

# **Alaska Housing Finance Corporation**

Energy Efficiency Programs Overview

House Energy Committee – January 27, 2015

# Presentation Topics

- Energy Efficiency Framework
- Home Programs
- Public Programs
- Tools for Homeowners
- Partnerships
- Efficiency First

# **Framework and Measurement Tools**

Building Energy Efficiency Standard,  
Home Energy Rating System,  
Alaska Retrofit Information System

# BEES

## Building Energy Efficiency Standard

Established 1992

Promote construction of energy-efficient buildings

IECC 2012  
ASHRAE 62.2  
AK Amendments



# HERS

## Home Energy Rating System

### Home Energy Rating Certificate



The Home Located At:

*This Street  
Palmer, Alaska*

Has Been Energy-Rated As:

★★★★★

Five Star

Overall Efficiency of Home

90.4 points



BEES Compliance

Pass

Amount of CO2 Produced by the Home

27,771 pounds per year

Projected Annual Energy Costs

\$2,539 per year

Breakdown of Heating Costs, \$ Per Year

Floor	\$55
Wall/Door	\$305
Window	\$83
Ceiling	\$55
Air/Vent	\$199
Htg System Loss	\$272
Hot Water	\$301

Client: One Awesome House    Rater: My Rater, Here in AK    Date: 9/22/2012

Rater's City: Anchorage, AK 99504    Contact:

ver. 2.3.1.0, library: 9/24/2013, file: Sample.hm2, Rating Type: BEES, Rebate ID: 21,440

I certify that this Rating is true and correct, to the best of my knowledge and belief:

Rater Signature

4300 Boniface Parkway | Anchorage, Alaska 99504 | P.O. Box 101020 | Anchorage, Alaska 99510

907.733.6110 | (Anchorage) or (Toll-Free) 1.800.475.4160 | www.alhfc.org

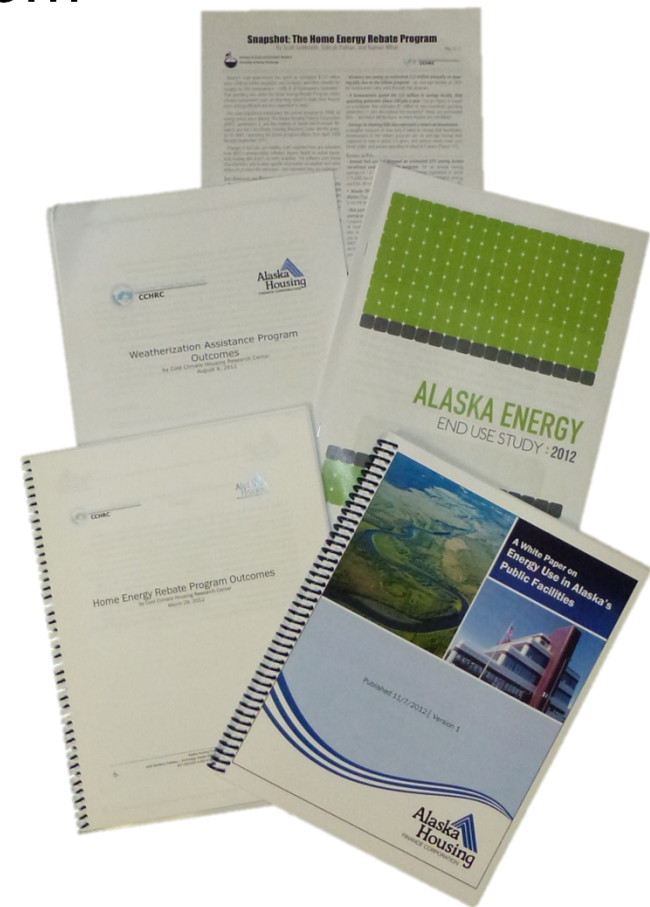
# AkWarm

## Energy Modeling Software

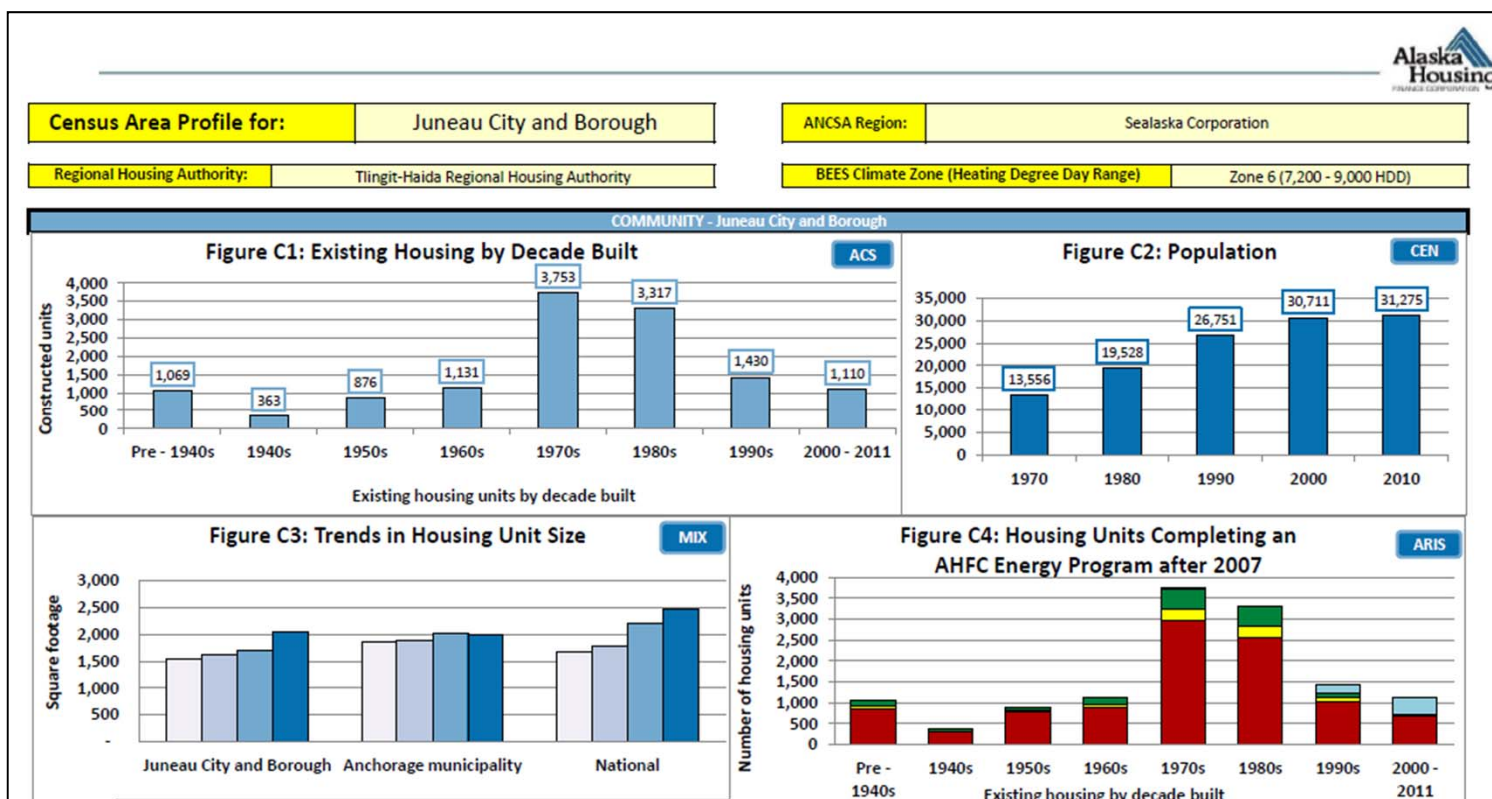
# ARIS

## Alaska Retrofit Information System

- ❑ AHFC's ARIS database has become the clearinghouse for information on Alaska buildings
- ❑ More than 75,000 unique records
- ❑ Information from the database may be used for policy decisions, research, program measurement, studies and reports, and much more



# 2014 Housing Needs Assessment



Juneau City and Borough



# AHFC Building Monitoring

[Map](#) [Data Charts and Reports](#) [Training Videos and Project Reports](#)

## Charts and Reports

Group:  Facility:  Report:

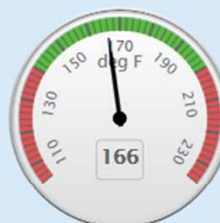
### Glacierview Dashboard

Boiler Info

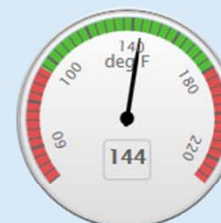
Boiler #1 Alarm Boiler #2 Alarm



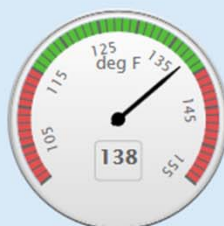
Primary Loop Temp



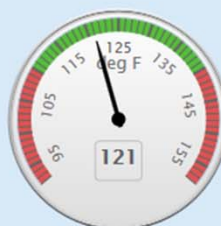
Bldg Heating Supply T



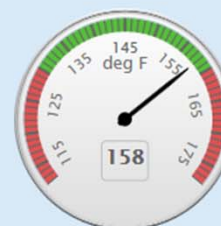
DHW Temp to Bldg



DHW Return Temp



DHW Temp from Tanks



Domestic Hot Water



This web site is funded by the Alaska Housing Finance Corporation.



# **Home Programs**

Rebate and Weatherization

# Weatherization Program

Health  
and Safety

Energy  
Efficiency

Homeowner  
Education

Comfort

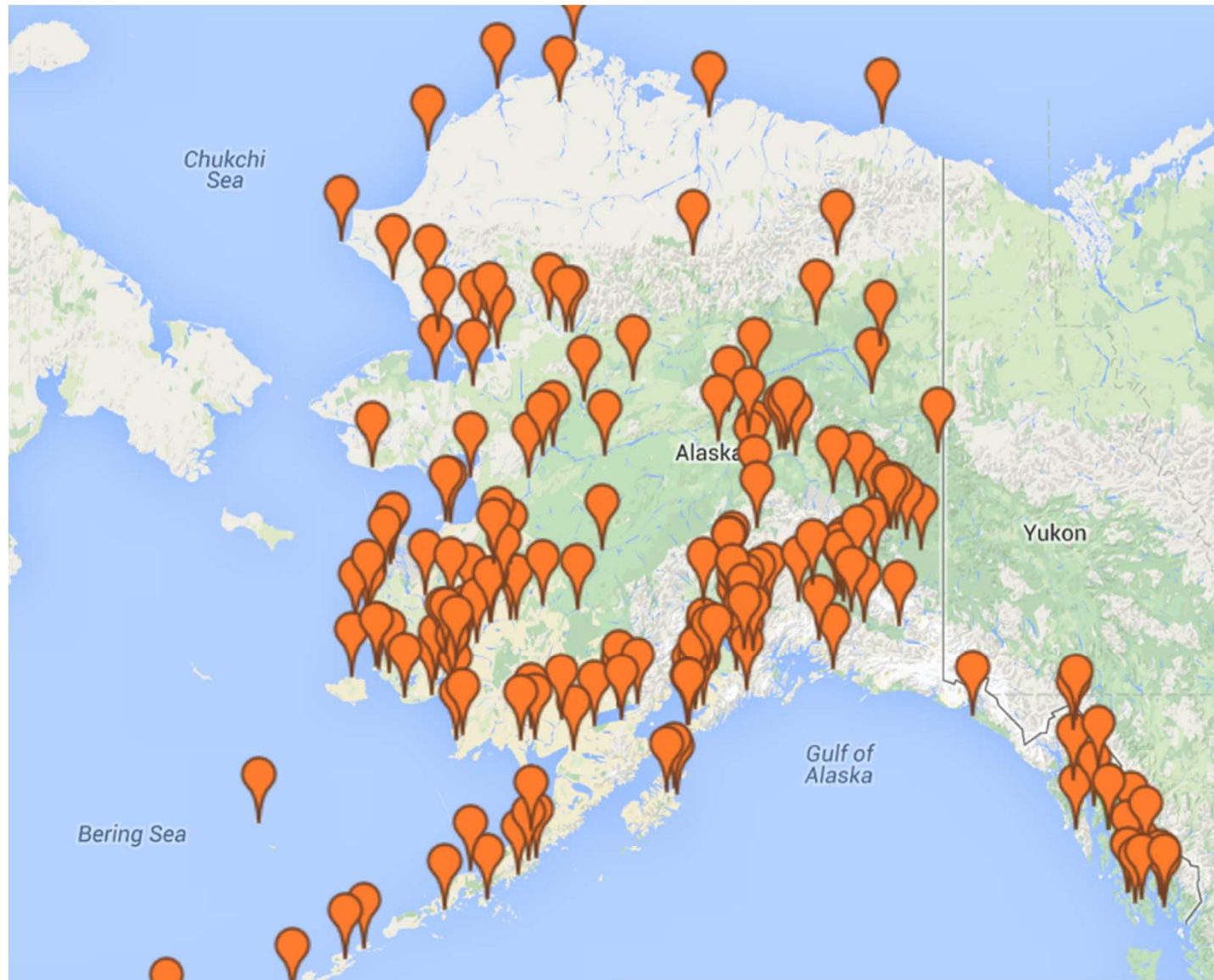
Building  
Durability



# Weatherization Program by the Numbers







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# Weatherization Program

## *Savings*

Average home BTU savings

60.8 million  
BTU/year

Average home energy savings

28%

# Home Energy Rebate Program

Open to all Alaskans

No income requirements

Owner-occupied, year-round residences

Homeowners pay upfront and are then rebated

“As-Is & Post” energy ratings



# New Home Rebate for New Construction

<u>Points</u>	<u>Rating</u>
0-39	1 Star
40-49	1 Star +
50-59	2 Star
60-67	2 Star +
68-72	3 Star
73-77	3 Star +
78-82	4 Star
83-88	4 Star +
89-91	5 Star
92-94	5 Star +
95-100	6 Star




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\$7,000 rebate for 5 Star Plus

\$10,000 rebate for 6 Star



# Home Energy Rebate by the Numbers



22,447

Rebates for Existing  
Homes

Rebates for Newly  
Constructed Energy  
Efficient Homes

63 – 6 Star

2,613 – 5 Star Plus

# Home Energy Rebate Program

## Program Snapshot

### Average Improvement Costs

\$11,681 spent  
-\$6,389 rebate  
-\$325 As-Is  
-\$175 Post  

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= \$4,792 homeowner  
investment

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# Home Energy Rebate Program

Average homeowner investment

\$4,792

Average home cost savings

\$1,464/year

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**Investment pays for itself in 3.3 years!**

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# Home Energy Rebate Program

## Stimulating an Economy

22,447 homeowners have spent more than  
\$262 million on energy efficiency  
improvements.

<i>Out of Pocket Homeowner Spending</i>	<i>\$107,566,024</i>
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<i>State Reimbursement</i>	<i>\$154,637,383</i>
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# Home Energy Rebate Program

## *Savings*

Average home BTU savings

103 million  
BTU's/year

Average home energy savings

34%

# Public Programs

Alaska Energy Efficiency Revolving Loan Program

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# Alaska Energy Efficiency Revolving Loan Program (AEERLP)

\$250 million in bond authority for energy efficiency improvements:

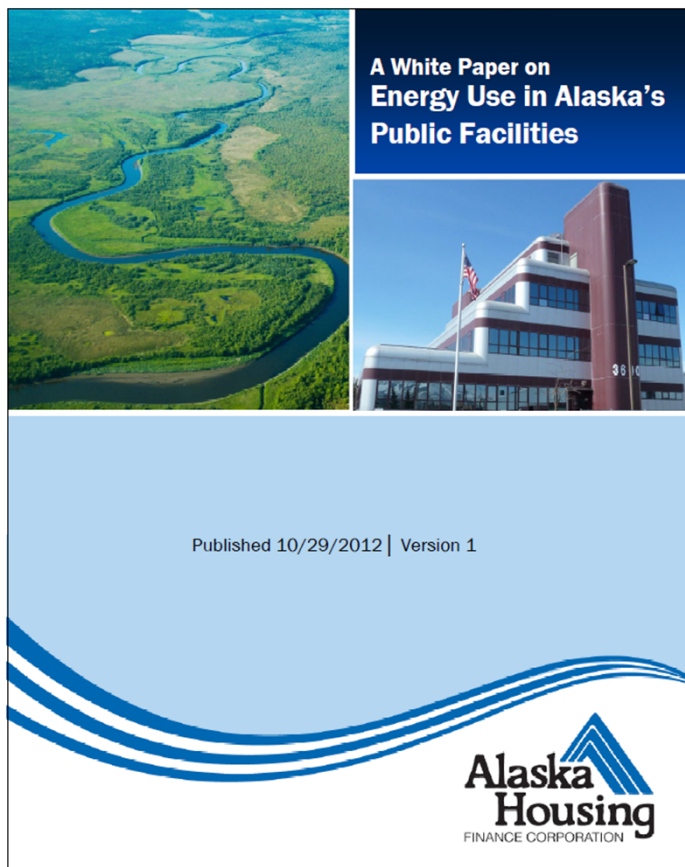
- |                       |                       |
|-----------------------|-----------------------|
| -Schools              | -State facilities     |
| -University of Alaska | -Municipal facilities |

Savings from energy efficiency improvements may be used to pay off the loan





# Energy Use in Alaska Public Facilities

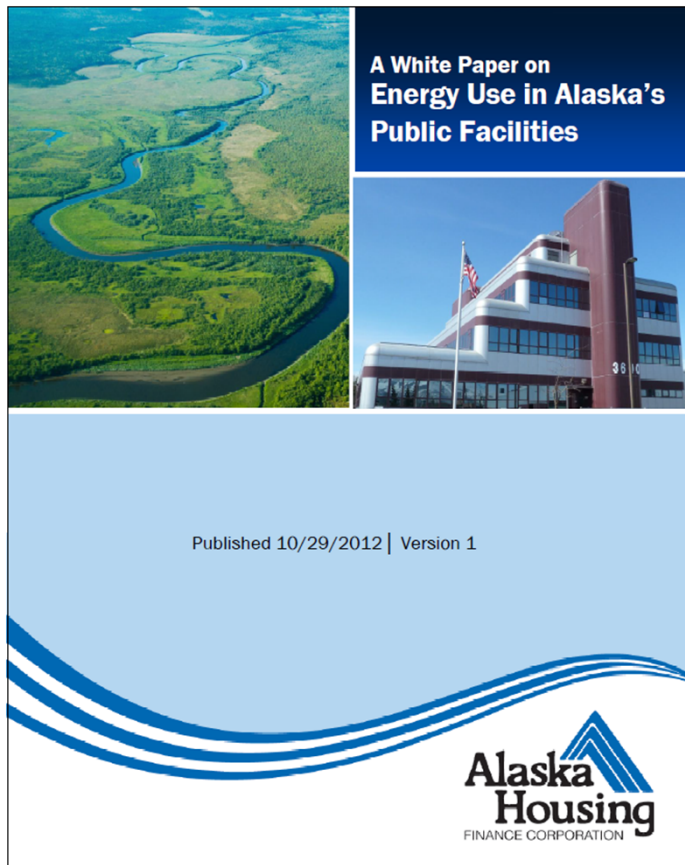


## Overall Findings

- ☐ Upwards of 5,000 publicly owned buildings exist in Alaska
- ☐ Estimated energy cost equates to approximately \$641,245,000 to the public each year
- ☐ At the average savings per building of \$25,000 the potential statewide annual savings would equal \$125,000,000

Note: Buildings were from a non-random sample

# Energy Use in AK Public Facilities



- ☐ Adopt and enforce energy codes
- ☐ Track energy use
- ☐ Establish a level of accountability

# **Tools for Homeowners**

Financing and Education

# Energy Efficiency Interest Rate Reduction

Finance with AHFC

Applies to first \$200,000  
of the loan amount

New Construction or  
Retrofit



## Second Mortgage for Energy Conservation Loan

Second mortgage up  
to \$30,000

15 Year Loan at the  
current rate

Partner with Alaska  
USA Federal Credit  
Union





# Energy Efficiency Education

Free workshops throughout the state and  
regularly in South-Central



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## Partnerships

- › Alaska Energy Authority
- › Cold Climate Housing Research Center
- › Housing Authorities
- › Weatherization Service Providers
- › Alaska Craftsman Home Program
- › Wisdom and Associates
- › Information Insights
- › Resource Data Inc.
- › Analysis North
- › Alaska Works Partnership
- › Cotter and Noson LLC
- › Renewable Energy Alaska Project



# Efficiency First

Since 2008:

More than 40,500  
efficient homes

More than 5,000 jobs

3.2 Trillion BTU's saved  
annually



# Rebate/Weatherization Program Energy Savings

Total Energy Saved Annually – 3.2 trillion BTUs

## Equivalent to:

- ❑ 558,922 Barrels of Oil or,
- ❑ 32,417,485 Ccf of Gas or,
- ❑ 23,490,931 Gallons of Fuel Oil or,
- ❑ 950,102 MegaWatt Hours of Electricity

# Thank You

