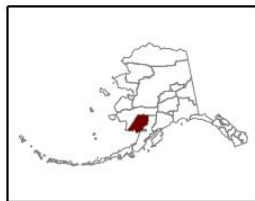
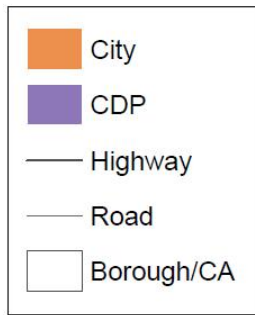


Dillingham Census Area



Map Prepared by:
Alaska Department of Labor
& Workforce Development
September 2011
Source: US Census
2010 TIGERline

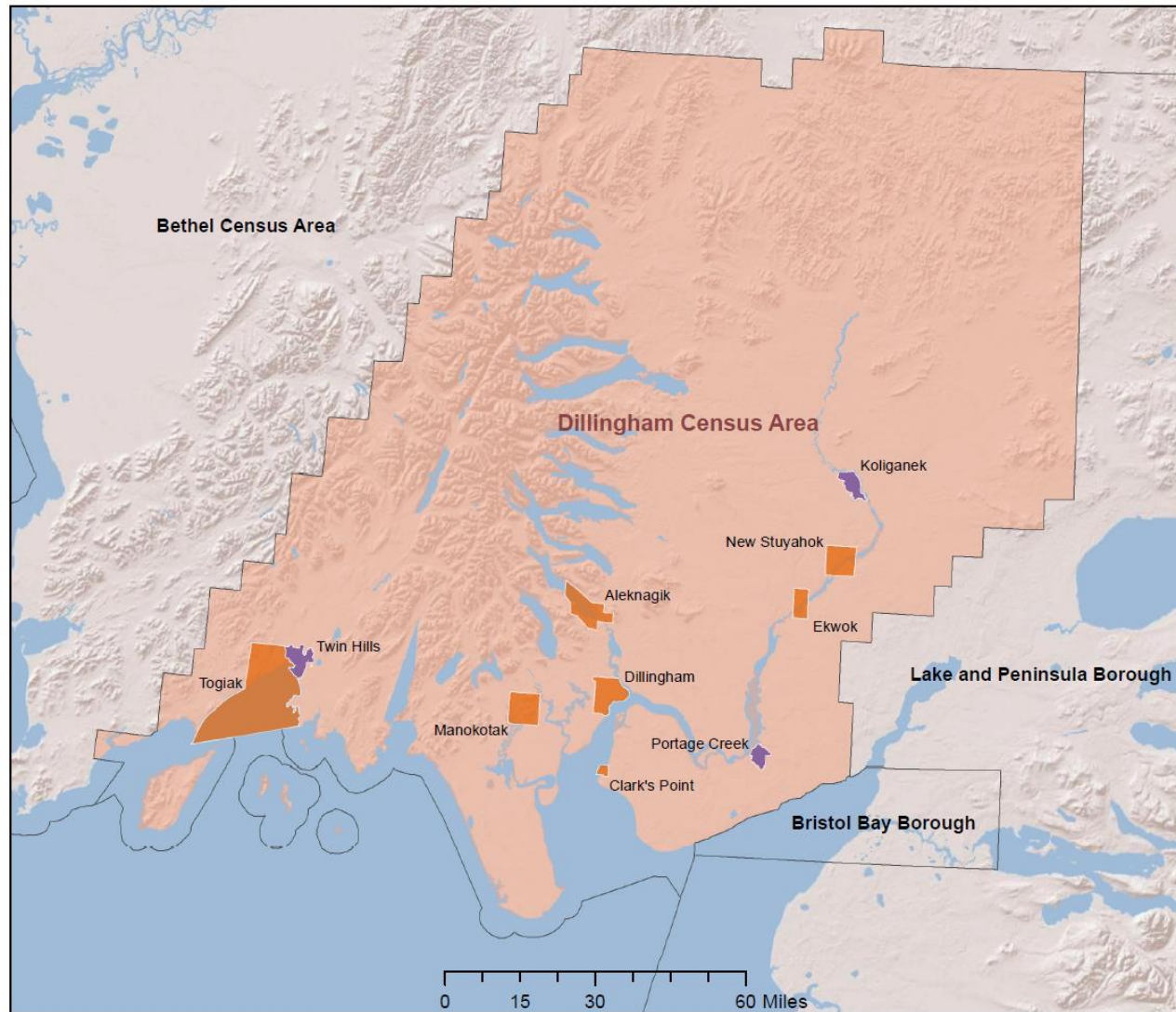


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Togiak Data Quantity: Medium	25
Twin Hills Data Quantity: Low	27

Dillingham Census Area Dashboard

Population: The Alaska Department of Labor and Workforce Development's current (2012) population estimate for the Dillingham Census Area is 4,988—an increase of 1% from 2000.

Housing Units: There are currently 2,416 housing units in the Dillingham Census Area. Of these, 1,369 are occupied, 128 are for sale or rent, and the remaining 919 are seasonal or otherwise vacant units (Profile Figure C6).

Energy: The average home in the Dillingham Census Area is 1,211 square feet and uses 134,000 BTUs of energy per square foot annually, 2% less than the statewide average of 137,000 BTUs per square foot per year.

Energy Costs: Using AKWarm estimates, average annual energy cost for homes in the Dillingham Census Area is \$6,320, which is approximately 2.3 times more than the cost in Anchorage, and 3 times more than the national average (Profile Figure C13).

Energy Programs: Approximately 22% of occupied housing in the Dillingham 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 current housing stock, newer homes have better energy performance. On average, homes built in the 1960s are currently rated at 1-star-plus, compared to a current average rating of 4-stars for houses built after 2000.

Air-tightness: Within current housing stock, newer homes are tighter. On average, homes built in the last decade meet the 2009 BEES standard of 7 air-changes per hour at 50 pascals (ACH50). In contrast, homes built before 1940 are 2.7 times leakier than those built since 2000 (Profile Figure C7).

Ventilation: An estimated 676 occupied housing units (or 49%) in the Dillingham Census Area 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: 18% of occupied units are estimated to be either overcrowded (11%) or severely overcrowded (7%). This is roughly 6 times the national average, and makes the Dillingham Census Area the sixth most overcrowded census area in the state.

Affordability: On average, approximately 20% of households in the Dillingham Census Area 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 11% of census median area income for occupied housing.

Dillingham Census Area Summary

Community

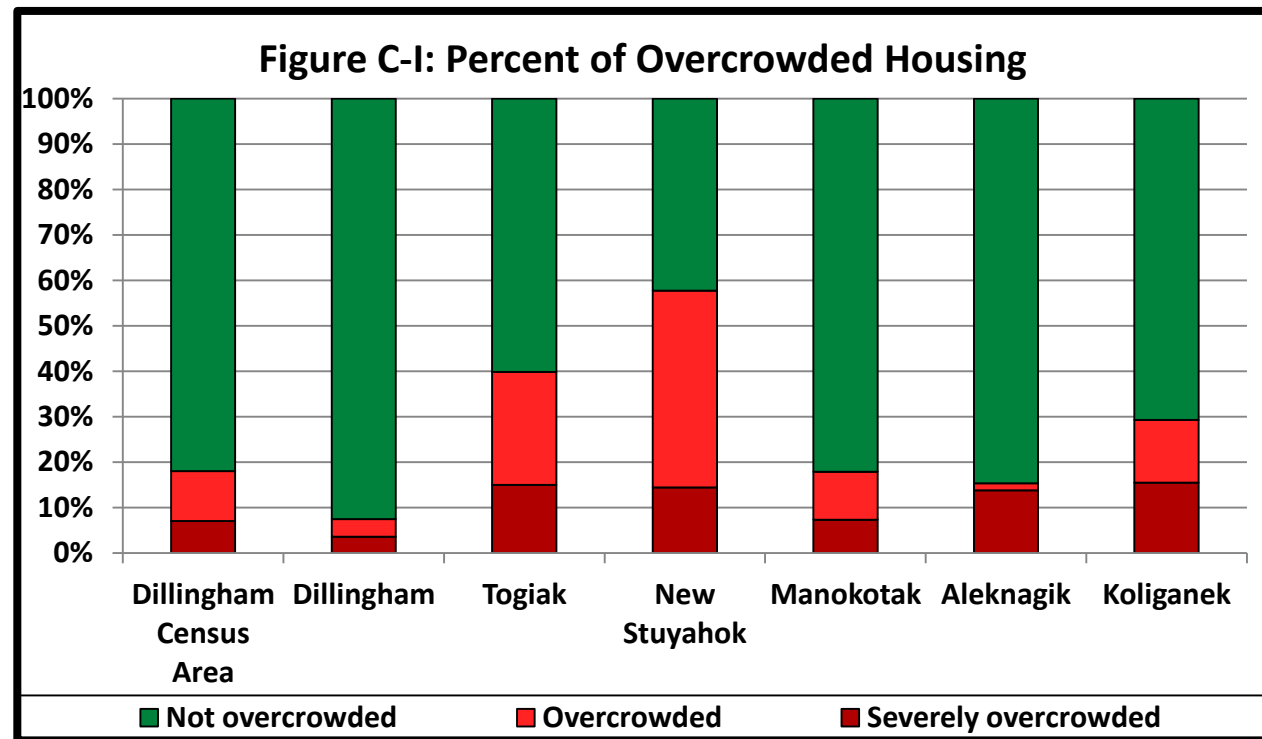
The Dillingham census area is located in the southwest corner of mainland Alaska in the Bristol Bay Native Corporation ANCSA region. Average home sizes in the census area range from 845 square feet in New Stuyahok to 1,597 square feet in Dillingham. The average home size for the census area as a whole is 1,211 square feet.

Overcrowding

Overall, 18% of occupied units in the census area are overcrowded (11%) or severely overcrowded (7%). Considering only the six most populous communities, overcrowding rates vary between 8% and 58% (Figure C-1). These communities include New Stuyahok, which has 58% of households with more than one person per room, roughly three times the census area average. The least overcrowded community is Twin Hills, where only 5% of households are overcrowded.

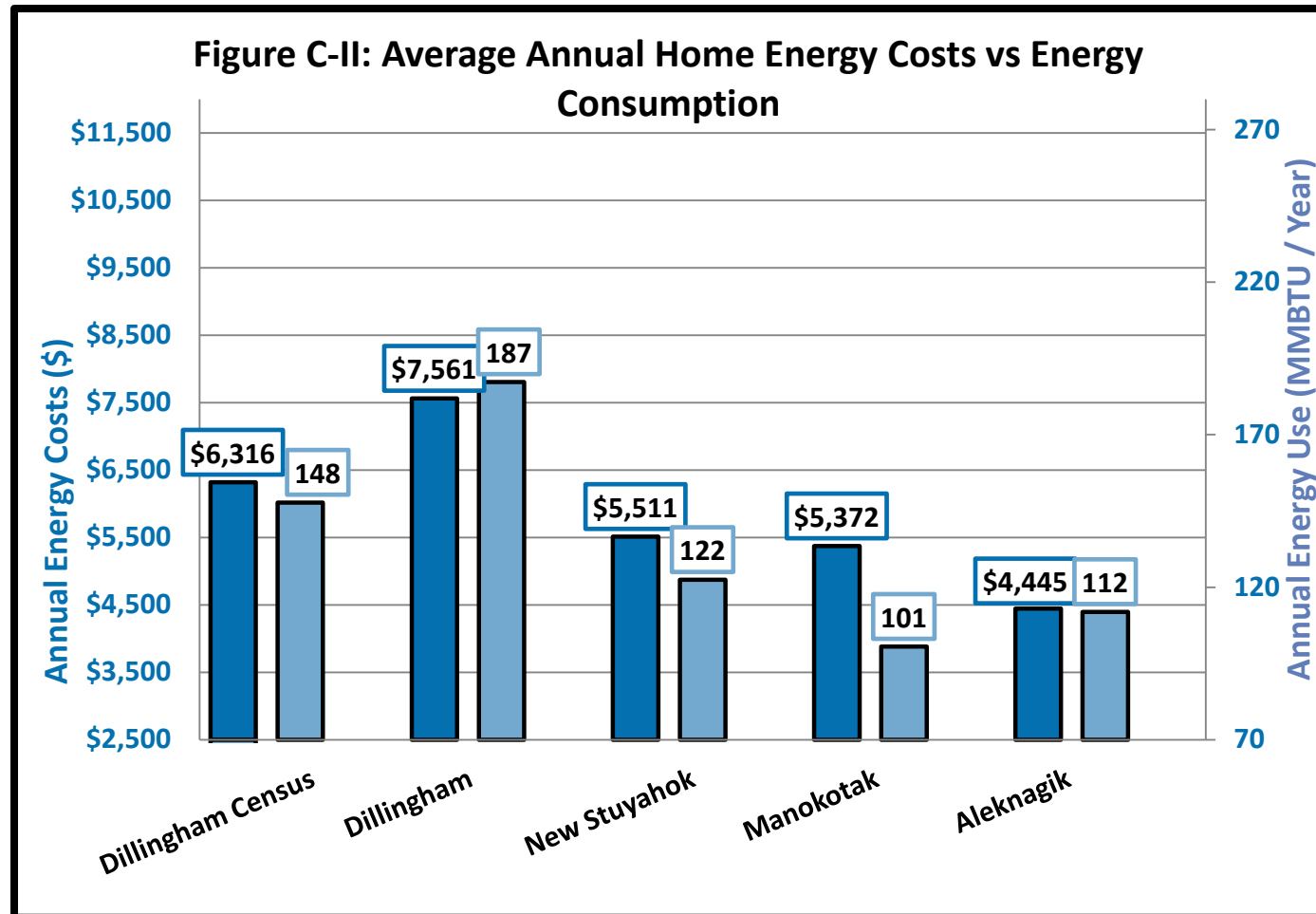
Approximately 5% of housing in the census area is available for sale or rent. The community of

Ekwok has the least amount of available housing, with an estimated zero houses available. The community of Dillingham has 10% available housing, the most of any community in the census area. Additionally, 38% of housing units in the census area are considered vacant because they are used for recreational, seasonal, or “other” purposes.



Energy

The Dillingham census area homes use on average 148 million BTUs of energy each year, for an average annual energy cost of \$6,316. The lowest energy costs are found in the community of Aleknagik, where residents pay an average annual energy cost of \$4,445. The community of Dillingham has the highest annual energy cost, \$7,561, or over \$3,000 more per year than some of the other communities in the census area. Housing units in the community of Dillingham also use almost twice the annual



energy of some of the other communities and are roughly twice the size (Figure C-II). Home heating indexes in the census area range from a low of 4.7 BTUs/ft²/HDD in Manokotak to a high of 9.5 BTUs/ft²/HDD in New Stuyahok.

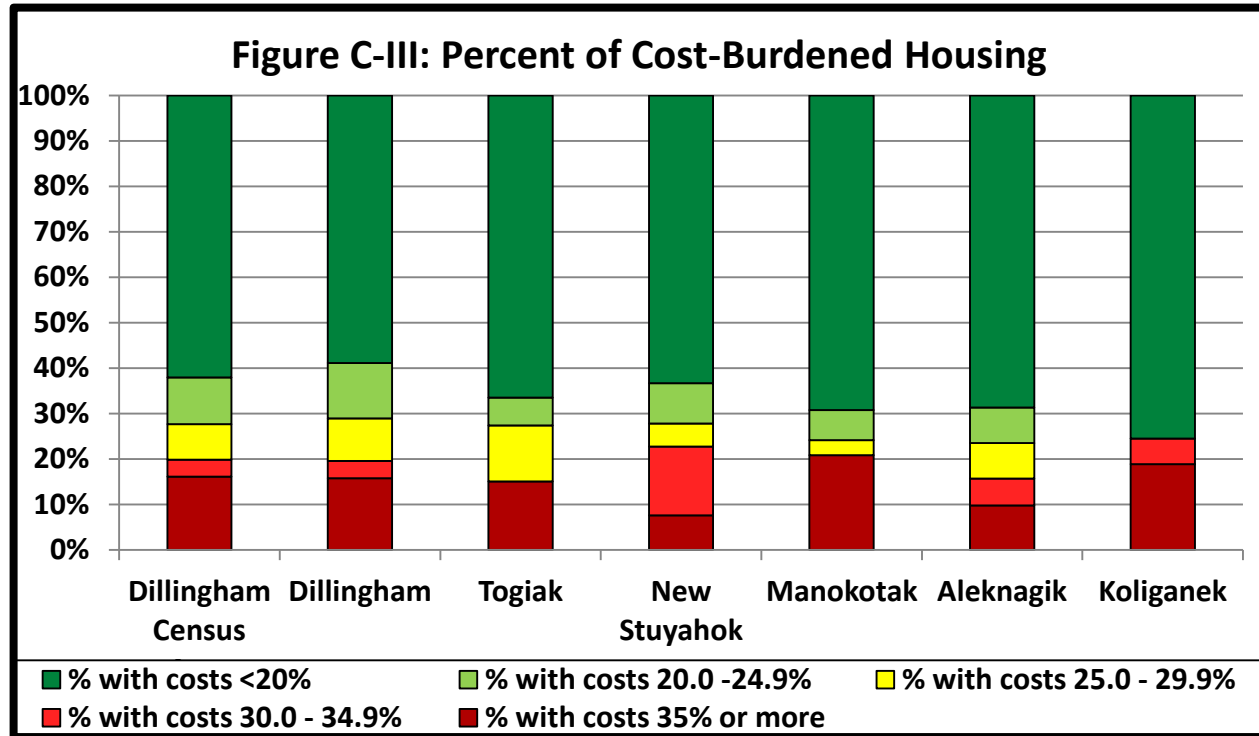
In the census area as a whole, approximately 26% of housing units have completed the Home Energy Rebate, Weatherization, or a BEES program since 2003. The community of Ekwok has the lowest participation rate, with an estimated no homes completing an energy program. At

the other end of the spectrum, 72% of homes in Manokotak have completed one of the programs. This has likely contributed to the fact that Manokotak has the lowest home heating index in the census area. Considering only the six most populous communities, participation rates range from 5% to 72%.

At least 45% of housing units built in the 1990s and 2000s have either an HRV or continuous mechanical ventilation system. However, more than 50% of homes built in the 1980s are relatively air-tight and lack one of these ventilation strategies. These homes are at higher risk of moisture- and indoor air quality-related problems.

Affordability

According to ACS estimates¹, roughly 20% of families in the census area are cost-burdened (Figure C-III). Between 15% and 25% of households in the six most populous communities spend more than 30%



of total income on housing costs. The most and least affordable communities are not among the six biggest: Ekwok has the highest percentage of cost-burdened households (40%) and Clark Point has the lowest percentage (0%). Clark Point also has the lowest median household income, \$22,500. The highest median income is found in the community of Dillingham, at \$67,782.

¹ CCHRC's analysis of ACS energy costs indicate that there are systematic underestimations for rural Alaska, which suggests that ACS-based cost burdened housing estimates are low. See Appendix A, "Analysis of American Community Survey Energy Cost Estimates" for more details.

Community, Regional, and Statewide Housing Characteristics

This census area summary only includes the highlights of housing characteristics at the census area level. Detailed data profile with charts and tables for both the census area and for each of the communities within it follow. The 2014 Alaska Housing Assessment provides a significant amount of data and analysis at statewide, ANCSA region, census area, and community levels. This assessment provides a statewide analysis of housing characteristics, how they compare to national numbers, and the estimated housing needs. Within the 2014 Alaska Housing Assessment, written summaries are available for each individual ANCSA region and census area, and data profiles are available for each community and census area characterizing the housing stock from the perspective of community, overcrowding, energy and affordability. These different tiers of information and analysis allow researchers, housing authorities, policymakers and others to generate answers to specific questions. For a detailed discussion of estimating housing need and comparison of methods to previous Housing Assessments, see Appendix B, "Statewide Need Assessment" of the 2014 Alaska Housing Assessment.

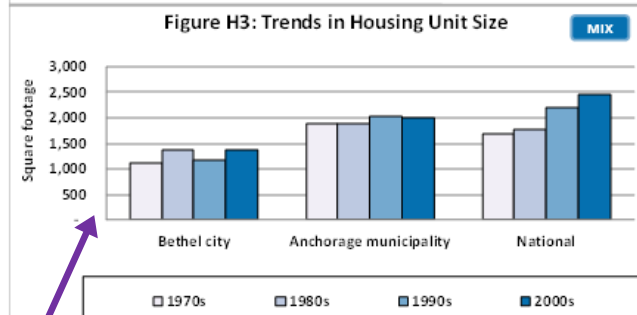
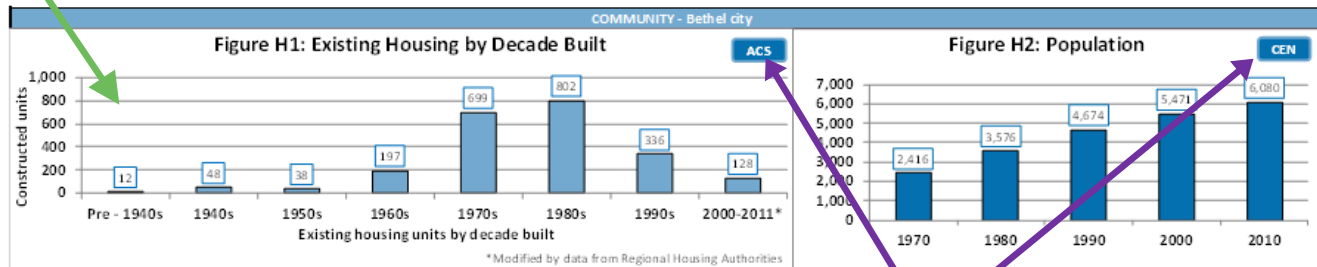
How to Interpret the Profile: Data Sources, Definitions & Clarifications

1

This graph show the breakdown of *current* housing stock by the decade in which the housing units were built. It does *not* show trends over time.

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

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



Data Source Key:

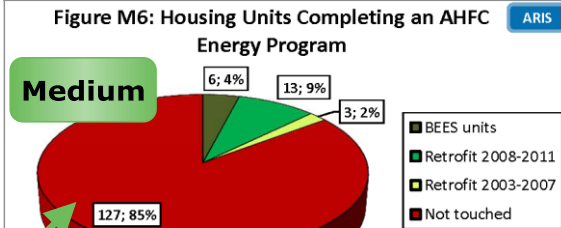
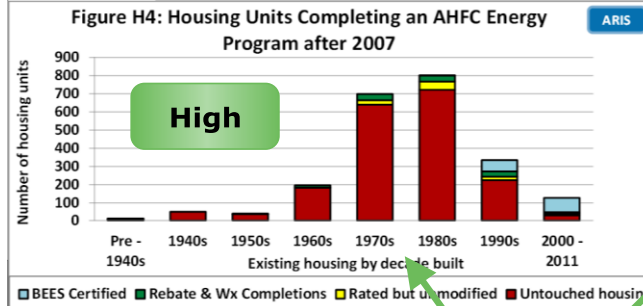
- 2011 American Community Survey 5 year estimates (ACS) **ACS**
- Alaska Retrofit Information System energy audits **ARIS**
- 2010 Decennial Census **CEN**
- Mixed data source; see individual graphs for details. **MIX**

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

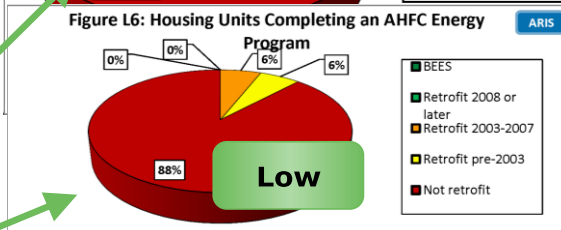
How to Interpret the Profile: Data Sources, Definitions & Clarifications

1

Energy program activity within communities with high, medium and low amounts of ARIS data available. (See p.7 of "How to Interpret" for detail on data levels).



Communities - AHFC Energy Program Activity
High Data - Reported by decade built for the housing units.
Medium Data - Reported by percent of total housing units touched.
Low Data - Have few or no post-2008 Weatherization/Rebate completions or BEES certifications in the ARIS database.



- PCE = Power Cost Equalization
- Average Annual Energy Cost with PCE: The cost to the household after it has been lowered by the PCE subsidy.
- Without PCE: The actual energy cost, including the amount paid by the State for PCE.

American Community Survey (ACS) Data:
Complete Plumbing: Includes hot & cold running water, a flush toilet, and a bathtub or shower within the home.
Complete Kitchen: Includes a sink with a faucet, a stove/range, and a refrigerator.

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

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

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

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

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

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

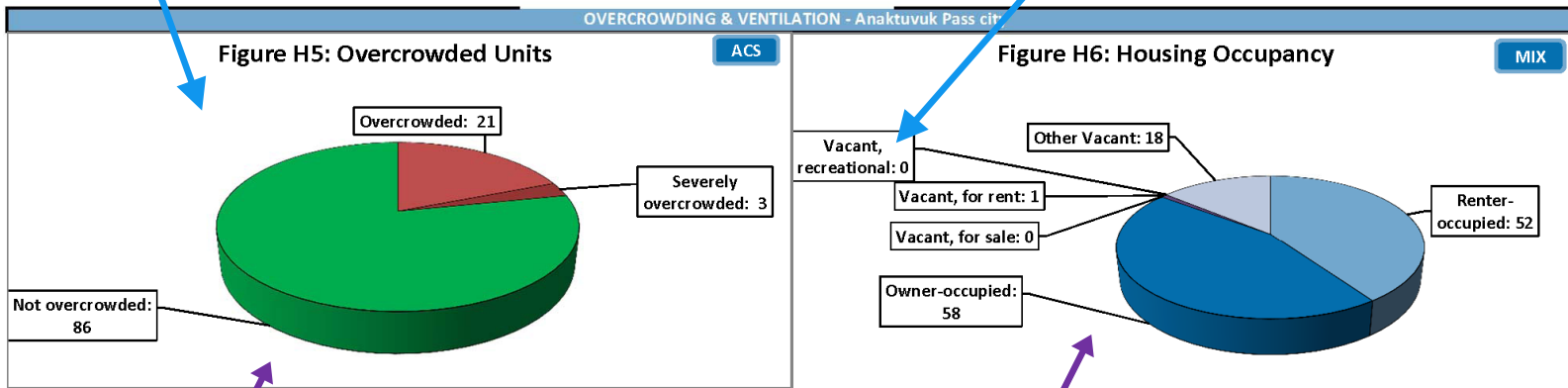
Units weatherized before 2008 are eligible to participate in the program again. (Data source: Alaska Housing Finance Corporation).

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

2

Overcrowded: Housing units with more than 1 person per room
Severely Overcrowded: Housing units with more than 1.5 people per room.
 "Rooms" include bedrooms, living rooms, dining rooms, kitchens, and other finished, separated spaces, but not including bathrooms, porches, balconies, foyers, halls, or unfinished basements.

Recreational: For seasonal, recreational, or occasional use.



Data Source:
 2011 American Community Survey 5-year estimates

Data Sources: The number of owner-occupied, renter-occupied, and total vacant units are taken from the 2011 ACS 5-year estimates. Data for vacancy type, only available from the decennial Census, were derived by taking the decennial census ratios by vacancy type and applying them to the total number of vacant units.

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

2

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

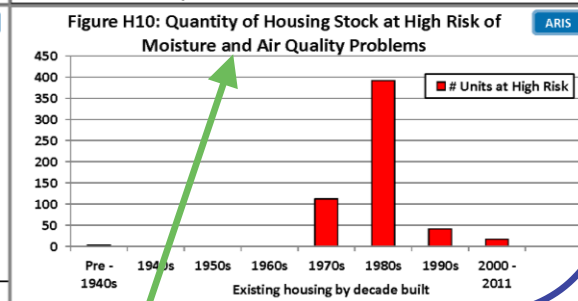
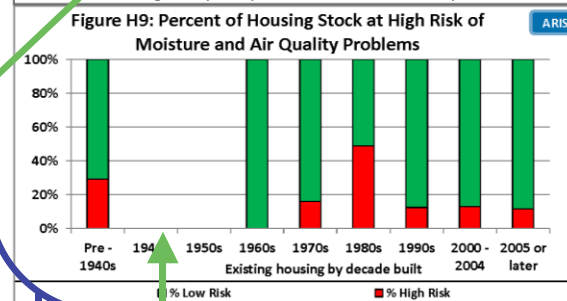
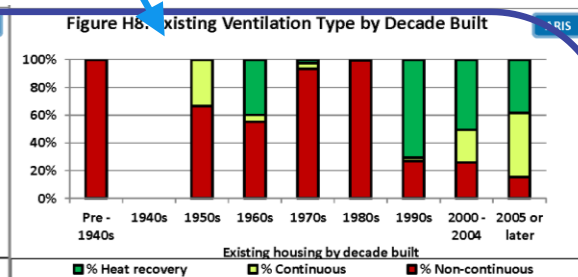
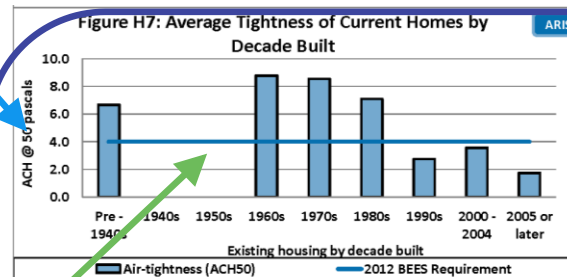
Continuous: Mechanical ventilation without heat recovery operated with automatic controls.

Non-Continuous ventilation: Includes homes with range and/or bath fans not operated using automatic controls.

ACH50: The results of a blower door test to measure building air leakage. Smaller numbers indicate tighter buildings. Tighter buildings lose less heated air to the outside and thus use less energy for space heating.

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

Data Source:
Alaska Retrofit Information System



Decades with no bar lack sufficient data for reporting. They should not be considered zero quantities.

High Risk of Moisture and Air Quality Problems: Note that moisture or poor indoor air quality have not been physically measured; these houses are considered "at-risk" because they are relatively air tight (less than 0.5 estimated natural air changes per hour) and do not have a continuous ventilation system.

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

Rating stars and points are based on AHFC's AkWarm energy rating system.

Average annual energy cost:
Includes all end uses. Costs are estimated using January 2013 energy prices, and include reductions from the PCE program.

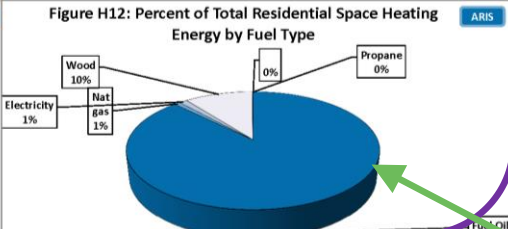
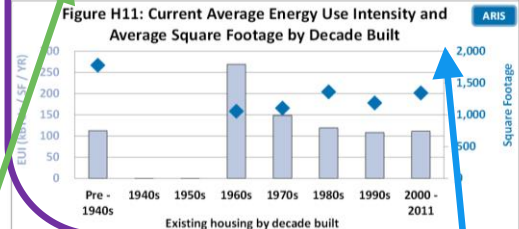
Space Heating, DHW, Appliances:
Estimated annual energy for the end uses of: Space Heating, Domestic Hot Water, and all other energy including lights, appliances, and electronics.

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

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

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

Current 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 (\$ / \$/ SqF)	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



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

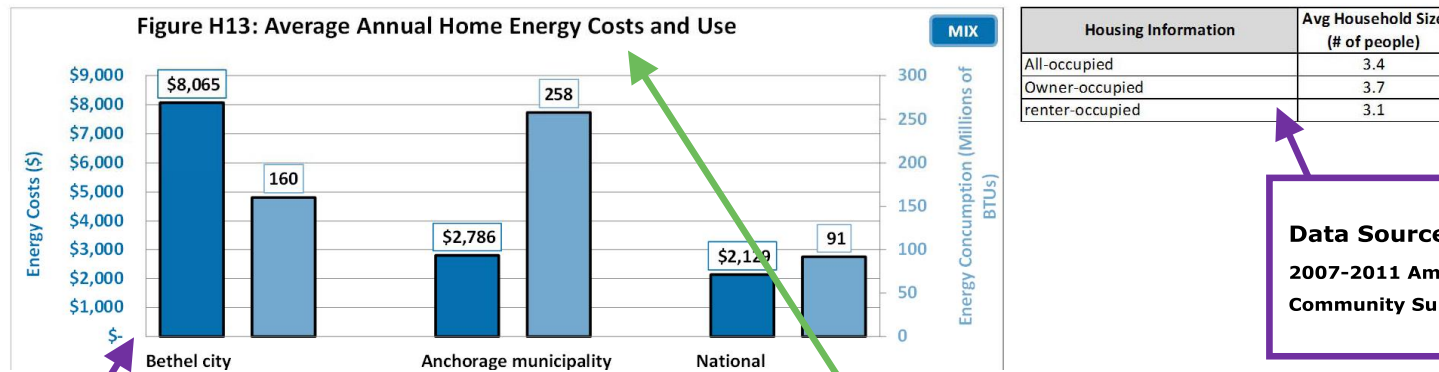
Communities are categorized in this report by the amount of ARIS data available, and reporting is more extensive for locations with more data. Data quantities are defined as--

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?"

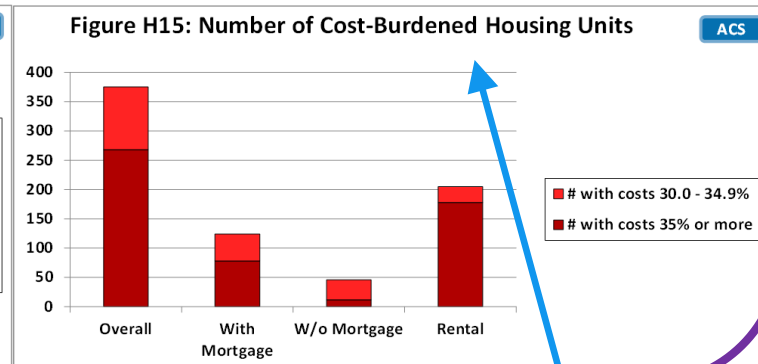
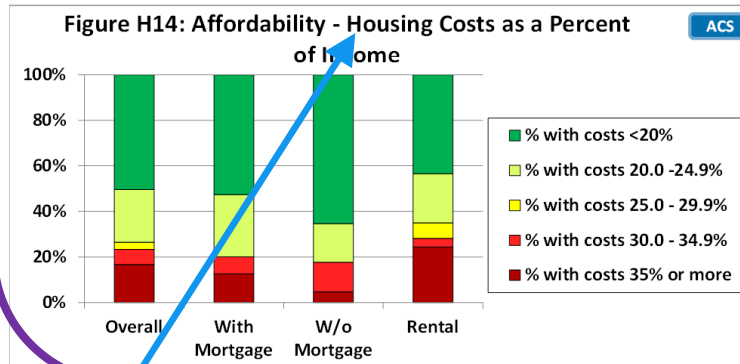
Household income includes all earnings from salaries, stocks, gifts, public assistance, etc.

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%	



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.

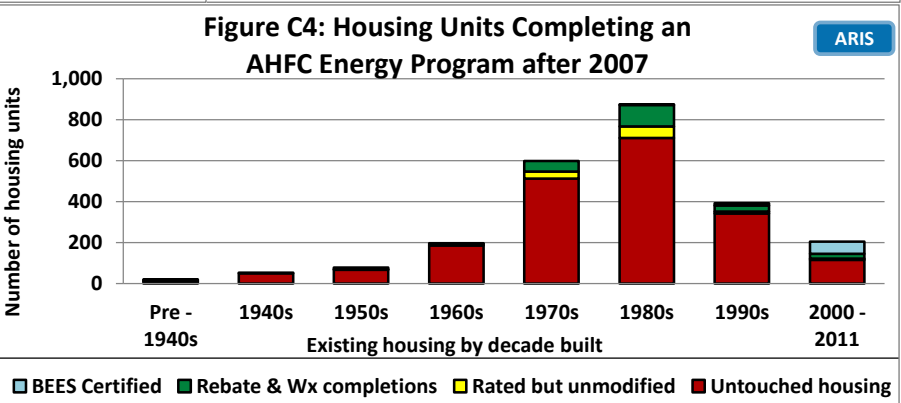
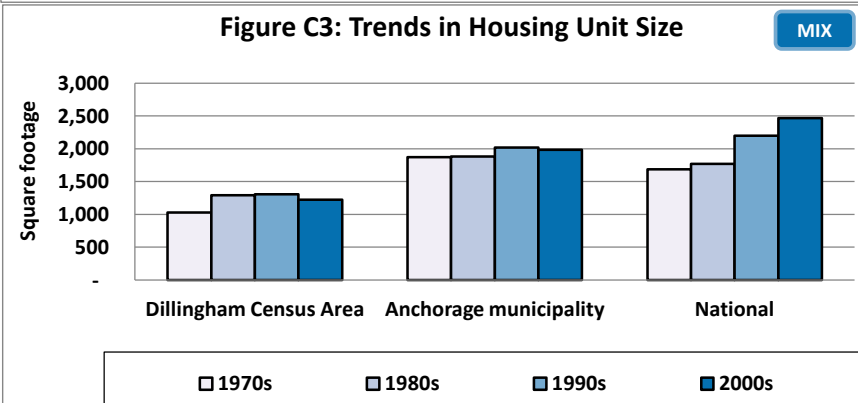
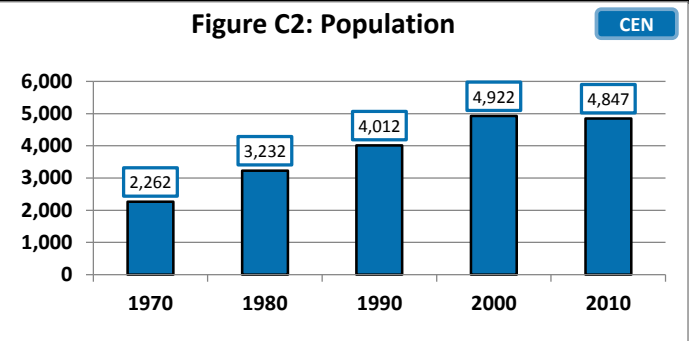
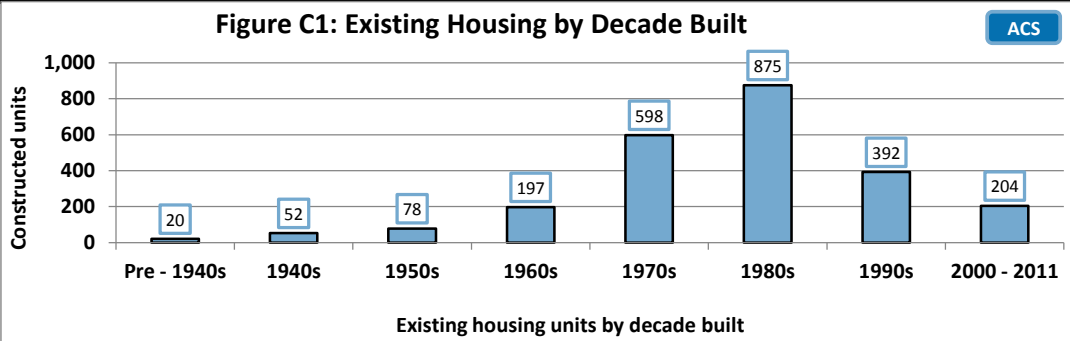
Census Area Profile for: Dillingham Census Area

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 - Dillingham Census Area



Houses Lacking Complete Plumbing or Kitchen Facilities	Households	
	Number	Percent
Lack complete plumbing	172	13%
Lack complete kitchen	100	7%

Avg Annual Energy Cost with PCE	\$6,316
Avg Annual Energy Cost without PCE	\$7,727

Weatherization Retrofits (funding increased 2008)	
Date Range	Units
2008 -2011	211
2003-2007	62
1990-2002	166

Estimated Total Annual Community Space Heating Fuel Use		
Fuel Oil	765,093	(gallons)
Natural Gas	-	(ccf)
Electricity	523,985	(kWh)
Wood	2,044	(cords)
Propane	-	(gallons)
Coal	-	(tons)

Housing Need Indicators	Number of Units	% Occupied Housing
Overcrowded	247	18%
Housing cost burdened	237	17%
1 Star Homes	244	18%

Housing Stock Estimates	Number of Units
All Housing	2,416
All Occupied Housing	1,369
All Vacant housing	1,047
Vacant Housing for Sale or Rent	128

OVERCROWDING & VENTILATION - Dillingham Census Area

Figure C5: Overcrowded Units

ACS

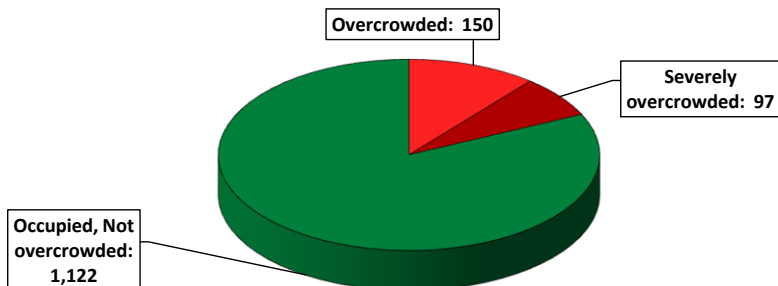


Figure C6: Housing Occupancy

MIX

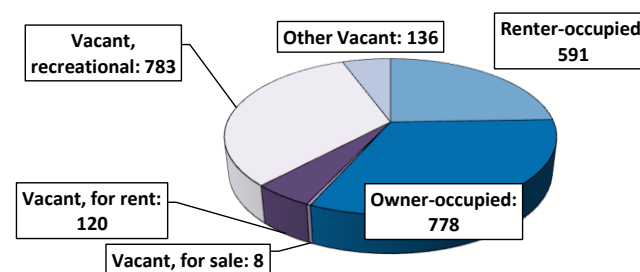


Figure C7: Average Air-Tightness of Current Homes by Decade Built

ARIS

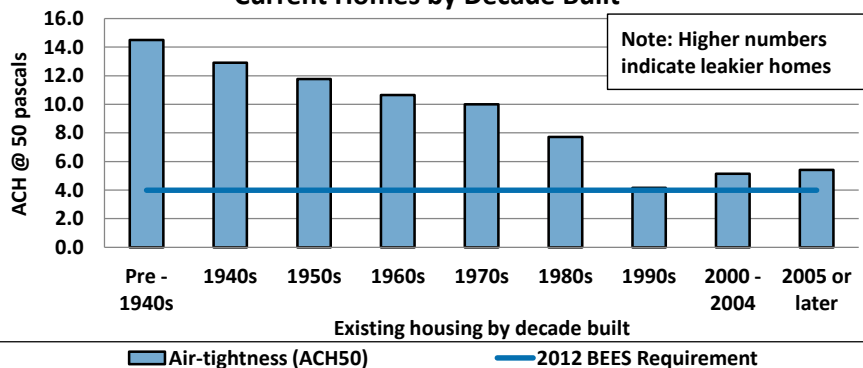


Figure C8: Existing Ventilation Type by Decade Built

ARIS

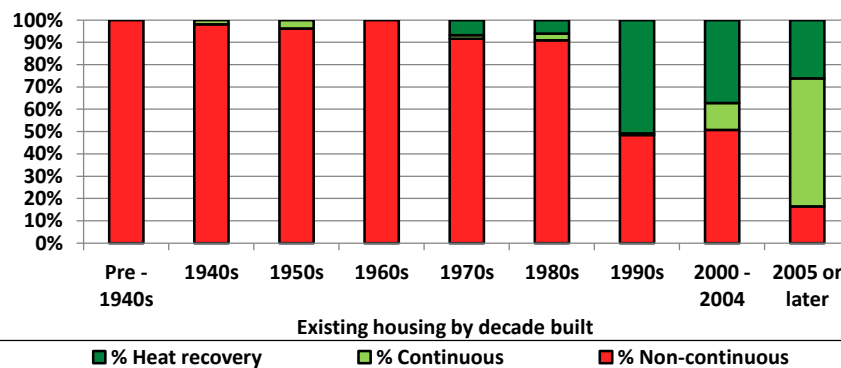


Figure C9: Percent of Housing Stock at High Risk of Moisture and Air Quality Problems

ARIS

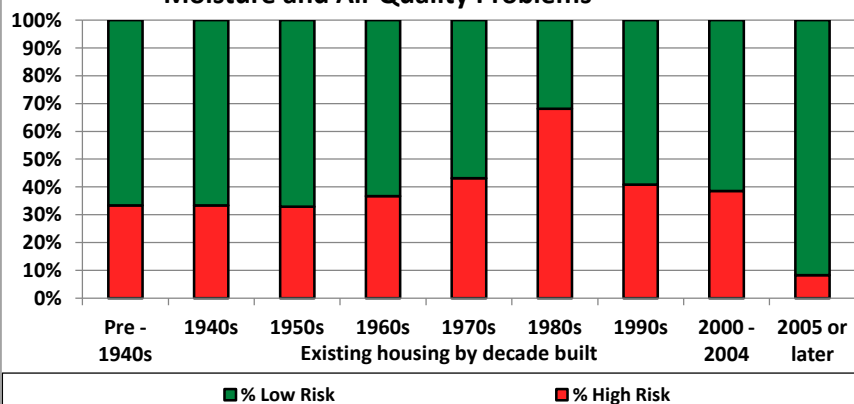
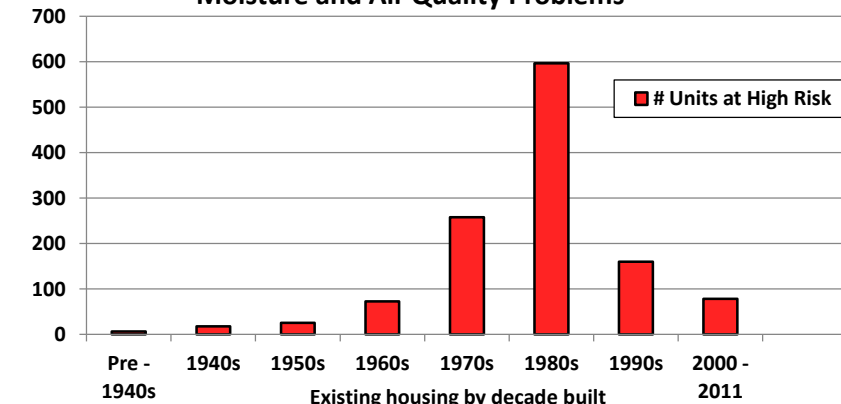


Figure C10: Quantity of Housing Stock at High Risk of Moisture and Air Quality Problems

ARIS



ENERGY - Dillingham Census Area												
Current Dillingham 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	440	2-star plus	67.0	1,211	\$6,316	148	94	26	26	134	\$5.89	8.0
Pre- 1940	12	1-star plus	48.9	1,908	\$11,544	316	269	17	30	204	\$7.48	15.9
1940- 49	6	2-star	57.7	1,354	\$7,567	178	147	11	21	139	\$5.05	10.1
1950- 59	22	2-star	57.5	1,134	\$6,969	149	108	17	23	138	\$6.31	9.1
1960- 69	12	1-star plus	46.9	1,138	\$7,817	203	147	28	27	193	\$7.92	12.8
1970- 79	122	2-star	55.5	1,029	\$6,576	142	97	21	25	151	\$7.32	9.1
1980- 89	262	3-star	72.2	1,293	\$6,236	149	93	29	27	131	\$5.49	7.6
1990- 99	71	4-star	80.8	1,309	\$5,578	132	77	25	25	105	\$4.89	5.5
2000- 2004	40	3-star plus	76.0	1,224	\$4,962	122	62	31	28	133	\$4.74	7.5
2005 or later	55	4-star plus	86.2	1,159	\$4,466	93	46	22	24	85	\$4.00	4.0

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

ARIS

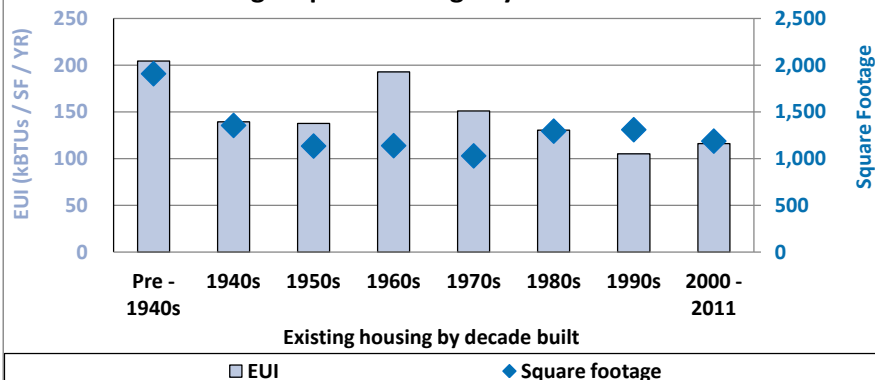
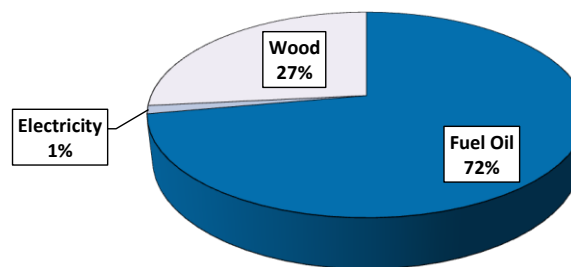


Figure C12: Percent of Total Residential Space Heating Energy by Fuel Type

ARIS

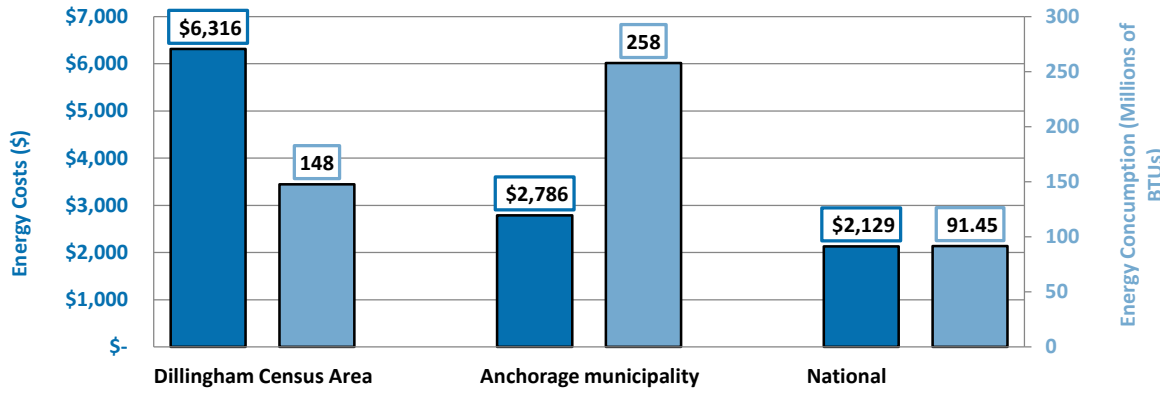


Current Dillingham Census Area Housing Envelope Characteristics By Decade Built											
Current Residential Units by Year Built	# of AkWarm Records	ACH 50	Ceiling R	Above Grade Wall R	Below Grade Wall R	Above Grade Floor R	On Grade Floor R	Below Grade Floor R	Door U	Garage Door U	Window U
OVERALL	440	8.1	22	15	7	17	3	3	0.27	0.23	0.47
Pre- 1940	12	14.5	12	11	7	NR	2	2	0.32	NR	0.60
1940- 49	6	12.9	25	13	NR	NR	NR	NR	0.26	NR	0.48
1950- 59	22	11.8	16	18	3	11	3	3	0.26	NR	0.47
1960- 69	12	10.7	12	12	NR	12	NR	NR	0.25	NR	0.54
1970- 79	122	10.0	19	13	4	14	2	2	0.29	0.39	0.53
1980- 89	262	7.7	25	16	8	19	3	3	0.26	0.21	0.47
1990- 99	71	4.2	34	18	19	29	3	3	0.27	0.17	0.40
2000- 2004	40	5.1	22	18	18	19	NR	3	0.26	NR	0.40
2005 or later	55	5.4	42	22	18	22	4	4	0.24	NR	0.31

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 - Dillingham Census Area

Figure C13: Average Annual Home Energy Cost and Use



Housing Information	Avg Household Size (# of people)
All-occupied	3.5
Owner-occupied	3.8
Renter-occupied	3.1

Median Value of Owner-occupied House with Mortgage
\$237,300

Median Value of Owner-occupied House without a Mortgage
\$153,800

Median Annual Household Income	
Housing Units	Household Income
All-occupied	\$ 57,681
Renter-occupied	\$ 51,875
Owner-occupied	\$ 66,875
w/ mortgage	\$ 120,402
w/o mortgage	\$ 50,625

Median Housing Costs		
	Monthly	Annual
All-occupied	\$ 790	\$ 9,480
Gross rent	\$ 931	\$ 11,172
Owner-occupied	\$ 673	\$ 8,076
Housing units w/ mortgage	\$ 1,639	\$ 19,668
Housing units w/out a mortgage	\$ 513	\$ 6,156

Avg % of Median Income Spent on Energy
11.0%

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

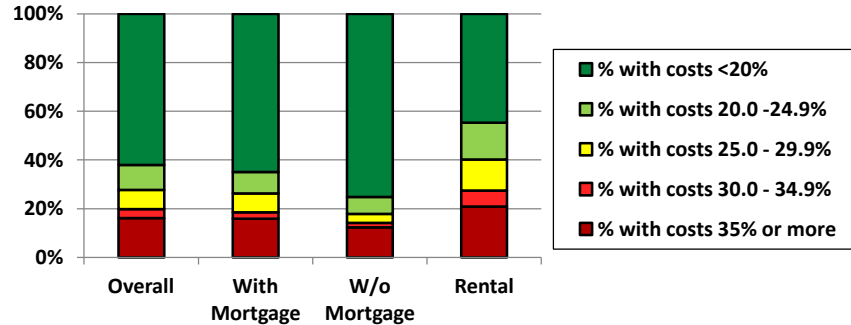
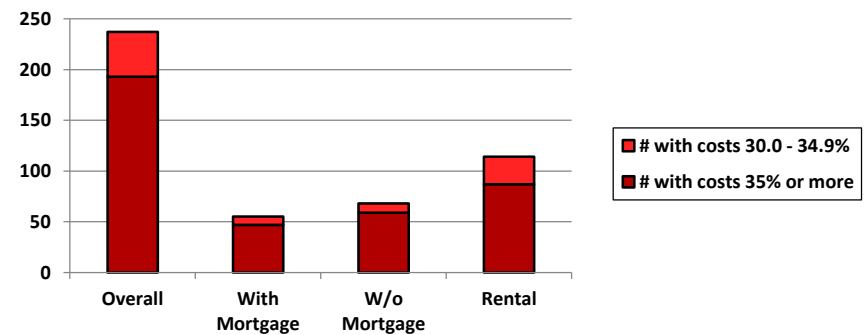


Figure C15: Number of Cost-Burdened Housing Units



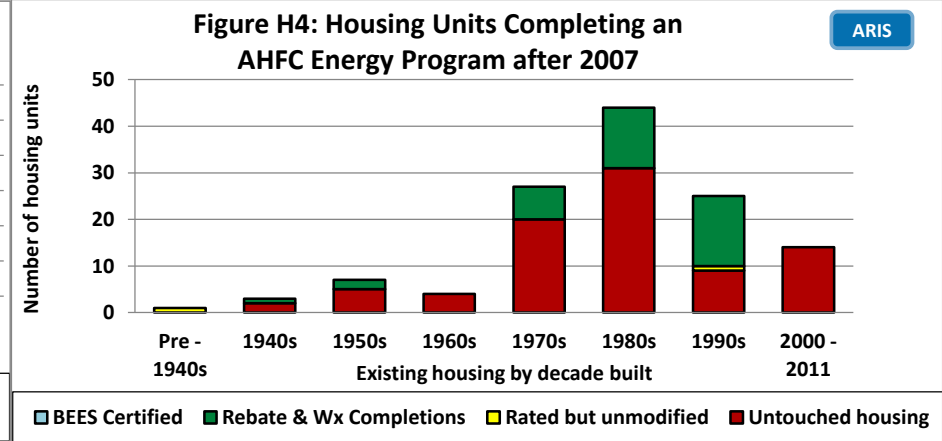
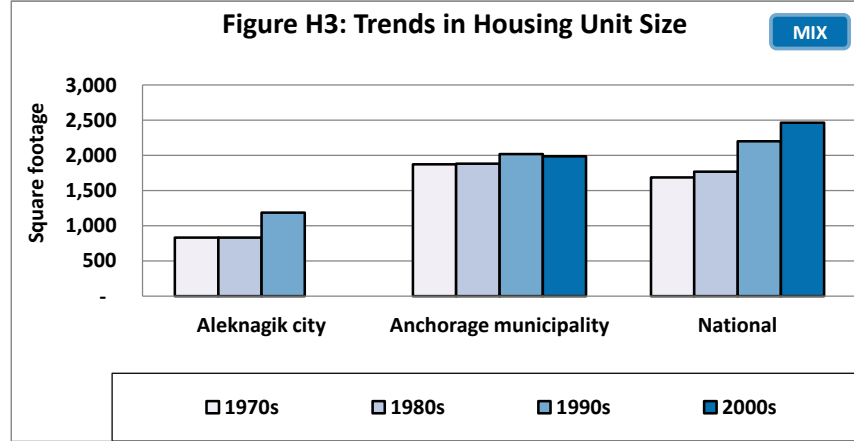
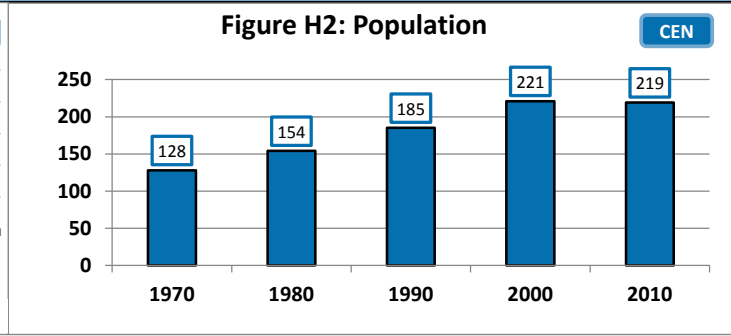
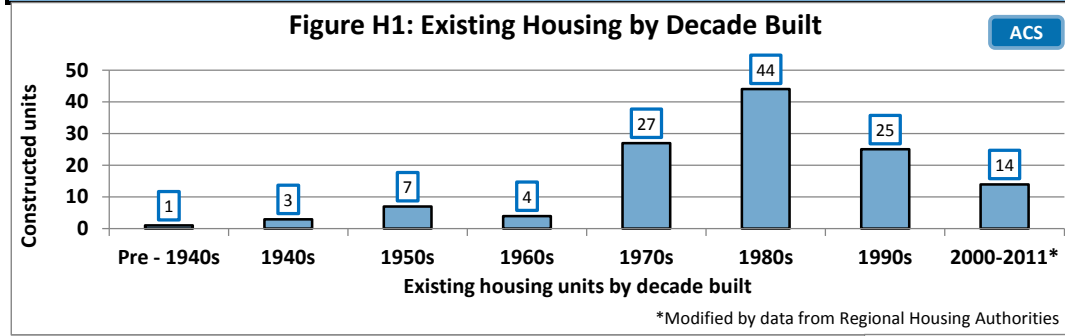
Community Profile for: Aleknagik city

ANCSA Region: Bristol Bay Native Corporation

Regional Housing Authority: Bristol Bay Housing Authority

BEES Climate Zone (Heating Degree Days): Zone 7 (11,751 HDD)

COMMUNITY - Aleknagik city



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

Avg Annual Energy Cost with PCE	\$4,445
Avg Annual Energy Cost without PCE	\$5,520

Weatherization Program Retrofits (funding increased in 2008)	
Date Range	Units
2008-2011	37
2003-2007	-
1990-2002	13

Estimated Total Annual Community Space Heating Fuel Use		
Fuel Oil	24,309	(gallons)
Nat Gas	-	(ccf)
Electricity	18,349	(kWh)
Wood	80	(cords)
Propane	-	(gallons)
Coal	-	(tons)

Estimated Energy Prices as of January 2013	
#1 Fuel oil cost (\$ / gallon)	\$4.72
Electricity with PCE (\$/kWh)	\$0.19
Electricity cost without PCE (\$/kWh)	\$0.39

Housing Stock Estimates	Number of Units
All Housing	125
All Occupied Housing	65
All Vacant housing	60
Vacant Housing for Sale or Rent	4

OVERCROWDING & VENTILATION - Aleknagik city

Figure H5: Overcrowded Units

ACS

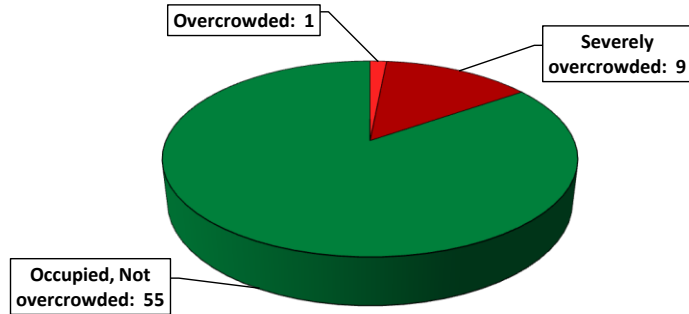


Figure H6: Housing Occupancy

MIX

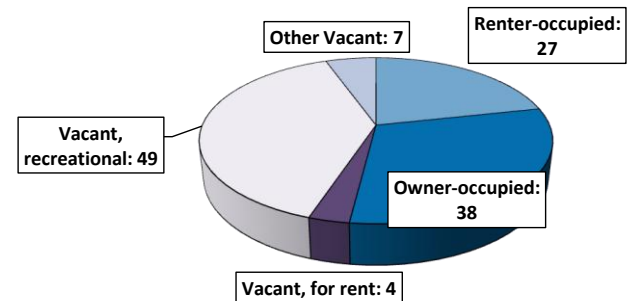


Figure H7: Average Air-Tightness of Current Homes by Decade Built

ARIS

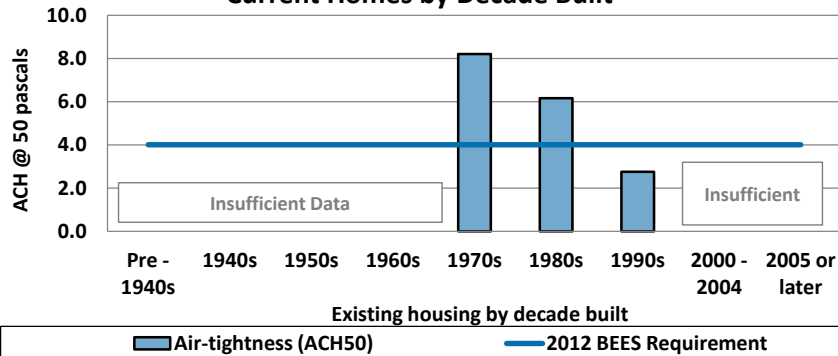


Figure H8: Existing Ventilation Type by Decade Built

ARIS

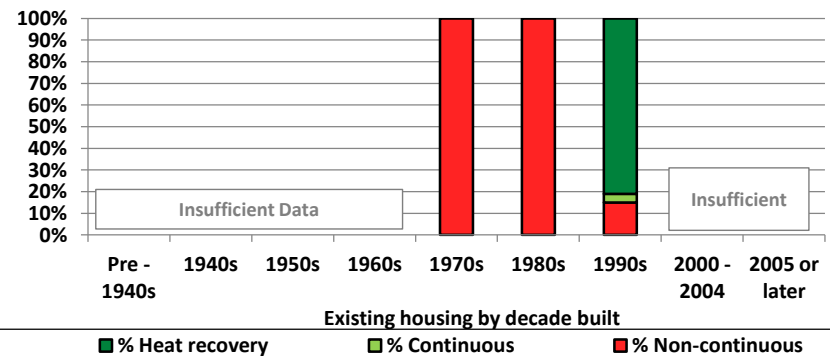


Figure H9: Percent of Housing Stock at High Risk of Moisture and Air Quality Problems

ARIS

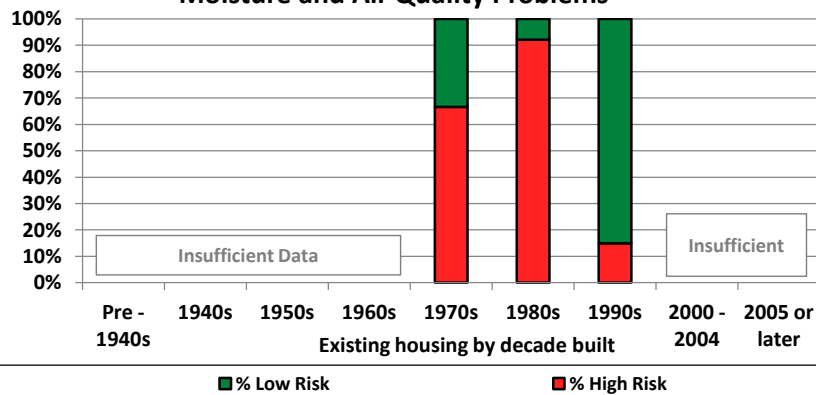
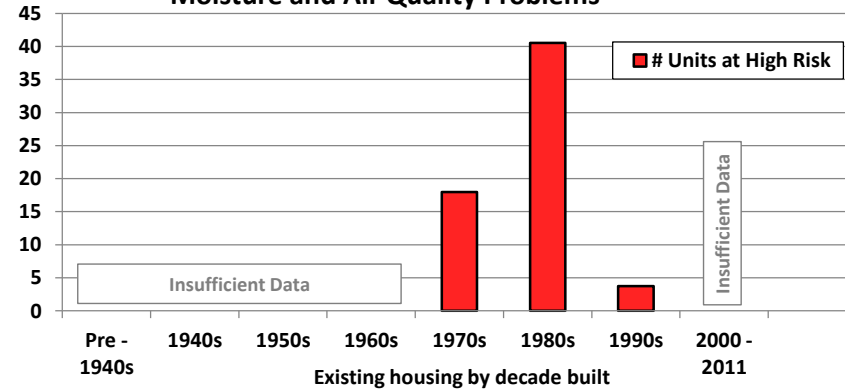


Figure H10: Quantity of Housing Stock at High Risk of Moisture and Air Quality Problems

ARIS



ENERGY - Aleknagik city

Current Aleknagik 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	41	3-star	70.5	914	\$ 4,445	112	70	20	22	120	\$ 4.73	6.5
Pre- 1940	1	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	4	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	13	2-star	56.3	833	\$ 5,725	139	96	19	23	168	\$ 7.05	10.3
1980- 89	25	3-star	72.2	833	\$ 4,015	95	54	20	21	116	\$ 4.97	5.9
1990- 99	27	4-star plus	87.0	1,185	\$ 4,563	123	69	29	25	104	\$ 3.88	5.0
2000- 2004	0	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

ARIS

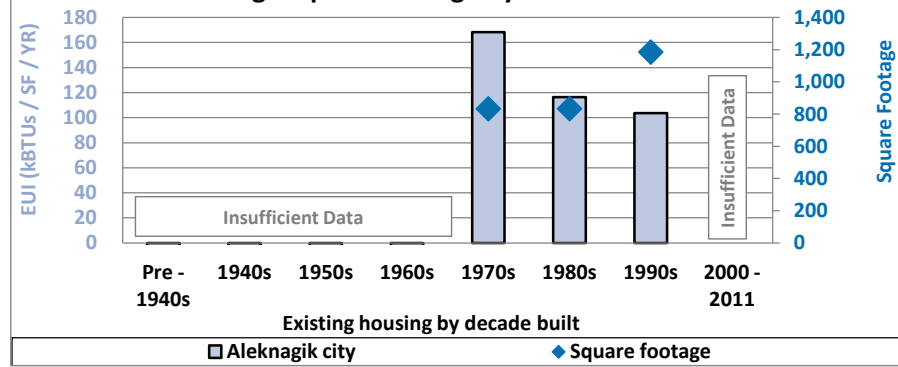
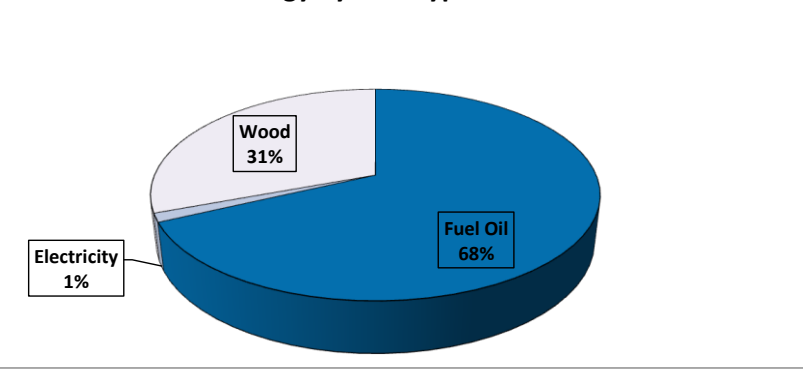


Figure H12: Percent of Total Residential Space Heating Energy by Fuel Type

ARIS

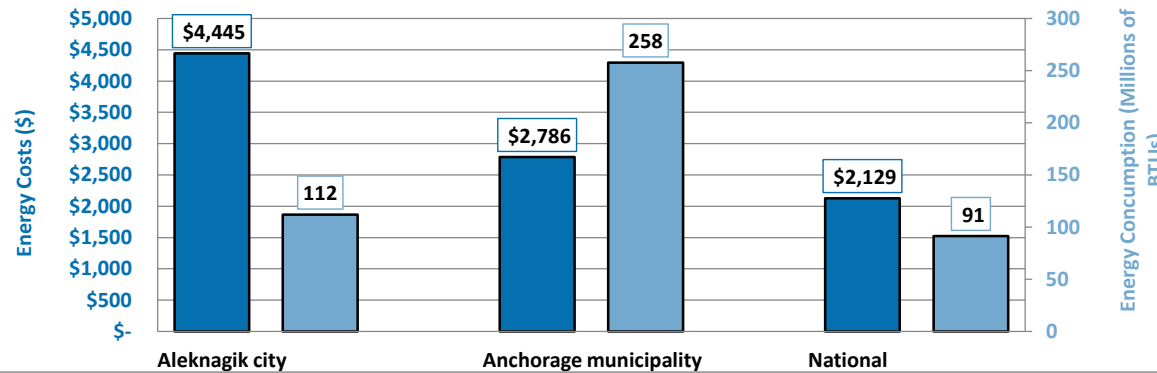


Current Aleknagik city Housing Envelope Characteristics By Decade Built

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	41	6.0	28	17	14	16	2	3	0.25	NR	0.39
Pre- 1940	1	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	4	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	13	8.2	19	11	7	10	2	NR	0.32	NR	0.50
1980- 89	25	6.2	27	15	11	17	NR	NR	0.21	NR	0.38
1990- 99	27	2.8	54	20	24	NR	NR	4	0.25	NR	0.36
2000- 2004	0	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	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 - Aleknagik city

Figure H13: Average Annual Home Energy Costs and Use



Housing Information	Avg Household Size (# of people)
All-occupied	3.9
Owner-occupied	3.5
renter-occupied	4.5

Owner-occupied House with Mortgage, Median Value
NR

Owner-occupied House without a Mortgage, Median Value
\$180,000

Median Annual Household Income	
Housing Units	Household Income
All-occupied	\$ 50,313
Renter-occupied	\$ 41,250
Owner-occupied	\$ 50,625
w/ mortgage	NR
w/o mortgage	\$ 50,625

Median Housing Costs		
	Monthly	Annual
All-occupied	\$ 406	\$ 4,872
Gross rent	\$ 913	\$ 10,956
Owner-occupied	\$ 383	\$ 4,596
Housing units w/ mortgage	NR	NR
Housing units w/out a mortgage	\$ 380	\$ 4,560

Avg % of Median Income Spent on Energy	8.8%
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Figure H14: Affordability - Housing Costs as a Percent of Income

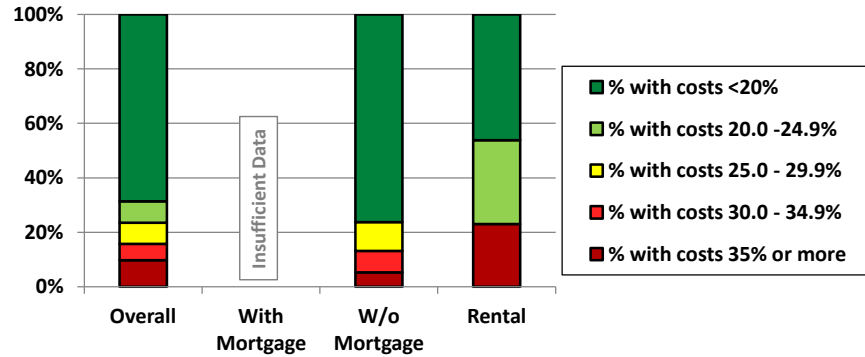
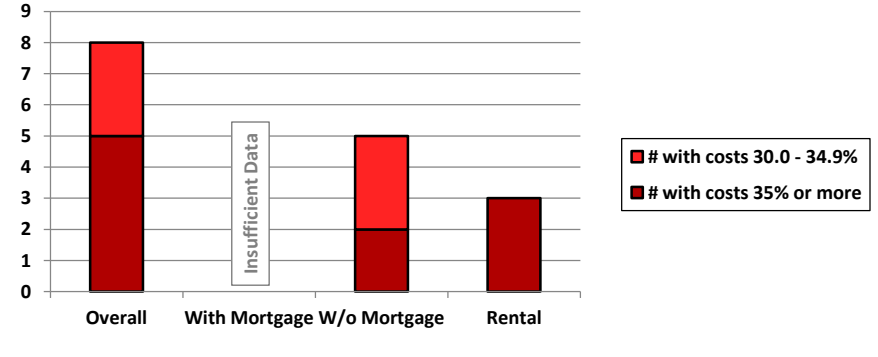


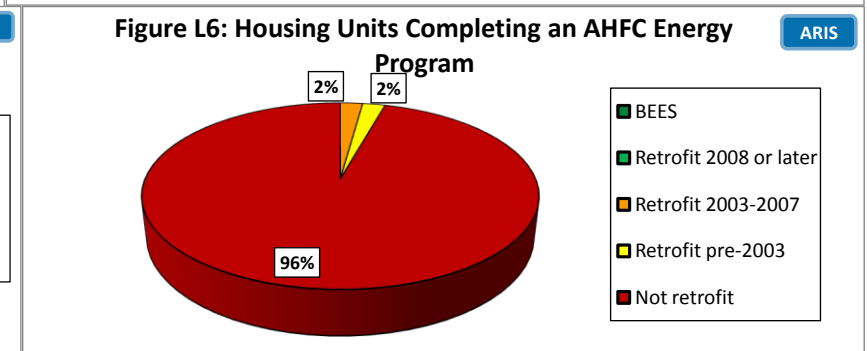
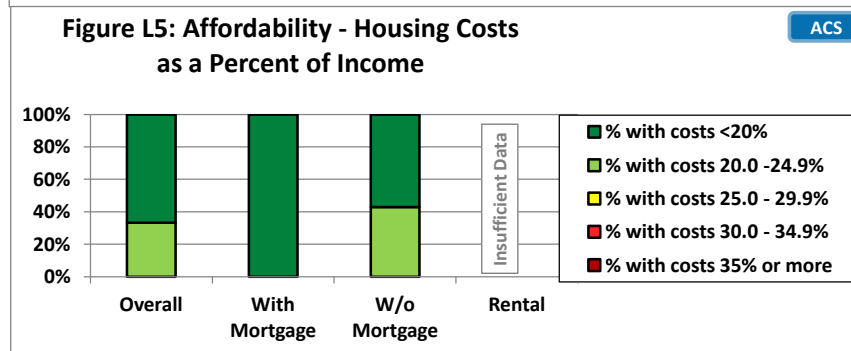
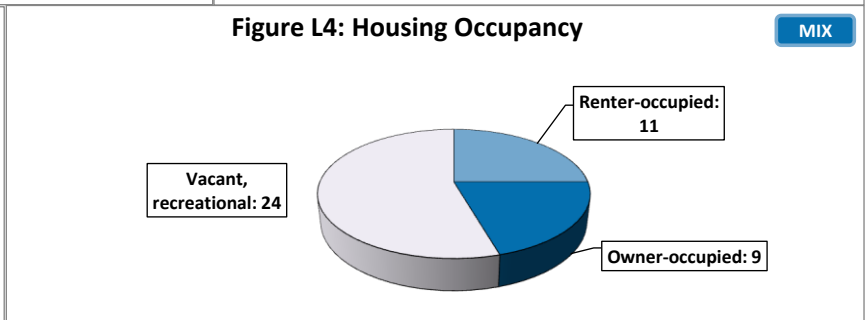
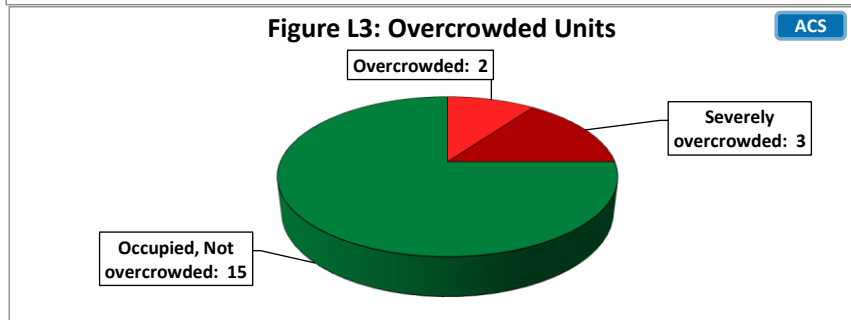
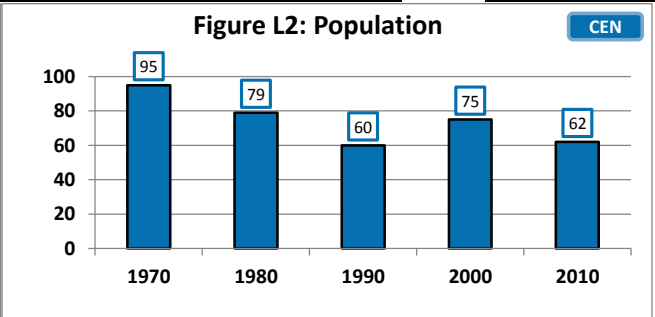
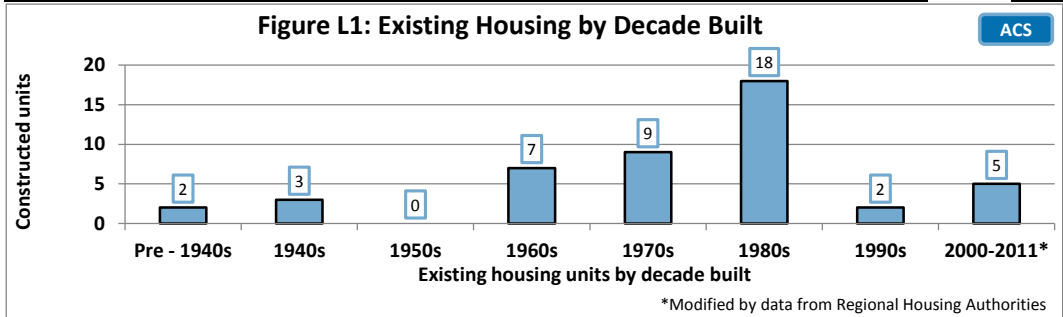
Figure H15: Number of Cost-Burdened Housing Units



Community Profile for: Clark's Point city

ANCSA Region: Bristol Bay Native Corporation

Climate Zone: 7



Owner-occupied House with Mortgage, Median Value
NR

Owner-occupied House without a Mortgage, Median Value
\$85,000

Median Annual Household Income	
Housing Units	Household Income
All-occupied	\$ 22,500
Renter-occupied	\$ 12,083
Owner-occupied	\$ 43,750
w/ mortgage	NR
w/o mortgage	\$ 42,917

Median Housing Costs		
	Monthly	Annual
All-occupied	\$ 325	\$ 3,900
Gross rent	NR	NR
Owner-occupied	\$ 350	\$ 4,200
Housing units w/ mortgage	NR	NR
Housing units w/out a mortgage	\$ 308	\$ 3,696

Estimated Energy Prices as of January 2013	
#1 Fuel oil cost (\$ / gallon)	\$ 6.00
Electricity with PCE (\$/kWh)	No PCE
Electricity without PCE (\$/kWh)	\$ 1.00

Housing Stock Estimates	Number of Units
All Housing	44
All Occupied Housing	20
All Vacant housing	24

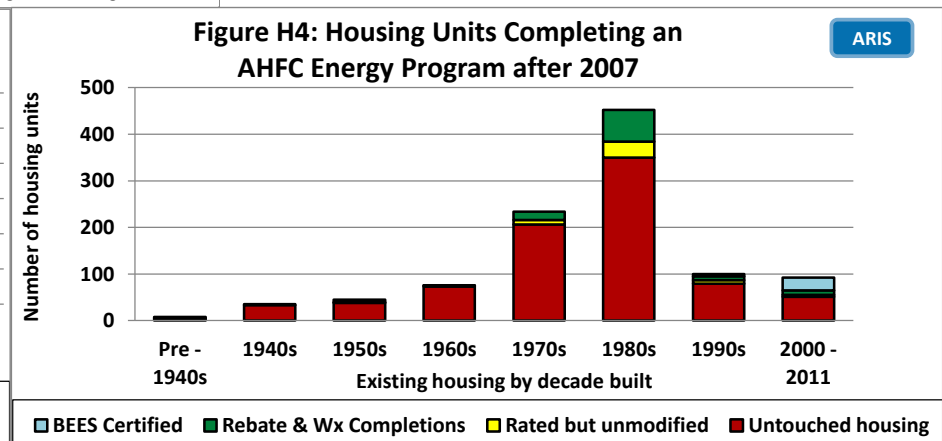
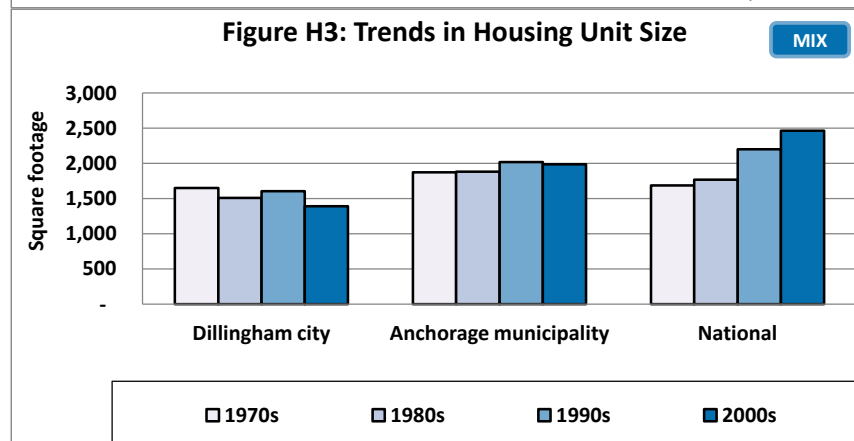
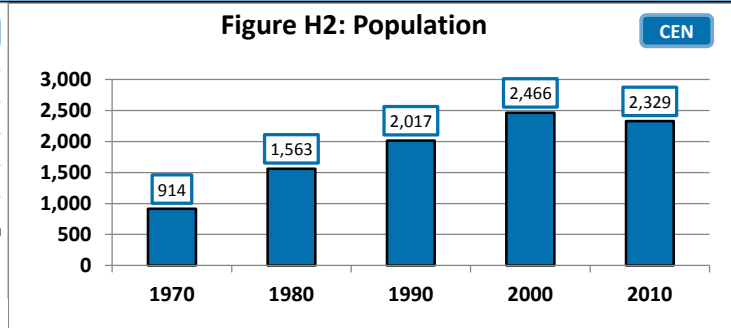
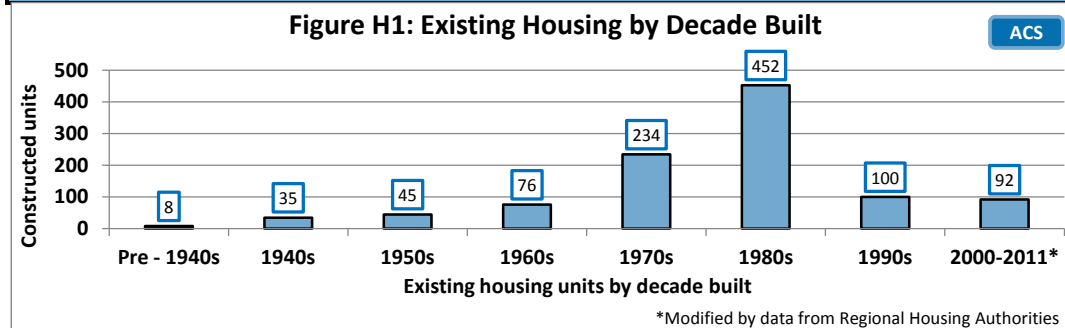
Community Profile for: Dillingham city

ANCSA Region: Bristol Bay Native Corporation

Regional Housing Authority: Bristol Bay Housing Authority

BEES Climate Zone (Heating Degree Days): Zone 7 (11,306 HDD)

COMMUNITY - Dillingham city



Houses Lacking Complete Plumbing or Kitchen Facilities	Households	
	Number	Percent
Lack complete plumbing	28	4%
Lack complete kitchen	11	1%

Avg Annual Energy Cost with PCE	\$7,561
Avg Annual Energy Cost without PCE	\$8,724

Weatherization Program Retrofits (funding increased in 2008)	
Date Range	Units
2008-2011	102
2003-2007	27
1990-2002	19

Estimated Total Annual Community Space Heating Fuel Use		
Fuel Oil	619,711	(gallons)
Nat Gas	-	(ccf)
Electricity	422,596	(kWh)
Wood	1,359	(cords)
Propane	-	(gallons)
Coal	-	(tons)

Estimated Energy Prices as of January 2013	
#1 Fuel oil cost (\$ / gallon)	\$5.47
Electricity with PCE (\$/kWh)	\$0.19
Electricity cost without PCE (\$/kWh)	\$0.39

Housing Stock Estimates	Number of Units
All Housing	1037
All Occupied Housing	773
All Vacant housing	264
Vacant Housing for Sale or Rent	103

OVERCROWDING & VENTILATION - Dillingham city

Figure H5: Overcrowded Units

ACS

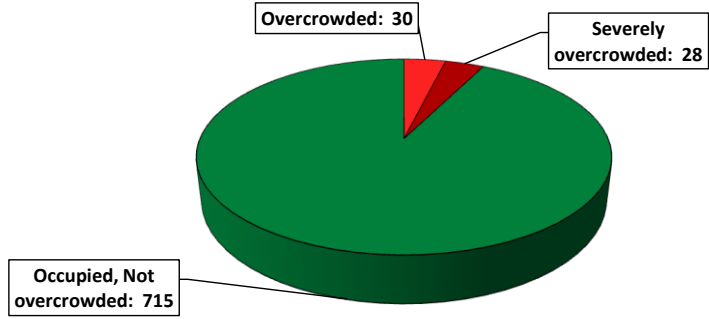


Figure H6: Housing Occupancy

MIX

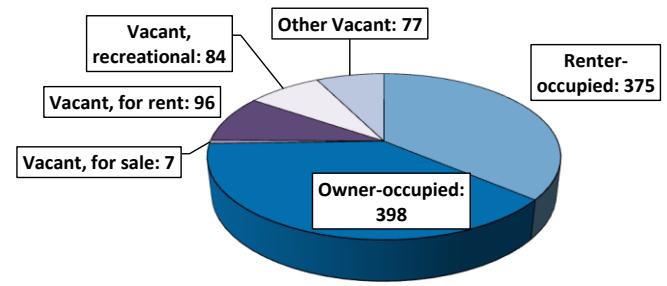


Figure H7: Average Air-Tightness of Current Homes by Decade Built

ARIS

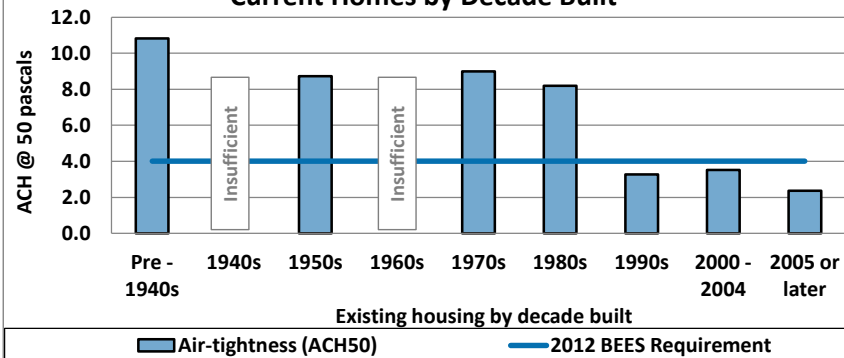


Figure H8: Existing Ventilation Type by Decade Built

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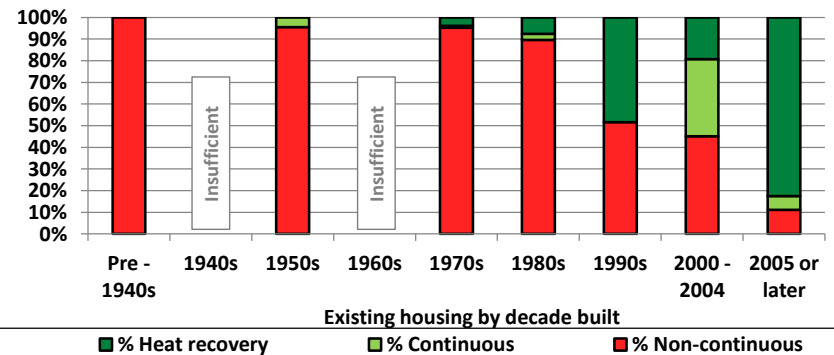


Figure H9: Percent of Housing Stock at High Risk of Moisture and Air Quality Problems

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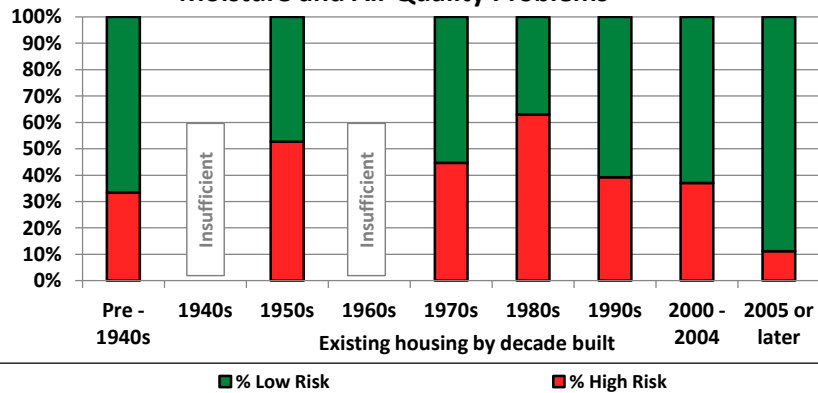
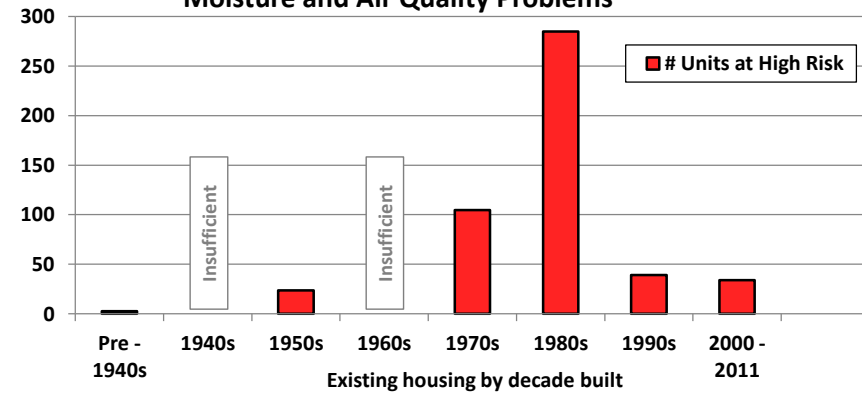


Figure H10: Quantity of Housing Stock at High Risk of Moisture and Air Quality Problems

ARIS



ENERGY - Dillingham city												
Current Dillingham 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	227	3-star	69.3	1,597	\$ 7,561	187	129	27	31	124	\$ 5.15	7.9
Pre- 1940	11	3-star	69.2	1,116	\$ 6,413	205	167	10	27	171	\$ 5.91	12.6
1940- 49	4	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1950- 59	14	2-star plus	66.7	1,412	\$ 8,292	176	122	25	29	123	\$ 5.85	7.8
1960- 69	4	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1970- 79	45	2-star	58.5	1,651	\$ 8,543	201	151	22	28	129	\$ 5.68	8.7
1980- 89	169	3-star plus	73.1	1,509	\$ 6,756	164	109	26	29	125	\$ 5.16	7.8
1990- 99	28	4-star	81.0	1,605	\$ 5,870	145	92	19	27	93	\$ 3.82	5.6
2000- 2004	29	4-star plus	84.5	1,390	\$ 4,816	115	58	28	28	82	\$ 3.67	3.9
2005 or later	13	5-star	91.3	1,373	\$ 5,001	111	53	33	25	80	\$ 3.62	3.4

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

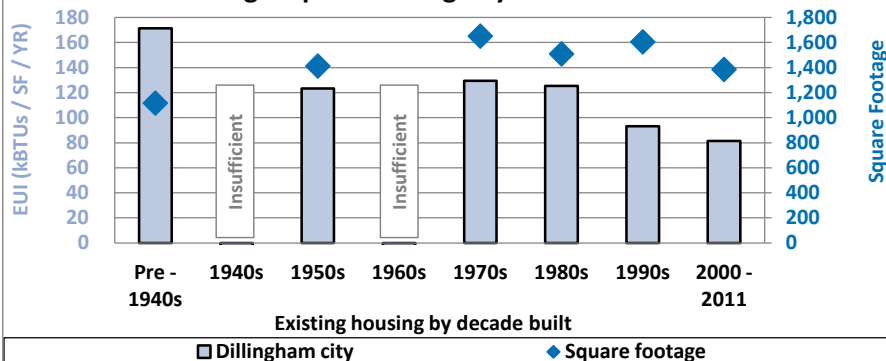
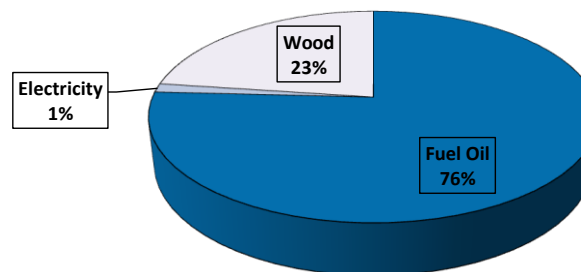


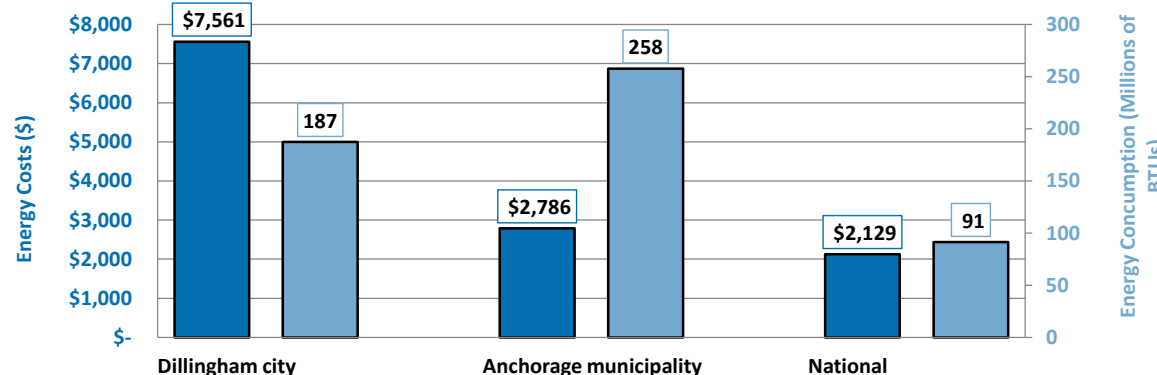
Figure H12: Percent of Total Residential Space Heating Energy by Fuel Type



Current Dillingham 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	227	7.8	24	16	7	18	3	3	0.29	0.23	0.46
Pre- 1940	11	10.8	12	14	22	NR	3	18	0.20	NR	0.33
1940- 49	4	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1950- 59	14	8.7	24	19	2	NR	3	3	0.29	NR	0.51
1960- 69	4	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1970- 79	45	9.0	21	12	4	13	3	3	0.34	0.37	0.51
1980- 89	169	8.2	25	16	9	20	3	3	0.27	0.21	0.47
1990- 99	28	3.3	45	22	18	28	4	4	0.23	0.17	0.37
2000- 2004	29	3.5	38	20	17	NR	NR	3	0.25	NR	0.36
2005 or later	13	2.4	53	27	15	NR	3	12	0.29	NR	0.27
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 - Dillingham city

Figure H13: Average Annual Home Energy Costs and Use



Housing Information	Avg Household Size (# of people)
All-occupied	2.8
Owner-occupied	3.0
renter-occupied	2.5

Owner-occupied House with Mortgage, Median Value
\$252,600

Owner-occupied House without a Mortgage, Median Value
\$183,300

Median Annual Household Income	
Housing Units	Household Income
All-occupied	\$ 67,782
Renter-occupied	\$ 54,107
Owner-occupied	\$ 112,500
w/ mortgage	\$ 126,458
w/o mortgage	\$ 93,333

Median Housing Costs		
	Monthly	Annual
All-occupied	\$ 1,057	\$ 12,684
Gross rent	\$ 988	\$ 11,856
Owner-occupied	\$ 1,192	\$ 14,304
Housing units w/ mortgage	\$ 1,977	\$ 23,724
Housing units w/out a mortgage	\$ 697	\$ 8,364

Avg % of Median Income Spent on Energy	11.2%
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Figure H14: Affordability - Housing Costs as a Percent of Income

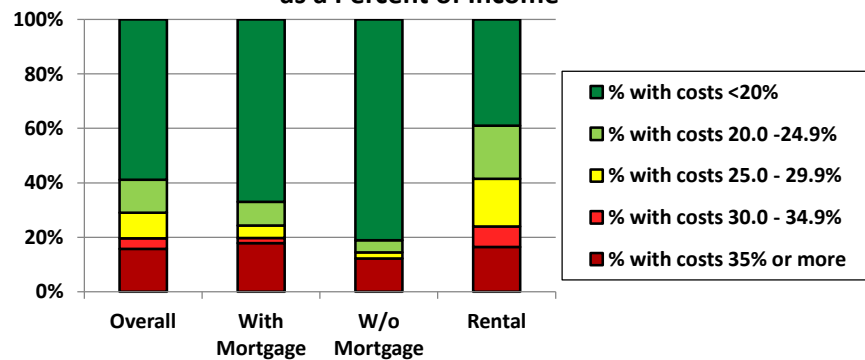
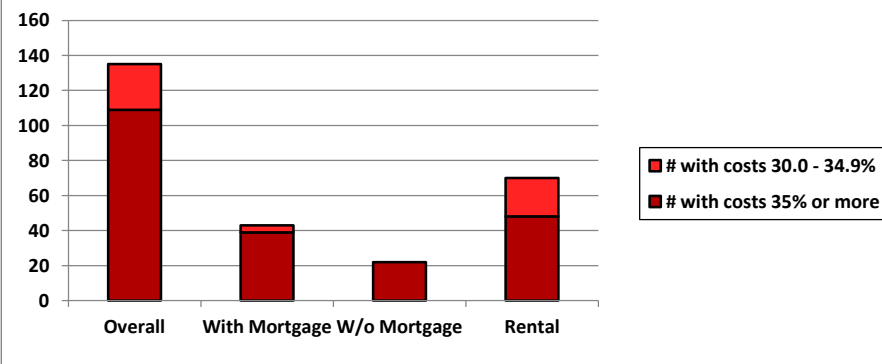


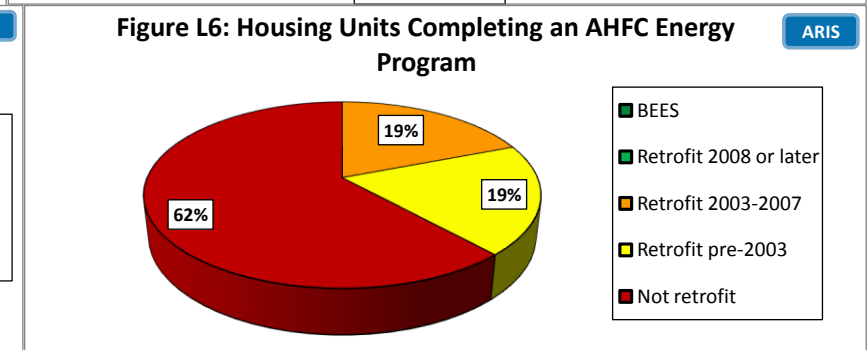
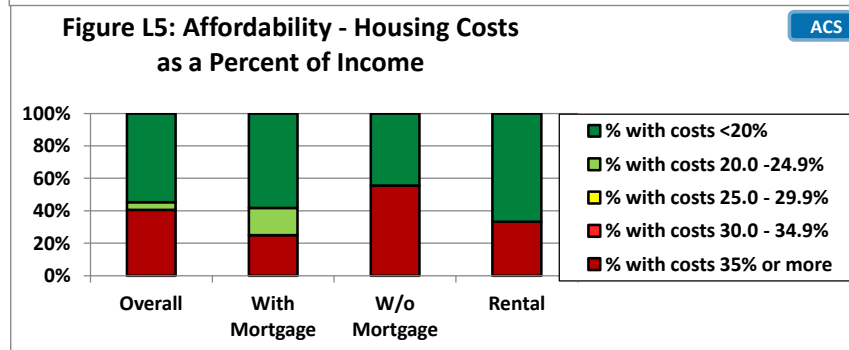
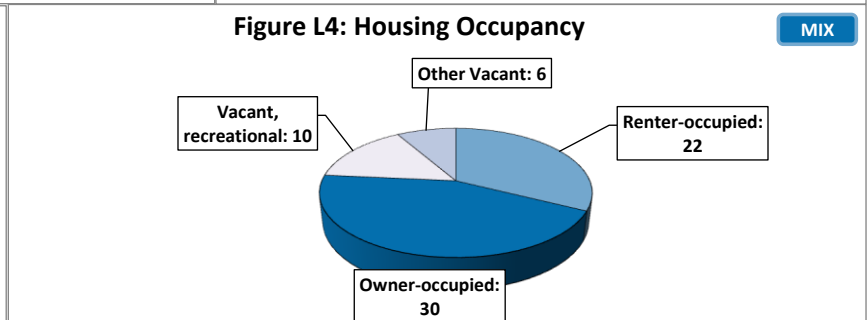
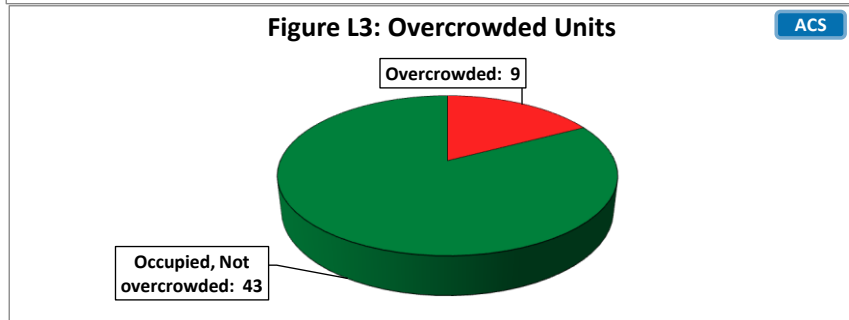
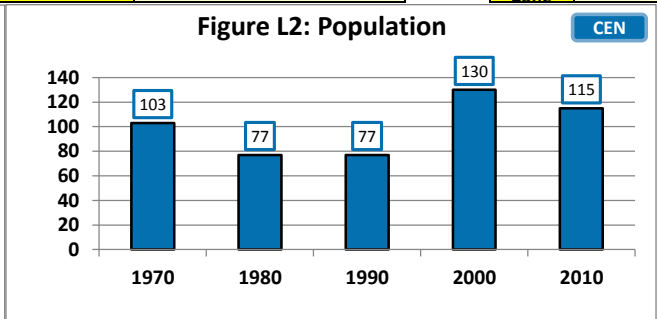
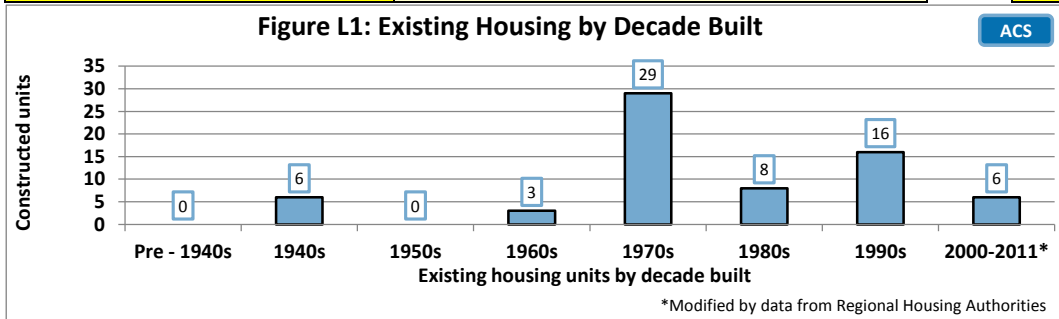
Figure H15: Number of Cost-Burdened Housing Units



Community Profile for: Ekwok city

ANCSA Region: Bristol Bay Native Corporation

Climate Zone: 7



Owner-occupied House with Mortgage, Median Value
\$116,700

Owner-occupied House without a Mortgage, Median Value
\$42,500

Estimated Energy Prices as of January 2013	
#1 Fuel oil cost (\$ / gallon)	\$ 6.75
Electricity with PCE (\$/kWh)	\$ 0.21
Electricity without PCE (\$/kWh)	\$ 0.70

Median Annual Household Income	
Housing Units	Household Income
All-occupied	\$ 33,750
Renter-occupied	\$ 125,417
Owner-occupied w/ mortgage	\$ 31,250
w/ mortgage	\$ 31,875
w/o mortgage	\$ 17,000

Housing Stock Estimates	
Housing Stock Estimates	Number of Units
All Housing	68
All Occupied Housing	52
All Vacant housing	16

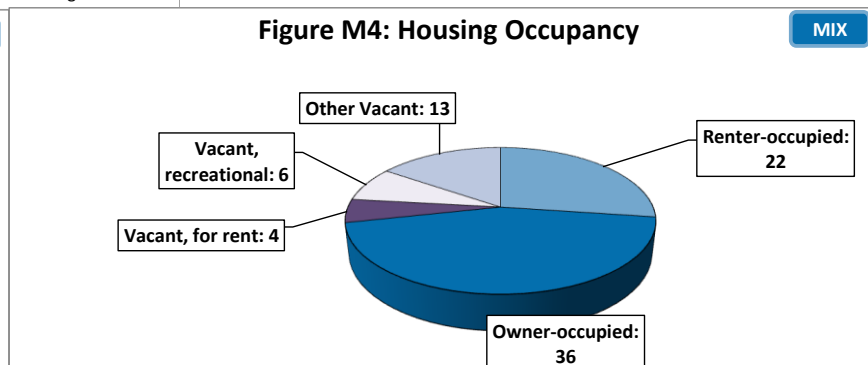
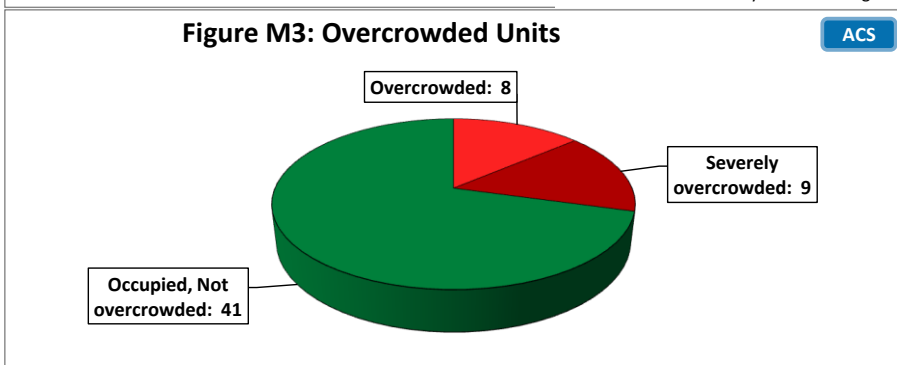
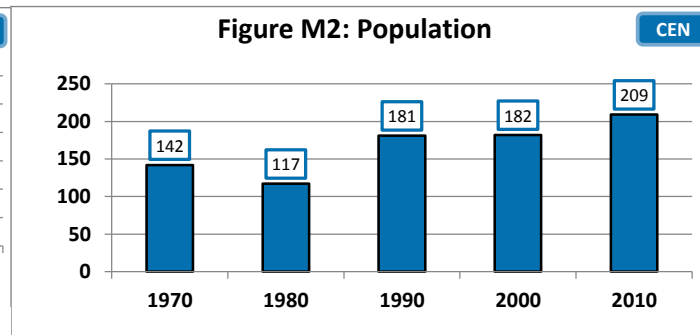
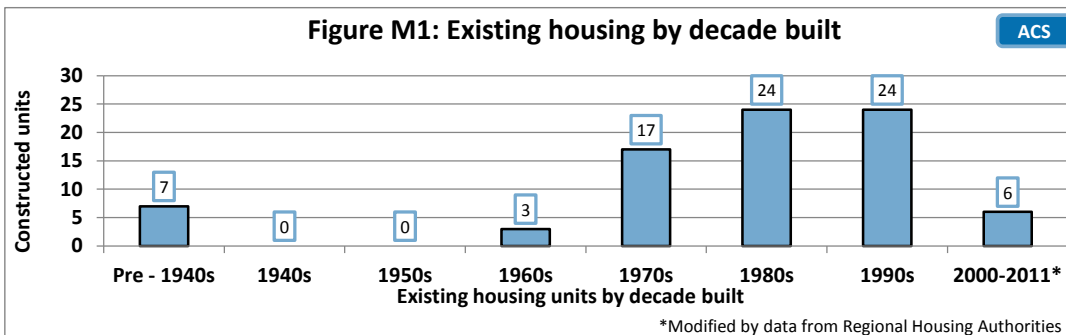
Median Housing Costs		
	Monthly	Annual
All-occupied	\$ 491	\$ 5,892
Gross rent	\$ 617	\$ 7,404
Owner-occupied	\$ 472	\$ 5,664
Housing units w/ mortgage	\$ 667	\$ 8,004
Housing units w/out a mortgage	\$ 450	\$ 5,400

Community Profile for: Koliganek CDP

ANCSA Region Bristol Bay Native Corporation

Regional Housing Authority Bristol Bay Housing Authority

BEES Climate Zone (Heating Degree Days) Zone 7 (11,306 HDD)



Koliganek 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	2	NR	NR	NR	NR	NR	NR	NR	NR	NR
Retrofit units	0	NR	NR	NR	NR	NR	NR	NR	NR	NR
New construction	3	2-star	57.4	956	\$ 7,446	170	191	\$8.46	13.5	33%

Koliganek 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	2	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Retrofit units	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
New construction	3	14.8	31	13	NR	NR	NR	NR	0.41	NR	0.42

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

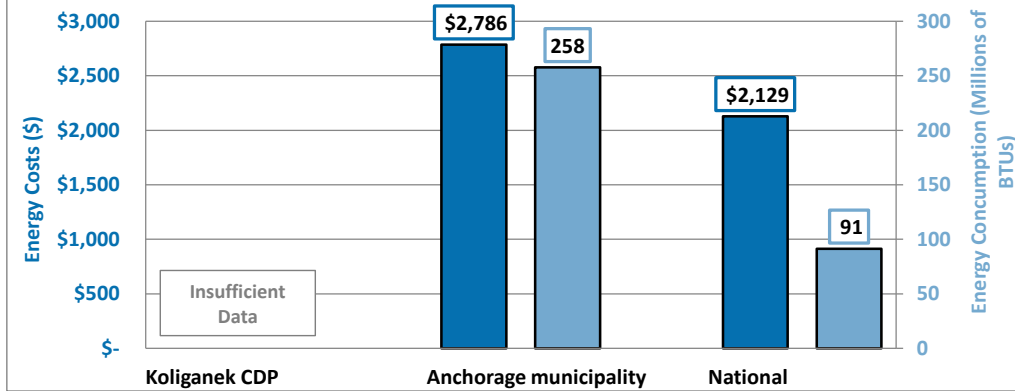
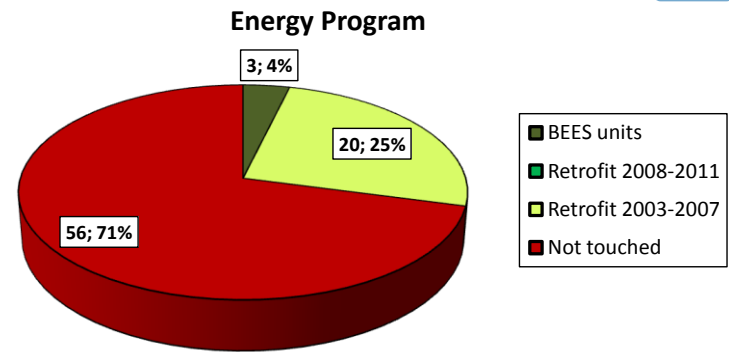


Figure M6: Housing Units Completing an AHFC Energy Program

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AFFORDABILITY - Koliganek CDP

Owner occupied House with Mortgage, Median Value
\$200,000
Owner-occupied House without a Mortgage, Median Value
\$66,700

Median Annual Household Income	
Housing Units	Household Income
All-occupied	\$ 59,444
Renter-occupied	\$ 58,214
Owner-occupied	\$ 71,250
w/ mortgage	\$ 98,750
w/o mortgage	\$ 37,500

Median Housing Costs		
	Monthly	Annual
All-occupied	\$ 594	\$ 7,128
Gross rent	\$ 732	\$ 8,784
Owner-occupied	\$ 483	\$ 5,796
Housing units w/ mortgage	\$ 700	\$ 8,400
Housing units w/out a mortgage	\$ 350	\$ 4,200

Estimated Energy Prices as of January 2013	
#1 Fuel oil cost (\$ / gallon)	\$ 5.47
Electricity with PCE (\$/kWh)	\$ 0.14
Electricity without PCE (\$/kWh)	\$ 0.50

Average Annual Energy Cost	
With PCE	NO PCE
Without PCE	\$7,987

Housing Stock Estimates	Number of Units
All Housing	81
All Occupied Housing	58
All Vacant housing	23
Vacant Housing for Sale/Rent	4

Avg % Median Income spent on Energy	13.4%
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Figure M7: Affordability - Housing Costs as a Percent of Income

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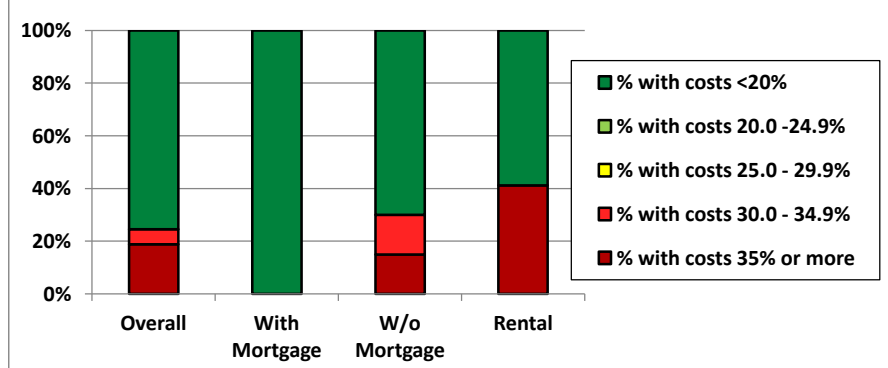
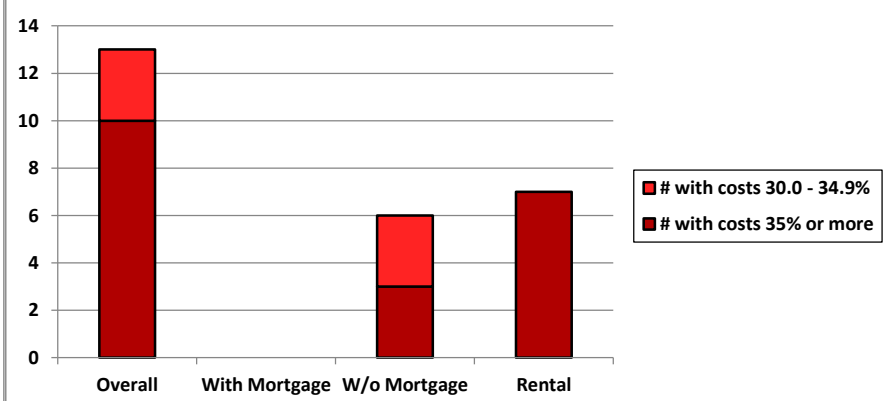


Figure M8: Number of Cost-Burdened Housing Units

ACS



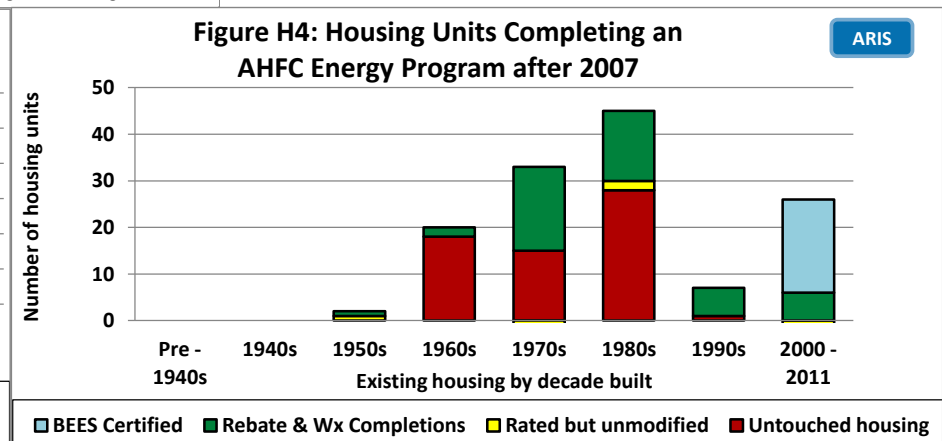
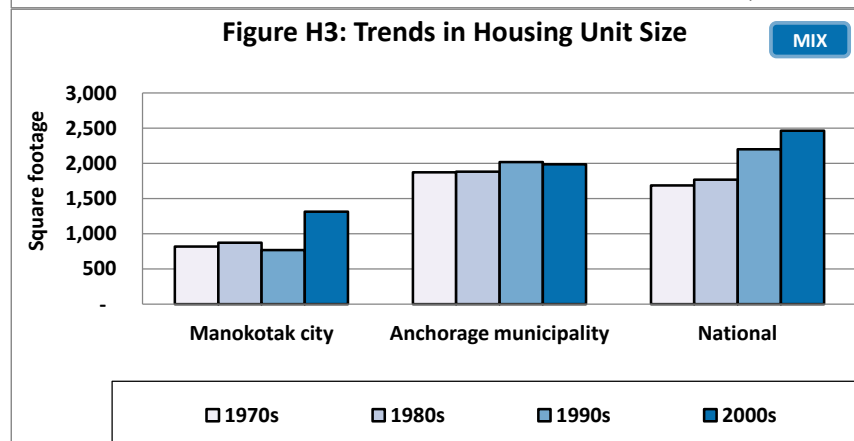
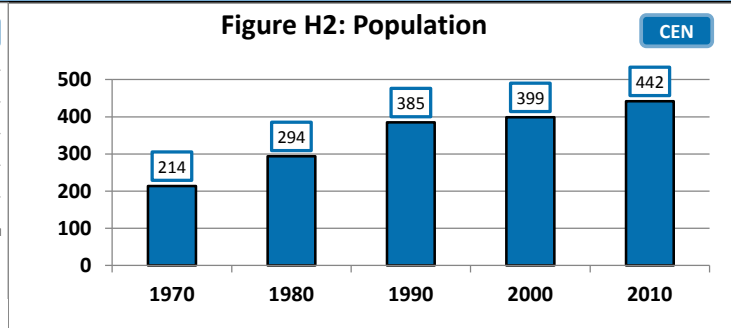
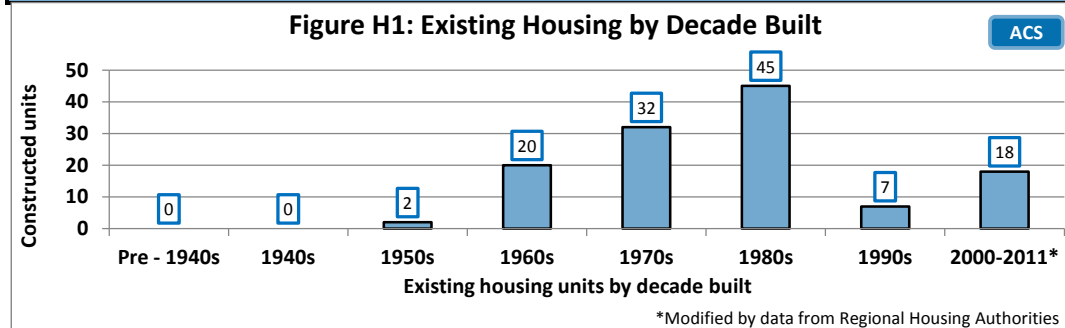
Community Profile for: Manokotak city

ANCSA Region: Bristol Bay Native Corporation

Regional Housing Authority: Bristol Bay Housing Authority

BEES Climate Zone (Heating Degree Days): Zone 7 (11,306 HDD)

COMMUNITY - Manokotak city



Houses Lacking Complete Plumbing or Kitchen Facilities	Households	
	Number	Percent
Lack complete plumbing	31	33%
Lack complete kitchen	23	24%

Avg Annual Energy Cost with PCE	\$5,372
Avg Annual Energy Cost without PCE	\$6,907

Weatherization Program Retrofits (funding increased in 2008)	
Date Range	Units
2008-2011	47
2003-2007	1
1990-2002	42

Estimated Total Annual Community Space Heating Fuel Use		
Fuel Oil	24,890	(gallons)
Nat Gas	-	(ccf)
Electricity	18,566	(kWh)
Wood	77	(cords)
Propane	-	(gallons)
Coal	-	(tons)

Estimated Energy Prices as of January 2013	
#1 Fuel oil cost (\$ / gallon)	\$5.97
Electricity with PCE (\$/kWh)	\$0.26
Electricity cost without PCE (\$/kWh)	\$0.55

Housing Stock Estimates	Number of Units
All Housing	113
All Occupied Housing	95
All Vacant housing	18
Vacant Housing for Sale or Rent	4

OVERCROWDING & VENTILATION - Manokotak city

Figure H5: Overcrowded Units

ACS

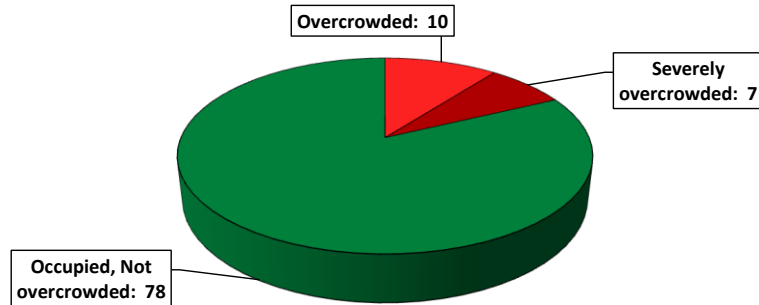


Figure H6: Housing Occupancy

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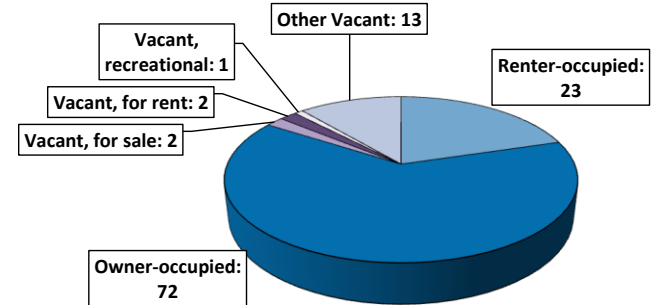


Figure H7: Average Air-Tightness of Current Homes by Decade Built

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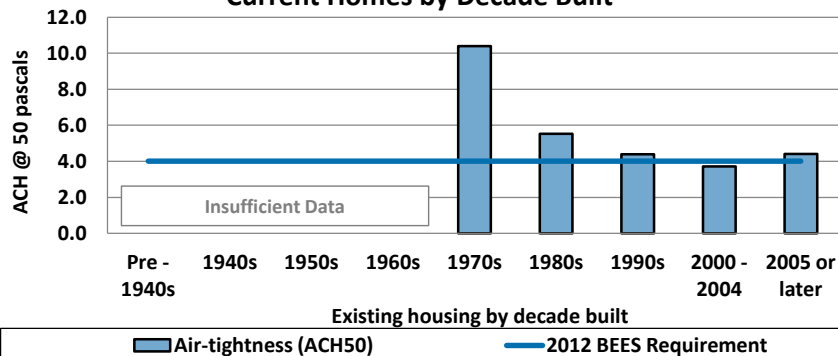


Figure H8: Existing Ventilation Type by Decade Built

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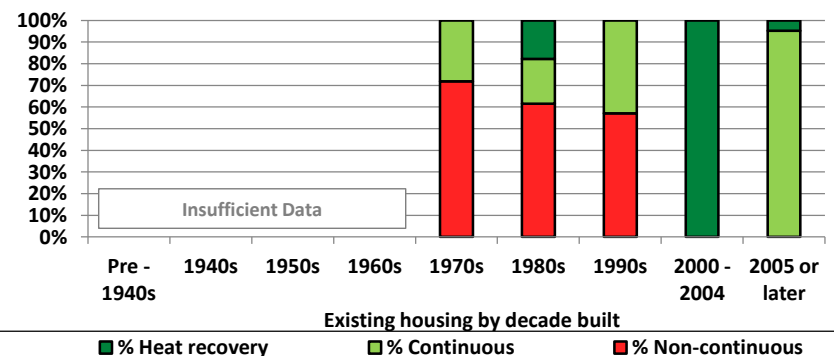


Figure H9: Percent of Housing Stock at High Risk of Moisture and Air Quality Problems

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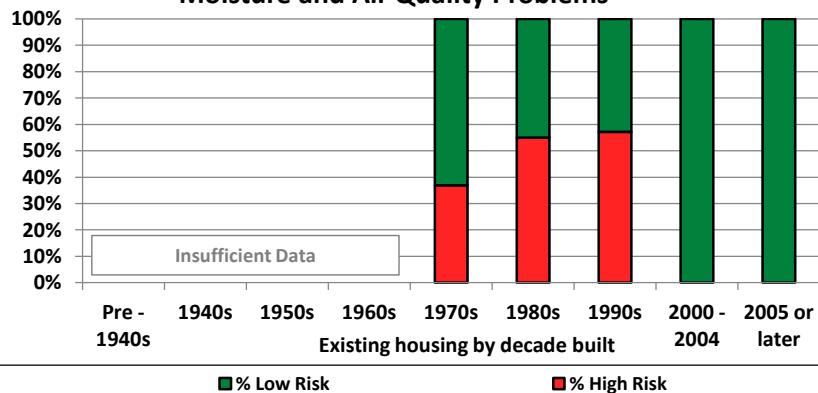
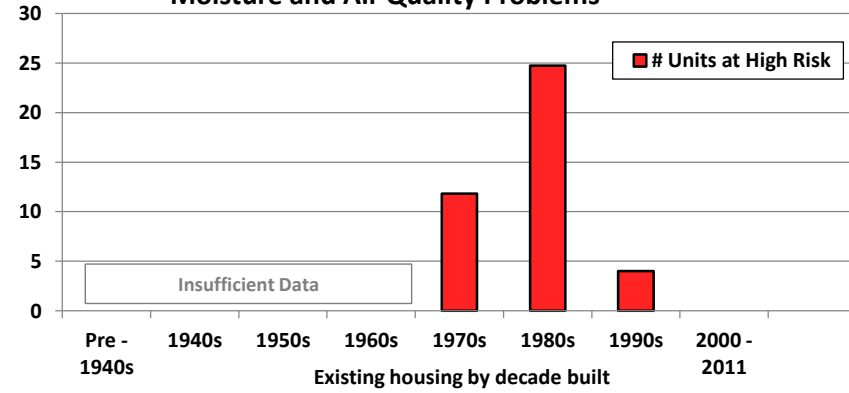


Figure H10: Quantity of Housing Stock at High Risk of Moisture and Air Quality Problems

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ENERGY - Manokotak city												
Current Manokotak 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	71	3-star plus	75.0	916	\$ 5,372	101	48	29	24	109	\$ 5.87	4.7
Pre- 1940	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
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	2	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1970- 79	30	3-star	70.6	820	\$ 4,753	96	55	15	26	118	\$ 5.90	6.4
1980- 89	37	4-star	78.6	871	\$ 5,130	102	40	40	21	117	\$ 5.93	4.3
1990- 99	9	3-star plus	77.5	767	\$ 5,740	90	35	33	22	127	\$ 8.71	3.9
2000- 2004	9	5-star	91.5	1,314	\$ 5,030	94	28	40	26	70	\$ 3.79	1.8
2005 or later	22	4-star plus	86.2	1,112	\$ 4,573	87	41	24	22	76	\$ 4.02	3.2

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

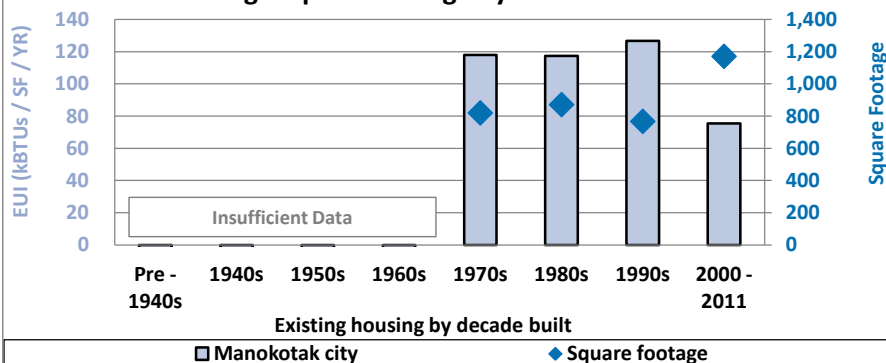
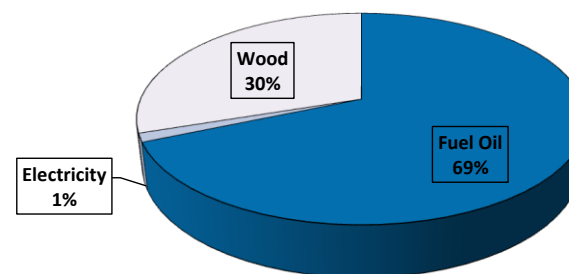


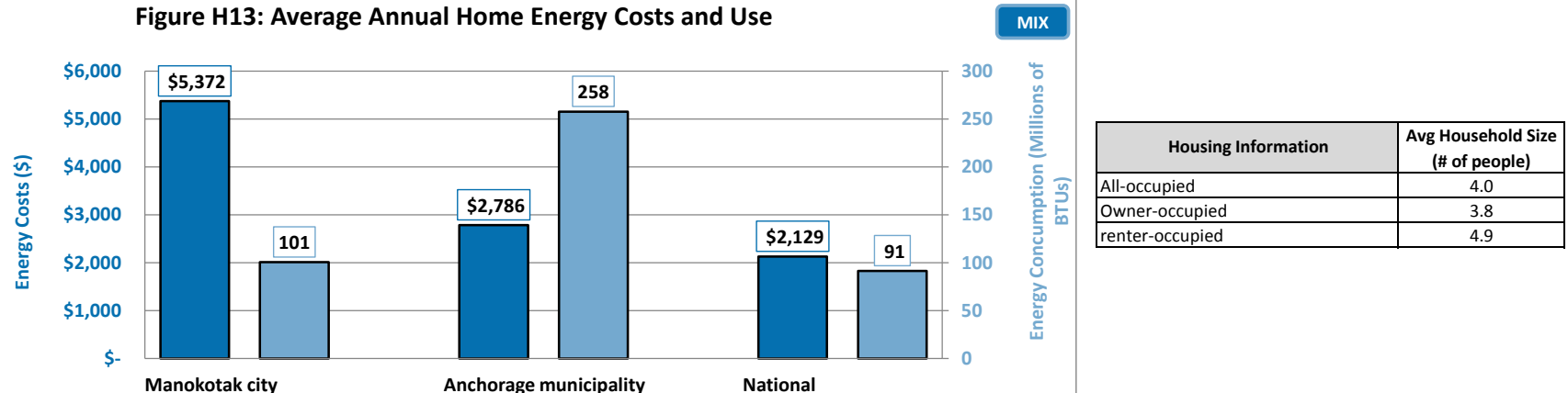
Figure H12: Percent of Total Residential Space Heating Energy by Fuel Type



Current Manokotak 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	71	7.0	31	17	5	29	NR	3	0.24	NR	0.42
Pre- 1940	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
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	2	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1970- 79	30	10.4	28	17	NR	25	NR	NR	0.25	NR	0.43
1980- 89	37	5.5	30	16	NR	29	NR	NR	0.26	NR	0.46
1990- 99	9	4.4	48	14	NR	40	NR	NR	0.16	NR	0.25
2000- 2004	9	3.7	58	21	NR	50	NR	NR	0.17	NR	0.30
2005 or later	22	4.4	45	19	26	38	NR	2	0.18	NR	0.32
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 - Manokotak city

Figure H13: Average Annual Home Energy Costs and Use



Housing Information	Avg Household Size (# of people)
All-occupied	4.0
Owner-occupied	3.8
renter-occupied	4.9

Owner-occupied House with Mortgage, Median Value
\$78,300

Owner-occupied House without a Mortgage, Median Value
\$61,000

Median Annual Household Income	
Housing Units	Household Income
All-occupied	\$ 33,472
Renter-occupied	\$ 33,750
Owner-occupied	\$ 33,438
w/ mortgage	\$ 32,083
w/o mortgage	\$ 33,594

Median Housing Costs		
	Monthly	Annual
All-occupied	\$ 467	\$ 5,604
Gross rent	\$ 481	\$ 5,772
Owner-occupied	\$ 431	\$ 5,172
Housing units w/ mortgage	\$ 1,125	\$ 13,500
Housing units w/out a mortgage	\$ 404	\$ 4,848

Avg % of Median Income Spent on Energy	16.0%
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Figure H14: Affordability - Housing Costs as a Percent of Income

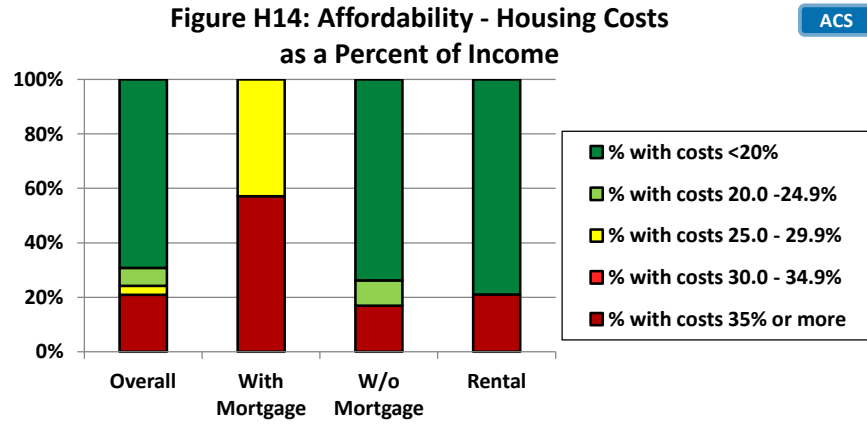
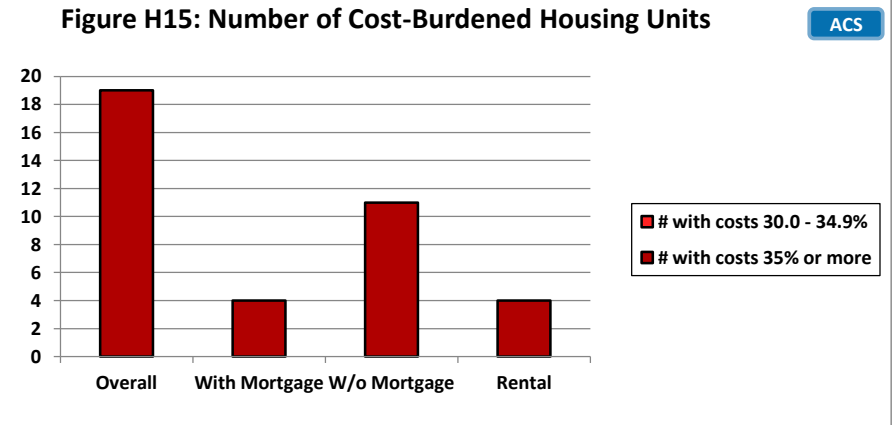


Figure H15: Number of Cost-Burdened Housing Units



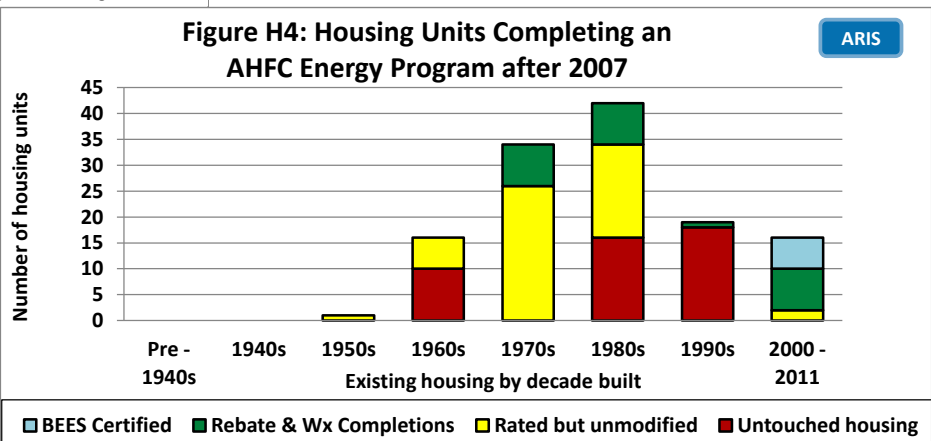
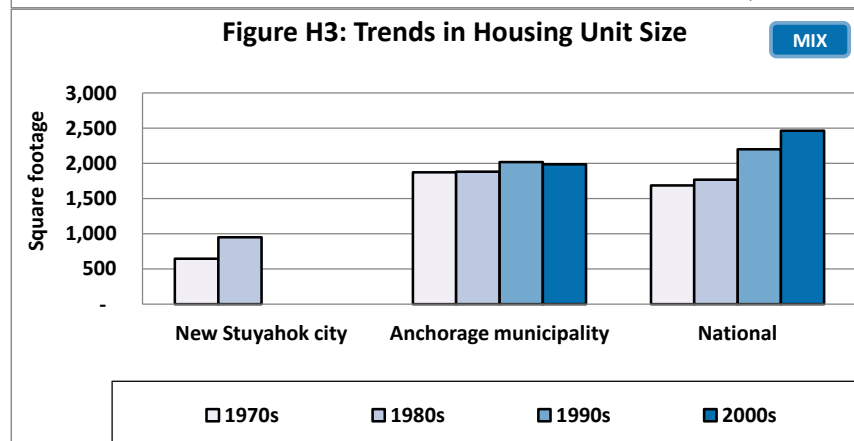
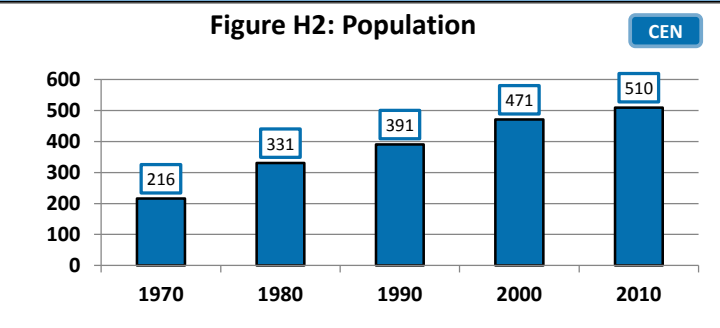
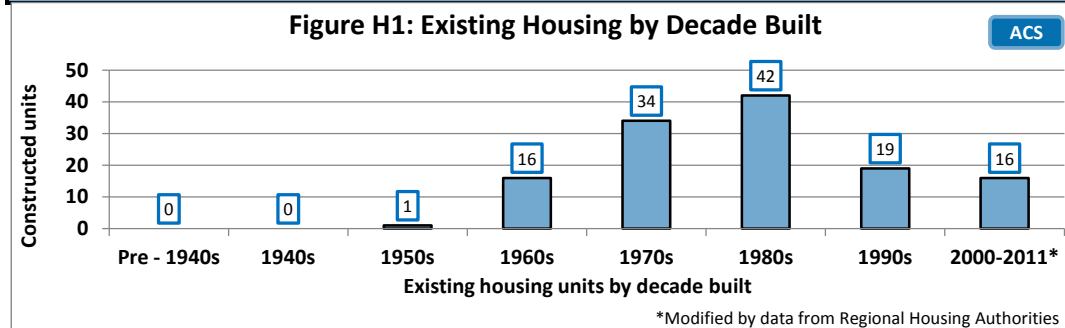
Community Profile for: New Stuyahok city

ANCSA Region: Bristol Bay Native Corporation

Regional Housing Authority: Bristol Bay Housing Authority

BEES Climate Zone (Heating Degree Days): Zone 7 (11,306 HDD)

COMMUNITY - New Stuyahok city



Houses Lacking Complete Plumbing or Kitchen Facilities	Households	
	Number	Percent
Lack complete plumbing	34	35%
Lack complete kitchen	21	22%

Avg Annual Energy Cost with PCE	\$5,511
Avg Annual Energy Cost without PCE	\$7,621

Weatherization Program Retrofits (funding increased in 2008)	
Date Range	Units
2008-2011	25
2003-2007	-
1990-2002	18

Estimated Total Annual Community Space Heating Fuel Use		
Fuel Oil	35,373	(gallons)
Nat Gas	-	(ccf)
Electricity	18,549	(kWh)
Wood	150	(cords)
Propane	-	(gallons)
Coal	-	(tons)

Estimated Energy Prices as of January 2013	
#1 Fuel oil cost (\$ / gallon)	\$6.55
Electricity with PCE (\$/kWh)	\$0.21
Electricity cost without PCE (\$/kWh)	\$0.62

Housing Stock Estimates	Number of Units
All Housing	113
All Occupied Housing	97
All Vacant housing	16
Vacant Housing for Sale or Rent	11

OVERCROWDING & VENTILATION - New Stuyahok city

Figure H5: Overcrowded Units

ACS

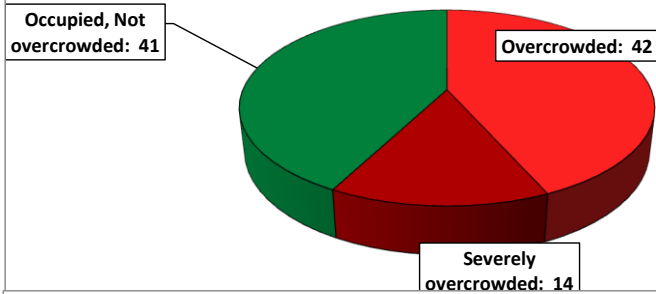


Figure H6: Housing Occupancy

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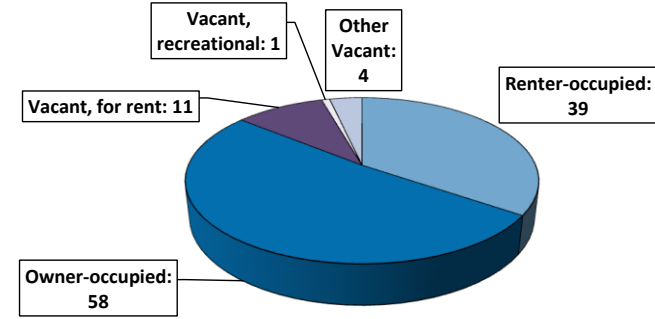


Figure H7: Average Air-Tightness of Current Homes by Decade Built

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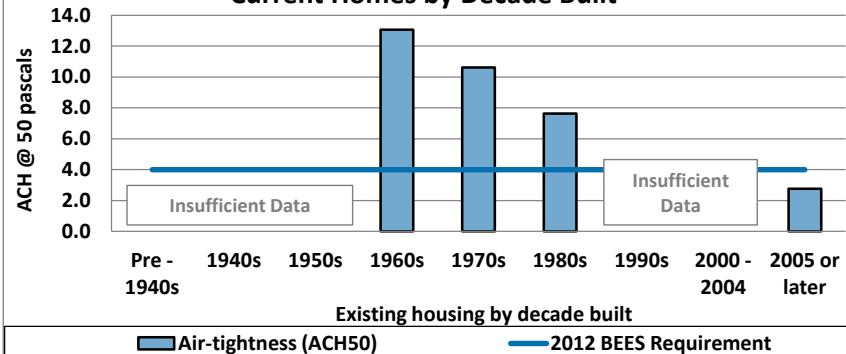


Figure H8: Existing Ventilation Type by Decade Built

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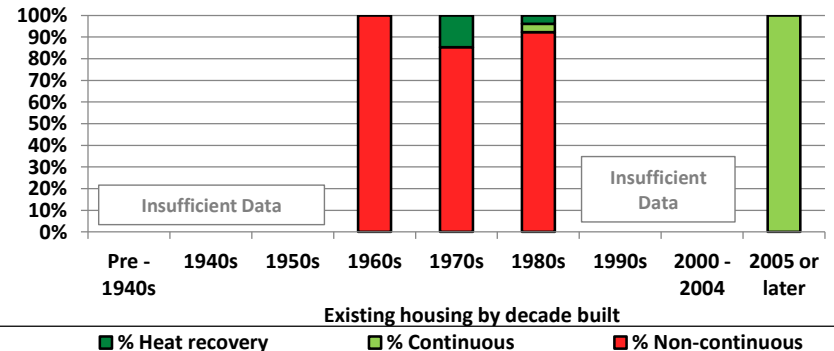


Figure H9: Percent of Housing Stock at High Risk of Moisture and Air Quality Problems

ARIS

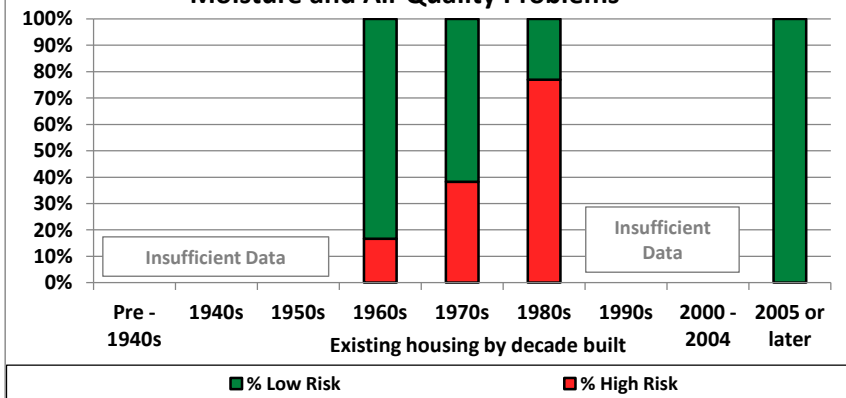
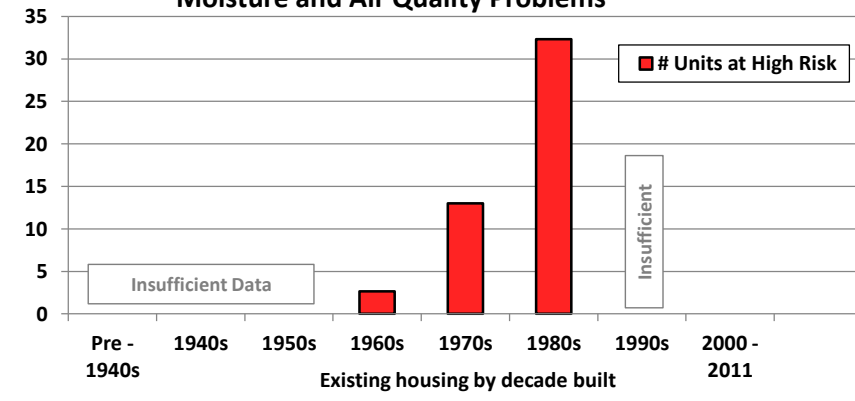


Figure H10: Quantity of Housing Stock at High Risk of Moisture and Air Quality Problems

ARIS



ENERGY - New Stuyahok city												
Current New Stuyahok 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	84	2-star plus	60.6	845	\$ 5,511	122	75	27	21	164	\$ 7.42	9.5
Pre- 1940	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1940- 49	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1950- 59	1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1960- 69	6	1-star plus	43.2	641	\$ 5,178	120	85	19	16	208	\$ 8.56	13.3
1970- 79	34	1-star plus	48.2	643	\$ 5,733	109	71	20	19	173	\$ 9.19	9.9
1980- 89	26	3-star	69.6	951	\$ 5,504	135	81	32	22	153	\$ 6.23	8.5
1990- 99	1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
2000- 2004	2	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
2005 or later	14	4-star plus	87.0	953	\$ 3,564	66	34	10	21	69	\$ 3.74	3.1

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

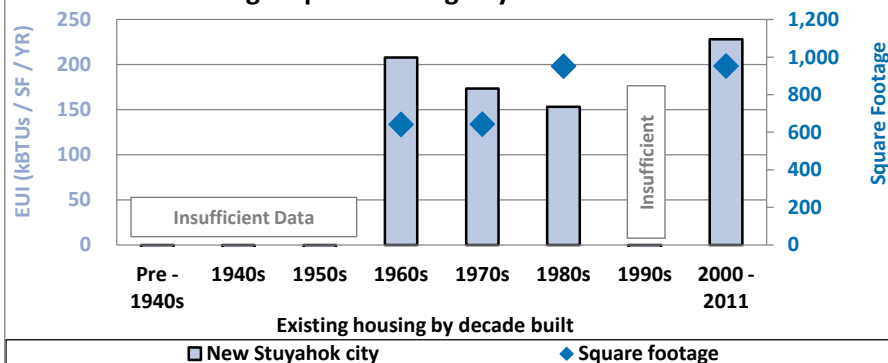
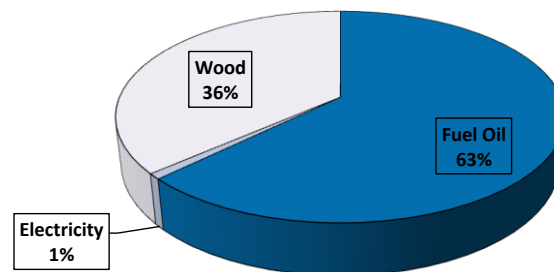


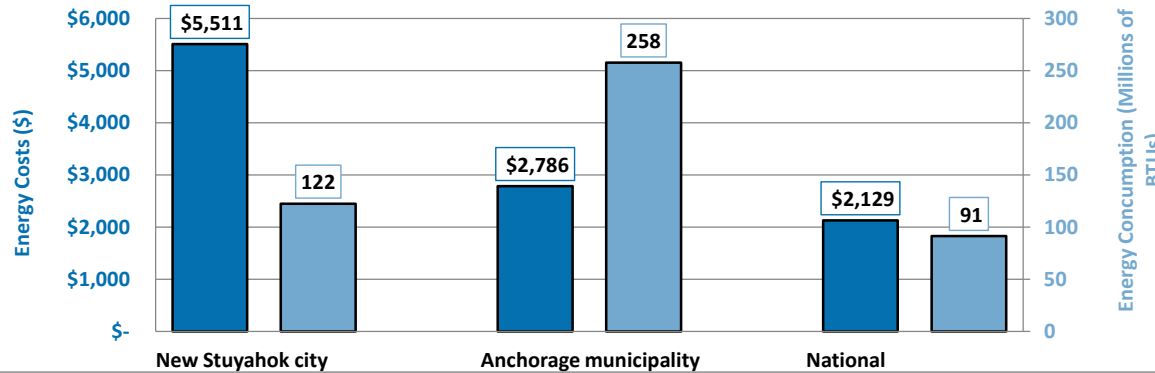
Figure H12: Percent of Total Residential Space Heating Energy by Fuel Type



Current New Stuyahok 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	84	9.8	18	14	19	14	NR	4	0.23	NR	0.50
Pre- 1940	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1940- 49	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1950- 59	1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1960- 69	6	13.1	10	11	NR	10	NR	NR	0.19	NR	0.58
1970- 79	34	10.6	17	12	NR	12	NR	NR	0.23	NR	0.56
1980- 89	26	7.6	27	14	NR	16	NR	NR	0.21	NR	0.50
1990- 99	1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
2000- 2004	2	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
2005 or later	14	2.8	51	24	19	NR	NR	2	0.19	NR	0.35
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 - New Stuyahok city

Figure H13: Average Annual Home Energy Costs and Use



Housing Information	Avg Household Size (# of people)
All-occupied	5.3
Owner-occupied	6.6
renter-occupied	3.5

Owner-occupied House with Mortgage, Median Value
\$119,600

Owner-occupied House without a Mortgage, Median Value
\$177,100

Median Annual Household Income	
Housing Units	Household Income
All-occupied	\$ 38,854
Renter-occupied	\$ 39,063
Owner-occupied	\$ 38,750
w/ mortgage	\$ 59,063
w/o mortgage	\$ 34,375

	Median Housing Costs	
	Monthly	Annual
All-occupied	\$ 498	\$ 5,976
Gross rent	\$ 658	\$ 7,896
Owner-occupied	\$ 467	\$ 5,604
Housing units w/ mortgage	\$ 770	\$ 9,240
Housing units w/out a mortgage	\$ 389	\$ 4,668

Avg % of Median Income Spent on Energy	14.2%
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Figure H14: Affordability - Housing Costs as a Percent of Income

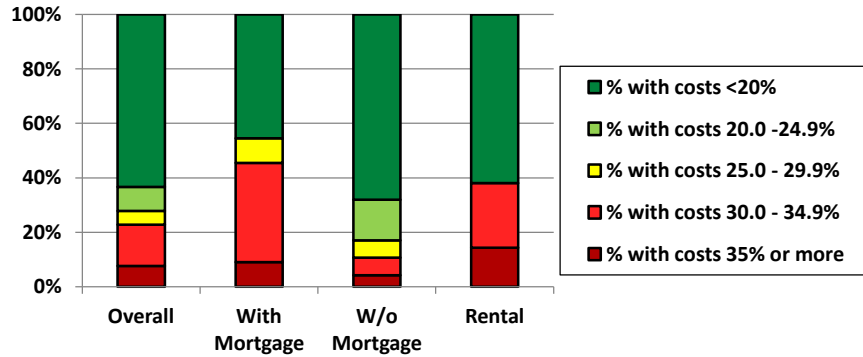
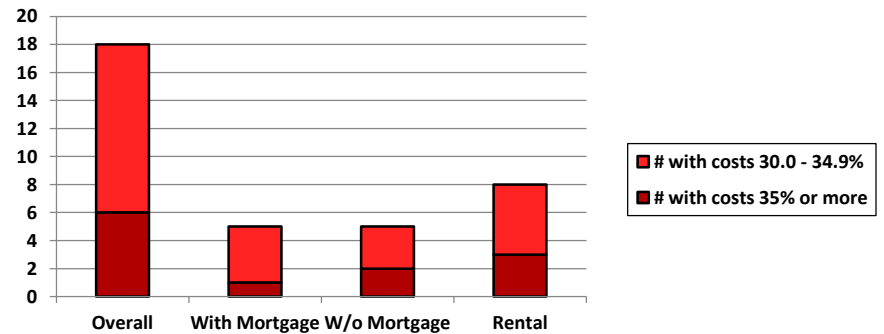


Figure H15: Number of Cost-Burdened Housing Units



Community Profile for: Togiak city

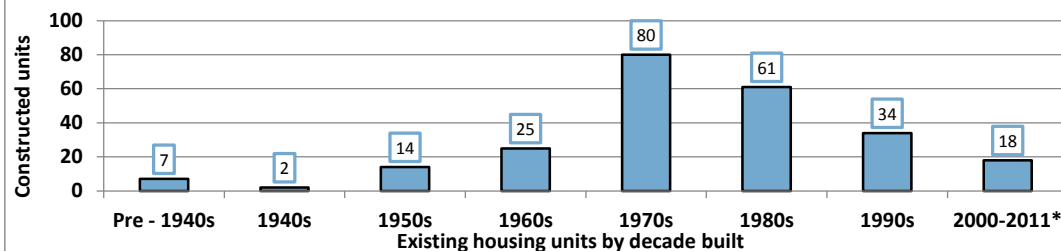
ANCSA Region: Bristol Bay Native Corporation

Regional Housing Authority: Bristol Bay Housing Authority

BEES Climate Zone (Heating Degree Days): Zone 7 (11,306 HDD)

Figure M1: Existing housing by decade built

ACS



*Modified by data from Regional Housing Authorities

Figure M2: Population

CEN

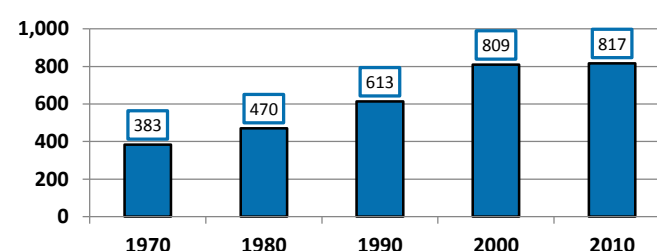


Figure M3: Overcrowded Units

ACS

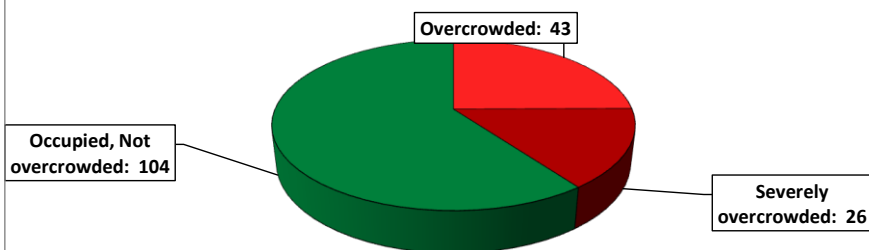
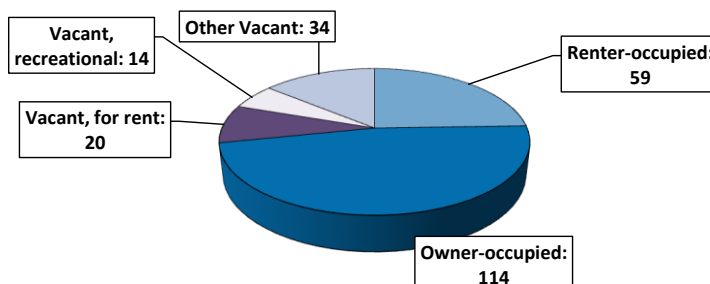


Figure M4: Housing Occupancy

MIX



Togiak 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	0	NR	NR	NR	NR	NR	NR	NR	NR	NR
Retrofit units	0	NR	NR	NR	NR	NR	NR	NR	NR	NR
New construction	12	4-star plus	87.3	769	\$ 5,027	103	92	\$4.51	4.3	0%

Togiak 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	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Retrofit units	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
New construction	12	3.8	44	23	19	NR	NR	2	0.18	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

MIX

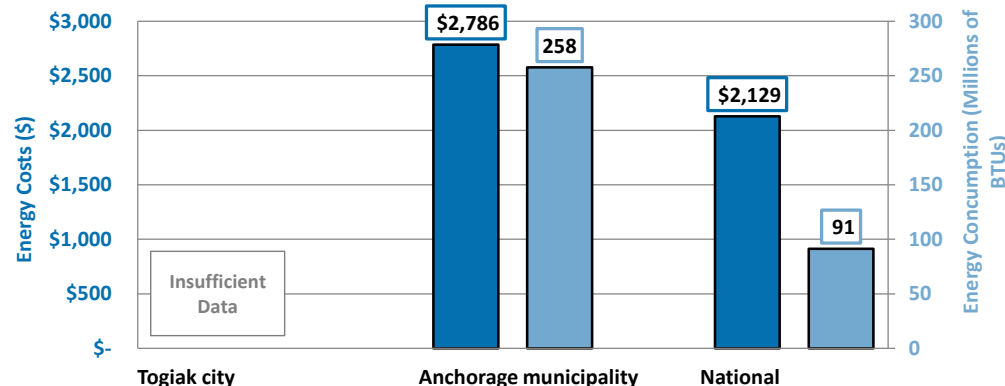
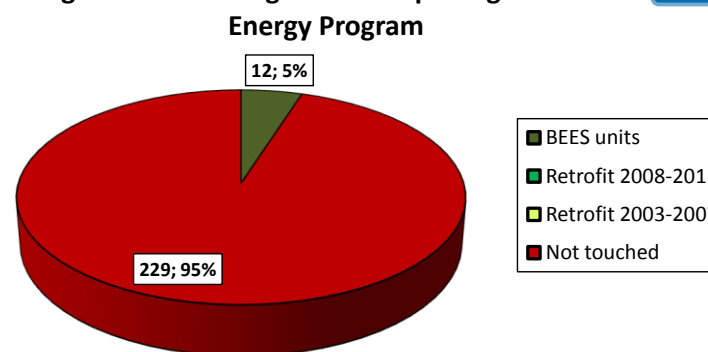


Figure M6: Housing Units Completing an AHFC Energy Program

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AFFORDABILITY - Togiak city

Owner occupied House with Mortgage, Median Value
\$114,300

Owner-occupied House without a Mortgage, Median Value
\$121,900

Estimated Energy Prices as of January 2013	
#1 Fuel oil cost (\$ / gallon)	\$ 5.97
Electricity with PCE (\$/kWh)	\$ 0.21
Electricity without PCE (\$/kWh)	\$ 0.55

Median Annual Household Income	
Housing Units	Household Income
All-occupied	\$ 46,750
Renter-occupied	\$ 52,708
Owner-occupied	\$ 45,833
w/ mortgage	\$ 55,625
w/o mortgage	\$ 45,000

Average Annual Energy Cost	
With PCE	NO PCE
Without PCE	\$343

Avg % Median Income spent on Energy	0.7%
-------------------------------------	------

Median Housing Costs		
	Monthly	Annual
All-occupied	\$ 575	\$ 6,900
Gross rent	\$ 783	\$ 9,396
Owner-occupied	\$ 561	\$ 6,732
Housing units w/ mortgage	\$ 625	\$ 7,500
Housing units w/out a mortgage	\$ 533	\$ 6,396

Housing Stock Estimates	Number of Units
All Housing	241
All Occupied Housing	173
All Vacant housing	68
Vacant Housing for Sale/Rent	20

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

ACS

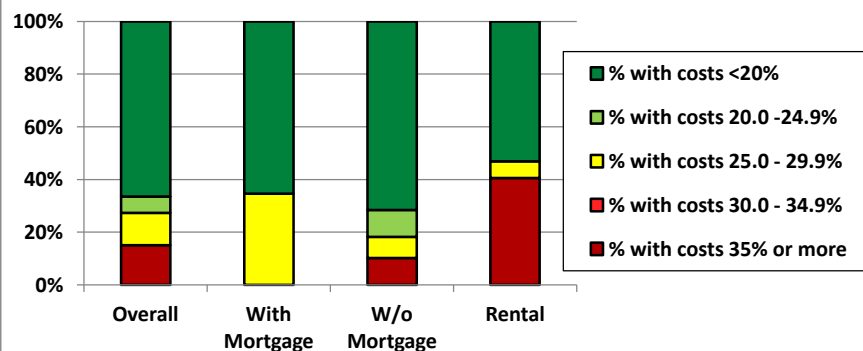


Figure M8: Number of Cost-Burdened Housing Units

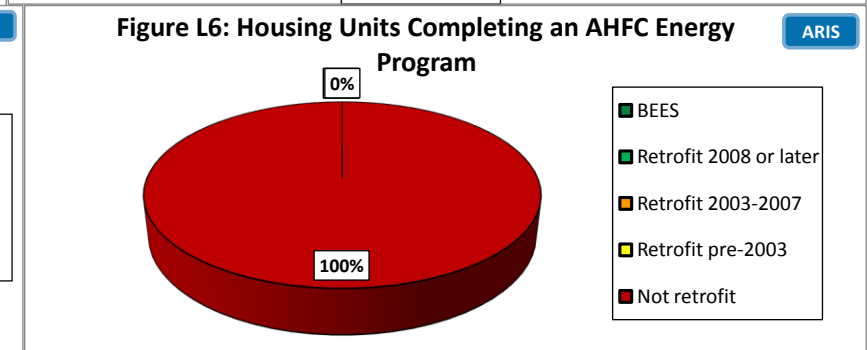
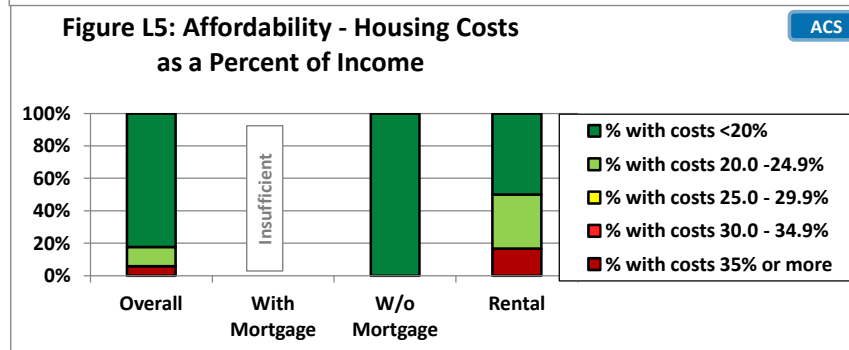
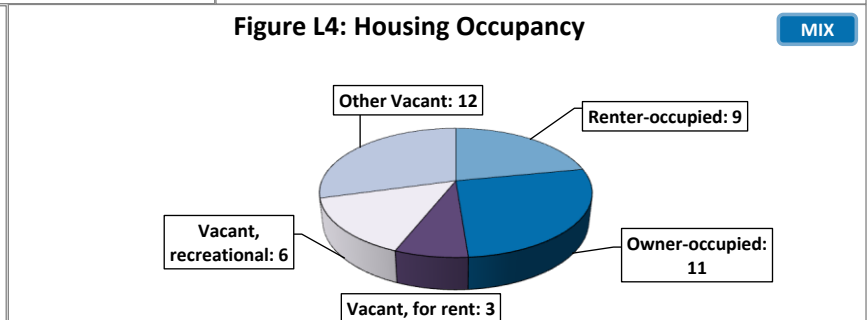
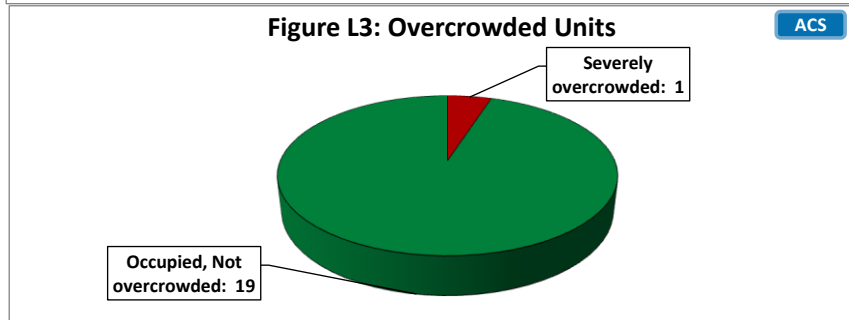
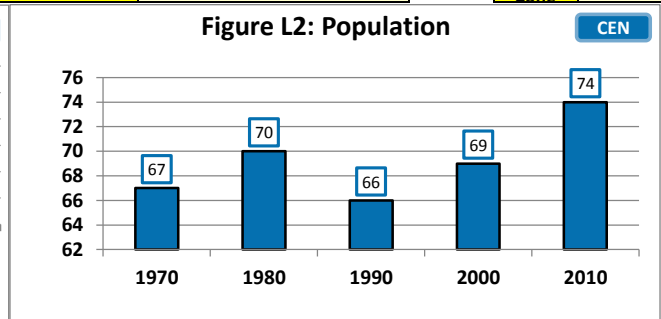
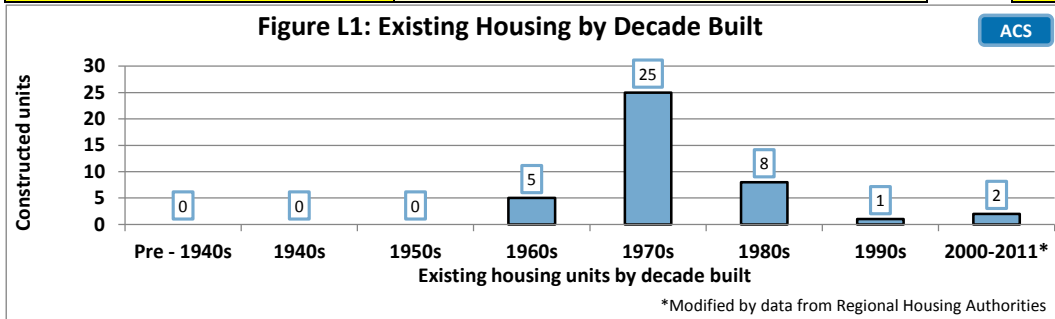
ACS



Community Profile for: Twin Hills CDP

ANCSA Region: Bristol Bay Native Corporation

Climate Zone: 7



Owner-occupied House with Mortgage, Median Value
NR

Owner-occupied House without a Mortgage, Median Value
\$24,400

Estimated Energy Prices as of January 2013	
#1 Fuel oil cost (\$ / gallon)	No Data
Electricity with PCE (\$/kWh)	\$ 0.20
Electricity without PCE (\$/kWh)	\$ 0.56

Median Annual Household Income	
Housing Units	Household Income
All-occupied	\$ 31,250
Renter-occupied	\$ 56,875
Owner-occupied w/ mortgage	\$ 21,875
w/o mortgage	NR
w/o mortgage	\$ 21,875

Housing Stock Estimates	
Housing Stock Estimates	Number of Units
All Housing	41
All Occupied Housing	20
All Vacant housing	21

Median Housing Costs		
	Monthly	Annual
All-occupied	\$ 275	\$ 3,300
Gross rent	\$ 767	\$ 9,204
Owner-occupied	NR	NR
Housing units w/ mortgage	NR	NR
Housing units w/out a mortgage	\$ 246	\$ 2,952