

Statewide Codes White Paper

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Introduction

Alaska has numerous statutes related to building codes and enforcement, administered through at least six different state departments. In some areas codes are rigorously enforced, in most areas, enforcement is lax or sporadic. The primary responsibility for adoption and enforcement of statewide building codes has been assigned to the Departments of Public Safety and Labor. However their purview is largely limited to life and safety plan reviews for commercial (i.e., non-residential) buildings with very little in the way of on-the-job-site inspections with some notable exceptions such as boiler and elevator inspections. The adoption and enforcement of energy efficiency standards has been assigned to the Alaska Housing Finance Corporation (AHFC), the Department of Education and Early Development (DEED), and the Department of Transportation and Public Facilities (DOT/PF).

The state allows Municipalities to adopt and enforce codes that are at least as strict as the statewide codes adopted by the above agencies. 17 municipalities have adopted building codes of some form for residential and commercial buildings and many include energy efficiency standards. Enforcement of these codes generally is funded by plan review and inspection fees. Some communities though, tailor their code structure to the state, and as such feel they cannot move code changes forward until the state does.

This results in a very uneven distribution of code requirements among urban areas and between urban and rural areas. For example, Eagle River while part of the Municipality of Anchorage (MOA) is not subject to the MOA building codes; the City of Fairbanks has building codes but the Fairbanks North Star Borough (FNSB) outside of the City does not; and portions of the Mat-Su Borough have codes while other parts of the Borough do not. Rural areas with populations less than 2,500 have been exempted from some of the statewide codes. Homes financed by AHFC are subject to the International Building Code and the Alaska Building Energy Efficiency Standard (BEES), while those financed by federal home-loan agencies and outside of certain municipal areas are not required to meet any building code or energy efficiency standard, unless they are required by the financial institution originating the loan.

The various state and municipal agencies are doing a reasonable job of making this hodge-podge of codes workable for the building industry (realtors, bankers, building contractors, suppliers, etc) and the building occupants. But there is some confusion and some life-safety and energy-efficiency issues fall through the cracks in this complicated "system." Three such issues are:

- (1) The lack of required combustion safety tests in homes has led to a risk of CO poisoning from improperly vented heating devices that led to a specific statutory requirement to install CO detectors in every home. But Alaska does not require the proper inspections to lower this risk for all homeowners in the first place.
- (2) Too many homes are still being built with improper moisture ventilation resulting in the growth of mold that causes upper respiratory illness in many residents, some to the point that they are hospitalized and have to move out of their homes.
- (3) Too many homes and public and commercial buildings are being built that waste as much as half the energy used to heat and power the building. This waste of energy is costly to individuals, businesses and to our economy in general. In areas of the state with high energy costs where some residents are spending a third to half of their disposable income on fuel and electricity this waste is untenable. Further, it makes no sense for the state to spend millions of dollars per year on fixing up substandard homes and buildings while allowing substandard new construction that will have to be retrofit in the near future.

Below we provide some background regarding relatively recent discussions of what could be done to improve these circumstances.

Background

AHFC BEES - In 1992 AHFC adopted the Alaska Building Energy Efficiency Standards (BEES), due to heavy losses in retrofitting homes foreclosed during the recession of the latter half of the 1980's. Many homes were not built to any standards, and low energy efficiency and high utility costs forced at least some of these homeowners into foreclosure. This is the standard that must be met in order for a house to be eligible for AHFC financing. The BEES has been restated in terms of the International Energy Efficiency Code (IECC) and the American Society of Heating, Refrigeration and Air-conditioning Engineers (ASHRAE) ventilation standard along with Alaska-specific amendments. The current BEES is based on the 2009 IECC and 2010 ASHRAE 62.2 and includes standards for both residential and commercial buildings. Compliance with the BEES for AHFC financing is certified on the PUR-101 form. These forms are signed by private, for profit inspectors licensed through the Department of Occupational Licensing, not public employees. Since 2008, the State has given AHFC over \$500 million to retrofit residences through the Weatherization Assistance and Home Energy Rebate programs. Yet new homes are still being built today that will need to be retrofitted to meet current standards. It is much more expensive to retrofit than to build efficiency in during construction.

AHFC Building Code – While the Department of Public Safety does not adopt Building Codes for residential buildings, AHFC adopts the residential portion of the building code that DPS adopts for commercial buildings. Compliance with this residential building code for AHFC financing is certified on the PUR-102 form.

ASHBA volunteer code development effort – In 2005, in anticipation that the state would eventually adopt a state building code, the Alaska State Home Building Association (ASHBA)

set up a codes committee to develop a plan of action. The committee worked for two years on adopting a voluntary code based on the 2003 IRC, but eventually concluded that a voluntary code was not feasible and that a statewide residential building code would have to be administered by the State.

Safety Code Task Force Report to 23rd Legislature – In 2003 the Legislature set up a task force to:

1. Discuss the features of the available published building and safety codes and recommend a consistent set of codes to be adopted for the State;
2. Discuss and make recommendations on having one State agency responsible for the adoption and administration of all building and life safety codes; and
3. Discuss and make recommendations on the methods and authority for local governments to amend and administer building and life safety codes.

In a January 2004 report to the Legislature, the committee recommended that:

1. Local "Home Rule" municipalities remain autonomous regarding the *administration* of building and life safety codes. They would be required to adopt the State codes once adopted by the State. An amendment process should be established to accommodate local conditions;
2. The Legislature should establish a Building and Life Safety Code Commission tasked with the responsibility of adopting building and life safety codes; and
3. The Legislature consider: (a) adoption of statewide residential building and life safety codes; (b) full documentation and complete plan review for municipal, commercial and residential building projects proposed for areas outside the deferred municipalities; and, (c) housing plan review functions by all State agencies in a single location whenever practicable.

CCHRC Policy Recommendations – In 2008 & 2012 CCHRC published recommendations for improvements in the energy efficiency policy of the State of Alaska. For the preparation of each of these reports a panel of local experts was convened to make recommendations regarding state energy efficiency policy. In both cases the top recommendation of the panel was the adoption of a statewide building code that included an energy efficiency standard. The adoption of such a code was second among the top six recommendations made in the 2012 report.

House Bill 306 – 2010 (An Act Declaring an Energy Policy for the State of Alaska) –

Sec. 2 (AS 44.99.115) ... Therefore, it is the policy of the state to (1) institute a comprehensive and coordinated approach to supporting energy efficiency and conservation by (A) encouraging statewide energy efficiency codes for new and renovated residential, commercial, and public buildings ...

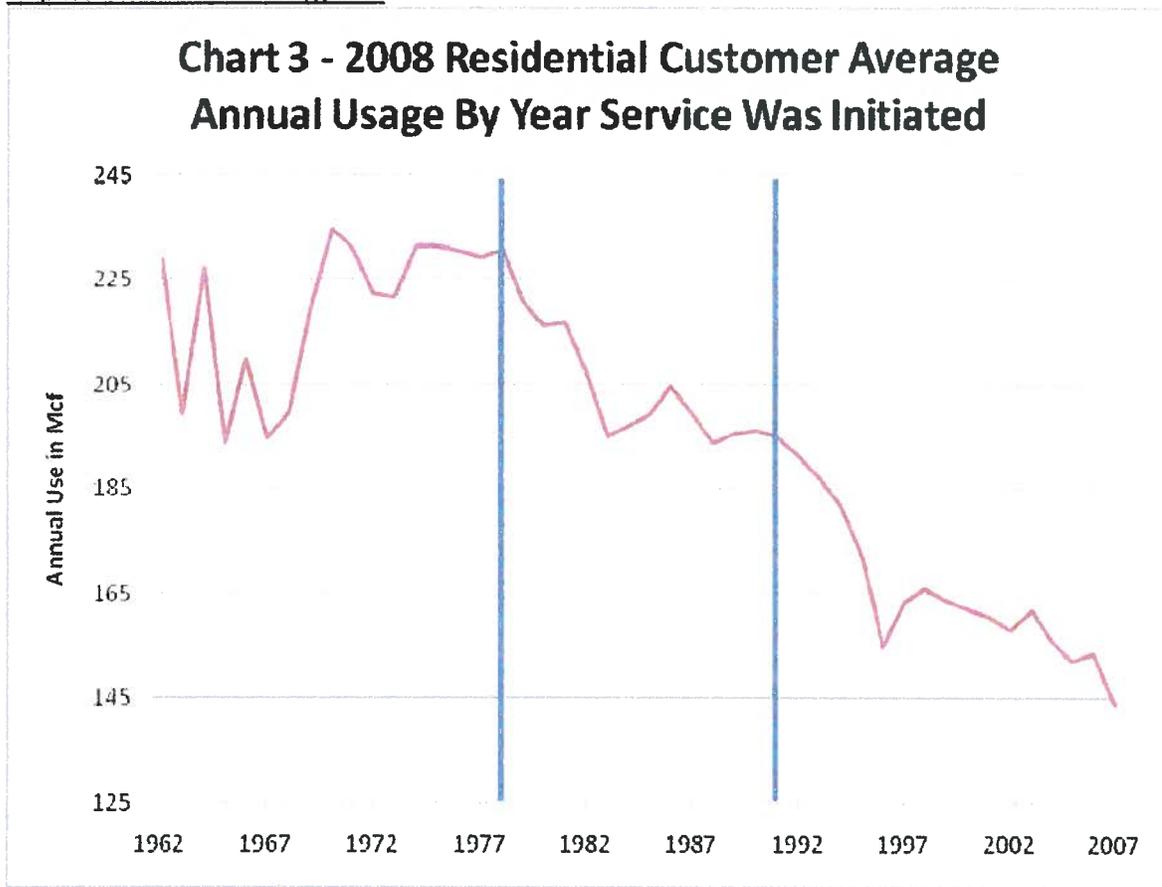
Senate Bill 220 – 2010 (The Alaska Sustainable Energy Act)

Sec. 2, 3, 8, 9. Alaska Energy Efficiency Revolving Loan Fund is established to allow AHFC to make loans to (1) regional educational attendance areas, (2) municipal governments, including subdivisions of municipal governments [municipal school districts], (3) the University of Alaska, and (4) other state departments for the purpose of financing energy efficiency improvements to their respective buildings.

Sec. 8 Energy Codes and Standards The Alaska Housing Finance Corporation, in furtherance of its corporate purpose, may, in cooperation, with the Alaska Energy Authority, provide technical assistance to municipalities related to residential and commercial building energy codes and energy efficiency standards.

AHFC extended the BEES (IECC-2009) to include commercial buildings for purposes of establishing an energy efficiency standard for buildings participating in this revolving loan program.

Impact of Codes on Energy Use



This chart shows average residential natural gas use per household from 1962 to 2007 for all Enstar customers, for the year service was initiated. The vertical line in 1978 shows energy use reductions when the Municipality of Anchorage changed the energy standard to 2x6 walls and a raised heel energy truss. The vertical line in 1991 shows energy use reductions as

the Alaska Housing Finance Corporation began implementing the Building Energy Efficiency Standards.

Current Situation

CCHRC statewide code exploratory work – Over the past few months CCHRC has reviewed state statutes related to building codes and energy standards, convened an ad-hoc working group to discuss current relationship among the many state agencies with responsibility for adopting and promulgating codes and standards in Alaska and met with several mortgage lending institutions to gauge the potential impact of extending the requirements of BEES to all mortgages written in the state.

- A. *Statutes* - CCHRC has found that significant responsibility for the adoption and enforcement of different elements of building codes and energy efficiency standards has been assigned by statute to various state agencies; namely, Dept. of Public Safety, Dept. of Labor, Dept. of Transportation and Public Facilities, Dept. of Education, Dept. of Commerce Community and Economic Development, and Dept. of Revenue (see Table XXX).
- B. *Ad-hoc Working Group* – We convened a meeting in Anchorage with representatives of the DPS, DOL, DOT/PF, AHFC, the MOA, and CCHRC. This group, which has most of the primary responsibility for promulgating codes and standards in Alaska, characterized the current situation as functional but confusing, with overlap and gaps.
- C. *Mortgage lending institutions* – We met with several banking institutions to gauge their familiarity with BEES and reaction to requiring that BEES be met for all homes financed by their institution. In general, we found that BEES was regarded in a positive light and that most builders followed BEES even when not required to in order to maintain flexibility in resale options. They stated, not surprisingly, that the most significant factor for the home buyer in deciding which loan package to choose was the interest rate. The most significant concern regarding AHFC financing, other than interest rate, was that the loan approval turnaround time at AHFC was too long (days vs. hours) for some clients who were up against a tight deadline. Electronic approval will likely reduce this time lag significantly.

Statutory Framework Table – Below is a table that summarizes the statutory authority for each agency with significant building code responsibility. This table allows one to see where there are overlaps and gaps.

Department	Statutes	Code Family	Residential	Commercial
AHFC	Adopts state building code for state financed buildings	AS 18.56.300(e)(3)(A)	X	X
	Adopts building codes	AS 18.70.080(a)(2)	X	X
	Adopts electrical standards	AS 18.60.580 AS 46.11.040; AS 18.56.096; AS 46.11.050; AS 18.56.855	X	X
	Adopts energy efficiency standards	AS 18.70.080(a)(2)	X	X
	Adopts mechanical standards	Uniform Mechanical Code as adopted by Public Safety; notwithstanding the exclusion of those buildings from the Department of Public Safety's jurisdiction made by AS 18.70.080 (a)(2); Residential BEES	X	X
	Adopts plumbing standards	Uniform Plumbing Code	X	X
	Issue energy Rater Agreements	AS 18.60.705 15 AAC 155.530	X	X
	Residential Conservation Energy Fund	AS 45.88.100 - 45.88.190	X	
	Business and Professional License	AS 08.18.011- 08.18.171	X	
	Certified home inspectors	American Society of Home Inspectors or National Association of Home Inspectors; ICC	X	
Mechanical administrators	Uniform Plumbing; Uniform Mechanical	X	X	
Residential contractor endorsement	Residential contractor examination	X		
AEA				
Energy audits	AS 44.83.080 (17) Commercial BEES if AKWarm used		X	
Education		AS 14.07.020(a)(11); AS 14.11.014.(b)(3)		
Boiler and Pressure Vessel	AS 18.60.180	ASME Boiler and Pressure Vessel Code as adopted by Labor		X
Fire and Life Safety codes	AS 18.70.080-095	IBC chapters 1-12, 14-28, 30-35, Appendix C as adopted by Public Safety		X
Electrical code	AS 18.60.580	National Electrical Code (NFPA 70-2008) as adopted by Labor		X
Fire code	AS 18.70.080	International Fire Code (I.F.C.), Chapters 1 - 45 and Appendices B - G as adopted by Public Safety		X
Plumbing code	AS 18.60.705	Uniform Plumbing Code as adopted by Labor		X

Department	Statutes	Code Family	Residential	Commercial
Labor	Boiler and Pressure Vessel	AS 18.60.180		
	Electrical code	AS 18.60.580	X	X
	Plumbing code	AS 18.60.705	X	X
	Solar Energy Code	AS 18.60.705	X	X
	Swimming pool, spa, & hot tub code	AS 18.60.705	X	X
	Public Safety			
Fire and Life Safety codes	AS 18.70.080-095	International Building code chapter 1-12, 14-26, 28, 30-32, 34,35 appendix c 89 (code family not specified in statute)		X
Smoke and CO2 detectors	AS 18.70.095	Code family not specified in statute	X	
Mechanical Code	AS 18.60.180; AS 18.70.080	International Mechanical Code Chapters 1-15 and Appendix A		X
Prepare and make available a list of approved fire protection systems to the DCCED and the public.	AS 18.70.080(4)(b)	Code family not specified in statute		
Fire Code	AS 18.70.080	International Fire Code (I.F.C.), Chapters 1 - 45 and Appendices B - G		X
Transportation & Public Facilities				
Conduct audits every 7 years	AS 44.42.065	No Code family specified		X
Energy efficiency codes	AS 44.42.067	ASHRAE/IESNA Standard 90.1		X
Plan, design, construct, and maintain all state...buildings, and similar facilities;	AS 44.42.020	uses relevant national codes (International Building Code, National Electric Code, Uniform Plumbing Code, Uniform Mechanical Code		X

Municipalities with Building Officials, Fire Marshals and SOA waivers (enforce their own codes)

Municipality	Building Official	Fire Marshal	Waiver (building, mechanical, & fire codes)	Waiver (building and mechanical code plan review)
Anchorage	Yes	Yes	Yes	Yes
Chena Goldstream	No	Yes	No	No
City of Cordova	No	Yes	No	No
City of Fairbanks	Yes	Yes	Yes	Yes
City of Homer	No	Yes	No	No
City & Borough of Juneau	Yes	Yes	Yes	Yes
City of Kenai	Yes	Yes	Yes	Yes
City of Ketchikan	Yes	Yes	No	No
City of Kodiak	Yes	Yes	Yes	Yes
Matanuska-Susitna Borough	No	Yes	No	No
City of Nome	Yes	Yes	No	No
City of North Pole	Yes	Yes	No	No
North Slope Borough	No	Yes	No	No
City of Palmer	Yes	Yes	No	No
City of Petersburg	Yes	Yes	No	No
City of Seward	Yes	Yes	Yes	Yes
City and Borough of Sitka	Yes	Yes	Yes	Yes
City of Skagway	Yes	Yes	No	No
City of Soldotna	Yes	Yes	Yes	Yes
City of Unalaska	Yes	Yes	No	No
University of Alaska, Fairbanks	No	Yes	No	Yes
City of Valdez	Yes	Yes	No	Yes
City of Wrangell	Yes	Yes	No	No

Alaska Regional Housing Authorities – Many housing authorities use federal funds to construct and renovate housing units. While there are no building code requirements attached to those federal funds, all of the housing authorities have standard building plans

that constitute de facto standards which are generally fairly good. A major difficulty arises when building designs are put out for bid without specifying an adequate energy efficiency standard. Architects that are not familiar with the energy costs can create pleasing designs that use significantly more energy than necessary. These buildings may be affordable from a construction cost standpoint, but the operating costs often are beyond the means of the occupant to support. AHFC, through the Supplemental Housing Program, does require homes using this funding meet BEES, but not the federal program allows NAHASDA communities to build without following this standard.

Recommendations

1. Reconcile Statutes to eliminate confusion – There is an obvious need to simply clean up the state statutes where older references to the Uniform Building Code remain and should read International Building Code or International Residential Building Code. Also, there are some statutes that have not been implemented for decades and may have been superseded by other provisions and therefore should be repealed. Beyond the mere clean up, however, some duplication of effort could be avoided if all state agencies that have overlapping authority were required to follow a single code. For example AHFC, DOT/PF and DEED all adopt some form of energy efficiency standard for state buildings. Also, some gaps should be filled; for example, because there is no statewide residential energy standard, buildings financed using federal funds are not required to meet such a standard while those financed using state funds do, creating an uneven playing field for AHFC and allowing the construction of substandard housing that will have to be retrofit in the near future.
2. Assign primary responsibility to State Fire Marshal – One way to avoid duplication, gaps, and incompatibilities to arise is to have a single point of responsibility for the adoption of all codes at the statewide level. We recommend that the State Fire Marshal be assigned that single point responsibility.
3. Create a Code Advisory Committee - We agree with the recommendation of the Safety Code Task Force, that there should be a code advisory committee to advise the State Fire Marshal as to which codes should be adopted and what Alaska-specific changes, if any, should be made to the national code under consideration. We differ, however, in assigning the committee (or commission) the authority to adopt the codes; we believe it should have an advisory function.
4. Adopt Statewide Building Code with BEES included – We recommend that the Fire Marshal adopt a state wide building code that provides building standards, including energy efficiency standards for both residential and commercial buildings. We further recommend that enforcement of the residential code provisions be modeled on the AHFC system of certification by a third party, private sector entity using a simple form such as the AHFC forms PUR-101 and PUR-102 to level the palying field.
5. Alternatively, require lenders to have homeowners purchasing homes sign a waiver form signifying they understand a home has not been built to code or inspected, and that future financing options are limited.

Conclusion

If the state were to adopt these recommendations we could

1. Eliminate confusion and improve coordination – We can improve coordination among state agencies and provide more consistent standards for adoption by municipalities.
2. Help get to 2020 Goal for 15% increase in EE – The state has adopted a goal of increasing energy efficiency by 15% by 2020. The adoption of statewide energy efficiency standards would help meet this goal.
3. Once an energy code is adopted, there will be a reduced future need for rebate, Wx and Public Facilities programs – The adoption of an energy code would reduce the need and expense for retrofiting buildings in the future. Homes and public facilities less than ten years old are taking advantage of AHFC retrofit programs now.
4. Improve the quality of housing – Adoption of a statewide residential code could improve the combustion safety and indoor air quality of homes.