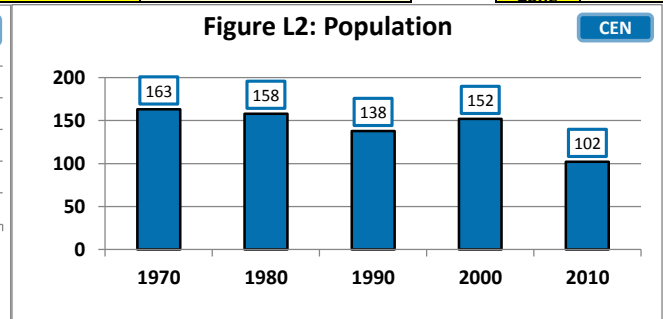
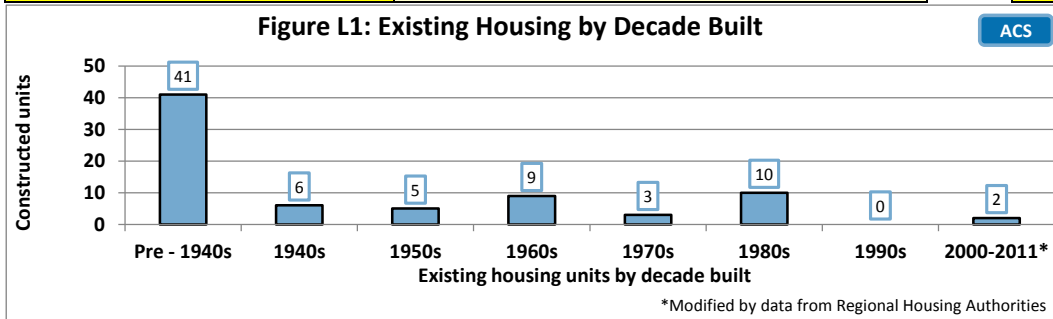
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Community Profile for: St. George city

ANCSA Region: Aleut

Climate Zone: 7



Owner-occupied House with Mortgage, Median Value
\$80,000

Owner-occupied House without a Mortgage, Median Value
\$78,300

Estimated Energy Prices as of January 2013	
#1 Fuel oil cost (\$ / gallon)	\$ 5.76
Electricity with PCE (\$/kWh)	\$ 0.30
Electricity without PCE (\$/kWh)	\$ 0.86

Median Annual Household Income	
Housing Units	Household Income
All-occupied	\$ 46,750
Renter-occupied	\$ 11,875
Owner-occupied w/ mortgage	\$ 72,500
Owner-occupied w/o mortgage	\$ 49,000

Housing Stock Estimates	
Housing Stock Estimates	Number of Units
All Housing	76
All Occupied Housing	53
All Vacant housing	23

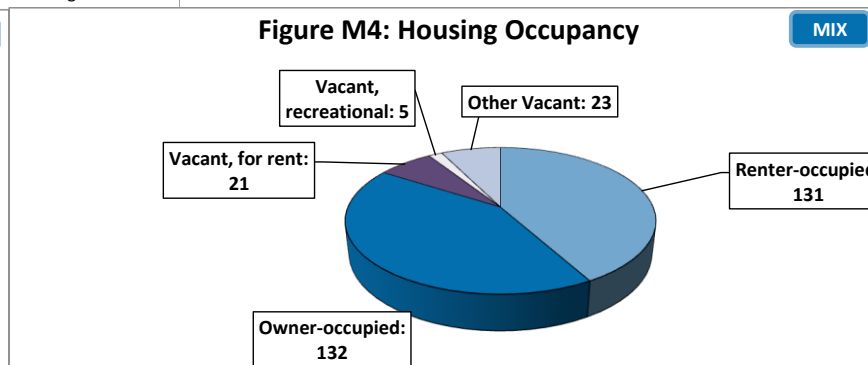
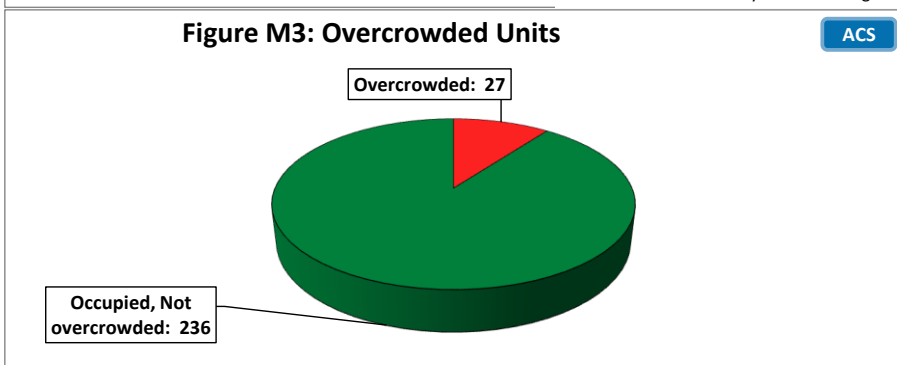
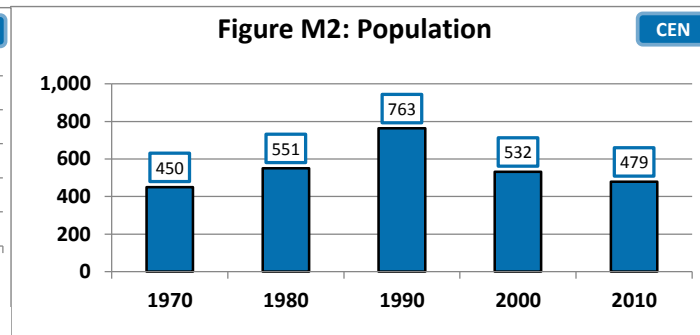
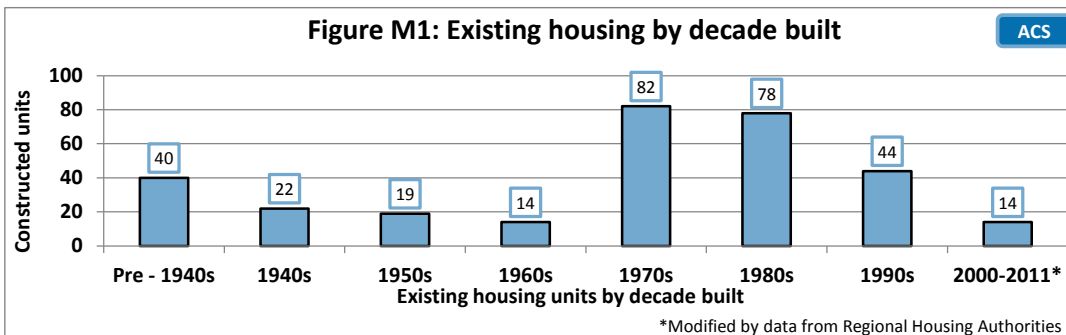
Median Housing Costs		
	Monthly	Annual
All-occupied	\$ 706	\$ 8,472
Gross rent	\$ 775	\$ 9,300
Owner-occupied	\$ 713	\$ 8,556
Housing units w/ mortgage	\$ 950	\$ 11,400
Housing units w/out a mortgage	\$ 400	\$ 4,800

Community Profile for: St. Paul city

ANCSA Region: Aleut

Regional Housing Authority: Aleutian Housing Authority

BEES Climate Zone (Heating Degree Days): Zone 7 (11,178 HDD)



St. Paul city Housing Energy Characteristics

Residential Unit Categories	Number of records	Avg Energy Rating Stars	Avg Energy Rating Points	Avg Sq. Feet	Avg. Ann Energy Cost	Avg. Ann Energy Use (million BTUs)	Avg. EUI (kBtus/SF)	Avg. ECI	Avg. Home Heating Index	% Tight Homes, No Ventilation
Pre-retrofit units	10	4-star	78.1	744	\$ 5,123	116	157	\$6.94	9.3	0%
Retrofit units	10	5-star	88.8	738	\$ 3,538	77	105	\$4.80	5.2	0%
New construction	9	5-star	91.2	1,105	\$ 5,478	114	103	\$4.94	5.0	0%

St. Paul city Housing Envelope Characteristics

Residential Unit Categories	Number of Records	ACH 50	Ceiling R	Above Grade Wall R	Below Grade Wall R	Above Grade Floor R	On Grade Floor R	Below Grade Floor R	Door U	Garage Door U	Window U
Pre-retrofit units	10	10.5	39	21	30	12	NR	2	0.16	NR	0.39
Retrofit units	10	6.2	39	21	30	12	NR	2	0.16	NR	0.39
New construction	9	2.7	39	24	18	NR	NR	2	0.23	NR	0.32
		NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
BEES 2009		7.0	38	21	15	38	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

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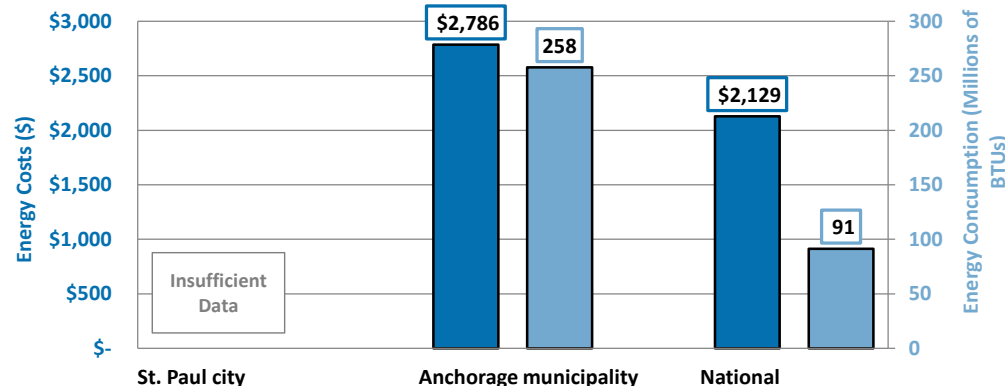
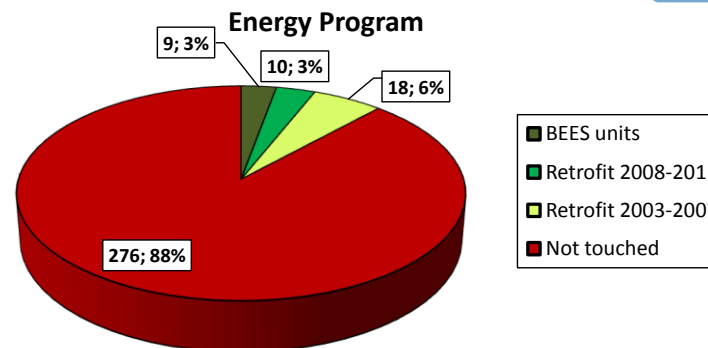


Figure M6: Housing Units Completing an AHFC Energy Program

ARIS



AFFORDABILITY - St. Paul city

Owner occupied House with Mortgage, Median Value
\$183,300

Owner-occupied House without a Mortgage, Median Value
\$74,000

Estimated Energy Prices as of January 2013	
#1 Fuel oil cost (\$ / gallon)	\$ 5.62
Electricity with PCE (\$/kWh)	\$ 0.22
Electricity without PCE (\$/kWh)	\$ 0.53

Median Annual Household Income	
Housing Units	Household Income
All-occupied	\$ 40,982
Renter-occupied	\$ 36,964
Owner-occupied	\$ 42,500
w/ mortgage	\$ 53,333
w/o mortgage	\$ 38,750

Average Annual Energy Cost	
With PCE	NO PCE
Without PCE	\$6,608

Avg % Median Income spent on Energy	16.1%
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Median Housing Costs		
	Monthly	Annual
All-occupied	\$ 690	\$ 8,280
Gross rent	\$ 731	\$ 8,772
Owner-occupied	\$ 647	\$ 7,764
Housing units w/ mortgage	\$ 917	\$ 11,004
Housing units w/out a mortgage	\$ 533	\$ 6,396

Housing Stock Estimates	Number of Units
All Housing	313
All Occupied Housing	263
All Vacant housing	50
Vacant Housing for Sale/Rent	21

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

ACS

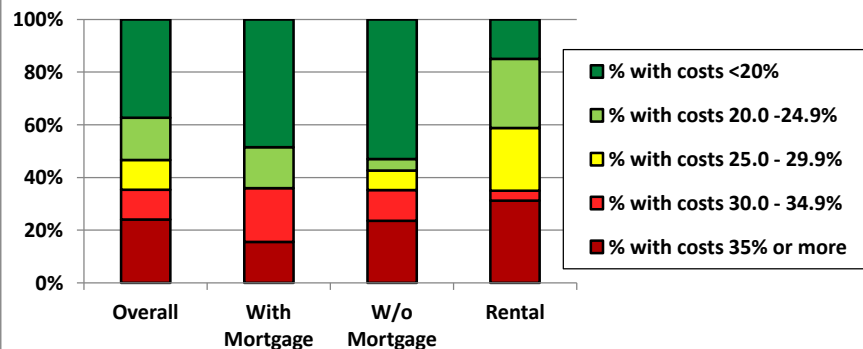
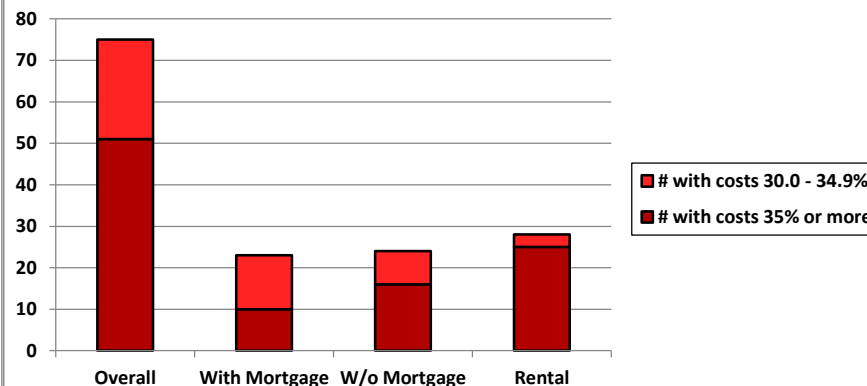


Figure M8: Number of Cost-Burdened Housing Units

ACS



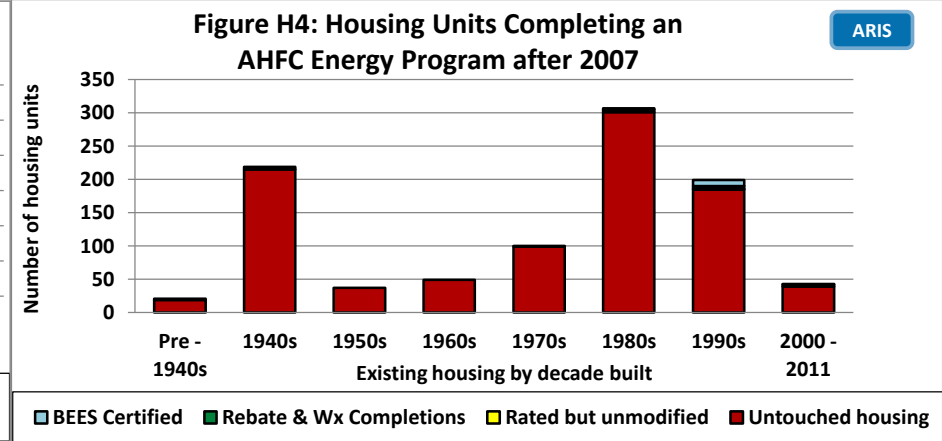
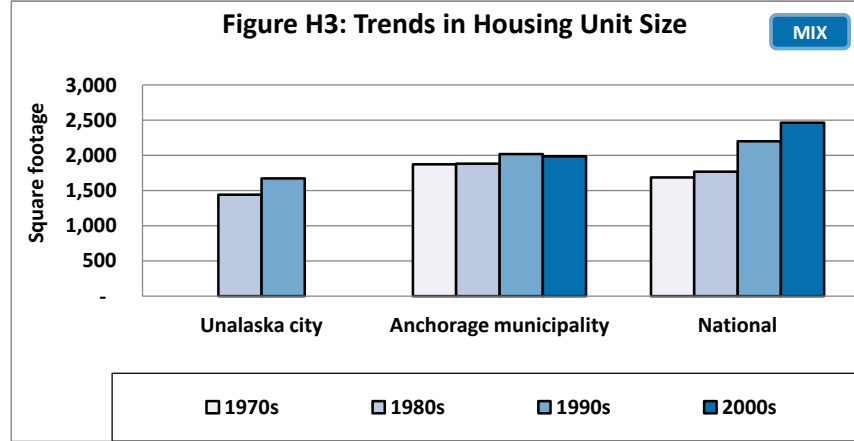
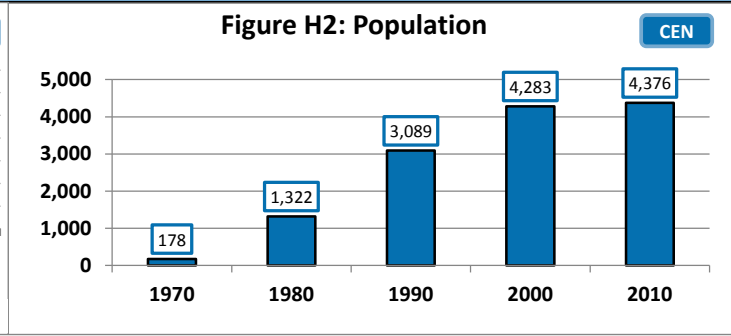
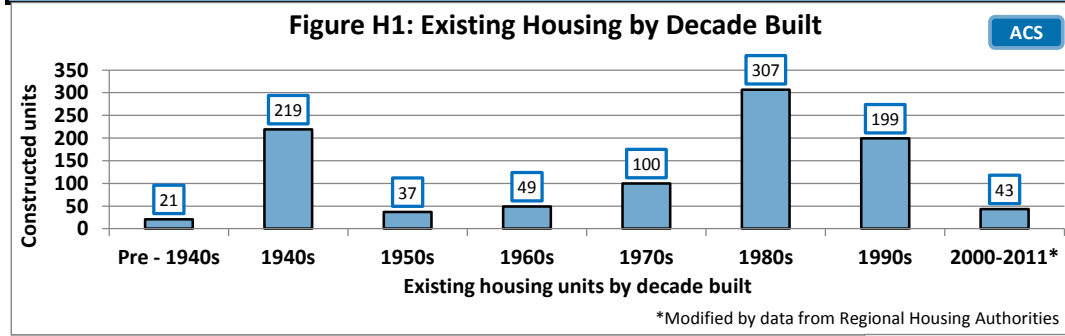
Community Profile for: Unalaska city

ANCSA Region: Aleut

Regional Housing Authority: Aleutian Housing Authority

BEES Climate Zone (Heating Degree Days): Zone 7 (9,197 HDD)

COMMUNITY - Unalaska city



Houses Lacking Complete Plumbing or Kitchen Facilities	Households	
	Number	Percent
Lack complete plumbing	41	5%
Lack complete kitchen	36	4%

Avg Annual Energy Cost with PCE	\$7,674
Avg Annual Energy Cost without PCE	\$8,953

Weatherization Program Retrofits (funding increased in 2008)	
Date Range	Units
2008-2011	0
2003-2007	NR
1990-2002	NR

Estimated Total Annual Community Space Heating Fuel Use		
Fuel Oil	680,603	(gallons)
Nat Gas	-	(ccf)
Electricity	773,823	(kWh)
Wood	-	(cords)
Propane	1,172	(gallons)
Coal	-	(tons)

Estimated Energy Prices as of January 2013	
#1 Fuel oil cost (\$ / gallon)	\$3.64
Electricity with PCE (\$/kWh)	\$0.27
Electricity cost without PCE (\$/kWh)	\$0.49

Housing Stock Estimates	Number of Units
All Housing	975
All Occupied Housing	834
All Vacant housing	141
Vacant Housing for Sale or Rent	31

OVERCROWDING & VENTILATION - Unalaska city

Figure H5: Overcrowded Units

ACS

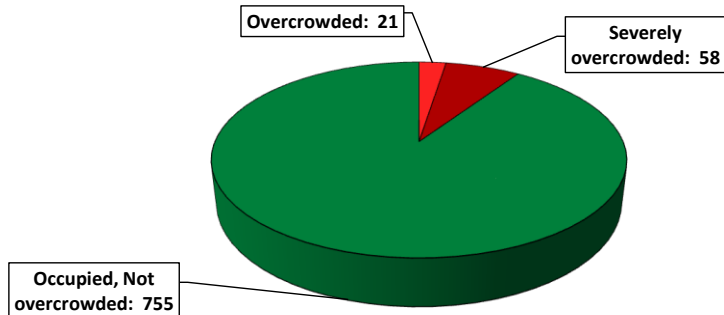


Figure H6: Housing Occupancy

MIX

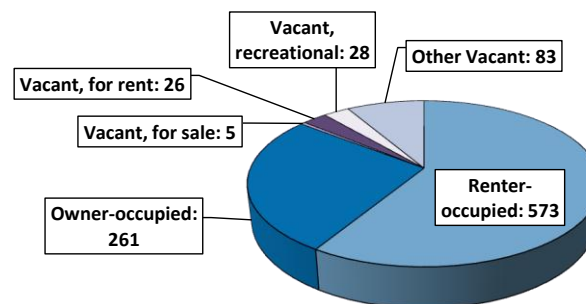


Figure H7: Average Air-Tightness of Current Homes by Decade Built

ARIS

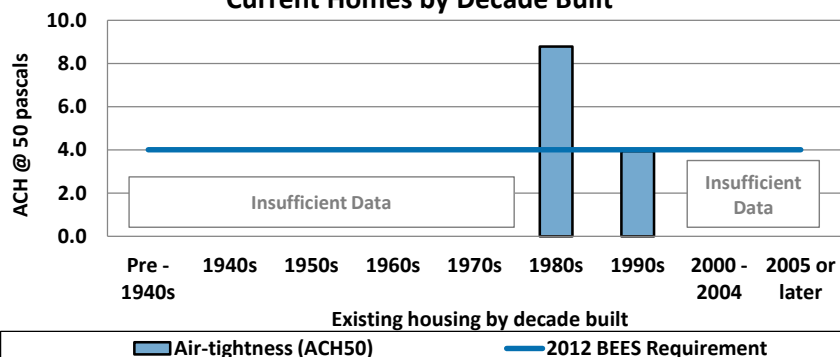


Figure H8: Existing Ventilation Type by Decade Built

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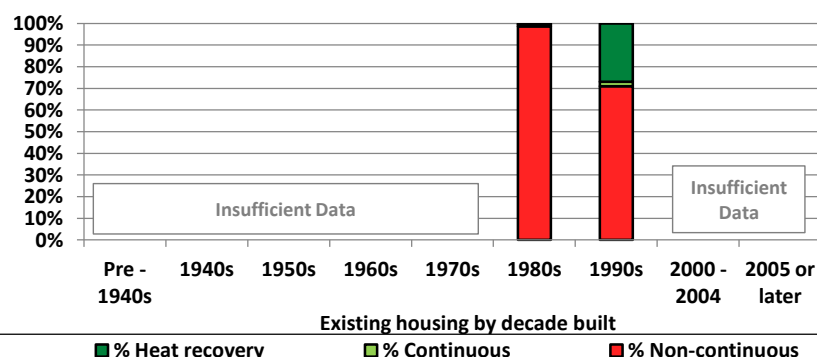


Figure H9: Percent of Housing Stock at High Risk of Moisture and Air Quality Problems

ARIS

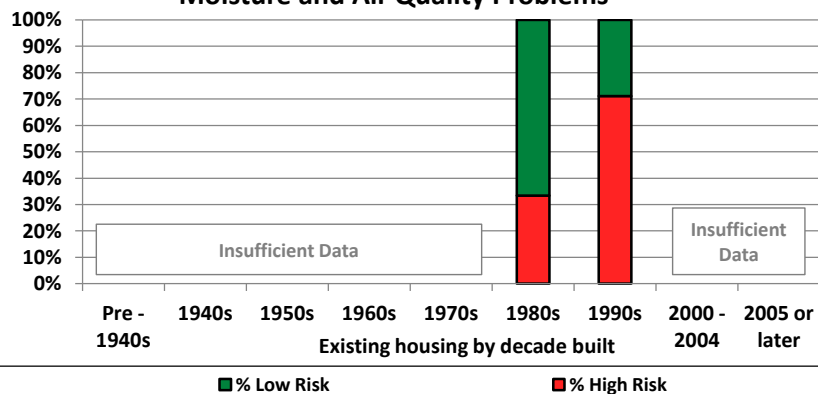
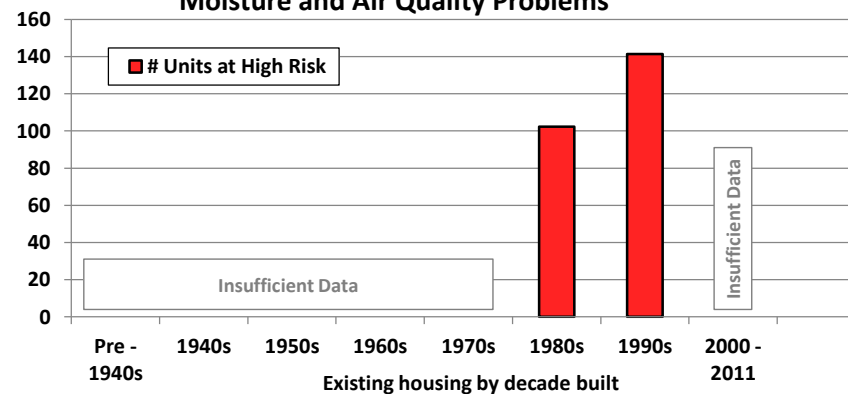


Figure H10: Quantity of Housing Stock at High Risk of Moisture and Air Quality Problems

ARIS



ENERGY - Unalaska city

Current Unalaska city Housing Energy Characteristics By Decade Built

Current Residential Units by Year Built	Number of Records	Avg Energy Rating Stars	Avg Energy Rating Points	Avg Sq. Feet	Avg. Annual Energy Cost (with PCE)	Avg. Annual Energy Use (million BTUs)	Avg Ann Energy by End Use (million Btus)			Avg. EUI (kBtUs/SF)	Avg. ECI (\$ / SF)	Avg. Home Heating Index
							Space Heating	DHW	Appliances			
OVERALL	37	2-star plus	67.9	1,469	\$ 7,674	161	109	23	27	123	\$ 5.73	9.9
Pre- 1940	2	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1940- 49	4	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1950- 59	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1960- 69	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1970- 79	1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1980- 89	12	3-star	69.8	1,441	\$ 7,886	156	104	26	26	107	\$ 5.58	8.0
1990- 99	31	4-star	82.8	1,672	\$ 6,219	134	75	26	27	80	\$ 3.71	5.3
2000- 2004	3	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
2005 or later	1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

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

ARIS

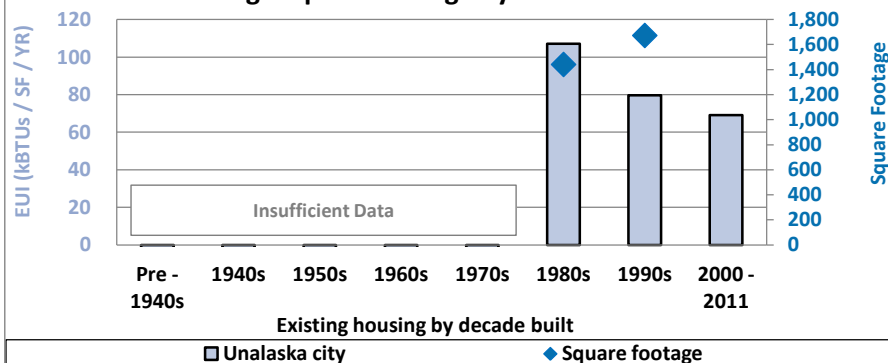
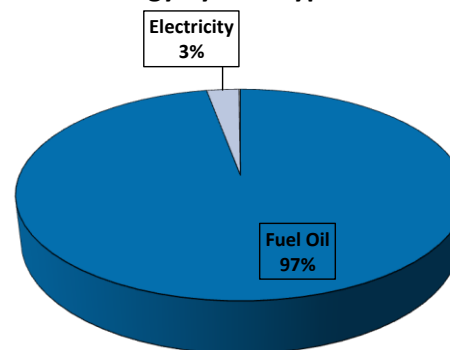


Figure H12: Percent of Total Residential Space Heating Energy by Fuel Type

ARIS



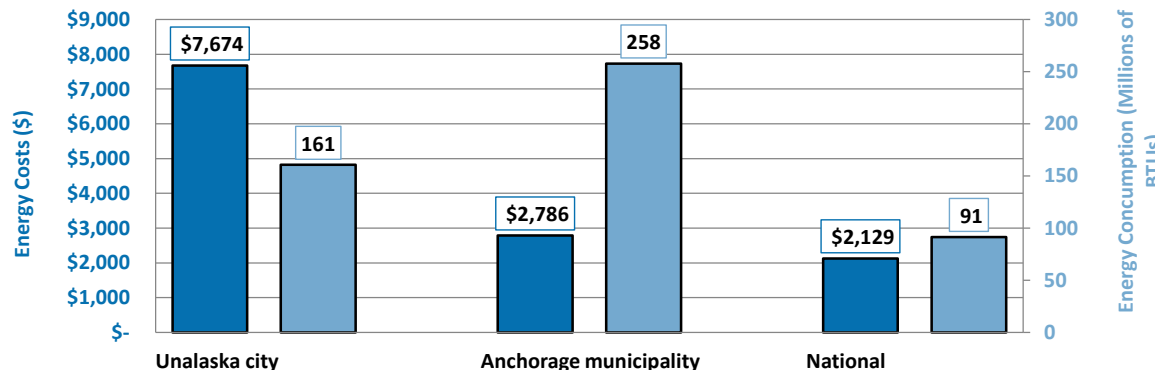
Current Unalaska city Housing Envelope Characteristics By Decade Built

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	37	8.3	17	12	12	13	3	2	0.35	0.34	0.54
Pre- 1940	2	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1940- 49	4	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1950- 59	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1960- 69	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1970- 79	1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1980- 89	12	8.8	25	15	NR	17	NR	NR	0.37	NR	0.56
1990- 99	31	3.9	30	18	14	16	NR	3	0.39	NR	0.48
2000- 2004	3	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
2005 or later	1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

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

AFFORDABILITY - Unalaska city

Figure H13: Average Annual Home Energy Costs and Use



Housing Information	Avg Household Size (# of people)
All-occupied	2.4
Owner-occupied	2.6
renter-occupied	2.4

Owner-occupied House with Mortgage, Median Value
\$294,500

Owner-occupied House without a Mortgage, Median Value
\$320,800

Median Annual Household Income	
Housing Units	Household Income
All-occupied	\$ 85,455
Renter-occupied	\$ 80,694
Owner-occupied	\$ 107,188
w/ mortgage	\$ 133,393
w/o mortgage	\$ 56,000

Median Housing Costs		
	Monthly	Annual
All-occupied	\$ 1,406	\$ 16,872
Gross rent	\$ 1,346	\$ 16,152
Owner-occupied	\$ 1,644	\$ 19,728
Housing units w/ mortgage	\$ 2,319	\$ 27,828
Housing units w/out a mortgage	\$ 595	\$ 7,140

Avg % of Median Income Spent on Energy	9.0%
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Figure H14: Affordability - Housing Costs as a Percent of Income

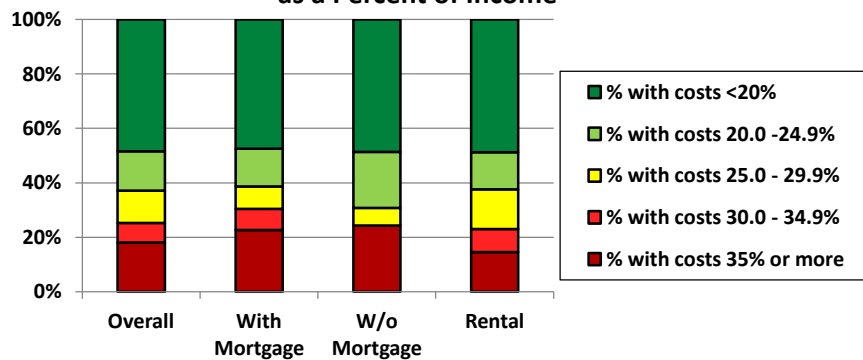


Figure H15: Number of Cost-Burdened Housing Units

