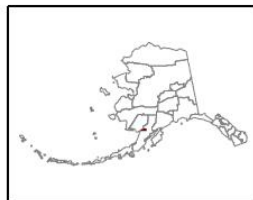
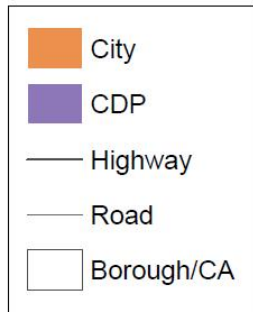


Bristol Bay Borough



Map Prepared by:
Alaska Department of Labor
& Workforce Development

September 2011

Source: US Census
2010 TIGERline

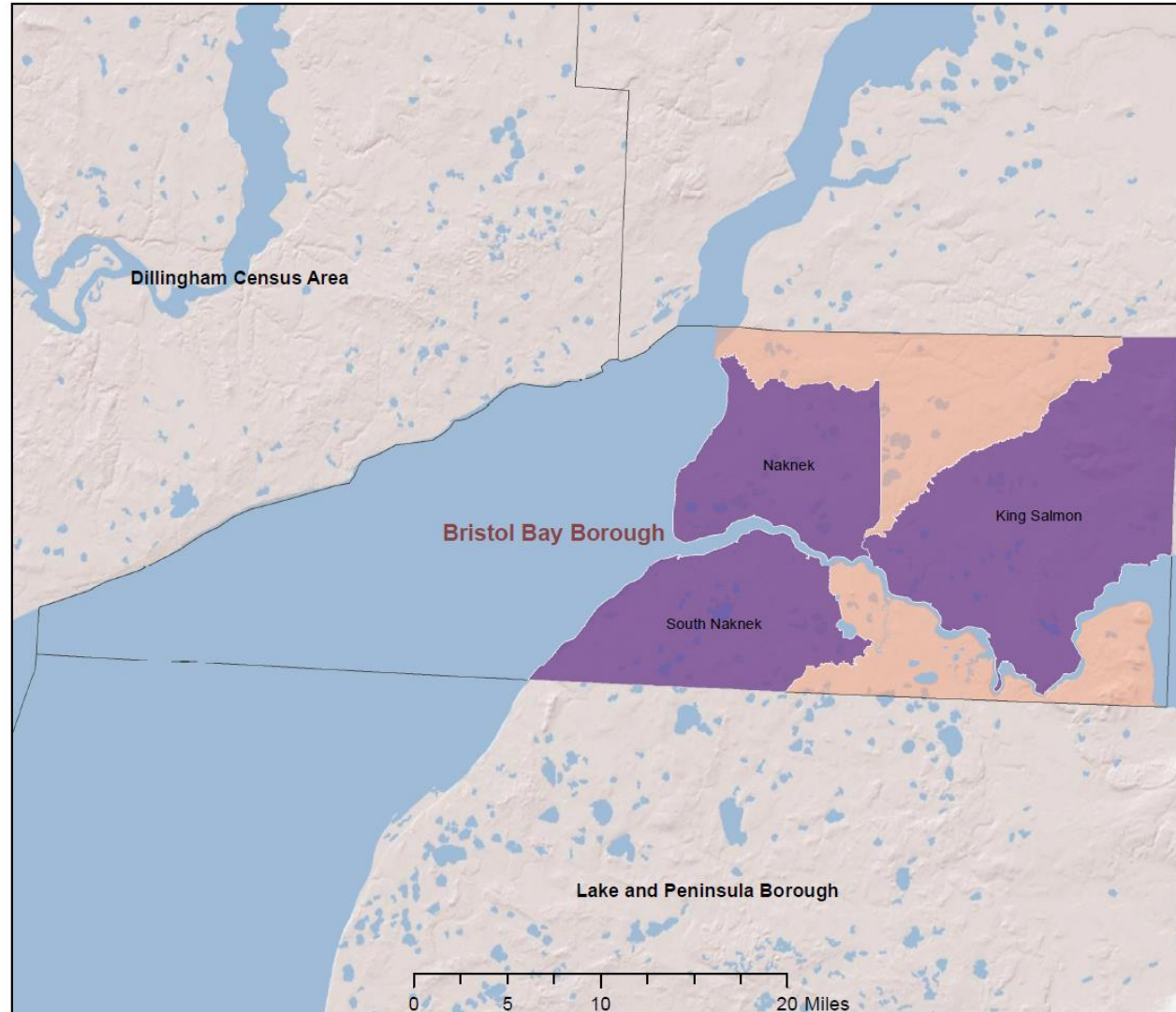


Table of Contents

Bristol Bay Borough Dashboard	II
Bristol Bay Borough Summary	III-VI
Community.....	III
Overcrowding.....	III
Energy	IV
Affordability	V
Community, Regional, and Statewide Housing Characteristics.....	VI
How to Interpret the Profile: Data Sources, Definitions & Clarifications	A-H
Bristol Bay Borough Profile	1-4
Bristol Bay Borough Community Profiles	5-14
King Salmon Data Quantity: Medium	5
Naknek Data Quantity: High	7
South Naknek Data Quantity: High	11

Bristol Bay Borough Dashboard

Population: The Alaska Department of Labor and Workforce Development's current (2012) population estimate for the Bristol Bay Borough is 987—a decrease of 27% from 2000.

Housing Units: There are currently 952 housing units in the Bristol Bay Borough. Of these, 424 are occupied, 43 are for sale or rent, and the remaining 485 are seasonal or otherwise vacant units (Profile Figure C6).

Energy: The average home in the Bristol Bay Borough is 1,532 square feet and uses 142,000 BTUs of energy per square foot annually, 4% more than the statewide average of 137,000 BTUs per square foot per year.

Energy Costs: Using AKWarm estimates, average annual energy cost for homes in the Bristol Bay Borough is \$7,030, which is approximately 2.5 times more than the cost in Anchorage, and 3.3 times more than the national average (Profile Figure C13).

Energy Programs: Approximately 22% of occupied housing in the Bristol Bay Borough has completed either the Home Energy Rebate, Weatherization, or BEES programs since 2008, compared to 21% statewide (Profile Figure C12).

Housing Quality: Within current housing stock, newer homes have better energy performance. On average, homes built in the 1940s are currently rated at 1-star-plus, compared to a current average rating of 3-stars for houses built after 2000.

Air-tightness: Within current housing stock, newer homes are tighter. On average, homes built in the last decade nearly meet the 2009 BEES standard of 7 air-changes per hour at 50 pascals (ACH50). In contrast, homes built in the 1940s are 2.1 times leakier than those built since 2000 (Profile Figure C7).

Ventilation: An estimated 194 occupied housing units (or 46%) in the Bristol Bay Borough are relatively air-tight and lack a continuous ventilation system. These houses are at higher risk of moisture- and indoor air quality-related issues (Profile Figures C9-C10).

Overcrowding: 4.5% of occupied units are estimated to be either overcrowded (2.8%) or severely overcrowded (1.7%). This is roughly similar to the national average, and makes the Bristol Bay Borough the 18th most overcrowded census area in the state.

Affordability: On average, approximately 16% of households in the Bristol Bay 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.

Bristol Bay Borough Summary

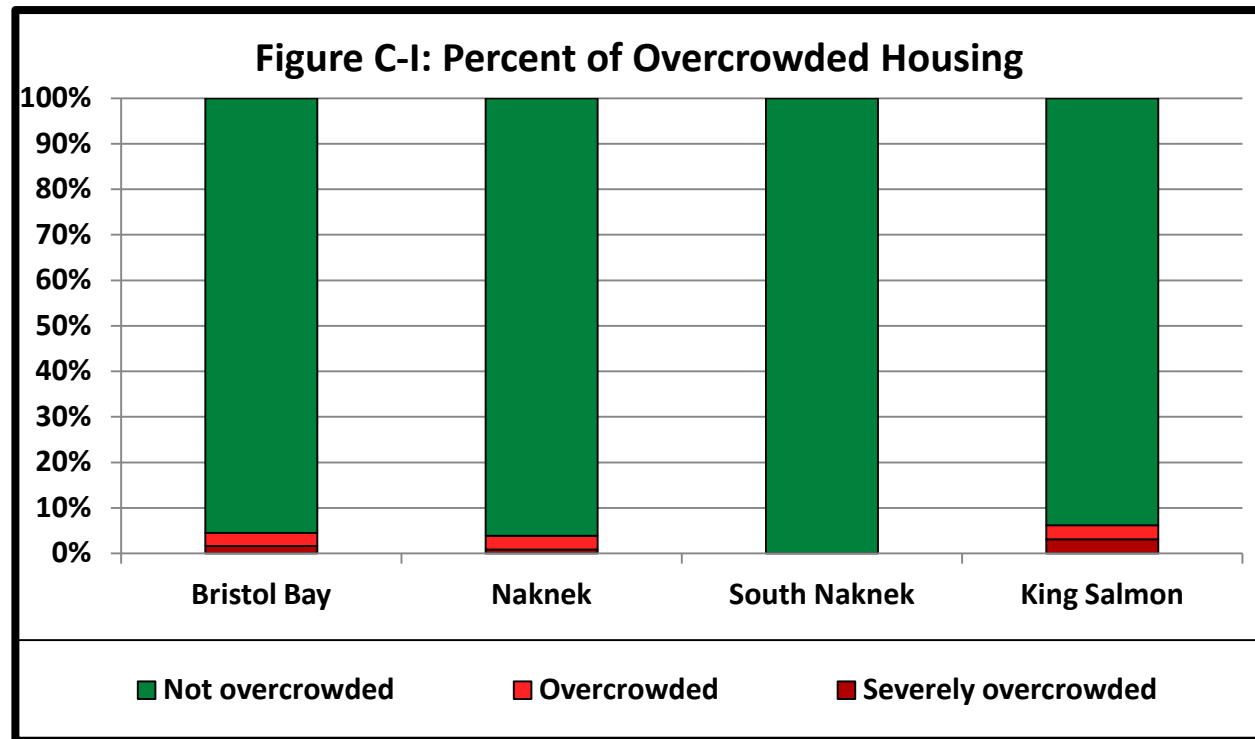
Community

The Bristol Bay Borough census area is located at the start of the Southwest peninsula in the Southwest corner of mainland Alaska. It is in the Bristol Bay Native Corporation ANCSA region. Average home sizes in the region range from 1,161 square feet in South Naknek to 1,688 square feet in King Salmon. The average home size for the census area as a whole is 1,532 square feet.

Overcrowding

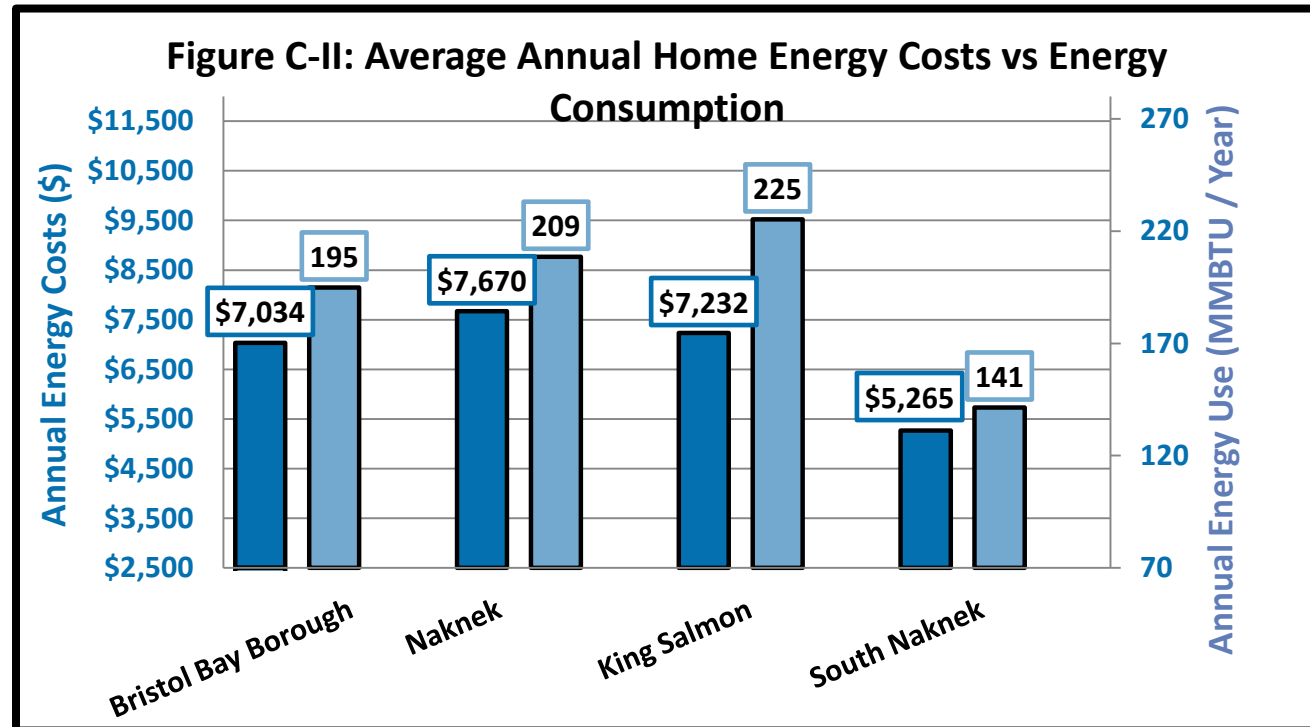
Only 4% of households in the census area are overcrowded. In fact, the community of South Naknek has an estimated zero households with more than one person per room. The highest overcrowding rate in the census area, 6%, is found in King Salmon.

More than 50% of housing units in the census area are considered vacant because they are used for seasonal, recreational, or “other” non-year-round purposes. Approximately 4% of housing in the region is available for sale or rent. Naknek has the lowest percentage of available housing at 3%, and the community of King Salmon has the highest percentage of available housing at 6%.



Energy

Across the census area, homes use on average 195 million BTUs of energy each year, for an annual average energy cost of \$7,034. The lowest energy costs are found in the community of South Naknek, where residents pay on average \$5,265 per year for energy. South Naknek also has the lowest average home heating index, 7.2 BTUs/ft²/HDD. The highest energy costs are found in the community of Naknek, where residents pay an annual energy cost of \$7,670, which is more than \$2,000 more than residents of South

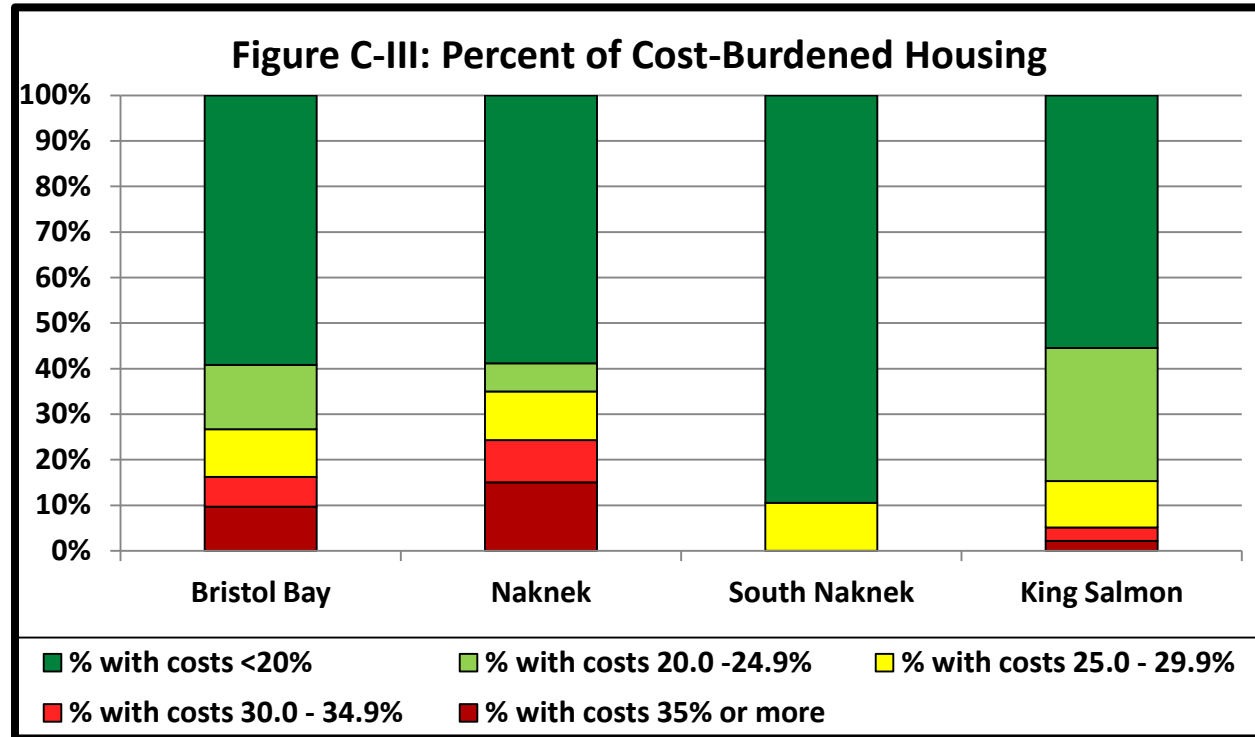


Naknek. Houses in South Naknek use approximately 67% of the energy of houses in Naknek, which may be due in part to their average size being more than 400 square feet smaller than Naknek houses. Also, houses in South Naknek are slightly more energy efficient than in Naknek, and 72% of housing units in South Naknek have completed an energy program (the highest participation in the census area). The highest home heating index of the census area communities is not found in Naknek, however, but in King Salmon, where homes on average have a heating index of 9.2 BTUs/ft²/HDD.

Approximately 22% of homes in the census area have completed the Home Energy Rebate, Weatherization, or BEES program since 2003. The communities have participation rates ranging from 9% to 72% for the energy programs. The lowest participation in energy programs is found in King Salmon, where 9% of homes have completed an energy program. Also, throughout the census area, approximately 1 in 4 homes built since 1990 has an HRV or a continuous mechanical ventilation system. Less than 10% of homes built in any other decade have such a system.

Affordability

According to ACS estimates¹, approximately 16% of homes in the Bristol Bay census area are considered cost-burdened, or spending more than 30% of their income on housing costs. The most affordable and least affordable communities are South Naknek, with approximately no cost-burdened households, and Naknek, where nearly 1 in 4 households are considered cost-burdened (Figure C-III). Median incomes in the census area range from \$62,750 in South Naknek to \$90,313 in King Salmon.



¹ CCHRC's analysis of ACS energy costs indicates 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.

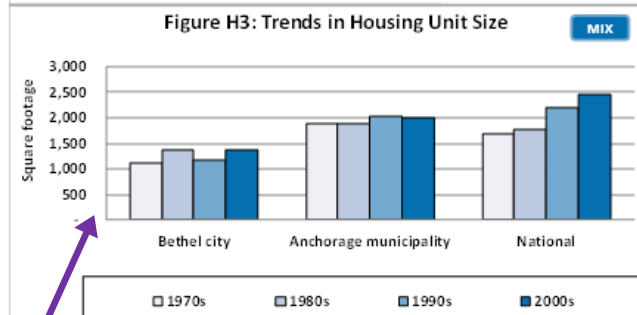
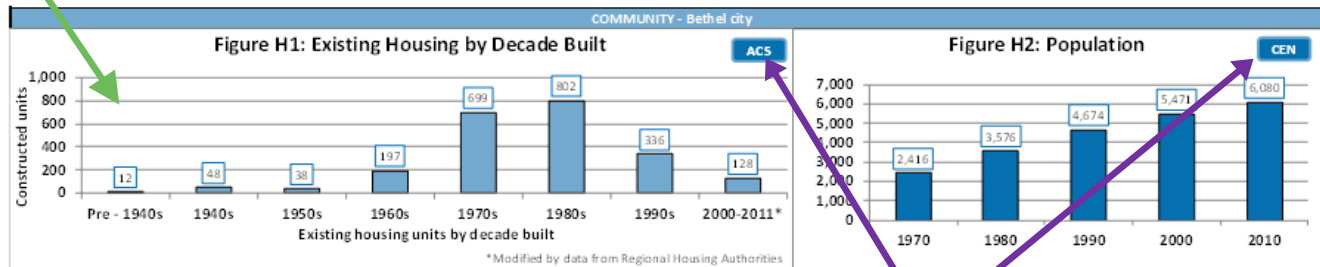
How to Interpret the Profile: Data Sources, Definitions & Clarifications

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:

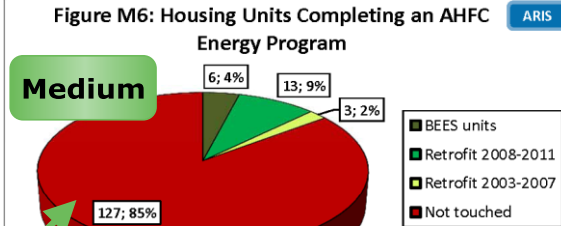
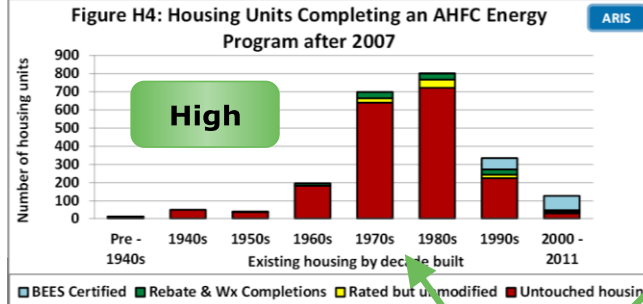
- 2011 American Community Survey 5 year estimates (ACS) **ACS**
- Alaska Retrofit Information System energy audits **ARIS**
- 2010 Decennial Census **CEN**
- Mixed data source; see individual graphs for details. **MIX**

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.

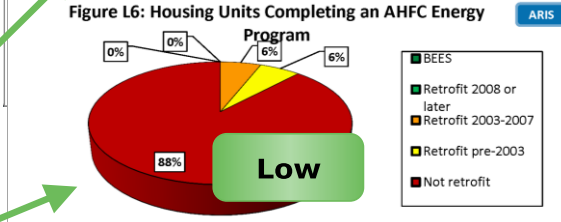
How to Interpret the Profile: Data Sources, Definitions & Clarifications

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	

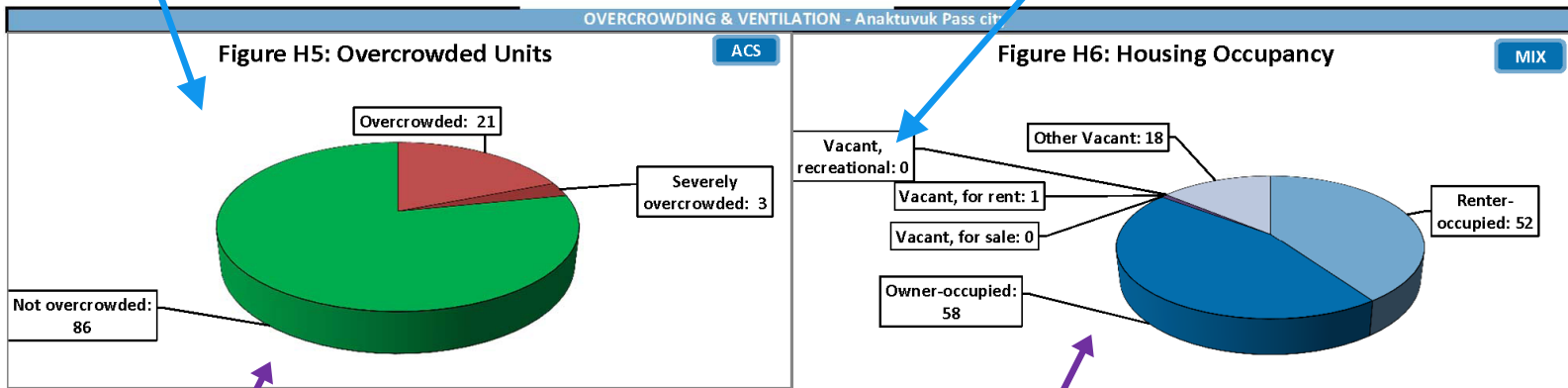
Units weatherized before 2008 are eligible to participate in the program again. (Data source: Alaska Housing Finance Corporation).

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.

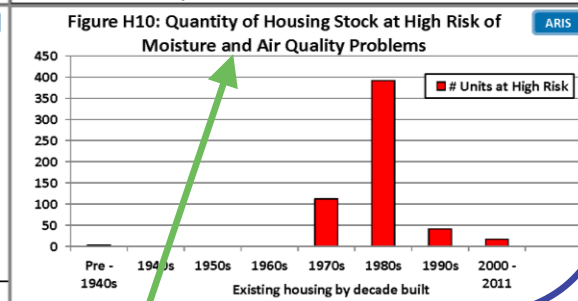
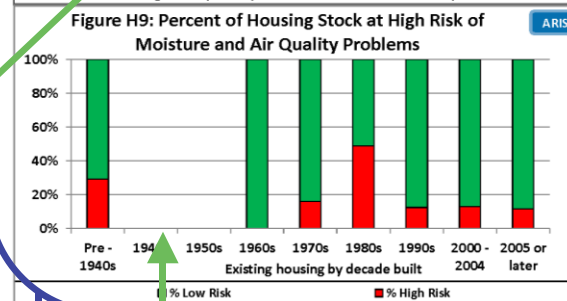
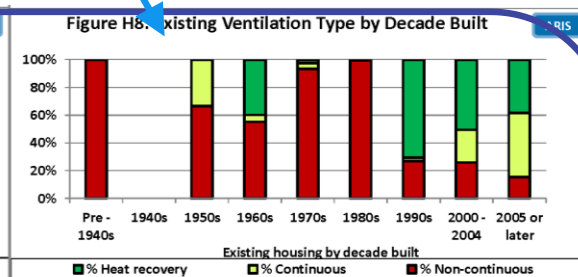
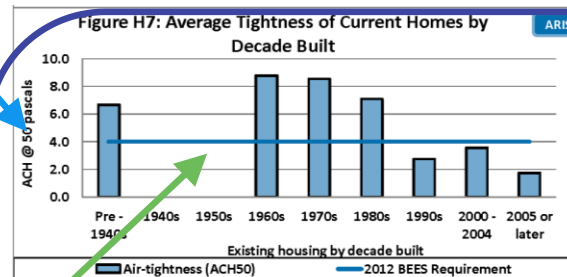
Continuous: Mechanical ventilation without heat recovery operated with automatic controls.

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

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.

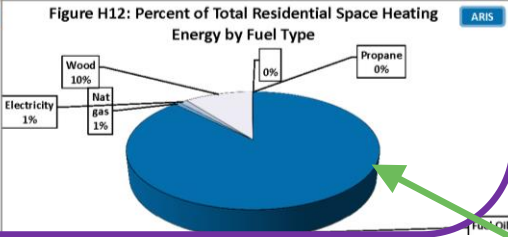
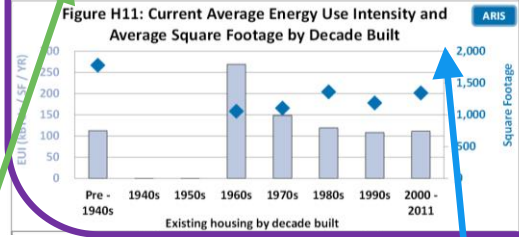
Space Heating, DHW, Appliances:
Estimated annual energy for the end uses of: Space Heating, Domestic Hot Water, and all other energy including lights, appliances, and electronics.

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--

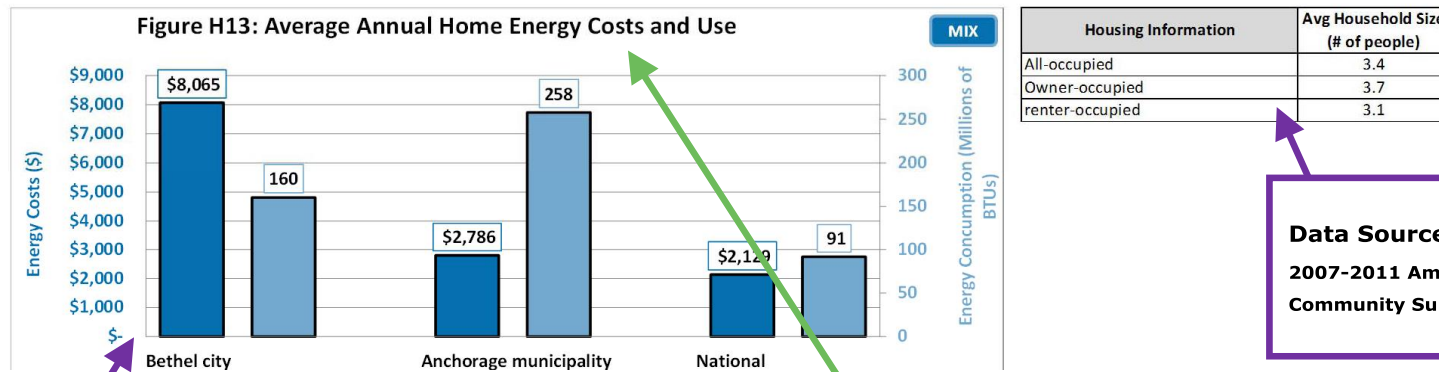
Green: the average value meets or exceeds the 2012 BEES requirement.
Yellow: value is 75-99% of the 2012 BEES requirement.
Red: value is less than 75% of the 2012 BEES requirement.

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 Source:
2007-2011 American Community Survey

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

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

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

4

Data Source:
2007-2011
American
Community
Survey.

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

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

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

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

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

Median Household Expenses		
	Monthly	Annual
All-occupied	\$ 1,369	\$ 16,428
Gross rent	\$ 1,201	\$ 14,412
Owner-occupied	\$ 1,610	\$ 19,320
Housing units w/ mortgage	\$ 1,854	\$ 22,248
Housing units w/out a mortgage	\$ 680	\$ 8,160
Avg % of Median Income Spent on Energy	8.8%	

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

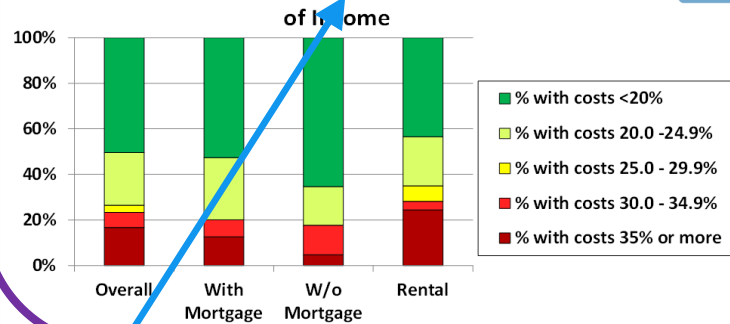
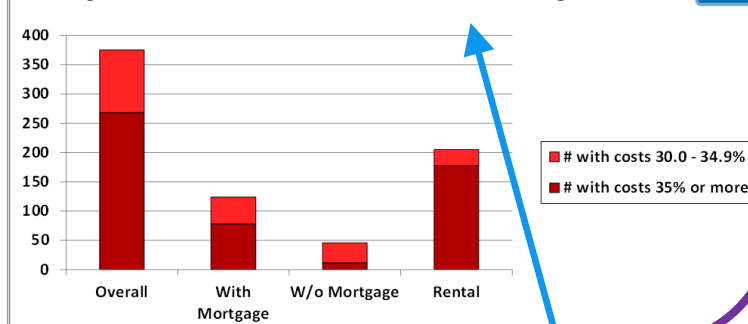


Figure H15: Number of Cost-Burdened Housing Units



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.

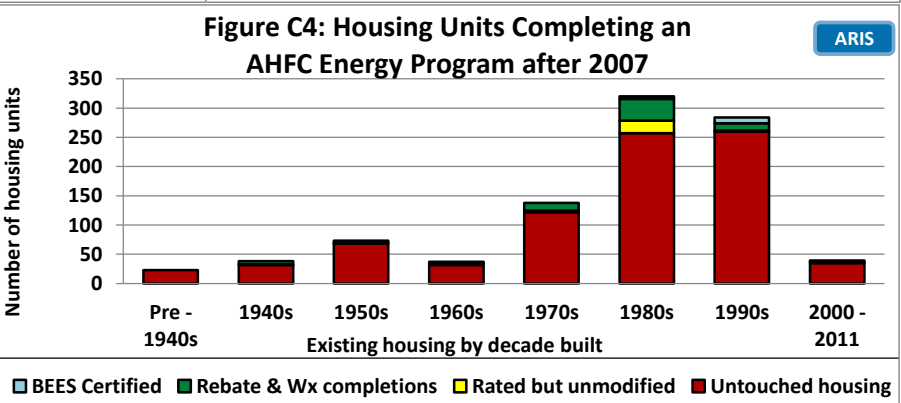
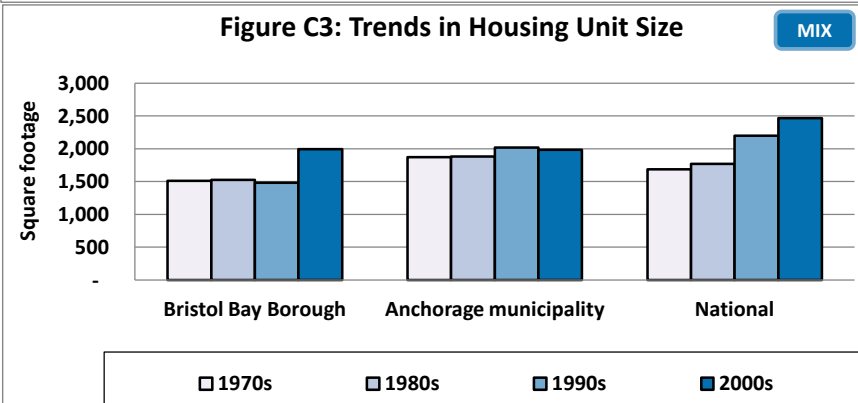
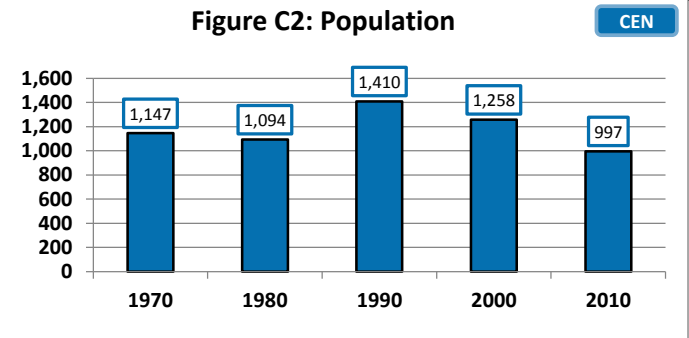
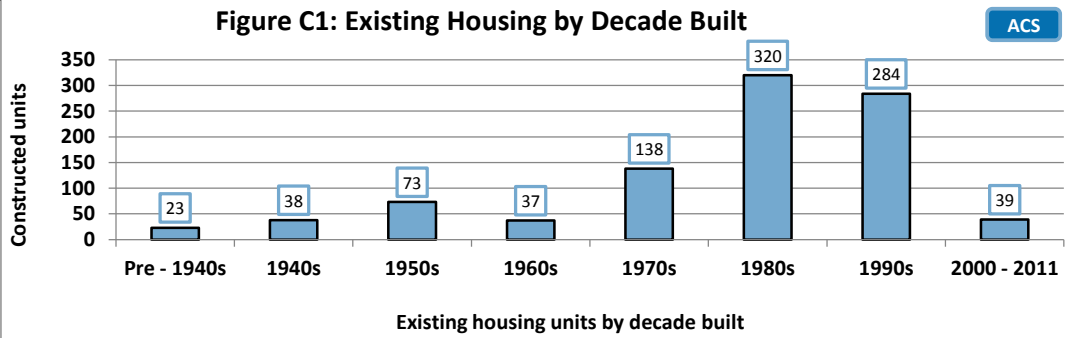
Census Area Profile for: Bristol Bay Borough

ANCSA Region: Bristol Bay Native Corporation

Regional Housing Authority: Bristol Bay Housing Authority

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

COMMUNITY - Bristol Bay Borough



Houses Lacking Complete Plumbing or Kitchen Facilities	Households	
	Number	Percent
Lack complete plumbing	8	2%
Lack complete kitchen	2	1%

Avg Annual Energy Cost with PCE	\$7,034
Avg Annual Energy Cost without PCE	\$8,419

Weatherization Retrofits (funding increased 2008)	
Date Range	Units
2008 - 2011	66
2003 - 2007	0
1990 - 2002	10

Estimated Total Annual Community Space Heating Fuel Use		
Fuel Oil	422,739	(gallons)
Natural Gas	-	(ccf)
Electricity	364,959	(kWh)
Wood	279	(cords)
Propane	782	(gallons)
Coal	-	(tons)

Housing Need Indicators	Number of Units	% Occupied Housing
Overcrowded	19	4%
Housing cost burdened	62	15%
1 Star Homes	55	13%

Housing Stock Estimates	Number of Units
All Housing	952
All Occupied Housing	424
All Vacant housing	528
Vacant Housing for Sale or Rent	43

OVERCROWDING & VENTILATION - Bristol Bay Borough

Figure C5: Overcrowded Units

ACS

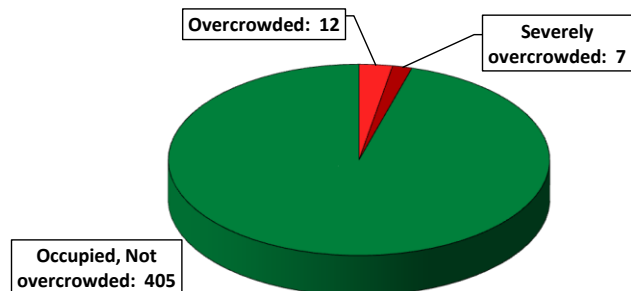


Figure C6: Housing Occupancy

MIX

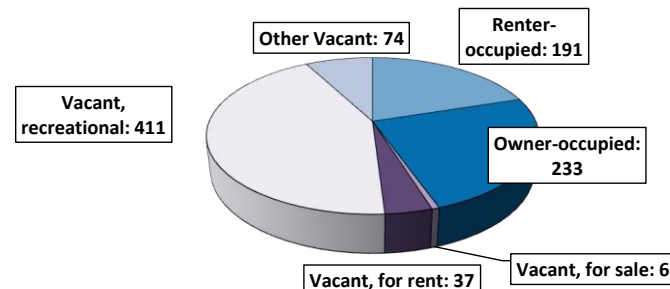


Figure C7: Average Air-Tightness of Current Homes by Decade Built

ARIS

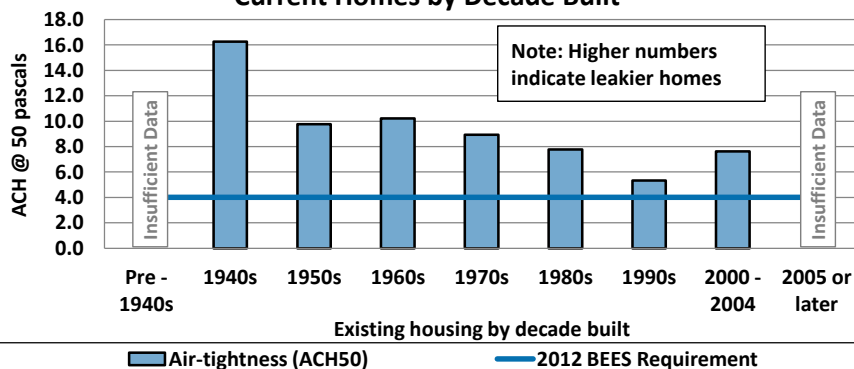


Figure C8: Existing Ventilation Type by Decade Built

ARIS

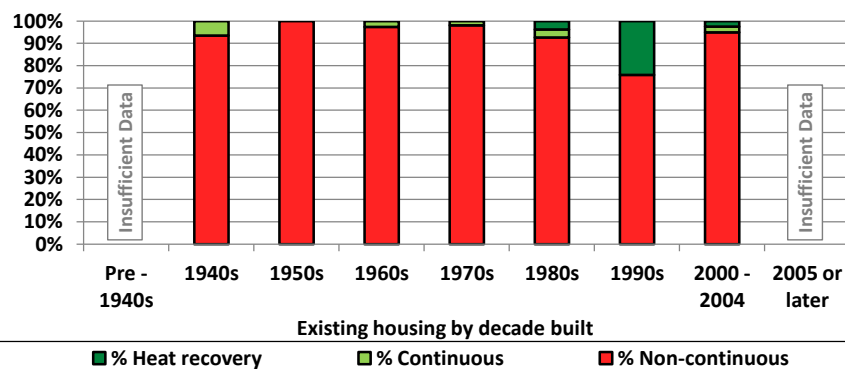


Figure C9: Percent of Housing Stock at High Risk of Moisture and Air Quality Problems

ARIS

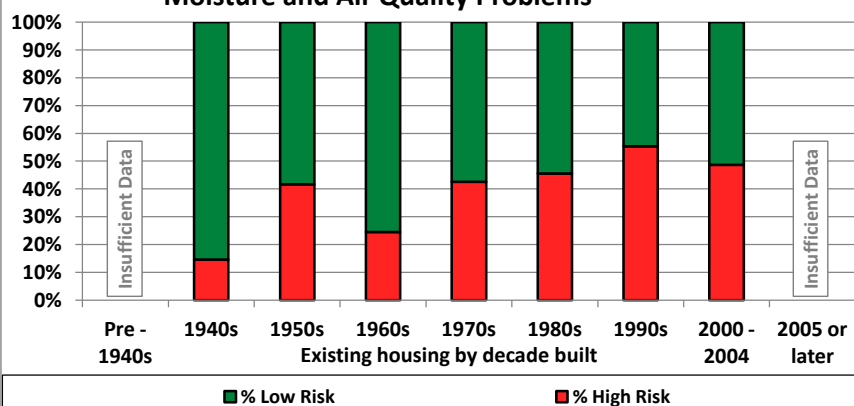
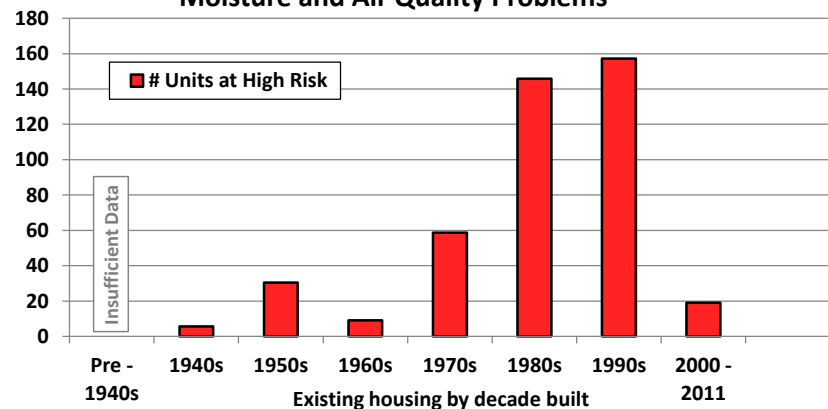


Figure C10: Quantity of Housing Stock at High Risk of Moisture and Air Quality Problems

ARIS



ENERGY - Bristol Bay Borough												
Current Bristol Bay Borough Housing Energy Characteristics By Decade Built												
Current Residential Units by Year Built	# of AkWarm Records	Avg Energy Rating Stars	Avg Energy Rating Points	Avg Sq. Feet	Avg. Annual Energy Cost (with PCE)	Avg. Annual Energy Use (million BTUs)	Avg Ann Energy by End Use (million Btus)			Avg. EUI (kBtUs / SF)	Avg. ECI (\$ / SF)	Avg. Home Heating Index
							Space Heating	DHW	Appliances			
OVERALL	136	3-star	68.7	1,532	\$7,034	195	138	26	29	142	\$4.96	9.0
Pre- 1940	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1940- 49	11	1-star plus	44.1	1,048	\$5,599	160	125	11	24	216	\$6.15	14.9
1950- 59	7	2-star	56.5	1,807	\$9,253	244	197	20	28	142	\$5.38	9.8
1960- 69	7	2-star	50.1	1,513	\$10,731	270	222	21	26	182	\$7.26	13.1
1970- 79	32	2-star plus	63.1	1,514	\$7,901	217	158	30	29	148	\$5.38	9.3
1980- 89	92	3-star	70.4	1,526	\$6,684	195	140	25	28	139	\$4.79	8.8
1990- 99	40	4-star	78.1	1,483	\$6,044	164	104	26	28	113	\$4.08	6.1
2000- 2004	5	3-star	71.5	1,993	\$7,785	209	155	25	28	108	\$4.01	6.9
2005 or later	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

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

ARIS

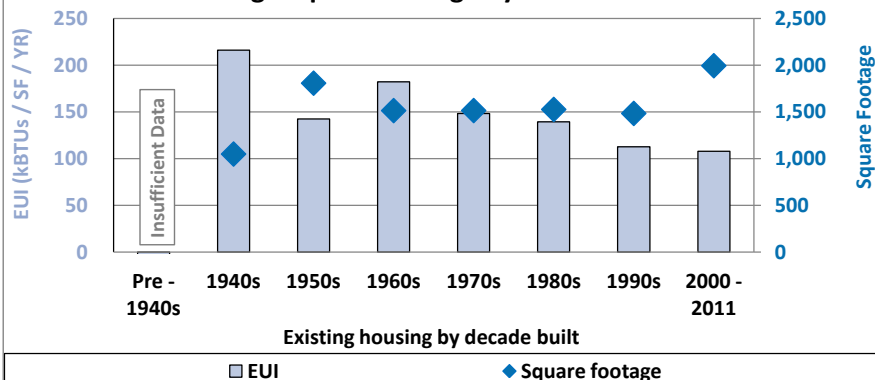
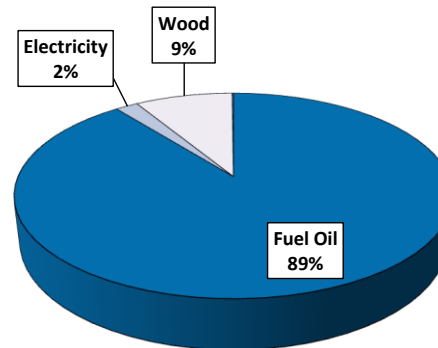


Figure C12: Percent of Total Residential Space Heating Energy by Fuel Type

ARIS

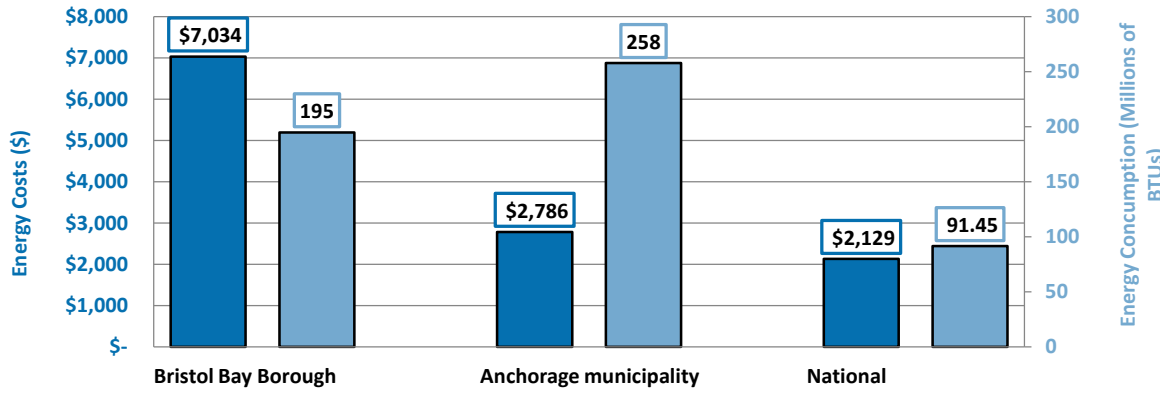


Current Bristol Bay Borough Housing Envelope Characteristics By Decade Built											
Current Residential Units by Year Built	# of AkWarm Records	ACH 50	Ceiling R	Above Grade Wall R	Below Grade Wall R	Above Grade Floor R	On Grade Floor R	Below Grade Floor R	Door U	Garage Door U	Window U
OVERALL	136	8.3	22	16	6	19	3	3	0.31	0.43	0.49
Pre- 1940	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1940- 49	11	16.3	15	11	6	NR	NR	NR	0.33	NR	0.64
1950- 59	7	9.8	19	13	4	NR	NR	2	0.45	NR	0.47
1960- 69	7	10.2	14	13	3	NR	NR	2	0.30	NR	0.70
1970- 79	32	8.9	14	15	4	12	3	3	0.34	NR	0.48
1980- 89	92	7.8	26	17	8	22	3	3	0.29	0.41	0.48
1990- 99	40	5.3	36	21	8	20	3	3	0.29	0.40	0.39
2000- 2004	5	7.6	28	15	NR	NR	NR	NR	0.28	NR	0.38
2005 or later	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

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 - Bristol Bay Borough

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	2.2

Median Value of Owner-occupied House with Mortgage
\$176,600

Median Value of Owner-occupied House without a Mortgage
\$167,500

Median Annual Household Income	
Housing Units	Household Income
All-occupied	\$ 80,000
Renter-occupied	\$ 62,014
Owner-occupied	\$ 114,250
w/ mortgage	\$ 116,667
w/o mortgage	\$ 91,250

Median Housing Costs		
	Monthly	Annual
All-occupied	\$ 957	\$ 11,484
Gross rent	\$ 1,057	\$ 12,684
Owner-occupied	\$ 882	\$ 10,584
Housing units w/ mortgage	\$ 1,560	\$ 18,720
Housing units w/out a mortgage	\$ 581	\$ 6,972

Avg % of Median Income Spent on Energy	8.8%
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Figure C14: Affordability - Housing Costs as a Percent of Income

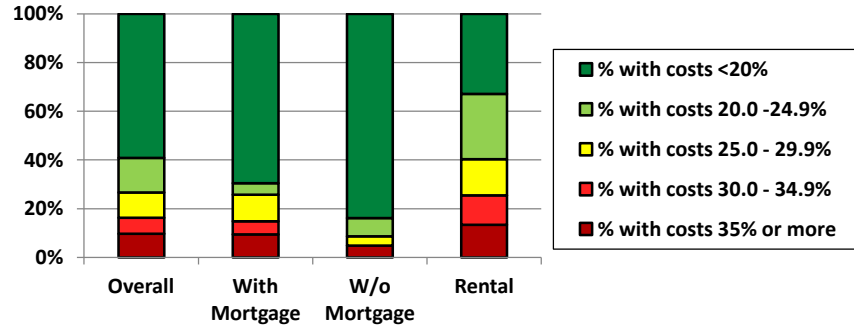
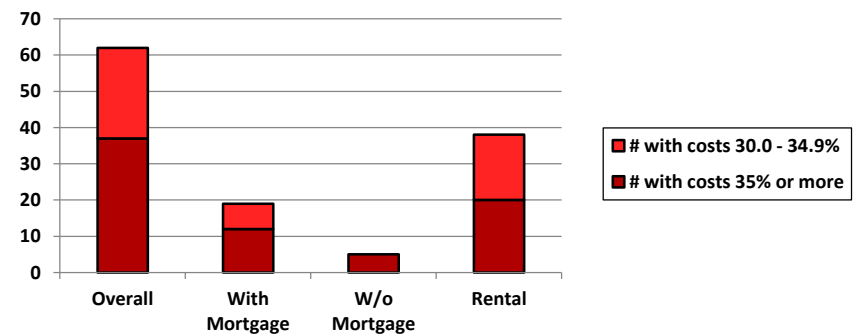


Figure C15: Number of Cost-Burdened Housing Units

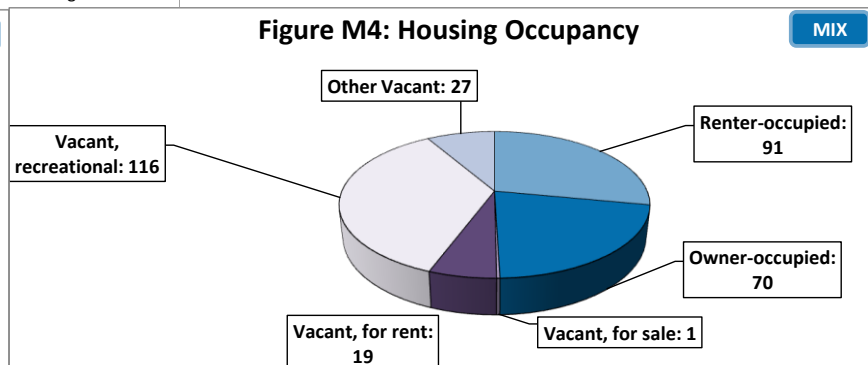
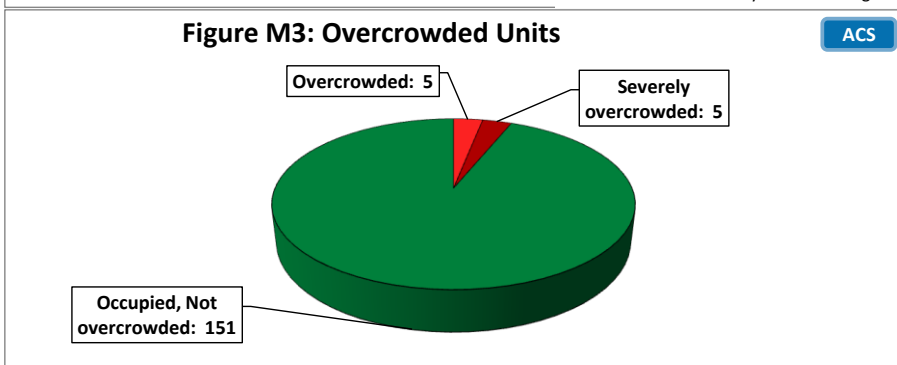
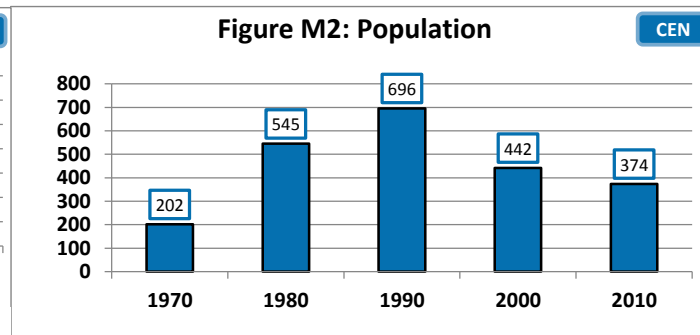
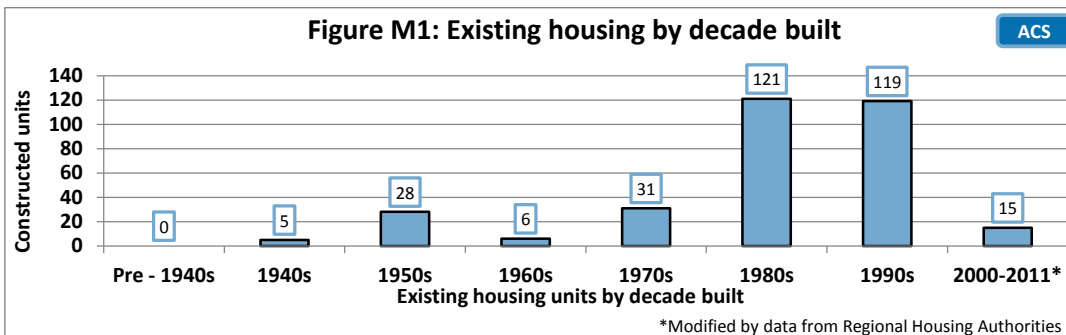


Community Profile for: King Salmon CDP

ANCSA Region: Bristol Bay Native Corporation

Regional Housing Authority: Bristol Bay Housing Authority

BEES Climate Zone (Heating Degree Days): Zone 7 (11,716 HDD)



King Salmon 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	22	2-star plus	65.9	1,688	\$ 7,281	229	142	\$4.69	9.4	36%
Retrofit units	13	4-star	82.1	1,602	\$ 5,695	146	100	\$3.78	5.7	51%
New construction	2	NR	NR	NR	NR	NR	NR	NR	NR	NR
Overall	37	2-star plus	66.6	1,688	\$ 7,232	225	140	\$4.65	9.2	37%

King Salmon 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	22	7.9	18	15	9	13	2	3	0.30	NR	0.55
Retrofit units	13	5.5	33	16	19	NR	3	6	0.24	NR	0.32
New construction	2	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Overall	37	7.8	18	15	9	13	2	3	0.30	NR	0.55

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

MIX

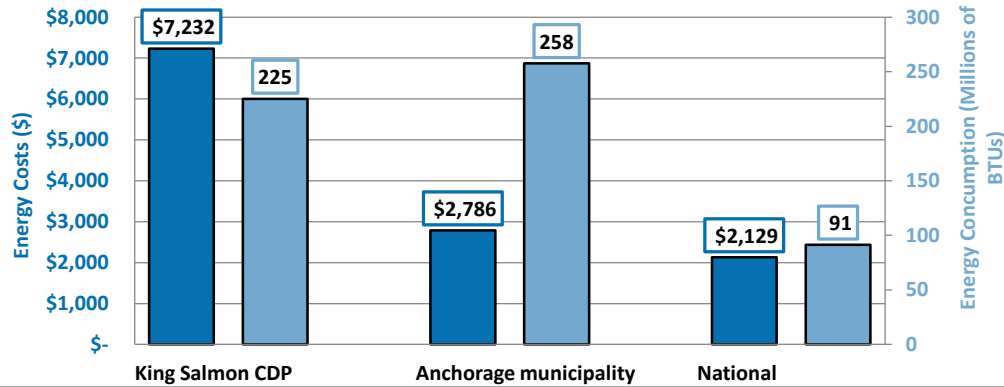
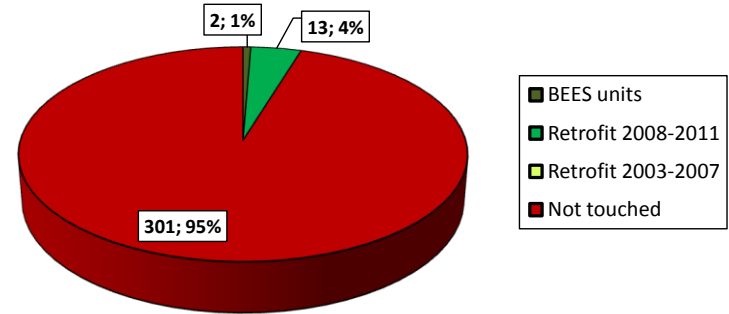


Figure M6: Housing Units Completing an AHFC Energy Program

ARIS



AFFORDABILITY - King Salmon CDP

Owner occupied House with Mortgage, Median Value
\$187,500
Owner-occupied House without a Mortgage, Median Value
\$256,300

Median Annual Household Income	
Housing Units	Household Income
All-occupied	\$ 90,313
Renter-occupied	\$ 67,212
Owner-occupied	\$ 122,857
w/ mortgage	\$ 125,313
w/o mortgage	\$ 66,042

Median Housing Costs		
	Monthly	Annual
All-occupied	\$ 1,137	\$ 13,644
Gross rent	\$ 1,173	\$ 14,076
Owner-occupied	\$ 925	\$ 11,100
Housing units w/ mortgage	\$ 1,801	\$ 21,612
Housing units w/out a mortgage	\$ 772	\$ 9,264

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

Average Annual Energy Cost	
With PCE	NO PCE
Without PCE	\$8,641

Housing Stock Estimates	Number of Units
All Housing	325
All Occupied Housing	161
All Vacant housing	164
Vacant Housing for Sale/Rent	20

Avg % Median Income spent on Energy	9.6%
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Figure M7: Affordability - Housing Costs as a Percent of Income

ACS

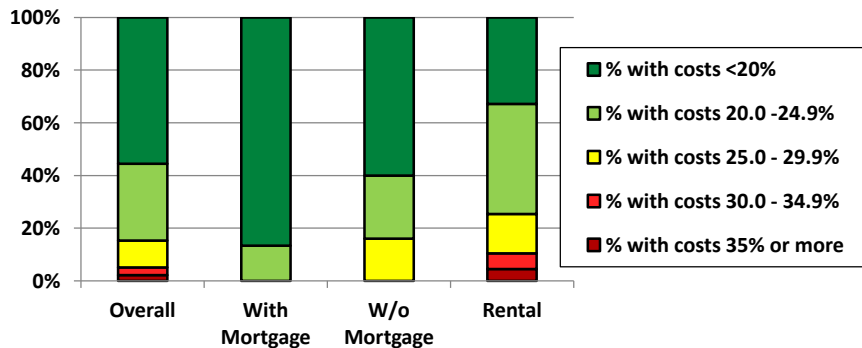
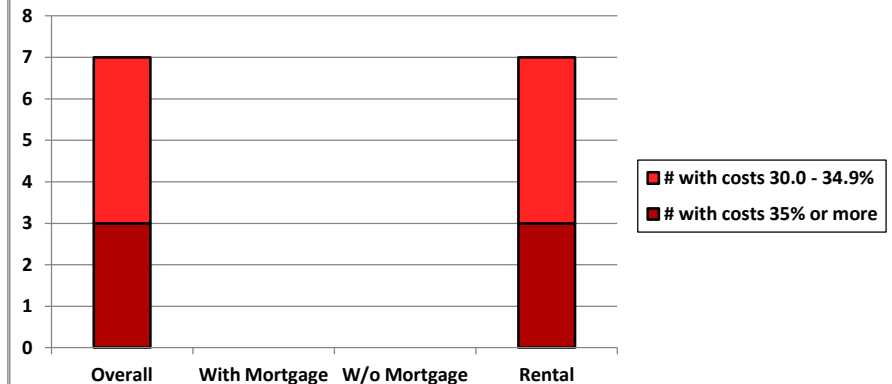


Figure M8: Number of Cost-Burdened Housing Units

ACS



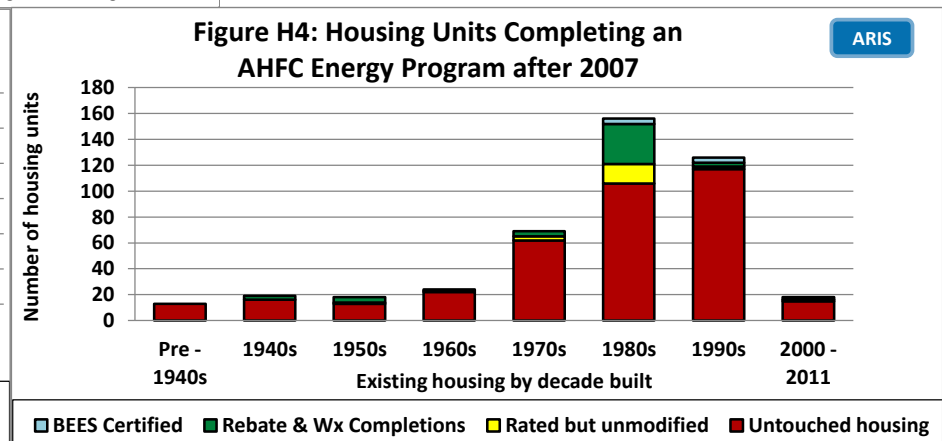
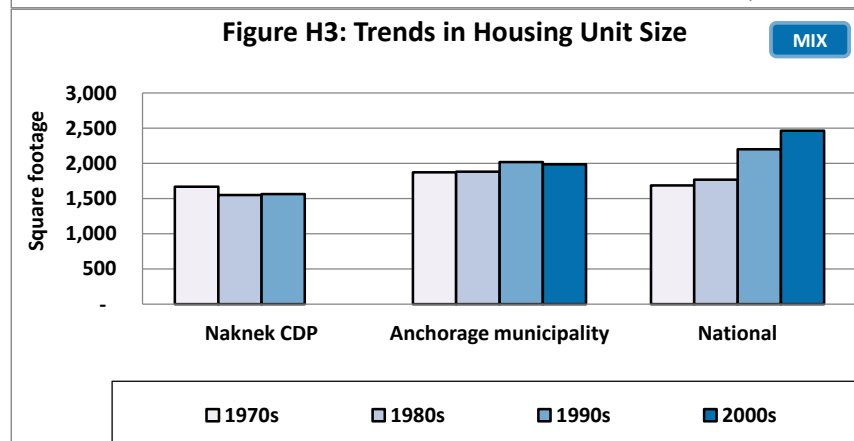
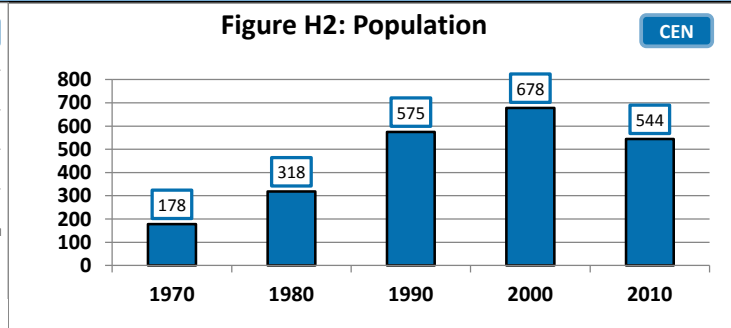
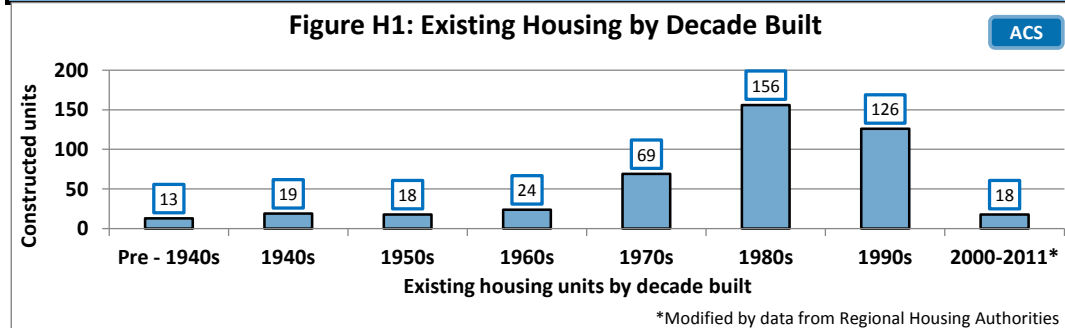
Community Profile for: Naknek CDP

ANCSA Region: Bristol Bay Native Corporation

Regional Housing Authority: Bristol Bay Housing Authority

BEES Climate Zone (Heating Degree Days): Zone 7 (11,716 HDD)

COMMUNITY - Naknek CDP



Houses Lacking Complete Plumbing or Kitchen Facilities	Households	
	Number	Percent
Lack complete plumbing	1	0%
Lack complete kitchen	2	1%

Avg Annual Energy Cost with PCE	\$7,670
Avg Annual Energy Cost without PCE	\$9,054

Weatherization Program Retrofits (funding increased in 2008)	
Date Range	Units
2008-2011	41
2003-2007	NR
1990-2002	NR

Estimated Total Annual Community Space Heating Fuel Use		
Fuel Oil	264,247	(gallons)
Nat Gas	-	(ccf)
Electricity	209,468	(kWh)
Wood	131	(cords)
Propane	-	(gallons)
Coal	-	(tons)

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

Housing Stock Estimates	Number of Units
All Housing	443
All Occupied Housing	234
All Vacant housing	209
Vacant Housing for Sale or Rent	15

OVERCROWDING & VENTILATION - Naknek CDP

Figure H5: Overcrowded Units

ACS

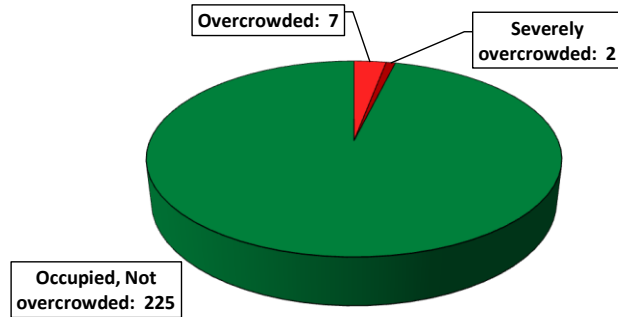


Figure H6: Housing Occupancy

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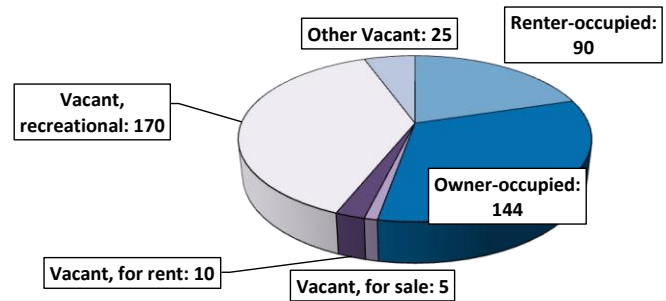


Figure H7: Average Air-Tightness of Current Homes by Decade Built

ARIS

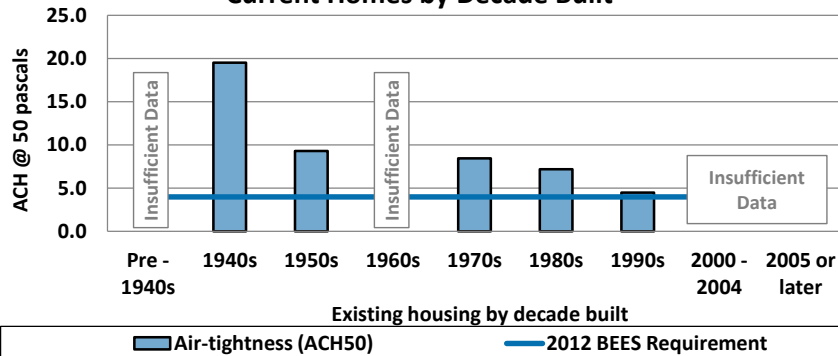


Figure H8: Existing Ventilation Type by Decade Built

ARIS

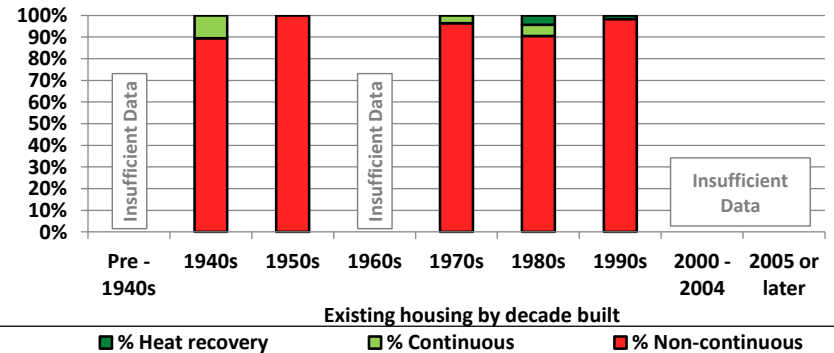


Figure H9: Percent of Housing Stock at High Risk of Moisture and Air Quality Problems

ARIS

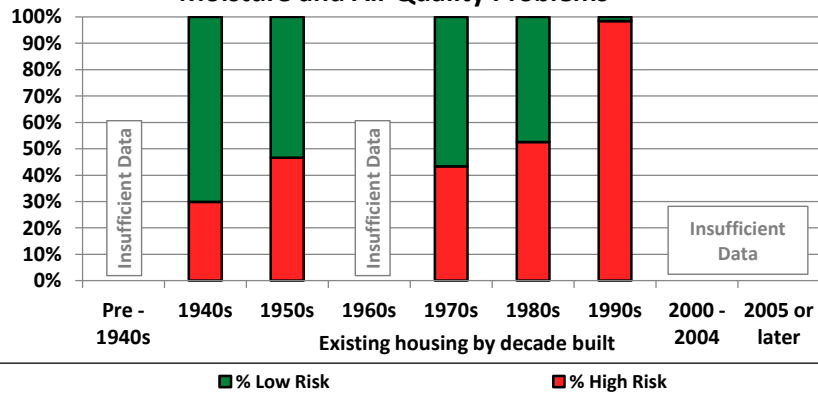
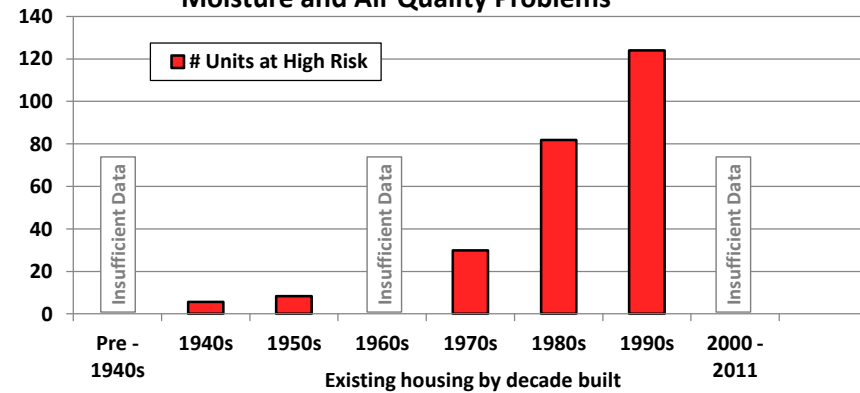


Figure H10: Quantity of Housing Stock at High Risk of Moisture and Air Quality Problems

ARIS



ENERGY - Naknek CDP												
Current Naknek CDP Housing Energy Characteristics By Decade Built												
Current Residential Units by Year Built	Number of Records	Avg Energy Rating Stars	Avg Energy Rating Points	Avg Sq. Feet	Avg. Annual Energy Cost (with PCE)	Avg. Annual Energy Use (million BTUs)	Avg Ann Energy by End Use (million Btus)			Avg. EUI (kBtus/SF)	Avg. ECI (\$ / SF)	Avg. Home Heating Index
							Space Heating	DHW	Appliances			
OVERALL	85	3-star	68.3	1,571	\$ 7,670	209	154	23	28	141	\$ 4.97	9.1
Pre- 1940	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1940- 49	5	1-star	31.4	653	\$ 3,088	114	93	2	19	287	\$ 6.75	20.7
1950- 59	7	2-star	58.7	1,781	\$ 8,857	234	186	19	29	138	\$ 5.18	9.4
1960- 69	3	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1970- 79	12	2-star	57.4	1,668	\$ 10,101	283	223	29	31	170	\$ 6.09	11.6
1980- 89	74	3-star	71.6	1,550	\$ 6,881	190	132	26	27	135	\$ 4.82	8.4
1990- 99	12	3-star plus	75.7	1,564	\$ 7,457	195	141	20	28	115	\$ 4.35	7.6
2000- 2004	4	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
2005 or later	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

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

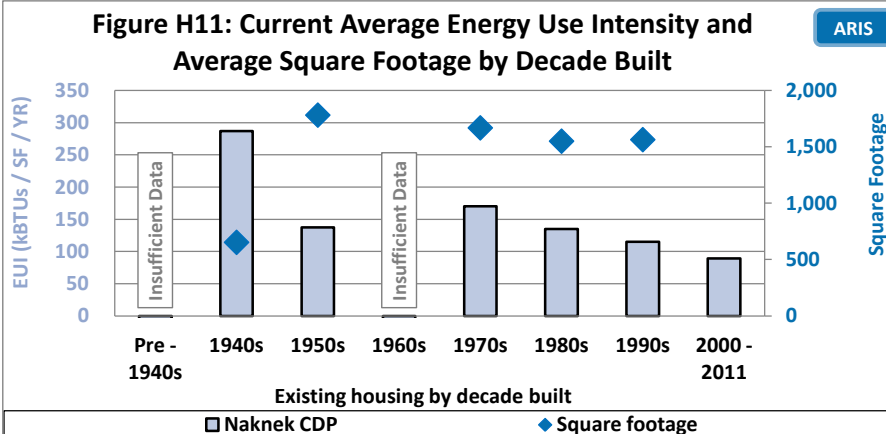
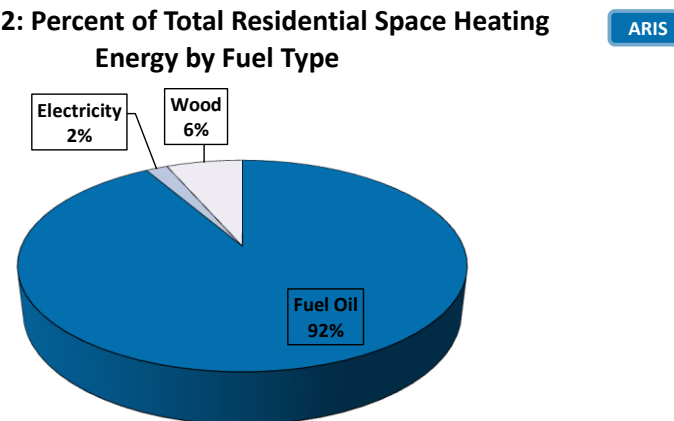


Figure H12: Percent of Total Residential Space Heating Energy by Fuel Type

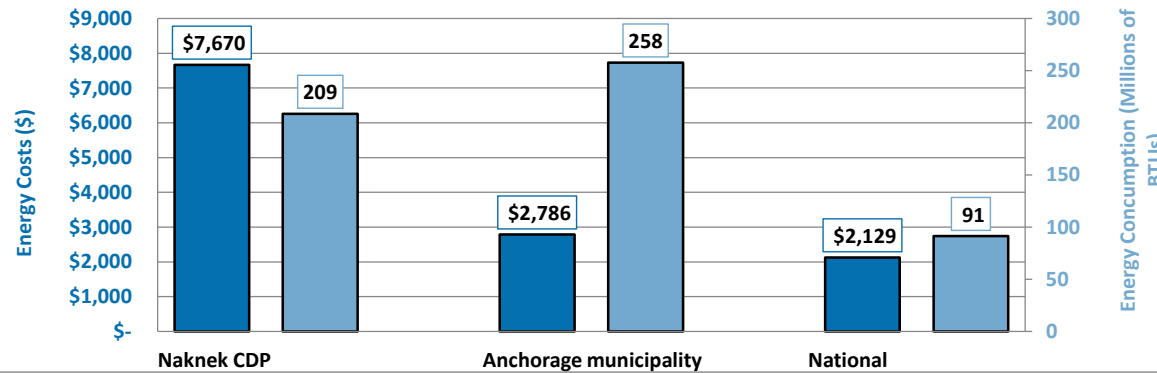


Current Naknek CDP Housing Envelope Characteristics By Decade Built											
Current Residential Units by Year Built	Number of Records	ACH 50	Ceiling R	Above Grade Wall R	Below Grade Wall R	Above Grade Floor R	On Grade Floor R	Below Grade Floor R	Door U	Garage Door U	Window U
OVERALL	85	7.8	24	16	6	21	3	3	0.30	0.39	0.48
Pre- 1940	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1940- 49	5	19.5	11	10	NR	NR	NR	NR	0.30	NR	0.70
1950- 59	7	9.3	20	13	4	NR	NR	3	0.43	NR	0.46
1960- 69	3	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1970- 79	12	8.4	27	15	2	NR	3	3	0.36	NR	0.54
1980- 89	74	7.2	25	17	8	20	3	3	0.26	0.42	0.45
1990- 99	12	4.5	49	22	18	NR	18	3	0.28	0.24	0.42
2000- 2004	4	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
2005 or later	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

BEES 2009 - Climate Zone 7	7.0	38	21	15	15	38	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 - Naknek CDP

Figure H13: Average Annual Home Energy Costs and Use



Housing Information	Avg Household Size (# of people)
All-occupied	2.5
Owner-occupied	2.6
renter-occupied	2.4

Owner-occupied House with Mortgage, Median Value
\$169,300

Owner-occupied House without a Mortgage, Median Value
\$160,800

Median Annual Household Income	
Housing Units	Household Income
All-occupied	\$ 89,167
Renter-occupied	\$ 55,000
Owner-occupied	\$ 118,125
w/ mortgage	\$ 114,250
w/o mortgage	\$ 127,639

	Median Housing Costs	
	Monthly	Annual
All-occupied	\$ 929	\$ 11,148
Gross rent	\$ 900	\$ 10,800
Owner-occupied	\$ 938	\$ 11,256
Housing units w/ mortgage	\$ 1,508	\$ 18,096
Housing units w/out a mortgage	\$ 539	\$ 6,468

Avg % of Median Income Spent on Energy	8.6%
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Figure H14: Affordability - Housing Costs as a Percent of Income

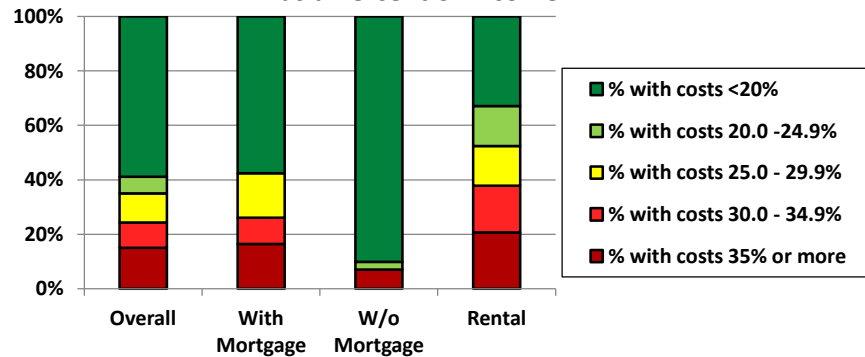
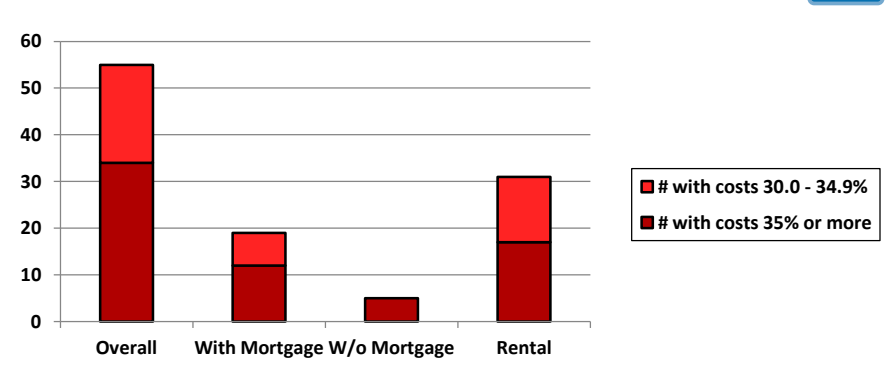


Figure H15: Number of Cost-Burdened Housing Units



Community Profile for: South Naknek CDP

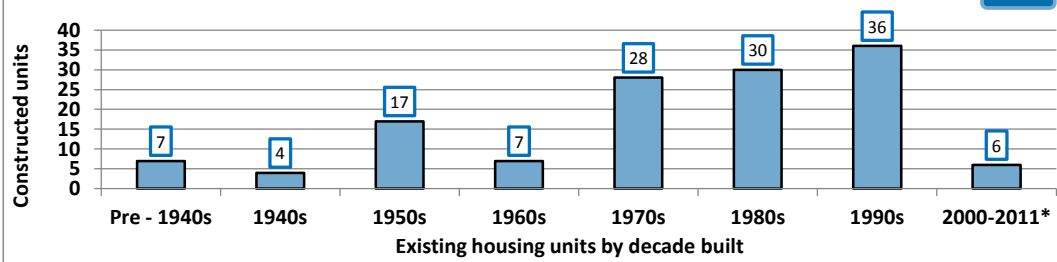
ANCSA Region: Bristol Bay Native Corporation

Regional Housing Authority: Bristol Bay Housing Authority

BEES Climate Zone (Heating Degree Days): Zone 7 (11,772 HDD)

COMMUNITY - South Naknek CDP

Figure H1: Existing Housing by Decade Built



*Modified by data from Regional Housing Authorities

Figure H2: Population

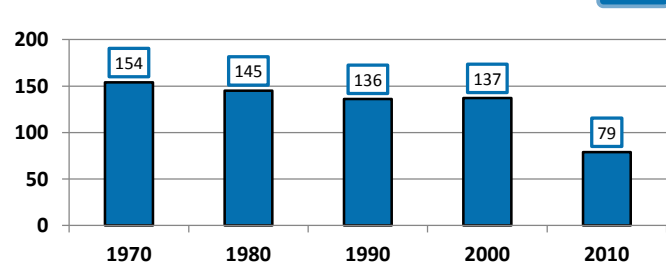


Figure H3: Trends in Housing Unit Size

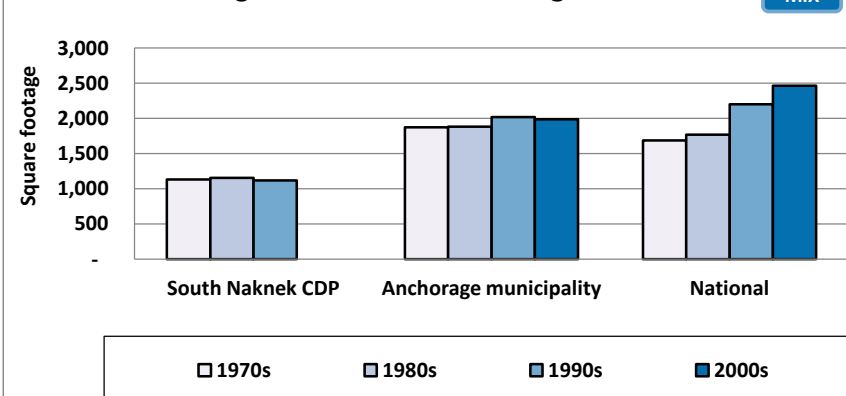
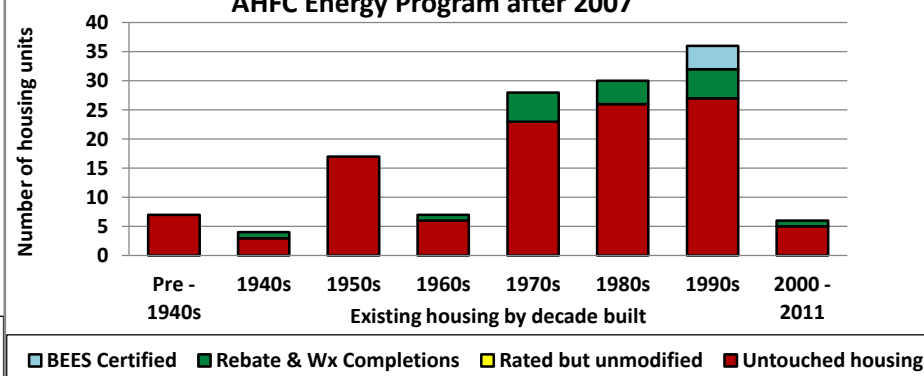


Figure H4: Housing Units Completing an AHFC Energy Program after 2007



Houses Lacking Complete Plumbing or Kitchen Facilities	Households	
	Number	Percent
Lack complete plumbing	3	10%
Lack complete kitchen	0	0%

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

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

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

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

Housing Stock Estimates	Number of Units
All Housing	135
All Occupied Housing	29
All Vacant housing	106
Vacant Housing for Sale or Rent	7

OVERCROWDING & VENTILATION - South Naknek CDP

Figure H5: Overcrowded Units

ACS

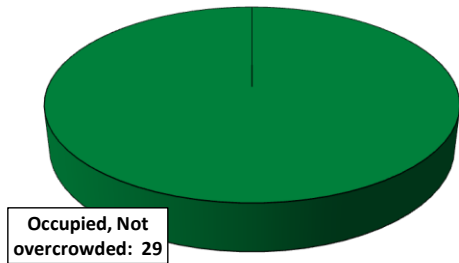


Figure H6: Housing Occupancy

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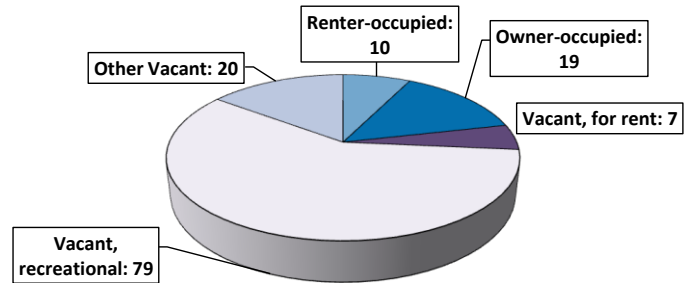


Figure H7: Average Air-Tightness of Current Homes by Decade Built

ARIS

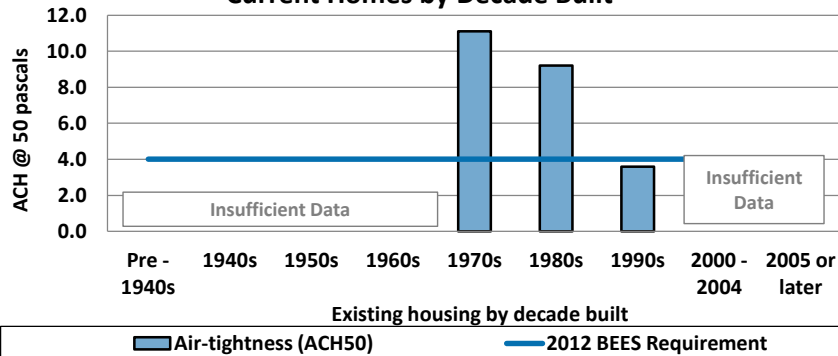


Figure H8: Existing Ventilation Type by Decade Built

ARIS

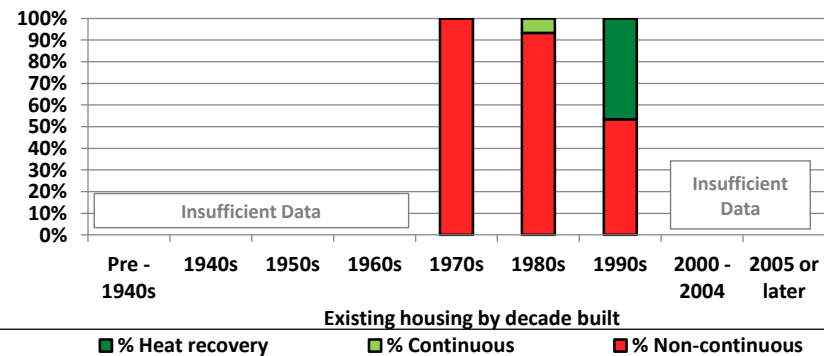


Figure H9: Percent of Housing Stock at High Risk of Moisture and Air Quality Problems

ARIS

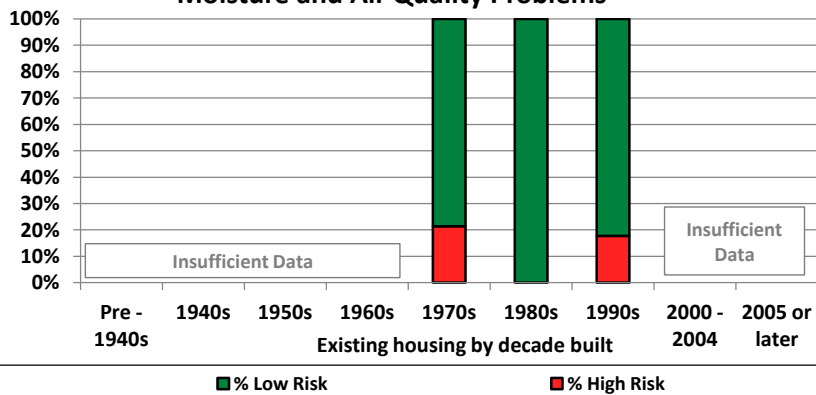
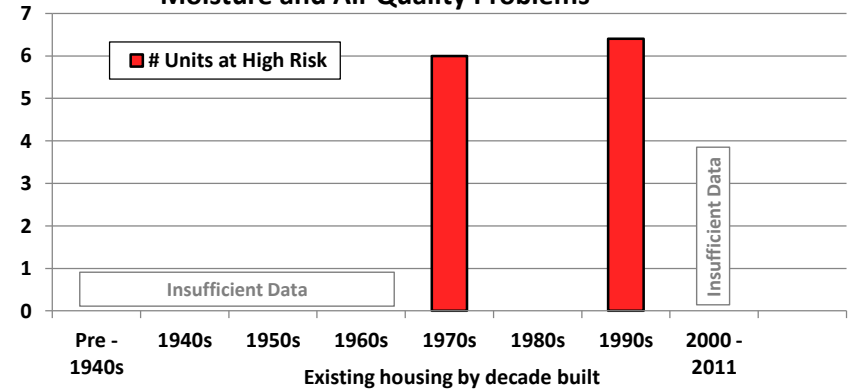


Figure H10: Quantity of Housing Stock at High Risk of Moisture and Air Quality Problems

ARIS



ENERGY - South Naknek CDP												
Current South Naknek CDP Housing Energy Characteristics By Decade Built												
Current Residential Units by Year Built	Number of Records	Avg Energy Rating Stars	Avg Energy Rating Points	Avg Sq. Feet	Avg. Annual Energy Cost (with PCE)	Avg. Annual Energy Use (million BTUs)	Avg Ann Energy by End Use (million Btus)			Avg. EUI (kBtus/SF)	Avg. ECI (\$ / SF)	Avg. Home Heating Index
							Space Heating	DHW	Appliances			
OVERALL	21	3-star	71.6	1,161	\$ 5,265	141	88	23	25	134	\$ 4.86	7.2
Pre- 1940	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1940- 49	2	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	2	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1970- 79	11	2-star plus	66.6	1,134	\$ 5,244	142	92	26	24	134	\$ 4.91	7.4
1980- 89	7	3-star plus	73.4	1,155	\$ 5,273	137	94	18	26	128	\$ 4.71	7.4
1990- 99	15	4-star	79.6	1,119	\$ 4,132	115	55	25	22	122	\$ 4.22	5.0
2000- 2004	1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
2005 or later	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

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

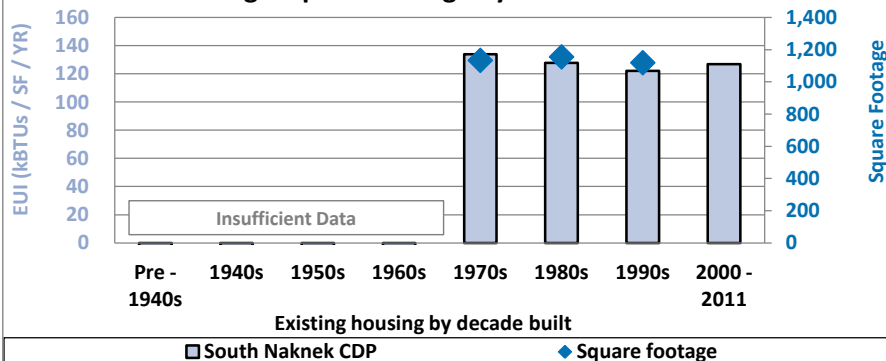
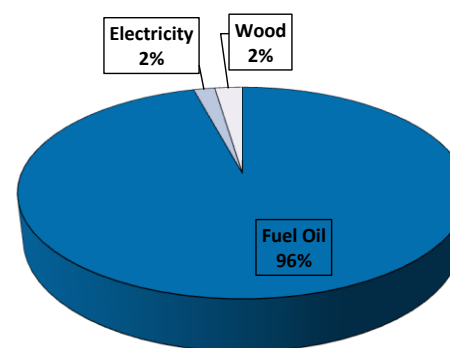


Figure H12: Percent of Total Residential Space Heating Energy by Fuel Type

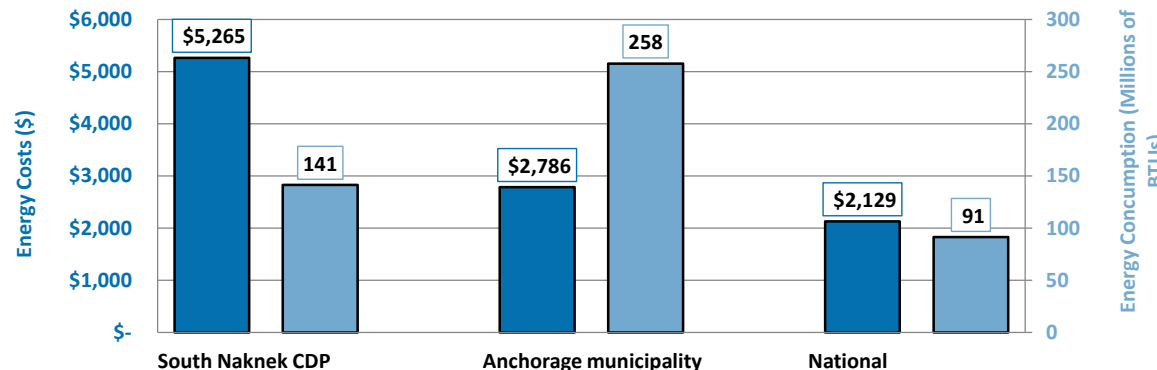


Current South Naknek CDP Housing Envelope Characteristics By Decade Built											
Current Residential Units by Year Built	Number of Records	ACH 50	Ceiling R	Above Grade Wall R	Below Grade Wall R	Above Grade Floor R	On Grade Floor R	Below Grade Floor R	Door U	Garage Door U	Window U
OVERALL	21	9.2	21	16	5	27	2	3	0.32	NR	0.44
Pre- 1940	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1940- 49	2	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	2	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1970- 79	11	11.1	13	17	NR	31	NR	NR	0.32	NR	0.41
1980- 89	7	9.2	29	14	NR	NR	NR	NR	0.42	NR	0.55
1990- 99	15	3.6	88	37	11	NR	NR	6	0.11	NR	0.22
2000- 2004	1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
2005 or later	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

BEES 2009 - Climate Zone 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	38	15	15	15	0.30	0.30	0.30

AFFORDABILITY - South Naknek CDP

Figure H13: Average Annual Home Energy Costs and Use



Housing Information	Avg Household Size (# of people)
All-occupied	2.3
Owner-occupied	2.5
renter-occupied	2.0

Owner-occupied House with Mortgage, Median Value
\$165,000

Owner-occupied House without a Mortgage, Median Value
\$120,800

Median Annual Household Income	
Housing Units	Household Income
All-occupied	\$ 62,750
Renter-occupied	\$ 2,500
Owner-occupied	\$ 63,250
w/ mortgage	\$ 64,000
w/o mortgage	\$ 51,250

Median Housing Costs		
	Monthly	Annual
All-occupied	\$ 525	\$ 6,300
Gross rent	NR	NR
Owner-occupied	\$ 550	\$ 6,600
Housing units w/ mortgage	\$ 750	\$ 9,000
Housing units w/out a mortgage	\$ 450	\$ 5,400

Avg % of Median Income Spent on Energy	8.4%
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Figure H14: Affordability - Housing Costs as a Percent of Income

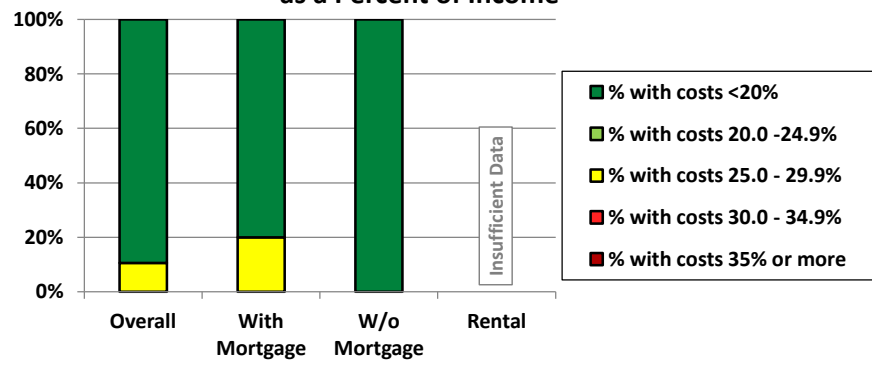


Figure H15: Number of Cost-Burdened Housing Units

