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## ***NANA Regional Corporation Dashboard<sup>1</sup>***

**Population:** The Alaska Department of Labor and Workforce Development's current (2012) population estimate for the NANA Regional Corporation ANCSA region is 7,716, an increase of 7% from 2000.

**Housing Units:** There are currently 2,699 housing units in the NANA Regional Corporation ANCSA region. Of these, 1,797 are occupied, 124 vacant units are for sale or rent, and the remaining 778 are seasonal or otherwise vacant units (Profile Figure R6).

**Energy:** The average home in the NANA Regional Corporation ANCSA region is 920 square feet and uses 169,000 BTUs of energy per square foot annually. This is 23% 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 NANA Regional Corporation ANCSA region is \$7,960, which is approximately 2.9 times more than the cost in Anchorage, and 3.7 times more than the national average (Profile Figure R13).

**Energy Programs:** Approximately 22% of the occupied housing units in the NANA Regional Corporation ANCSA region have completed either the Home Energy Rebate or Weatherization programs or have received BEES certification since 2008, compared to 21% statewide (Profile Figure R12).

**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-star-plus for homes built after 2000.

**Air-tightness:** Within current housing stock, newer homes are tighter. On average, homes built in the last decade nearly meet the 2012 BEES standard of 4 air-changes per hour at 50 pascals (ACH50). In contrast, homes built in the 1960s are 2 times leakier than those built since 2000 (Profile Figure R7).

**Ventilation:** An estimated 840 occupied housing units (or 47%) in the NANA Regional Corporation ANCSA region 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 R9-R10).

**Overcrowding:** Thirty nine percent of occupied units are estimated to be either overcrowded (18%) or severely overcrowded (21%). This is roughly 13 times the national average and makes the NANA region the second most overcrowded ANCSA region in the state.

**Affordability:** According to American Community Survey (ACS) data, approximately 24% of households in the NANA Regional Corporation area spend more than 30% of total income on reported housing costs, including rent, water and sewer utilities, and energy costs. Using AKWarm estimates, the average annual energy costs constitute approximately 13% of census median area income for occupied housing.

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<sup>1</sup> Figures referenced in the Dashboard are located in the ANCSA Region profile.

## NANA Regional Corporation Summary

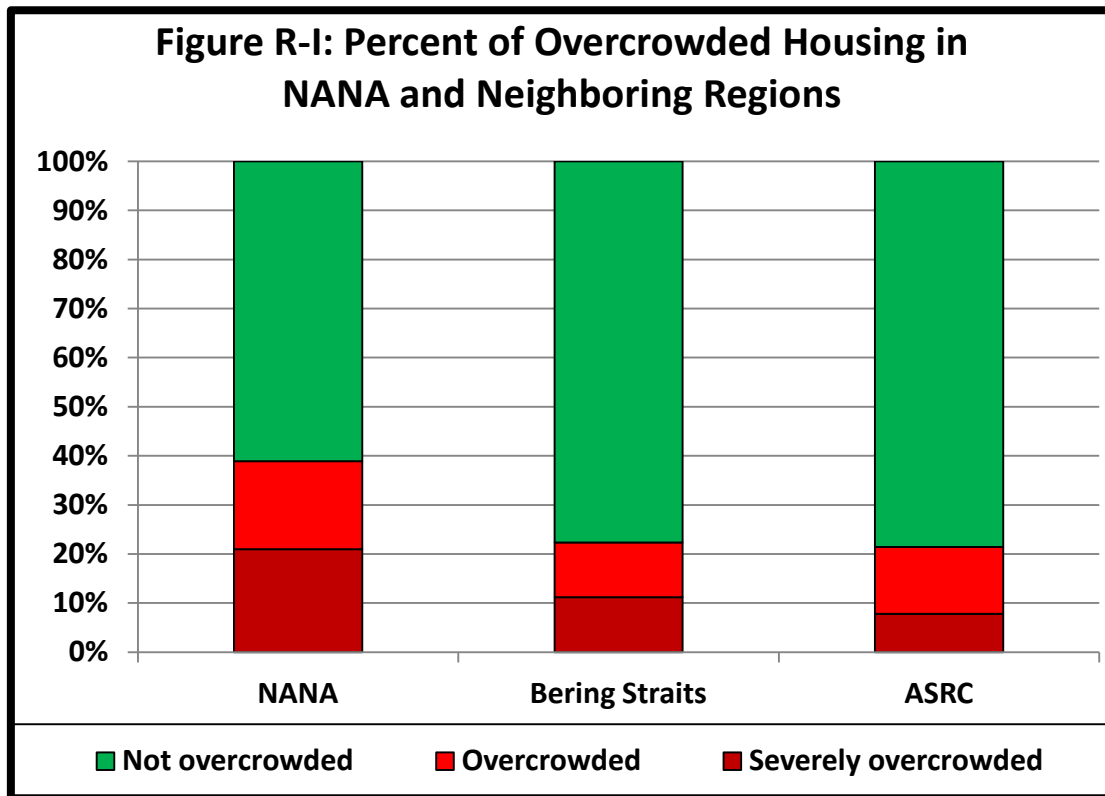
### Community

The NANA Corporation ANCSA region is located on the western coast of Alaska, south of the Arctic Slope region and north of the Bering Straits region. The regional average home size of 920 square feet is the second smallest in Alaska, second only to the Calista region. Average home sizes vary in the region, from a low of 770 square feet in Kivalina to a high of 1,178 square feet in Kotzebue.

### Overcrowding

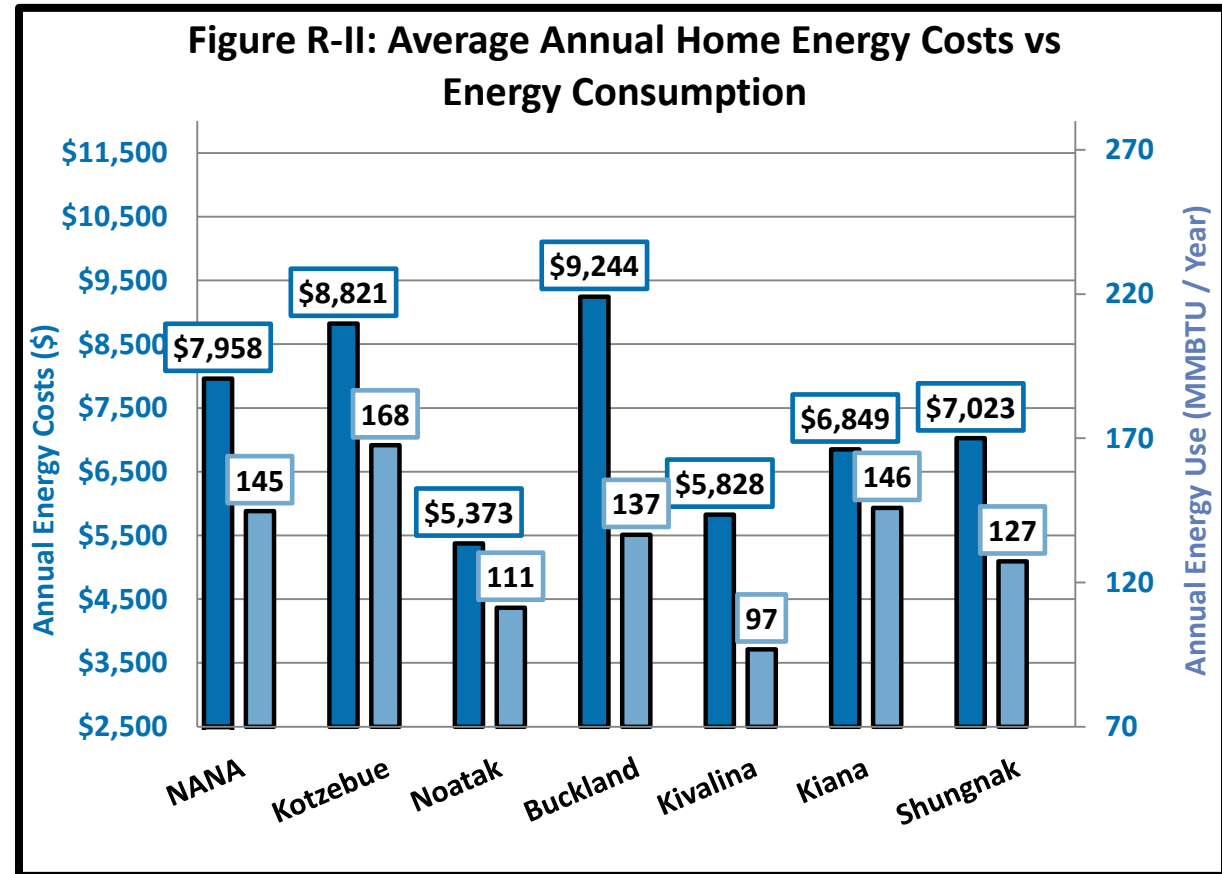
The NANA region is the second most overcrowded area in the state with 39% of occupied homes with more than one person per room (Figure R-1), nearly twice the level of overcrowding in the neighboring regions of Bering Straits (22%) and ASRC (21%). Overcrowding in the NANA region varies widely by community, from a low of 13% of homes in Deering considered overcrowded to a high of 73% in Buckland. Considering only the six most populous communities in the region, overcrowding ranges from 30% to 73% of households overcrowded.

Approximately 5% of housing in the region is vacant and available for sale or rent. Availability varies by community from a low of no available housing in Buckland to a high of 6% in Ambler available for sale or rent.



## Energy<sup>2</sup>

The average annual energy cost per household in the NANA region is \$7,958, which is the second most costly energy cost in the state. Figure R-II shows that energy costs vary by community, from a low of \$5,373 in Noatak to a high of \$9,534 in Kobuk. One factor that contributes to high annual energy costs is the high price of fuel in the region. According to the January Alaska Fuel Price Report,<sup>3</sup> the Northwest region of Alaska has the second highest average fuel oil price in the state at \$6.25 per gallon. The colder climate of Northwest Alaska also plays a part in the high cost of energy, with communities having around 16,000 heating degree days, roughly double the heating requirement of many communities in Southeast Alaska.

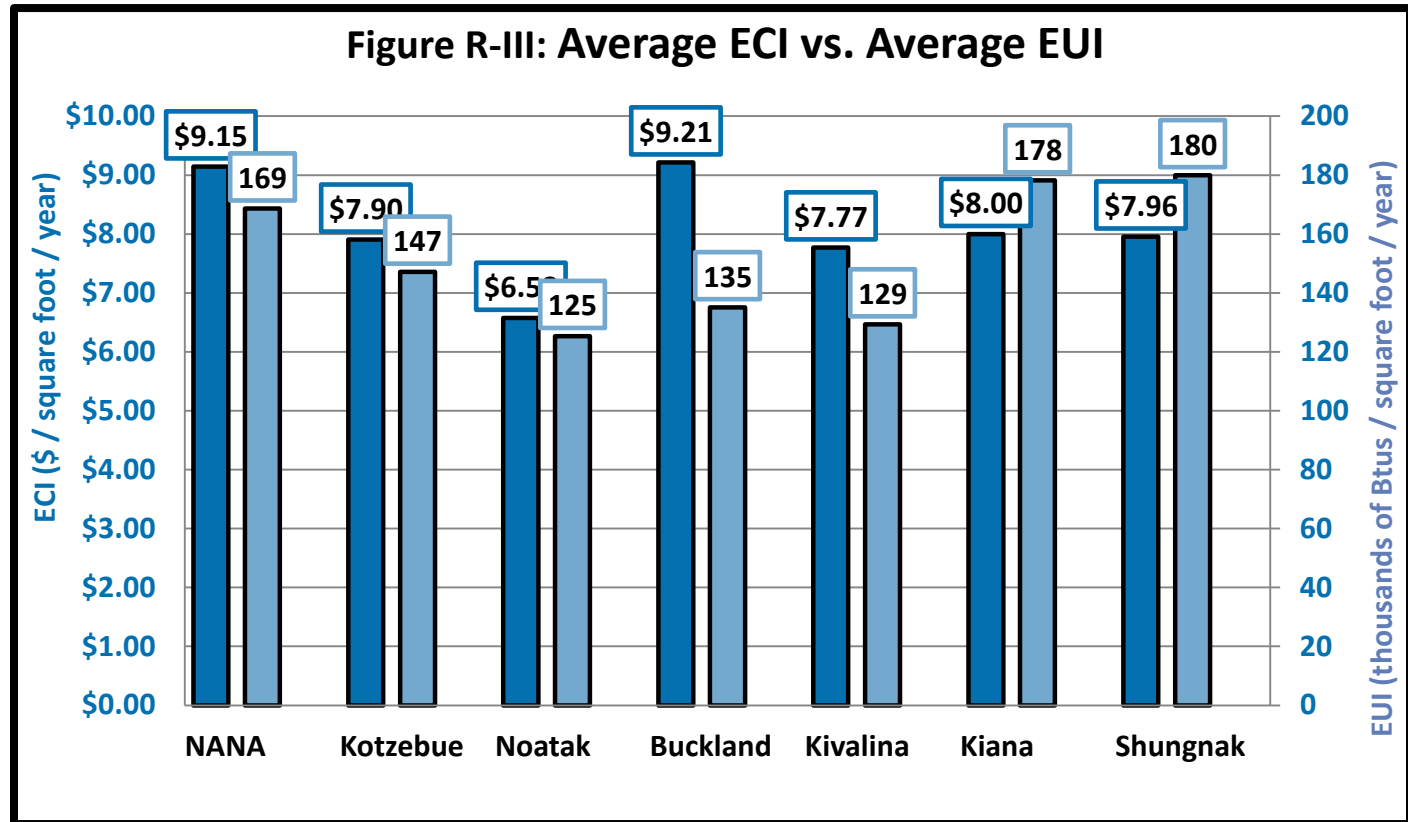


<sup>2</sup> Regional data appearing in this section is based on communities with sufficient levels of ARIS data, so not all communities were included in the analysis.

<sup>3</sup> The State of Alaska, Department of Commerce, Community, and Economic Development. (January 2013). *Alaska Fuel Price Report: Current Community Conditions*. Retrieved from [http://commerce.alaska.gov/dca/pub/Fuel\\_Report\\_2013\\_January.pdf](http://commerce.alaska.gov/dca/pub/Fuel_Report_2013_January.pdf).

The average energy cost index, or ECI, for the region is also high with NANA households spending on average \$9.15 per square foot (Figure R-III). This is more than 9 times the national average ECI, and is the highest regional ECI in Alaska.

Housing units in the NANA region are relatively efficient, having the second lowest average home heating index in Alaska at 7.5 BTUs/ft<sup>2</sup>/HDD. The only region with a better home heating index is the Arctic Slope Regional Corporation. The home heating index average varies by community with Buckland having the lowest index of 4.2 and Kiana with the highest index of 9.1.



Understanding the variations between communities participating in energy efficiency programs is essential to targeting work and resource allocation in the region. Approximately 20% of housing units in the NANA region have completed the Weatherization program or the Home Energy Rebate Program since 2008, and an additional 2% of homes have been certified to meet BEES. Participation in energy programs varies widely by community, from a low of an estimated zero housing units in Noorvik to a high of 93% in Deering.

Figure R-IV shows that there has been little participation in the Home Energy Rebate Program or BEES in the region. However, the Weatherization program has been used extensively in many communities and the overall regional participation (18%) is the second highest in Alaska. The Weatherization program has had particularly high participation in the communities of Selawik, Noatak, and Kivalina, where estimates show that over 50% of occupied housing units have undergone an energy retrofit.

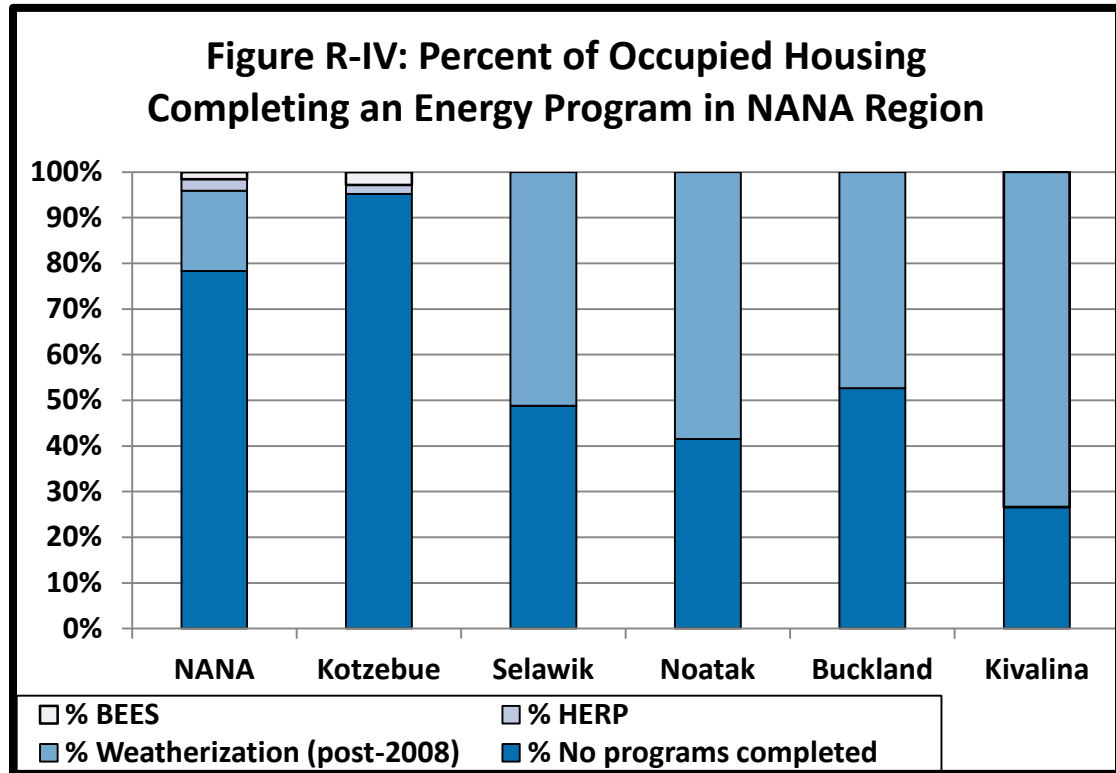
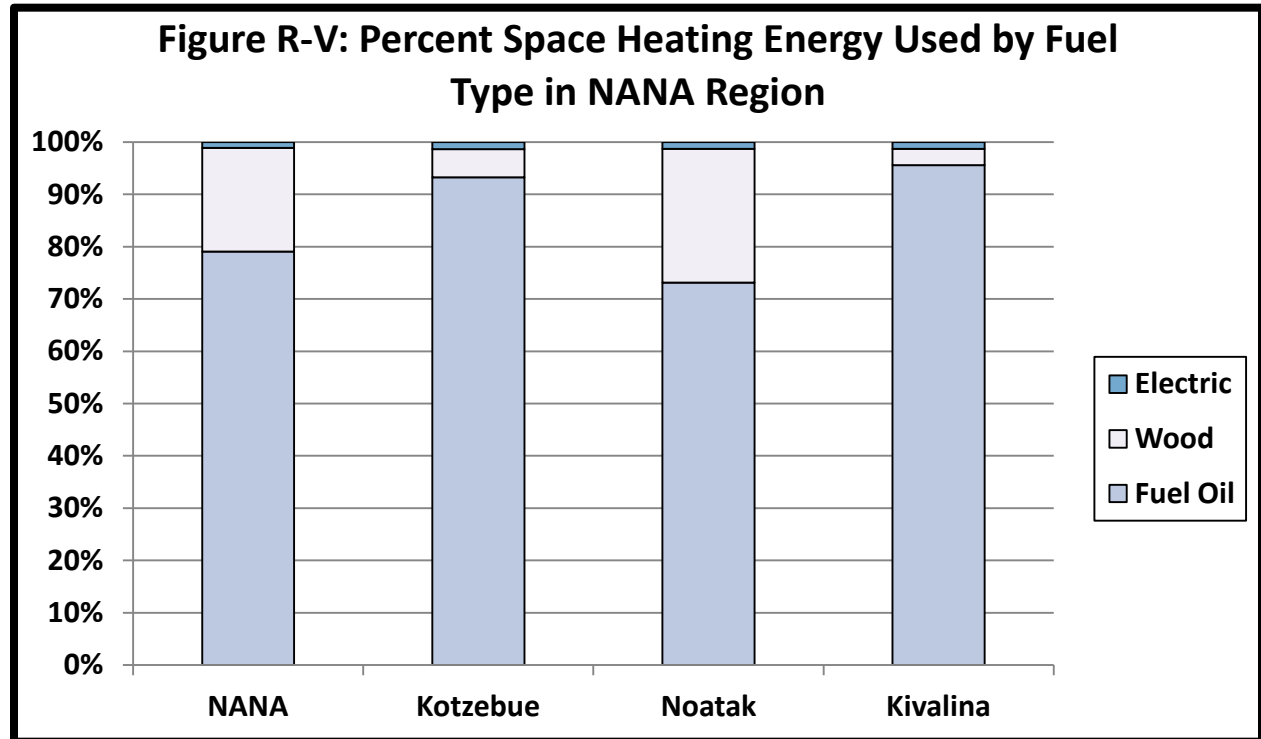
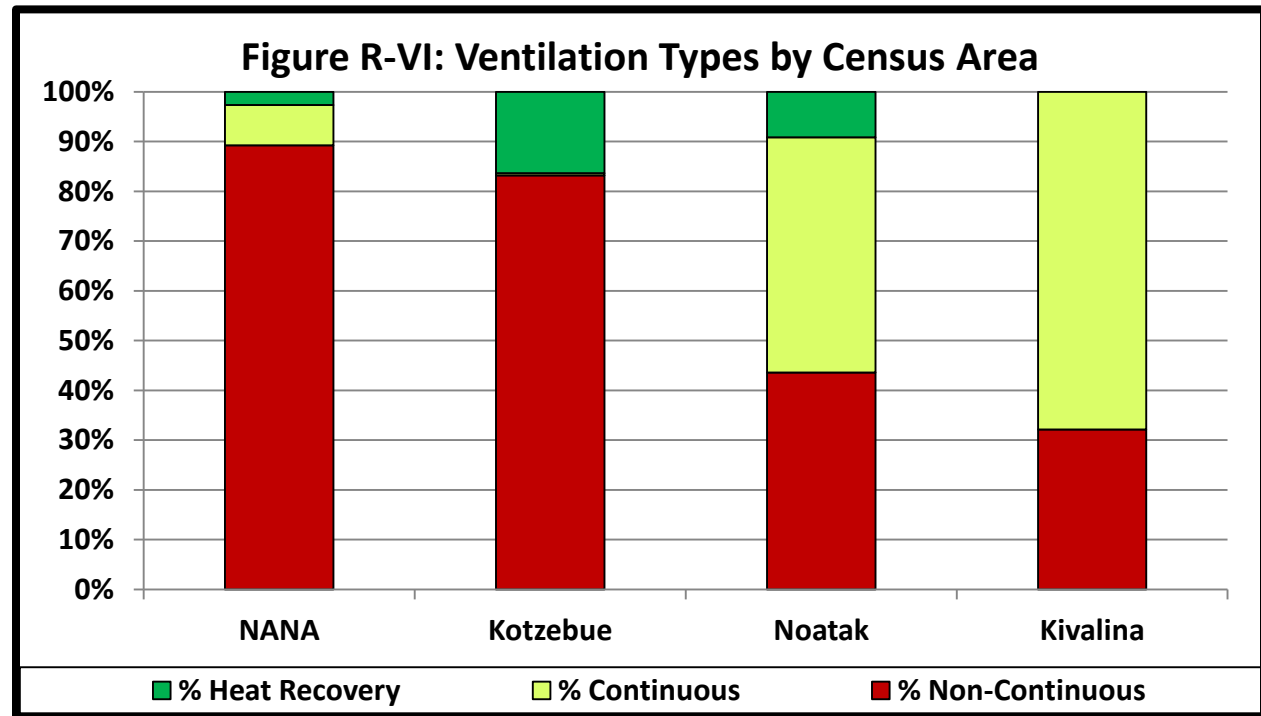


Figure R-V shows that fuel oil accounts for 80% of the space heating energy used in the NANA region, with the majority of the remaining space heating needs met by wood. Overall, wood accounts for approximately 20% of space heating energy, although its use varies by community depending on availability. For example, Kivalina uses wood to meet 3% of space heating needs compared to Noatak where residents rely on wood for 26% of space heating energy.





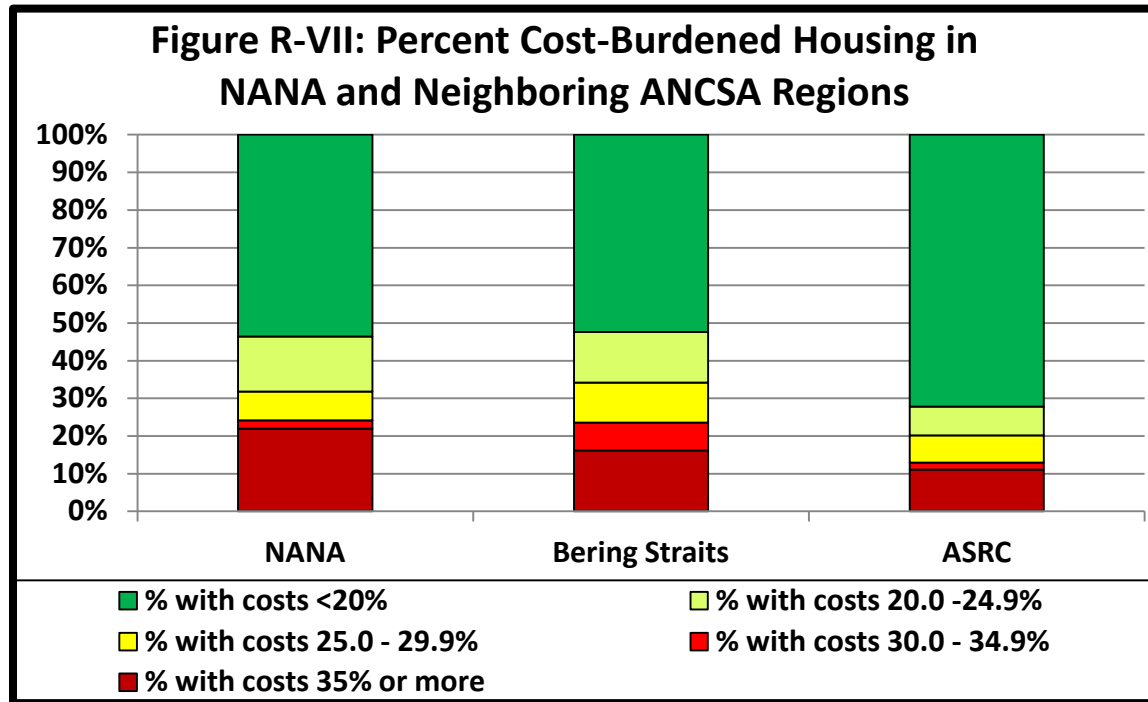
Approximately 11% of housing units in the NANA region have a continuous mechanical ventilation system or a heat recovery ventilation system installed. Ventilation varies significantly by community (Figure R-VI). Kivalina and Noatak primarily have continuous mechanical ventilation systems installed, whereas in Kotzebue 16% of housing units have heat recovery ventilation systems. This variation may be due in part to the extensive participation of Noatak and Kivalina homes in the Weatherization efficiency program.



## Affordability

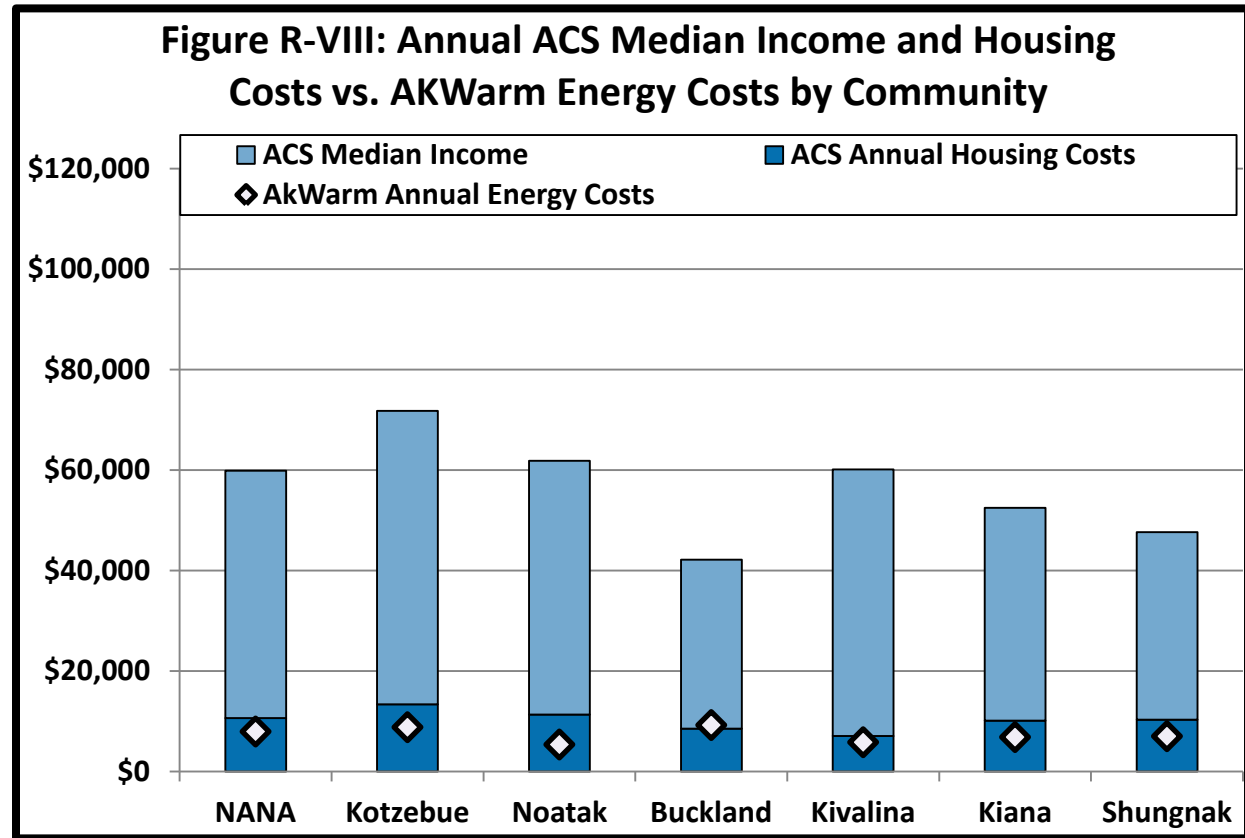
According to ACS estimates, approximately 24% of households in the NANA region are considered cost-burdened, spending 30% or more of household income on housing costs.<sup>4</sup> This is similar to the rate of cost-burdening found in the neighboring Bering Straits region (Figure R-VII). Both the NANA and Bering Straits regions have higher percentages of cost-burdened homes than the Arctic Slope Regional Corporation to the north, where 13% of homes are cost-burdened.

Affordability varies by community in the NANA region from a low of 8% of cost-burdened households in Shungnak to a high of 41% in Deering. The six most populous communities have between 17% and 31% of households spending 30% or more of household income on housing costs.



<sup>4</sup> CCHRC's analysis of ACS energy costs indicate that there are systematic underestimations for rural Alaska which suggests that ACS-based cost burdened housing estimates are low. See Appendix A, "Analysis of American Community Survey Energy Cost Estimates" for more details.

Figure R-VIII shows the median household incomes for the region and the six most populous communities along with housing and energy costs.<sup>4</sup> The six most populous communities have median household incomes ranging from \$36,875 to \$71,761. Kotzebue has the highest median income of \$71,761 and Kobuk, one of the region's smaller communities, has the lowest median income of \$31,250.



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## Community, Regional, and Statewide Housing Characteristics

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

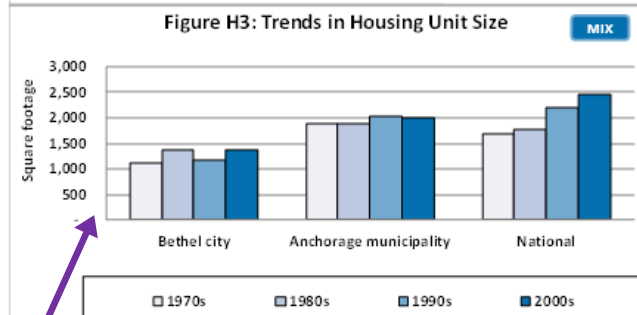
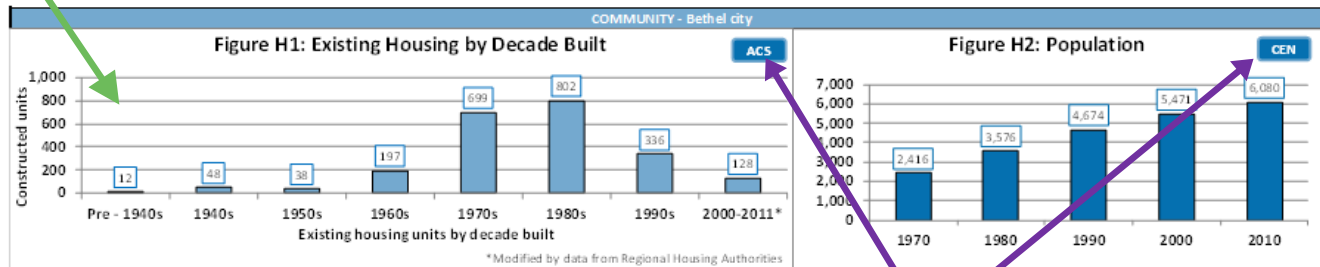
# How to Interpret the Profile: Data Sources, Definitions & Clarifications

1

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

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

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



**Data Source Key:**

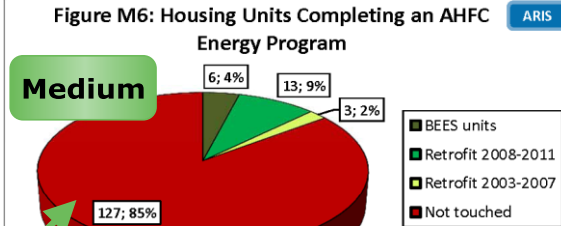
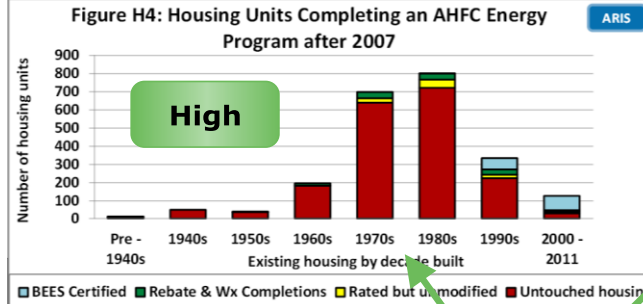
- 2011 American Community Survey 5 year estimates (ACS) **ACS**
- Alaska Retrofit Information System energy audits **ARIS**
- 2010 Decennial Census **CEN**
- Mixed data source; see individual graphs for details. **MIX**

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

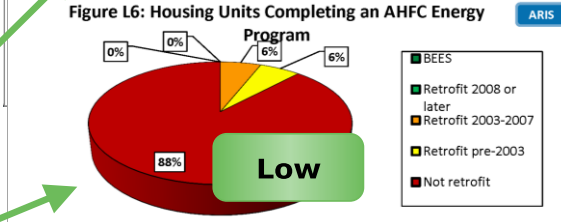
# How to Interpret the Profile: Data Sources, Definitions & Clarifications

1

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



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



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

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

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

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

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

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

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

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

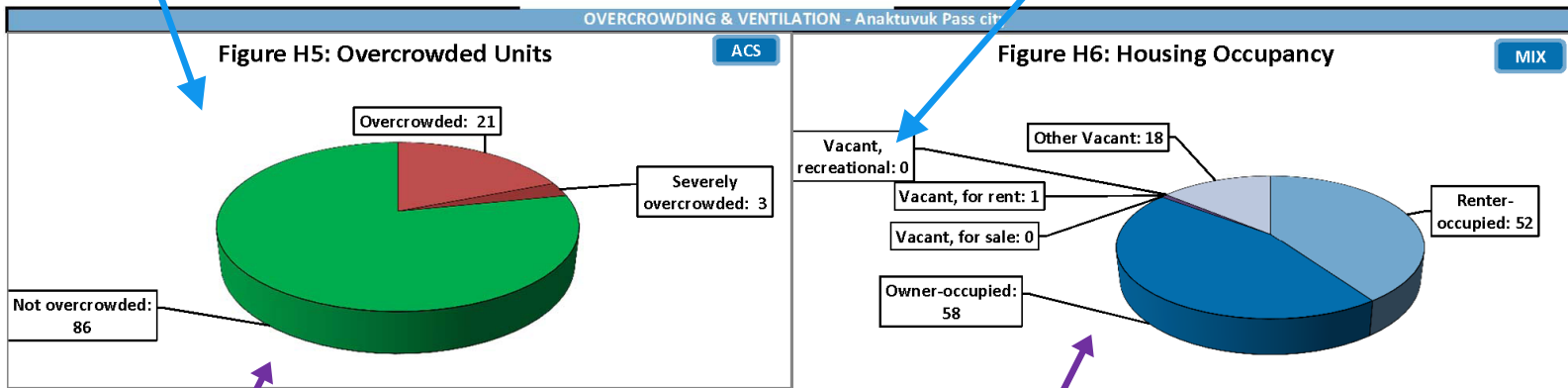
Units weatherized before 2008 are eligible to participate in the program again. (Data source: Alaska Housing Finance Corporation).

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

2

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

**Recreational:** For seasonal, recreational, or occasional use.



**Data Source:**  
 2011 American Community Survey 5-year estimates

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

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

2

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

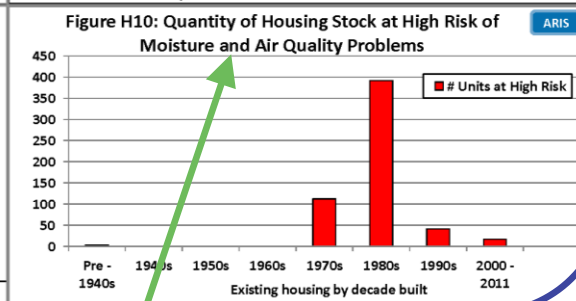
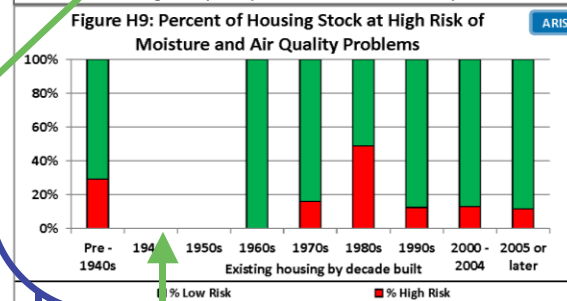
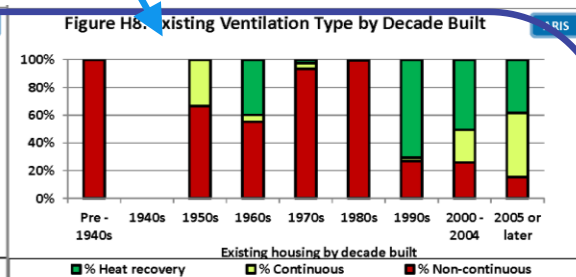
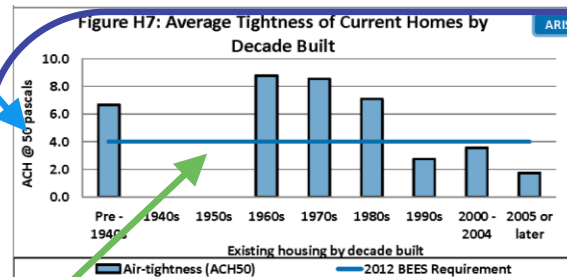
**Continuous:** Mechanical ventilation without heat recovery operated with automatic controls.

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

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

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

Data Source:  
Alaska Retrofit Information System



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

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



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

3

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

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

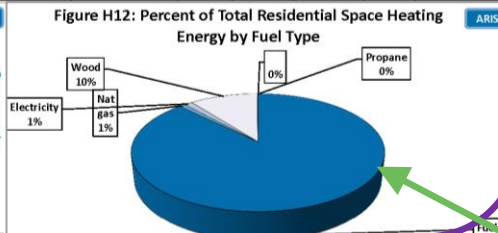
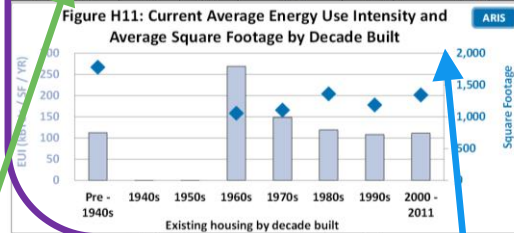
**Space Heating, DHW, Appliances:**  
Estimated annual energy for the end uses of: Space Heating, Domestic Hot Water, and all other energy including lights, appliances, and electronics.

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

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

Current Residential Units by Year Built	Number of Records	Avg Energy Rating	Avg Energy Rating Points	Avg Sq. Feet	Avg Annual Energy Cost (with PCE)	Avg Annual Energy Use (million BTUs)	Avg Ann Energy by Use (million Btus)			Avg. EUI (kBtu/SqFt)	Avg. ECI (\$ / SqFt)	Avg. Home Heating Index
							Space Heating	DHW	Appliances			
OVERALL	419	3-star	70.7	1,237	\$ 8,065	160	102	27	26	132	\$ 6.97	6.5
Pre- 1940	7	3-star	68.3	1,779	\$ 11,107	199	145	21	33	113	\$ 6.66	6.4
1940-49	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1950-59	3	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1960-69	15	2-star	52.3	1,056	\$ 11,087	287	225	35	27	269	\$ 10.60	16.0
1970-79	71	2-star plus	64.5	1,106	\$ 7,961	153	105	21	25	149	\$ 8.09	7.8
1980-89	113	3-star plus	74.7	1,361	\$ 8,239	157	100	30	26	119	\$ 6.40	5.8
1990-99	111	4-star	79.9	1,187	\$ 6,395	122	57	21	20	108	\$ 5.58	4.7
2000-2004	71	3-star plus	77.5	1,388	\$ 8,435	143	80	35	27	118	\$ 7.24	5.2
2005 or later	28	5-star	91.9	1,233	\$ 4,504	92	39	28	25	79	\$ 3.82	2.5

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



**Data Source:**  
AkWarm ratings from AHFC's Alaska Retrofit Information System (ARIS).

Average energy characteristics of the *current* housing stock by decade built (high data communities) or by pre-/post-retrofit and new construction categories (medium data communities).

**Energy Use Intensity (EUI)** is the total amount of energy used per year per square foot of floor space.

This is the community's breakdown by fuel type of the energy (BTUs) used for home space heating. It is not the percent of housing using a given fuel in primary space heating devices. Because wood burning devices are inefficient, they may use a significant portion of total energy even if no homes in a community use wood as a primary fuel.

## How to Interpret the Profile: Data Sources, Definitions & Clarifications 3

Average building envelope characteristics of the *current* housing stock by decade built (high data communities) or by pre-/post-retrofit and new construction categories (medium data communities).

**ACH50:** The results of a blower door test to measure building leakiness. Smaller numbers indicate tighter buildings.

**R-value:** the capacity to resist heat flow. The higher the value, the better the insulator.

**U-value:** the conductance to heat flow. The lower the value, the better the insulator.

**Data Sources:** AkWarm ratings from AHFC's Alaska Retrofit Information System (ARIS).

**Current Bethel city Housing Envelope Characteristics By Decade Built**

Current Residential Units by Year Built	Number of Records	ACH 50	Ceiling R	Above Grade Wall R	Below Grade Wall R	Above Grade Floor R	On Grade Floor R	Below Grade Floor R	Door U	Garage Door U	Window U
OVERALL	419	6.4	23	17	7	30	NR	2	0.36	0.27	0.54
Pre- 1940	7	6.7	26	21	NR	30	NR	NR	0.30	NR	0.40
1940- 49	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1950- 59	3	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1960- 69	15	8.8	16	14	NR	21	NR	NR	0.44	NR	1.65
1970- 79	71	8.5	20	15	NR	29	NR	NR	0.39	NR	0.57
1980- 89	113	7.1	29	17	NR	32	NR	NR	0.30	NR	0.44
1990- 99	111	2.7	56	31	NR	50	NR	NR	0.19	0.12	0.29
2000- 2004	71	3.6	13	21	NR	36	NR	NR	0.27	0.23	0.40
2005 or later	28	1.7	41	22	NR	41	NR	NR	0.20	NR	0.31
BEES 2009 - Climate Zone 8		7.0	38	30	15	38	15	15	0.22	0.22	0.22
BEES 2012 - Climate Zone 8		4.0	48	30	15	38	15	15	0.22	0.22	0.22

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

"NR" is used when there are insufficient records to protect the confidentiality of the occupants.

**Color Coding--**

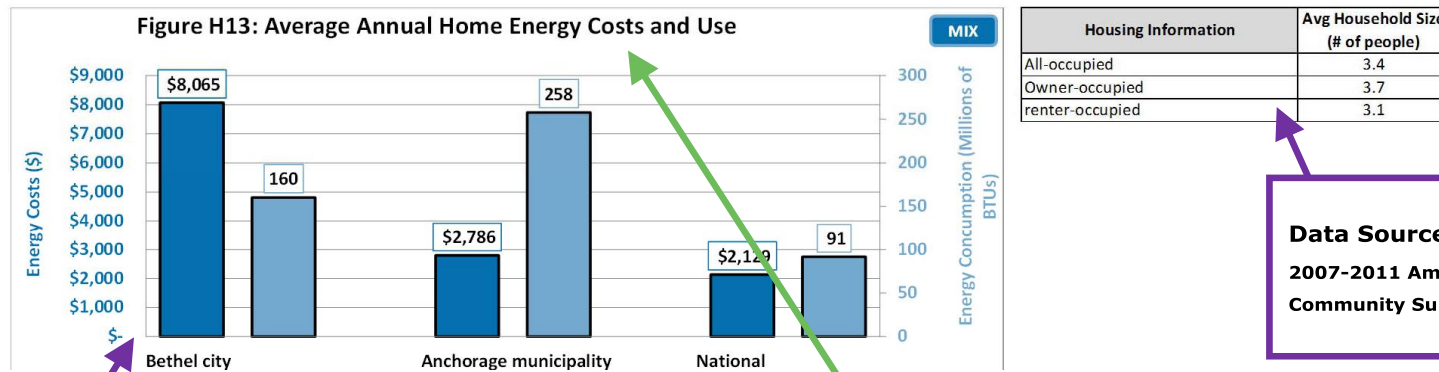
**Green:** the average value meets or exceeds the 2012 BEES requirement.  
**Yellow:** value is 75-99% of the 2012 BEES requirement.  
**Red:** value is less than 75% of the 2012 BEES requirement.

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

4

Communities are categorized in this report by the amount of ARIS data available, and reporting is more extensive for locations with more data. Data quantities are defined as--  
**High:** ARIS records exist for housing units built in 7 of the 9 date ranges use in this report, and there are either more than 50 records or records totaling 20 percent or more of the total number of housing units.  
**Medium:** There are three or more ARIS records. Data are presented for an "overall" group if there are "As Is" ARIS records totaling at least 10% of the community's occupied housing units.  
**Low:** There are fewer than three ARIS records for the location.

Community Template - Data Quantity: High



**Data 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
<b>Avg % of Median Income Spent on Energy</b>	<b>8.8%</b>	

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

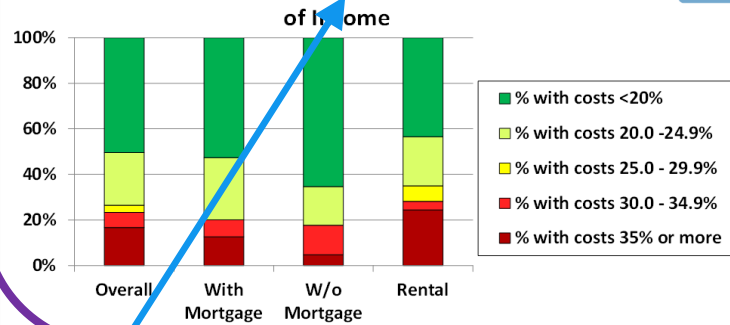
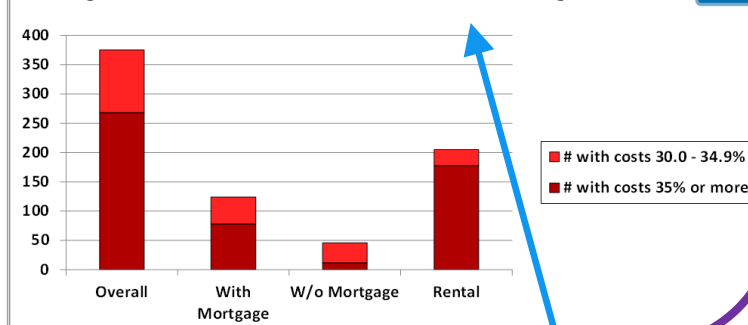


Figure H15: Number of Cost-Burdened Housing Units



**Rental housing costs:** Contract rent, fuels, utilities.

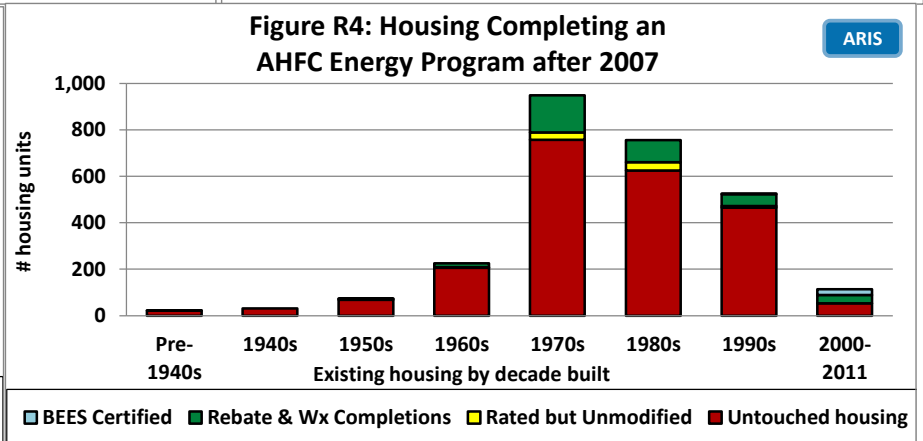
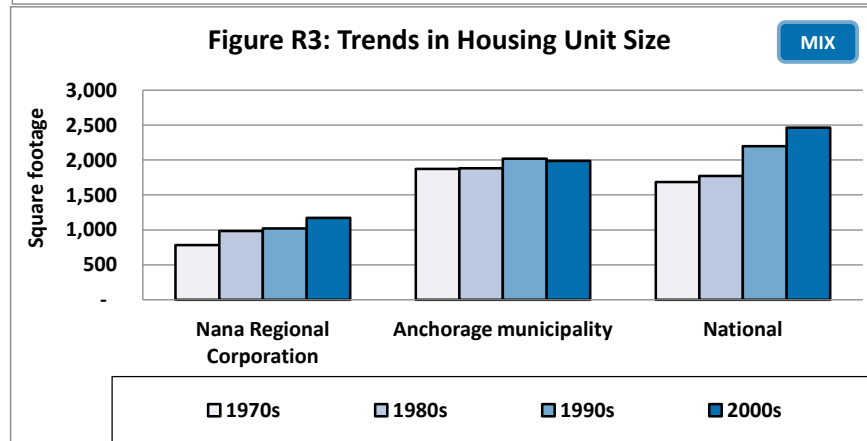
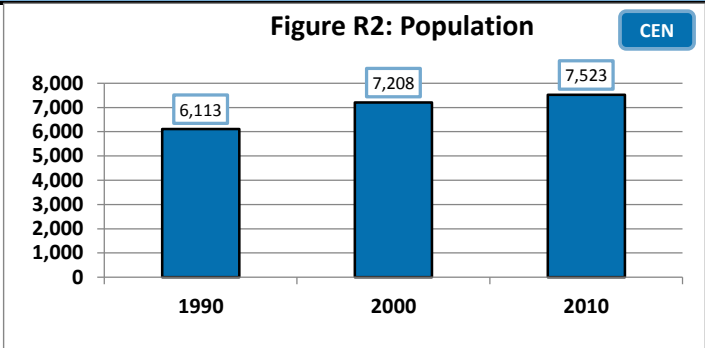
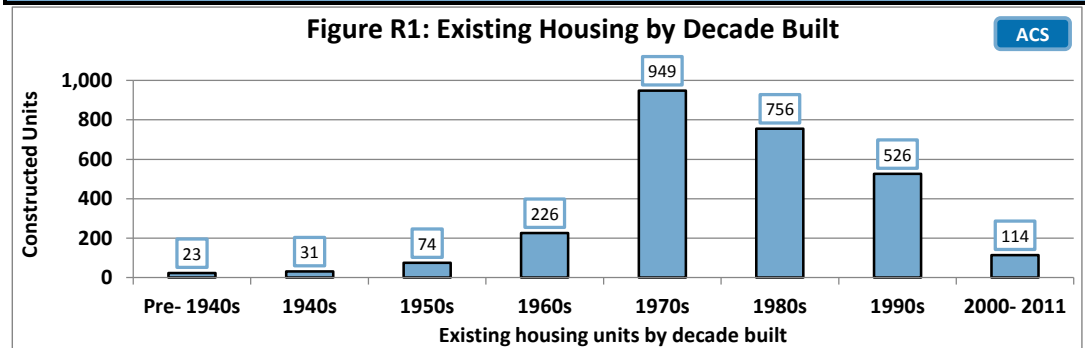
**Owner housing costs:** Mortgage payments, property taxes, insurance, fuels, utilities, condo fees.

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.

**ANCSA Region Profile for:** Nana Regional Corporation

**Climate Zone (Heating Degree Day Range)** Zone 8 (12,600 - 16,800 HDD)

**COMMUNITY - Nana Regional Corporation**



Houses Lacking Complete Plumbing or Kitchen Facilities	Households	
	Number	Percent
Lack complete plumbing	341	19%
Lack complete kitchen	264	15%

Avg Annual Energy Cost with PCE	\$7,958
Avg Annual Energy Cost without PCE	\$10,032

Weatherization Retrofits (funding increased 2008)	
Date Range	Units
2008-2011	316
2003-2007	72
1990-2002	117

Estimated Total Annual Community Space Heating Fuel Use		
Fuel Oil	1,102,215	(gallons)
Natural Gas	-	(ccf)
Electricity	594,271	(kWh)
Wood	1,943	(cords)
Propane	-	(gallons)
Coal	-	(tons)

Housing Need Indicators	Number of units	% Occupied Housing
Overcrowded	699	39%
Housing cost burdened	373	21%
1 Star Homes	428	24%

Housing Stock Estimates	Number of Units
All Housing	2,699
All Occupied Housing	1,797
All Vacant housing	902
Vacant Housing for Sale or Rent	124

OVERCROWDING & VENTILATION - Nana Regional Corporation

Figure R5: Overcrowded Units

ACS

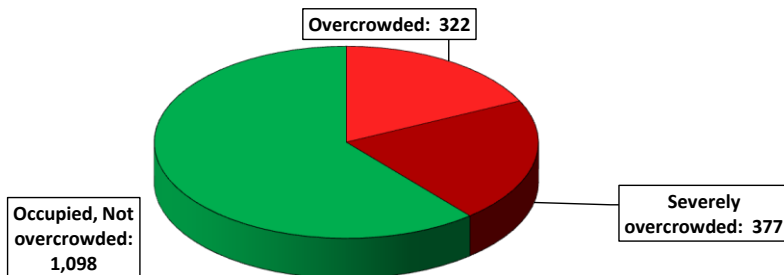


Figure R6: Housing Occupancy

MIX

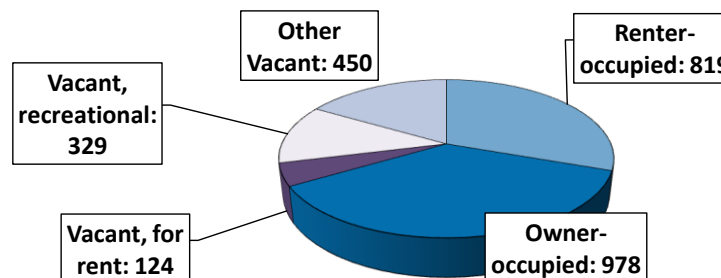


Figure R7: Average Air-Tightness of Current Homes by Decade Built

ARIS

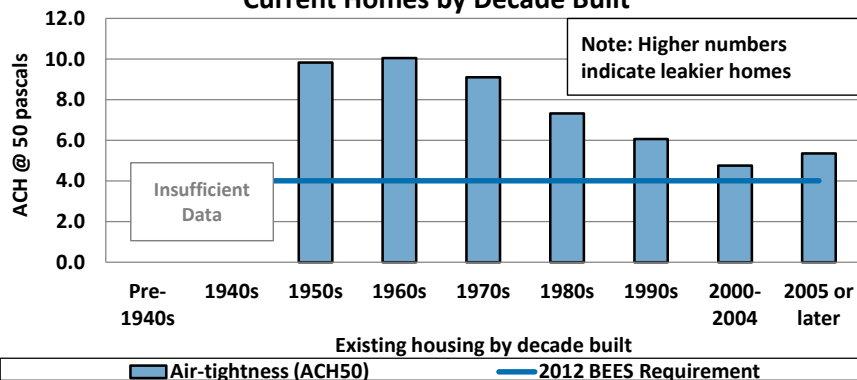


Figure R8: Existing Ventilation Type by Decade Built

ARIS

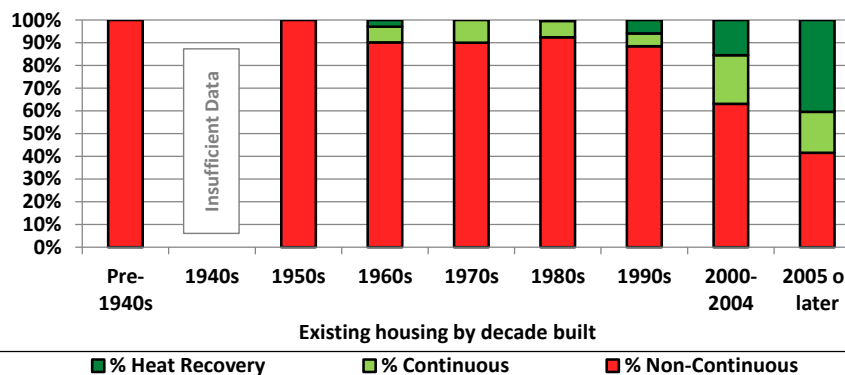


Figure R9: Percent of Housing Stock at High Risk of Moisture and Air Quality Problems

ARIS

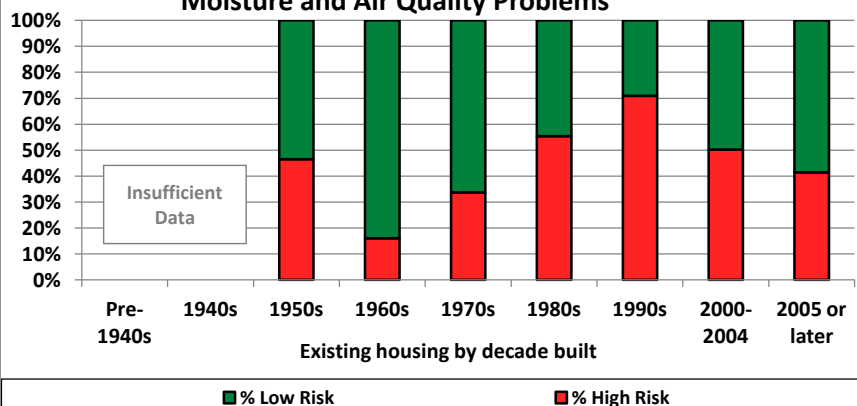
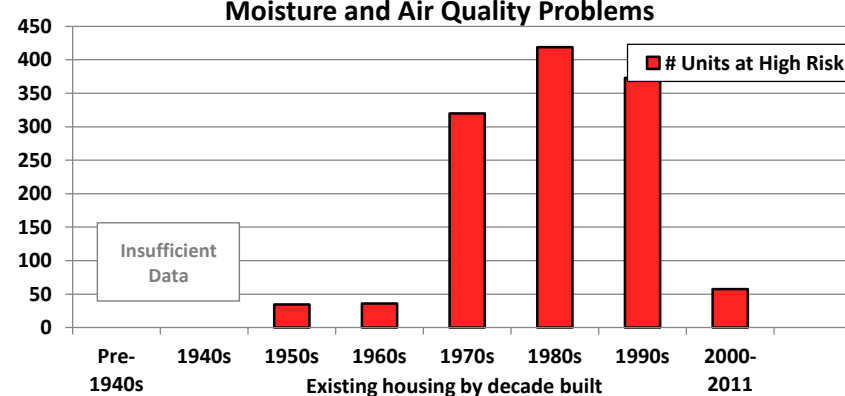


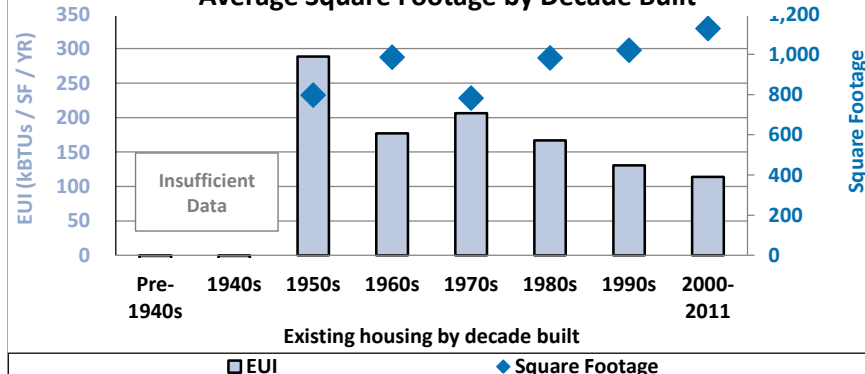
Figure R10: Quantity of Housing Stock at High Risk of Moisture and Air Quality Problems

ARIS

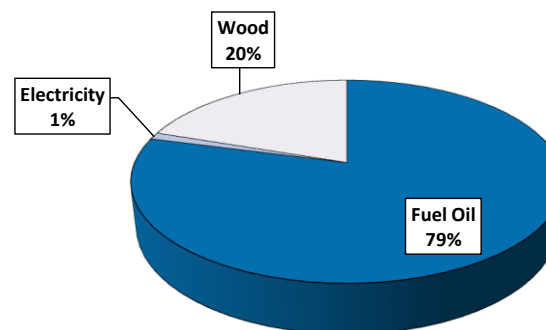


ENERGY - Nana Regional Corporation												
Current Nana Regional Corporation Housing Energy Characteristics By Decade Built												
Current Residential Units by Year Built	# of AkWarm Records	Avg Energy Rating Stars	Avg Energy Rating Points	Avg Sq. Feet	Avg. Annual Energy Cost (with PCE)	Avg. Annual Energy Use (million BTUs)	Avg Annual Energy / End Use (million Btus)			Avg. EUI (kBtus/SF)	Avg. ECI	Avg. Home Heating Index
							Space Heating	DHW	Appliances			
OVERALL	517	2-star plus	63.0	920	\$7,958	145	102	21	22	169	\$9.15	7.5
Pre- 1940	1	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	5	1-star plus	47.4	797	\$5,585	150	118	12	20	288	\$5.83	15.9
1960- 69	22	1-star plus	46.7	986	\$8,176	156	130	3	24	177	\$10.08	9.1
1970- 79	213	2-star	53.8	782	\$7,491	146	113	11	21	207	\$10.18	10.3
1980- 89	146	3-star	69.5	982	\$8,584	153	100	30	23	167	\$9.22	7.0
1990- 99	61	3-star plus	74.7	1,020	\$8,068	130	80	27	23	130	\$8.11	5.0
2000- 2004	37	4-star plus	84.0	1,171	\$8,737	132	66	42	23	117	\$7.88	3.5
2005 or later	31	4-star	82.2	1,078	\$7,215	117	67	27	23	110	\$6.83	4.0

**Figure R11: Current Average Energy Use Intensity and Average Square Footage by Decade Built**



**Figure R12: Percent of Total Residential Space Heating Energy by Fuel Type**

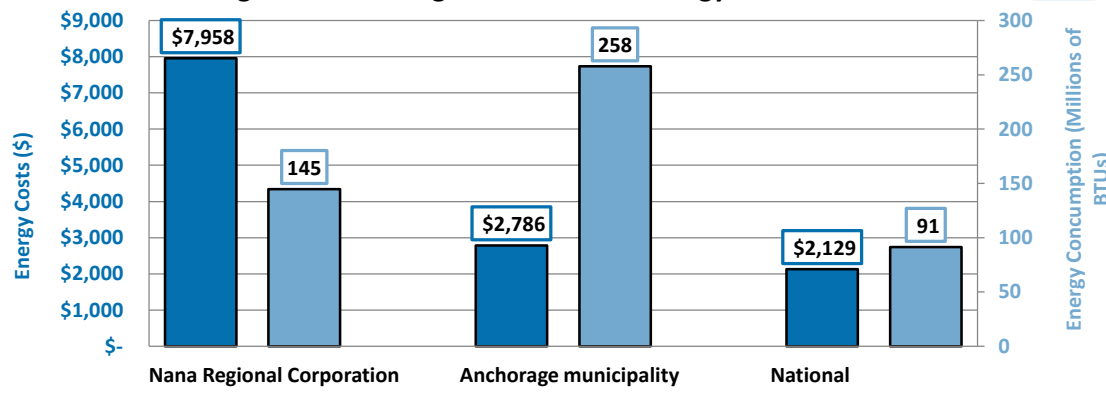


Current Nana Regional Corporation Housing Envelope Characteristics By Decade Built											
Current Residential Units by Year Built	# of AkWarm Records	ACH 50	Ceiling R	Above Grade Wall R	Below Grade Wall R	Above Grade Floor R	On Grade Floor R	Below Grade Floor R	Door U	Garage Door U	Window U
OVERALL	517	7.6	29	16	NR	30	3	NR	0.41	0.41	0.51
Pre- 1940	1	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	5	9.8	24	15	NR	27	NR	NR	0.52	0.52	0.62
1960- 69	22	10.0	20	13	NR	22	NR	NR	0.65	0.65	0.76
1970- 79	213	9.1	21	14	NR	24	NR	NR	0.50	0.50	0.63
1980- 89	146	7.3	34	16	NR	31	NR	NR	0.39	0.39	0.47
1990- 99	61	6.1	34	17	NR	34	NR	NR	0.32	0.32	0.43
2000- 2004	37	4.8	54	25	NR	42	NR	NR	0.26	0.26	0.36
2005 or later	31	5.4	48	21	NR	38	NR	NR	0.19	0.19	0.35

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

AFFORDABILITY - Nana Regional Corporation

Figure R13: Average Annual Home Energy Cost and Use



Housing Information	Avg Household Size (# of people)
All-occupied	3.9
Owner-occupied	4.3
Renter-occupied	3.4

Median value of owner-occupied house with mortgage
\$167,800

Median value of owner-occupied house without a mortgage
\$115,200

Median Household Income	
Housing Units	Annual Household Income
All-occupied	\$ 59,893
Renter-occupied	\$ 55,234
Owner-occupied	\$ 63,148
w/ mortgage	\$ 78,500
w/o mortgage	\$ 54,762

Median Housing Costs		
	Monthly	Annual
All-occupied	\$ 887	\$ 10,644
Gross rent	\$ 1,074	\$ 12,888
Owner-occupied	\$ 798	\$ 9,576
Housing units w/ mortgage	\$ 1,280	\$ 15,360
Housing units w/out a mortgage	\$ 654	\$ 7,848

Avg % of Median Income Spent on Energy **13.3%**

Figure R14: Affordability - Housing Costs as a Percent of Income



Figure R15: Number of Cost-Burdened Housing Units

