

Strategic Compliance Plan

Improving Energy Code Compliance in Alaska's Buildings

November 2012

The Compliance Planning Assistance Program

Acknowledgements

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Alaska Housing Finance Corporation

www.ahfc.state.ak.us



Cold Climate Housing Research Center

<http://www.cchrc.org/>



Building Codes Assistance Project

www.energycodesocean.org



U.S Department of Energy

www.energycodes.gov



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Contents

Acknowledgements	2
Background	4
Introduction	5
Strategic Compliance Plan Flowchart	6
Key Challenges & Prerequisite Actions	7
CHALLENGE #1: Current patchwork of codes is burdensome and in-efficient	7
Prerequisite Action 1: Establish a Stakeholder Group for Adoption	7
CHALLENGE #2: No single entity is authorized by the legislature to adopt energy codes.....	8
Prerequisite Action 2: Legislature: Grant Authority to a State-Level Entity.....	8
FOCUS AREA 1: Secure Funding.....	9
FOCUS AREA 2: State & Local Policy	12
CRITICAL TASK: Establish Enforcement Structure	13
CRITICAL TASK: Provide Technical Support	14
FOCUS AREA 3: Training.....	14
CRITICAL TASK: Expand Training Structure	15
CRITICAL TASK: Consider a Code Ambassadors Program	16
FOCUS AREA 4: Outreach.....	17
CRITICAL TASK: Professional and Consumer Outreach	18
FOCUS AREA 5: Compliance Evaluation.....	19
CRITICAL TASK: Energy Code Collaborative	20
CRITICAL TASK: Conduct Compliance Evaluation	21
TIMELINE	23
Appendix A: Elements of a Campaign.....	24

Background

The US Department of Energy (DOE) provided states with millions in American Recovery and Reinvestment Act (Recovery Act) funding, with the intention of helping states adopt and enforce updated energy codes, to annually measure compliance with such codes - specified as the 2009 International Energy Conservation Code for residential buildings and the ANSI/ASHRAE/IESNA Standard 90.1-2007 for commercial buildings (or equivalent codes), and to implement a plan for achieving compliance by the year 2017.

This Strategic Compliance Plan helps states develop a course of action to achieve such compliance by the year 2017. It is the final phase of the Compliance Planning Assistance (CPA) project, a collaborative effort by the Building Codes Assistance Project (BCAP) and the Alaska Housing Finance Authority (AHFC). BCAP's CPA project identified problems and opportunities with energy codes in more than 20 states where they could help state governments develop a realistic plan for achieving energy code compliance.

This Plan is based on extensive research conducted during the development of a companion report called the Alaska Gap Analysis (November 2012), which identified specific vulnerabilities and opportunities in Alaska's energy codes for buildings.

Implementing this Plan will reduce the energy needed to operate buildings in Alaska, and help protect its residents and businesses from high energy prices now and in the future.

This project was funded by the U.S. Department of Energy under Recovery Act.

As illustrated in Figure 1, this Plan is organized around five focus areas and their corresponding critical tasks. The implementation of these will lead to full compliance with the energy code, increased quality of life for Alaskans, including reduced energy costs and improved durability of residential and commercial structures. This Plan can be used as a reference for state and stakeholder efforts to adopt energy codes in Alaska. A timeline for completing critical tasks necessary for full compliance by 2017 is presented at the end of the Plan.

Introduction

Alaska has expensive fuel costs and an extreme climate, which results in high energy costs for many Alaskans. While a statewide code would help reduce energy costs for new and future residential or commercial buildings, Alaska has not adopted such a code. In fact in Alaska, the farthest north and coldest state in the union, in most of the state it is legal to build a structure with no insulation or other considerations for the building's energy consumption. This absence of statewide energy codes will continue to impact the monthly energy and maintenance bills for building owners for the next 50 years or longer.

High monthly energy bills are only a part of the actual cost to Alaskans, as the state and federal government invests millions of dollars on programs that help reduce energy bills for households, businesses, and government buildings. Between 2008 and 2012, the state and federal government spent more than \$643 million to reduce current and future energy bills through retrofits for Alaskan's homes, businesses, non-profits, municipalities, and state buildings.¹

As long as Alaska fails to adopt and enforce energy efficiency standards for new structures, in-efficient structures will continue to be built, and building owners will continue to need state and federal funds to pay energy bills and retrofit inefficient buildings.

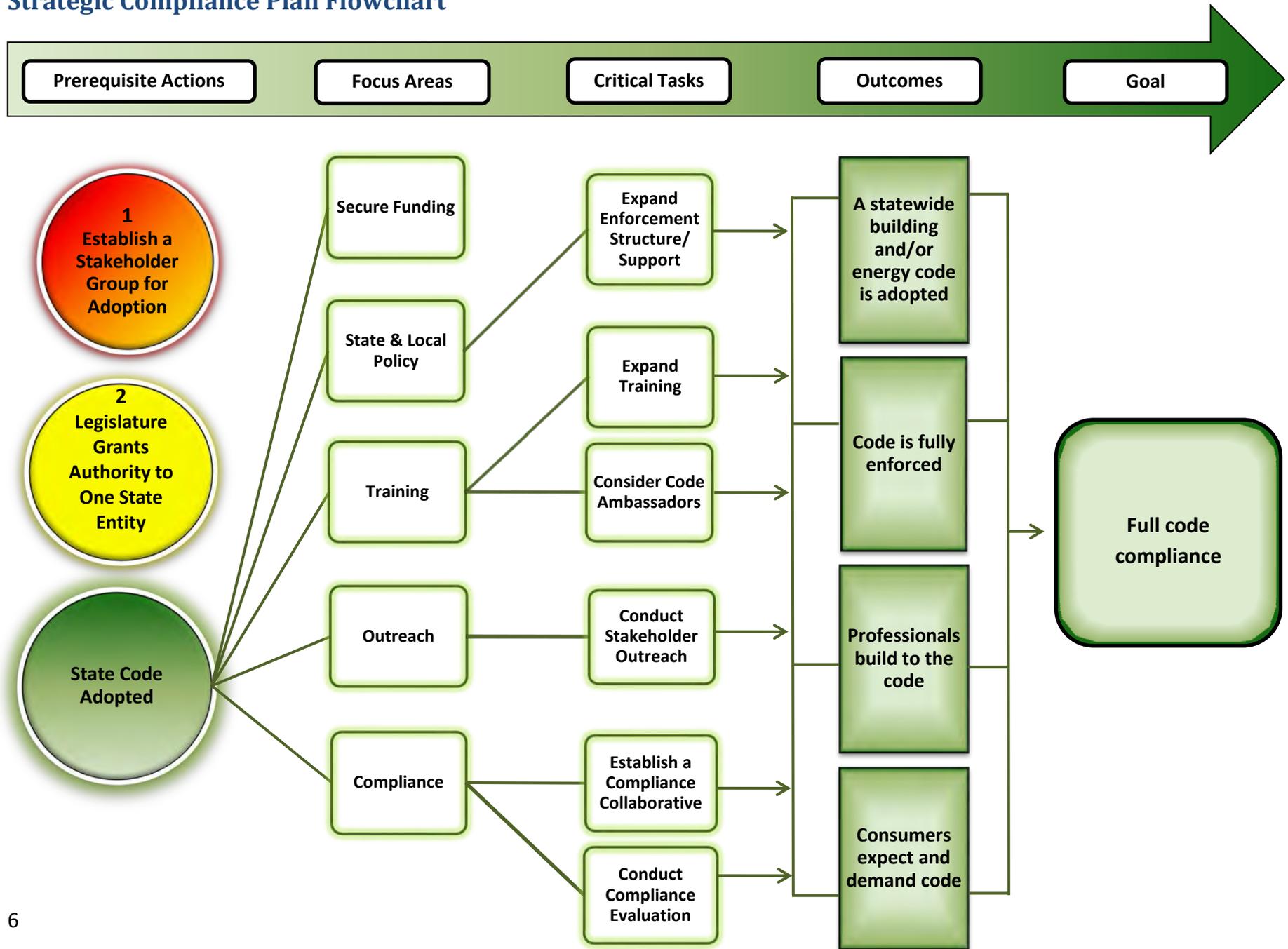
Many consider Alaska the "last frontier" and therefore do not support federal or state mandates. This mindset might work for the original building owner, but the second owners buys at their own risk, with the distinct possibility that it isn't up to any national building code, and may be quite expensive to heat and operate. Thus we are unnecessarily introducing a potential public and social issue, with real public costs like weatherization or home energy rebate funding – necessary to retrofit the property.

Alaska's Strategic Compliance Plan describes Alaska's five-year plan to help the state adopt and implement a statewide energy code.

It is much more cost-effective to build energy efficiency into a home during construction than trying to retrofit it after it's been built. An Alaskan energy code would address this problem by assuring that all new homes and buildings are built to a minimum standard of efficiency.

¹ See BCAP's Alaska Gap Analysis report (November 2012), "Cost and Potential Savings from Energy Codes" section for details.

Strategic Compliance Plan Flowchart



Key Challenges & Prerequisite Actions

CHALLENGE #1: Current patchwork of codes is burdensome and in-efficient

In Alaska Residential and Commercial energy codes are adopted and implemented in various mixes at the state and local level. These communities often look to the state for direction on what it has adopted for their region. Some communities believe they cannot adopt a version of the code if the state has not adopted it.²

In Alaska, there are some statewide building codes in place,³ but they are a mix of different codes, include limited permitting, have inconsistent or often no enforcement, and are administered by multiple departments. This results in:

- Homes that are built with no code guidance, putting Alaskans' health, welfare, energy efficiency, and quality of life at risk.
- A patchwork of adopted Commercial energy codes which has created a complicated system for Commercial code enforcement in Alaska.
- An undue burden of inefficiencies for general contractors during the permitting process, as they have to go to two or three different agencies to get the appropriate sign-offs needed for construction.⁴
- Confusion by builders and others about which code is required in which jurisdiction.⁵
- Ineligibility of home buyers for AHFC financing if a local energy code isn't as stringent as the BEES.

Elected state officials, local governments, and other decision-makers need to be educated on the importance of energy codes to Alaska. Further, one state-level agency or department needs to be assigned responsibility for energy codes.

Prerequisite Action 1: Establish a Stakeholder Group for Adoption

Form a coalition of stakeholders to raise this issue with legislators and the Governor. This will take collaboration amongst stakeholders; meeting and educating influential individuals in order to develop the collective strength and political will of a critical mass of decision-makers.

The Cold Climate Housing Research Center (CCHRC) and the AHFC have begun to convene stakeholders to build a coalition that can influence policy-makers on the benefits of streamlining oversight of building codes and the value of adopting energy codes. This group should expand to include knowledgeable and

² While communities may develop and adopt whatever **residential** code they see fit for their community, they may not adopt a commercial code less stringent than what the state DFLS has adopted.

³ The main ones related to buildings are: Building, Mechanical, Fuel Gas, and Fire, Plumbing, Electric, Boiler, Construction, and Elevator codes. They apply to commercial structures only. There are no codes adopted for residential structures, however new boiler installations must be certified.

⁴ Builders may have to complete paperwork for the Department of Public Safety, the Department of Labor and Workforce Development and the Alaska Housing Finance Corporation.

⁵ The CCHRC has been asked to host a meeting between builders and code officials to assist with this problem.

influential stakeholders that are impacted by the absence of, or future adoption of, an Alaska statewide energy code.

Through coordination, the stakeholders can develop and propose an effective energy code infrastructure that fits the needs of the state, and convince policy makers about the need for the same. The existing AHFC BEES is a ready-made code that could be expanded to include all buildings – not just those that are funded or financed by the state. In addition, the stakeholder group could help the state consider whether or not it should adopt a stretch code – a code more efficient than the statewide code, to provide a straightforward option for local jurisdictions that want to adopt a more stringent code than the state-adopted code.

CHALLENGE #2: No single entity is authorized by the legislature to adopt energy codes

There is no single entity authorized to adopt energy codes for Alaska. Four separate state entities have the authority to adopt or update building codes, which may include energy codes:

1. The Alaska Housing Finance Corporation (AHFC): Adopts and updates the Building Energy Efficiency Standard (BEES), which applies only to buildings utilizing state-funding or financing. In addition AHFC also adopts building codes for state-funded or financed structures: the International Residential Code (IRC) for residential structures and the International Building Code (IBC) for commercial structures.
2. The Department of Education and Early Development (DEED): has been required to build energy efficient educational facilities and is in the process of developing and adopting an energy efficiency standard to guide them.
3. The Department of Public Safety (DPS) (via the Division of Fire Prevention): Updates and administers the fire, building and mechanical codes in commercial buildings only. There is no similar building code for residential dwellings under four units and they do NOT adopt the energy code chapter.
4. The Department of Labor and Workforce Development (DOLWD): Updates and administers the plumbing and electrical codes for commercial and residential structures.

These various entities being responsible for different codes causes confusion. AHFC has adopted the BEES (based on the IECC), the IRC, and IBC; DPS does not have the authority to adopt residential building or energy codes but has adopted some limited fire safety provisions that apply to residential structures; and DOLWD adopts electric and plumbing codes for residential and commercial structure.

Prerequisite Action 2: Legislature: Grant Authority to a State-Level Entity

State departments need authority from the state in order to adopt statewide regional building and/or energy codes. Assign one state department with the responsibility for all building codes, in order to assure consistency throughout the state in code related matters; and to provide local jurisdictions and state agencies with one go-to point for all energy code related matters.

There are options for establishing the structure of energy code administration in Alaska. Two examples are:

- The legislature could expand the authority of the DPS, permitting it to adopt and administer a statewide commercial and residential building code that includes the energy code (or the state could adopt an energy code independent from a statewide building code).⁶ OR
- The state could establish a Building Codes Commission, comprised of knowledgeable representatives from each of the state departments involved in building codes to adopt and update commercial and residential building and/or energy codes for the state.⁷

As the DFLS is the agency most commonly considered the de-facto building department, it could be assigned this role. However, since it has not previously dealt with energy code issues, an Energy Codes Advisory Committee should be established to advise the DFLS in energy code matters.

The Energy Codes Advisory Committee would be comprised of knowledgeable and influential individuals involved in energy codes, such as local jurisdictions and Alaska building science experts.

FOCUS AREA 1: Secure Funding

In order to implement a successful statewide energy code, a continuous funding mechanism is needed to ensure consistent energy code training and support for local jurisdictions. The designated entity charged with administering the energy code will need advice and assistance from the Energy Codes Advisory Committee. For consideration in Alaska, some funding approaches that are being used successfully in other states include the following.

1. Inspection / Re-Inspection Fees

Raising permit fees and assessing re-inspection fees for failed inspections is a straightforward way to offset the cost of energy code inspections and raise funds for energy code trainings. Some states mandate that local governments responsible for enforcing the energy code cover their costs through building permit fees, and those fees may not be used for other purposes. In other states, some municipalities have found that issuing consistent re-inspection fees that fully cover the cost for additional inspections not only help cover departmental costs, but also act as a deterrent to noncompliance.⁸

Currently, Alaska does not receive funding from local inspection fees, and the fees charged by local jurisdictions are spent administering the local inspection program. In many jurisdictions (including

⁶ As an example, Louisiana and Illinois have adopted a statewide energy code, although the state remains home rule for other building codes.

⁷ The Cold Climate Housing Research Center published a report in June of 2012 entitled “Statewide Codes White Paper”, which describes how such a committee could be formed. See that report for additional information.

⁸ Metropolitan Mayors Caucus. May 2010. “Best Practices in Municipal Energy Code Compliance and Enforcement.”

Anchorage), the fees do not entirely cover the cost of enforcement and general funds make up the difference. In some (such as Fairbanks), the fees typically do cover the full cost of enforcement.

The state could require that a small portion of increased permit fees goes to the state for providing services that support energy codes (e.g.: support to local jurisdictions like free training; support for code interpretations; technical assistance for unique or complex commercial plans).

Local jurisdictions face pressure from builders when they raise permit fees. To support local jurisdictions, the state could provide localities with a suggested fee schedule for permit fees, providing state support to local jurisdictions that want to raise their permit fees (for example, re-inspection fees following a failed inspection).

2. State and Federal Opportunities

A common way to fund energy code work is via the State Energy Program (SEP), DOE formula and competitive grants, or through direct appropriations by the state. To access federal funding opportunities, Alaska must have a strategic plan in place and devote sufficient resources to respond to federal requests for proposals in a timely manner.

3. Direct Utility Support

In some instances utilities may provide in-kind support for energy code activities within their service territory, such as providing meeting space, technical expertise, or lunch for attendees.

Some utilities offer programs or rebates to offset the cost of code compliance, such as third-party energy ratings. For example, one utility in the western region of the U.S. offers an energy audit program which includes a blower door and duct blaster tests and discounted CFL bulbs which assist in meeting the efficient lighting requirement of the energy code. Other utilities provide incentives for new commercial and residential construction built above state code.

4. Utility Funding for Energy Codes

As a result of rising energy prices and/or the foreseeable need to build additional power plants, states are requiring utilities to work with ratepayers to reduce energy demand, thereby avoiding or delaying the need to build costly new power plants. Utility support for energy codes is a rapidly growing source of funding for energy codes in states, in the form of: Energy Efficiency Resource Standard (EERS), Public Benefit Funds (PBF), and Demand Side Management or Trust Funds.⁹

An EERS is a regulatory mechanism that requires energy providers to meet a portion of their electricity demand through energy efficiency within a specific timeframe. An EERS is developed to expand the scale of energy savings achieved through utility energy efficiency programs. More than half of all states have

⁹ For further Alaska specific recommendations see *Energy Efficiency Policy Recommendations for Alaska*, CCHRC, May 2012, Dr. John Davies, & Dr. Kathryn Dodge.

implemented an EERS. Some states allow utilities to get credit toward EERS goals for energy efficiency programs related to codes and standards, using the estimated savings from training and compliance enhancement activities.

Utilities can support energy codes by:

- Funding/administering energy code-related programs such as training and certification;
- Assisting local jurisdictions with the implementation of diagnostic tools or software that streamlines enforcement;
- Funding the purchase of diagnostic equipment, or code books;
- Offering space and refreshments for meeting;
- Providing technical assistance on energy codes;
- Providing rebates for third-party energy certification;
- Assistance with compliance evaluation studies.

This is a topic that should be fully explored in Alaska and discussed with the Regulatory Commission of Alaska, which is charged with some responsibilities that could be considered applicable for supporting energy codes in Alaska. The commission is to “make or require just, fair, and reasonable rates, classifications, regulations, practices, services, and facilities for a public utility” and “...the commission shall promote the conservation of resources used in the generation of electric energy.”

5. Public Benefit Fund (PBF) or Systems Benefit Charge (SBC)

A PBF is a way to provide long-term funding for energy programs, typically through a Systems Benefit Charge (SBC) – a small, fixed fee added to customers’ electricity bills. SBCs are usually collected from utility customers and the funds are administered by a state agency, a third-party, and “energy-efficiency utility”, or the utility. Some states are successfully using funds derived from their PBF for energy code-related work.

6. Trust Funds

Some states have created trust funds as a result of utility restructuring, or other major utility event. Trust funds can be administered by a public utilities commission and fund projects that benefit the state’s citizens, such as code-related work. For example, in 1997 Illinois passed restructuring legislation for the whole electric industry. Ancillary to that legislation was the creation of a fund providing \$3 million annually to be used for renewable energy and residential energy efficiency. In addition, the Illinois Clean Energy Community Trust was established in 1999 with \$225 million – some of which goes toward energy code projects in the state.

6. Energy Efficiency Resource Standard (EERS)

An EERS is a regulatory mechanism (typically administered by statewide non-profit energy efficiency utility or state agency) that requires energy providers (large investor-owned utilities, publicly-owned and/or cooperative utilities) to meet a specific portion of their electricity and/or natural gas demand

through energy efficiency within a specific timeframe. An EERS is enacted to expand the scale of energy savings achieved through utility energy efficiency programs.

More than half of all states have implemented an EERS. Some states allow utilities to get credit toward EERS goals for energy efficiency programs related to codes and standards, often for estimated savings resulting from training and compliance enhancement activities. Utilities recover their costs for implementing energy efficiency programs via a small monthly charge on energy bills. EERS and other similar funding mechanisms are being implemented in other states and could serve as a model for future funding opportunities for Alaska.

For example, an EERS may require utilities to “achieve a 15% reduction in per capita electricity consumption and 15% reduction in per capita peak demand by 2015, compared to 2007 levels.”

This is similar to the goal provided in Alaska HB 306 to “achieve a 15 percent increase in energy efficiency on a per capita basis between 2010 and 2020.” However, the Alaska goal is incomplete - no funding has been attached to this goal, and is not enforceable as a true EERS would have. As it currently stands, it does not require utilities to meet this standard, nor allow them to recover costs associated with implementing energy savings.

It should be a topic of discussion with the Regulatory Commission of Alaska as the potential for providing a dedicated source of funding for energy code support is tremendous. For example, in 2001 Illinois invested about \$235 million in electricity and gas efficiency programs with funds derived from its EERS.¹⁰

FOCUS AREA 2: State & Local Policy

The structure for implementing a statewide energy code would not involve starting from scratch, as a precedent is set for statewide building codes and the code adoption and enforcement relationship between state and local governments. Local jurisdictions are accustomed to having a statewide commercial code, and they know that while they are free to adopt their own commercial code, it must be at least as stringent as the state code. Likewise, the BEES could be adopted as the statewide energy code, with the same rules.¹¹

¹⁰ Seventy-five percent of revenues collected for the EERS program are administered by the participating utilities; the other 25 percent is administered by the state.

¹¹ Currently, enforcement of *state-adopted* building codes is the responsibility of both state and local jurisdictions in Alaska, but enforcement efforts are inconsistent. Some local Jurisdictions have received “deferred jurisdiction” and enforce the *commercial fire and life safety codes* locally – they are: Anchorage, Juneau, Fairbanks, Kenai, Ketchikan, Seward, Kodiak, Sitka, Soldotna, University of Alaska Fairbanks, Wasilla/Lakes. In these communities, building departments conduct inspections as required by the state. Outside of these communities, the state is responsible for enforcing the code, but since Alaska is such a large state and flying inspectors to conduct inspections is cost-prohibitive, most buildings are not visually inspected at all. Apart from the codes adopted at the state-level, local jurisdictions can choose to adopt *their own codes*. Of the 388 communities in Alaska, 17 jurisdictions have adopted a building code (residential, commercial, or both). Of those 17, fewer have adopted an energy code. Those that have adopted an energy code may choose to enforce the code or not.

CRITICAL TASK: Establish Enforcement Structure

Following the adoption of a statewide code, the state must establish an effective enforcement infrastructure and provide municipalities with resources and support. As a geographically large state with nearly 400 individual communities, it is not feasible for every community in Alaska to have its own building department with plan reviewers and inspectors. Additionally, the DFSL cannot take on the additional responsibility of code enforcement in all of communities across Alaska.

Fortunately, the state already has experience in this regard with the AHFC code enforcement system. The AHFC statewide code includes a building code and an energy code and inspection is required.¹² The AHFC code enforcement structure has been functioning for many years and could be expanded to non-AHFC funded structures, thus enforcing compliance with the AHFC BEES and the International Residential Code. Currently, AHFC requires that a certified inspector:

1. Conduct six building inspections for each residential dwelling: plan review; foundation/footing; wall assembly; electrical; plumbing; insulation; and final.¹³
2. Conduct an energy rating for each residential dwelling, which includes: visual inspection of the efficiency of windows, doors, and mechanical systems; air sealing; and a blower door test to measure the air tightness of the dwelling, and more.

Builders may choose one of the following methods to demonstrate compliance:

- Inspection and certification by a registered architect, engineer, or International Conference of Building Officials (ICBO) certified building inspector;
- State-approved home energy rating methods;
- Certification by a local building code official when the local energy code is at least as energy efficient as the BEES requirements;
- Certification by a builder who has taken the appropriate Building Science Training.¹⁴

Proof of compliance is confirmed by inspectors on AHFC forms PUR-101 and PUR-102; AHFC keeps records on which homes and buildings have complied with the BEES. These forms are required in order to receive state funding or financing.

There are experienced and certified inspectors currently available to conduct these inspections across Alaska. In rural communities where an inspector is not available, a builder can provide videos to an

¹² As mentioned previously, the AHFC codes only apply to buildings that will be funded or financed through the state. AHFC estimates that less than half of all new structures utilize state funding. As a result, many structures are built without the benefit of an energy code.

¹³ This is certified on the AHFC PUR-102 form.

¹⁴ There are about 500 builders who are certified to sign off on their own ventilation or energy code compliance provisions.

inspector¹⁵ in place of in-person enforcement. AHFC has used this technique to inspect such things as wall framing; building location (exterior); foundation tie-downs; clips and roof ties.

This existing infrastructure should be considered for enforcement of a statewide code. An Energy Codes Advisory Committee could work with the designated state-level department responsible for code enforcement to consider a number of issues that will need to be addressed such as whether or not existing inspectors can handle the increased workload of conducting building inspections statewide.

In addition, an Energy Codes Advisory Committee could help the state determine whether other policies would aid enforcement efforts or overcome barriers to implementation. For example, it could consider how to best address the mortgage industry to level the playing field for all mortgages. That is, whether the state should work to get the Alaska rating system (AkWarm) or BEES approved as a requirement of Fannie Mae, Freddie Mac, and FHA mortgages.

CRITICAL TASK: Provide Technical Support

In order to assure consistency in code related matters throughout the state, one entity (such as AHFC or CCHRC) should be charged with being the go-to expert providing technical and educational support to inspectors, builders, local jurisdictions and state agencies on all energy code related matters.

This entity should offer technical assistance, code interpretations, and education to support stakeholders as they support energy code compliance and enforcement. The state will need to make stakeholders aware that such service is available. Outreach to individual stakeholders, and well as organizations such as the Alaska Municipal League (AML) may help spread the word about the availability of such support.

FOCUS AREA 3: Training

Energy code training is a critical element of energy code implementation. The state must ensure that designers, engineers, builders and inspectors are proficient in code requirements and advanced building techniques, which are fundamental to energy code compliance. Even experienced code officials and design and construction professionals require periodic training to understand the energy code and its application in the field to lighting, insulation, windows, HVAC, and more. Training helps ensure that building professionals are proficient in energy codes.

The following table outlines three levels of training for code enforcement and construction professionals. Alaska is operating in Level 1 with an established program: curriculum, training kits, and knowledgeable trainers. Advanced training includes a focus on individual aspects of the energy code, such as HVAC and lighting.

¹⁵ These instances must be pre-approved by the AHFC on a case-by-case basis.

Level 1 Energy Code Training	Level 2 Energy Code Training	Level 3 Energy Code Training
Basic Training	Intermediate Training	Advanced Training *Best Practice
Length (Residential): half-day	Length (Residential): full-day	Length (Residential): full-day and multi-day training, or on-site training
Length (Commercial): half-day	Length (Commercial): full-day	Length (Commercial): full-day and multi-day training, or on-site training
Coverage: basic energy code provisions	Coverage: all energy code provisions	Coverage: in-depth coverage of individual aspects of the code: <ul style="list-style-type: none"> ▪ HVAC, lighting systems, envelope, scope and administration, etc. ▪ Installation, advanced building techniques ▪ Additional code interpretation
Frequency: ongoing; updated after every code adoption or update	Frequency: organized around code adoption—six months prior to and after new effective date	Frequency: ongoing; updated after every code adoption or update
Additional: online training opportunities	Additional: online training opportunities	Additional: on-site training; train-the-trainer program; part of community/technical college curriculum; specialized software training/energy modeling.

CRITICAL TASK: Expand Training Structure

The already established training system in Alaska can be expanded to accommodate a statewide energy code. AHFC has a tested and functioning training and certification program for its statewide inspectors. Since about 500 builders are also certified inspectors, many builders have already been educated and are accustomed to taking time out from their normal business to take training courses. Also, inspectors in both deferred jurisdictions and the AHFC program are accustomed to renewing their certification and obtaining CEU's on a set schedule; so expanding the training program statewide should be fairly straightforward and reasonably inexpensive.

To become certified to conduct AHFC inspections, individuals must take an eight-hour class on the BEES, and pass a test with a score of at least 70 percent. Inspectors must be re-certified every two years.

The state should consider extending the training to Level 2, and eventually Level 3 to ensure that all affected stakeholders are well-trained in the BEES for both residential and commercial buildings.

To reach other construction professionals (outside of those taking the BEES courses to become a certified inspector), the state should incentivize attendance at BEES training courses by offering continuing education credits to construction trade individuals.

CRITICAL TASK: Consider a Code Ambassadors Program

In addition to the regular BEES training described above, the Energy Code Ambassador Program (ECAP) is a *train the trainer* program that allows code officials to deepen their understanding of the code by learning from their peers. An Alaska Energy Code Ambassador Program could produce regional Ambassadors that support their peers as the state transitions to a statewide energy code, or when energy codes are updated. Ambassadors are energy code “champions” that can serve as energy code mentors and provide expertise, in-field guidance, technical support and training to code enforcement professionals in their regions.

Program Structure

The initial ECAP training should be presented by a well-established Alaskan energy code trainer to perhaps eight regionally-based, code officials across Alaska (two from each climate zone). The training consists of three parts: energy code advocacy, residential provisions of the code, and commercial provisions of the code. The small class size allows the trainer to go at a slow pace, focusing on parts of the code and advanced segments that need greater explanation. Following training, the program participants will be prepared to pass the exams need to be certified in one or more of the three ICC energy code certification programs: Commercial Energy Inspector, Commercial Energy Plans Inspector, and/or Residential Energy Inspector Plans Examiner. The Ambassadors would then be responsible for providing training to an agreed number of peers, per year, in their region.

Ambassador Selection & Compensation

The state should post the ECAP description to local International Code Council (ICC) chapters and invite members to apply. Well-known and respected ICC members should be targeted for recruitment, and the group should include a diverse set of building departments.

Since these code officials will be taking time away from work, it is desirable that the ECAP program be provided at no cost. They should be reimbursed for any travel expenses to and from meetings, as well as for any travel throughout the state to train code officials. Additionally, providing the attendees with free code books and ICC vouchers to take the energy certification tests at no cost is an allowable alternative to payment when using government funding.

Cost Estimate

Based on ECAP programs in other states, the following can be used as a model template for pricing the program for eight ambassadors spread over two days:

Expense	Cost Each	Total Cost
Trainer's Fee	\$1,200	\$2,400
Room Rental	-	\$5,000
Ambassador Travel Reimbursement	\$1,000	\$8,000
Code Books	\$202	\$1,616
2009 IECC/ASHRAE Standard 90.1-2007	\$123	
2009 IECC w/ Commentary	\$44	
2009 IECC Workbook	\$35	
ICC Energy Exam Vouchers (3 tests)	\$180	\$4,320
Oversight Costs – can be subcontracted to BCAP/ICC	-	\$16,000
Program Administration	\$7,000	
Curriculum Prep and Development	\$7,000	
Travel	\$2,000	
Total		\$37,336

FOCUS AREA 4: Outreach

Energy code implementation and compliance requires buy-in from distinct stakeholder groups. The message that is developed should be targeted and delivered to stakeholder groups in a way that resonates with them, as each group has specific interest and influence on codes. For example:

- **Design and construction communities:** Must implement the code requirements. They must understand the specific code requirements and who to turn to for technical assistance. They must believe that the state values, and will enforce, the code.
- **Building departments and enforcement staff:** Must understand the value of codes to building owners and the state; treat enforcement of energy codes with the same value as they do life and safety codes; and know who to turn to for technical assistance.
- **State legislators; and city council or borough assembly members:** Must recognize the public value of building energy codes in order to implement policies that promote code compliance and allocate funding necessary for consistent code compliance.
- **Consumers:** Have the power to influence the market by demanding that homes, offices, and public buildings meet or exceed the minimum energy code.
- **Lenders and Appraisers:** Must understand how and why value should be assigned to energy efficient homes and that lower monthly operating costs make borrowers better able to pay the mortgage.

CRITICAL TASK: Professional and Consumer Outreach

Outreach efforts need to reach target audiences in the appropriate way and in the right places. The state should go where necessary to reach professional stakeholders: public hearings, conferences, home shows. Some general ideas to increase stakeholder support include: presenting at the DPS’s annual meeting of deferred communities in Anchorage; outreach from the Alaska Municipal League, the American Institute of Architects (AIA), and the Home Builder Associations.

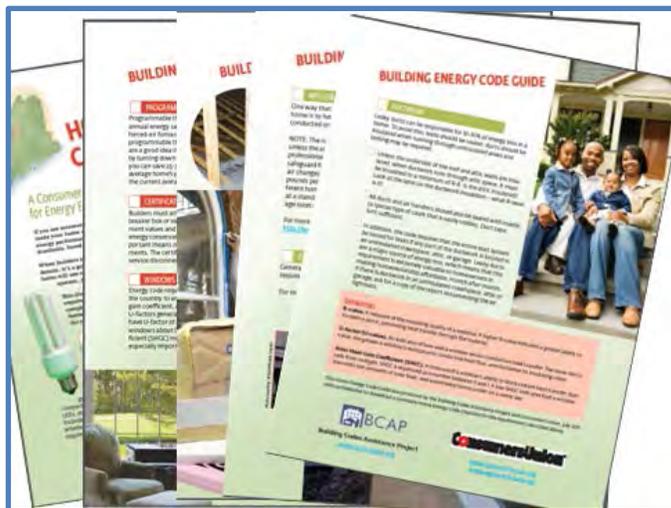
It may be more effective to reach out directly to stakeholder associations to gain support from the top. Outreach to appraisers and lenders may increase support for energy codes by helping them understand how to assign value for new energy efficient homes, as compared to older, less efficient homes.¹⁶

Consumer outreach can take the form of paid advertisements, earned media (media stories), or Public Service Advertisements (free ads), and can be delivered via print, radio, TV, billboard, Internet. Additionally, grass roots outreach can occur via social media and through local organizations. See Appendix A for a description of some media outreach tactics.

While professionals are also members of the “public” and will be reached by public awareness campaign efforts, specific outreach to disengaged stakeholders can help build support for energy codes.

Resources for Targeted Audiences

Some outreach materials are readily available free of charge from BCAP, DOE, or CCHRC, and can be customized for the state of Alaska. See the table below for a list of some of these resources and also suggestions for other resources that the state should make available on appropriate state and stakeholder websites.



¹⁶ The CCHRC’s forthcoming “**Value of Energy Efficiency for Appraisals calculator**” provides appraisers and the professional community with a technique for valuing energy efficiency which can lead to increased accuracy of appraisals during this time of significant energy retrofits, and energy efficient new construction. The calculator allows the comparison of operational costs for a subject home against the operational costs for up to 10 comparable homes, as well as against an average of homes with similar characteristics from the over 65,000 homes in the ARIS database. A net present value calculation is done on the differences in operational costs for each of the homes versus the subject home, and the average of those net present values is used to generate a value modifier for the appraisal of the subject home. This average is used to represent the value of the energy efficiency in the home. Currently the calculator is in a proof of concept stage.

Target Audience	Example of Existing Outreach Materials
State policy-makers	<ul style="list-style-type: none"> • Concise factsheet on why energy codes are important. <ul style="list-style-type: none"> - Top Ten Reasons for Energy Codes (by DOE): http://www.energycodes.gov/top-ten-reasons-building-energy-codes-0 - What Policy-Makers Need To Know (by BCAP, Consumers Union): http://energycodesocean.org/resource/why-energy-codes-matter-what-policymakers-need-know • Incremental cost information: <ul style="list-style-type: none"> - (BCAP) http://bcap-ocean.org/incremental-cost-analysis • Online cost-savings calculators: http://bcap-ocean.org/resource/energy-code-calculator
Lenders and Real Estate Professionals	<ul style="list-style-type: none"> • Incremental cost information (by BCAP): http://energycodesocean.org/resource/incremental-cost-analysis
Construction Professionals	<ul style="list-style-type: none"> • Calendar dates of code cycles and scheduled review meetings • Training opportunities (with CEU requirements)
General public / consumers	<ul style="list-style-type: none"> • Energy code checklist, guide, and more http://bcap-ocean.org/consumers-take-action

FOCUS AREA 5: Compliance Evaluation

To ensure that the state’s efforts to support, train, and market are successful, the state needs to determine the current status of actual code compliance. In the future, they need to periodically conduct a compliance evaluation study, compare it to the baseline and evaluate what is working and what should be improved. Measuring compliance involves evaluating a small random sample of construction projects. At its core, compliance evaluation is not about doubting the competency of code officials- rather, to help a state determine how well construction and design professionals are complying with codes, and how to support them in the future.

CRITICAL TASK: Energy Code Collaborative

Conducting a compliance evaluation study is difficult to do without buy-in and support from local jurisdictions and other stakeholders. Establishing an Energy Codes Collaborative can provide the state with a supportive group of Alaskan experts to assist with compliance, and a good first task for the Collaborative would be to assist in the design and implementation of a compliance study in Alaska. An *Energy Code Compliance Collaborative* is a diverse group of stakeholders responsible for advising the state on energy code implementation to ensure greater compliance with the energy code.

The Collaborative will offer a deep understanding of what can realistically be implemented statewide and can advise the state on how to prioritize and carry out the tasks necessary to ensure greater compliance with the energy code.

The Collaborative should meet on a regular basis, as determined by its members, to maintain momentum and ensure that issues are quickly resolved.

There are a number of invaluable supporting roles a collaborative may play:

Build Support by Utilizing Connections: Collaborative members have unique perspectives and interests. Members are well-connected and have intimate knowledge of how to reach and speak to specific audiences. Bringing these member's groups onboard through the collaborative can provide a critical mass that leads to widespread support for energy code compliance. See the sidebar box for suggested members.

Be a Resource of Expertise for Policy-Makers. Because of the diverse knowledge of its members, the Collaborative can serve as an authoritative source for code-related questions from state agencies, policymakers, and others.

Assist in Outreach. Using their first-hand knowledge of how to reach specific market actors and what arguments compel them, the Collaborative will be well-positioned to help craft and deliver messages to key groups / individuals.

Potential Collaborative Members

- Code officials, plan reviewers, building inspectors
- City and county government officials
- Construction community: leaders from the HBA, AIA, ASHRAE, USGBC, etc.
- Advocacy groups (e.g. Sierra Club; League of Women Voters)
- Utility companies
- Building product manufacturers
- State laboratories, universities, or other research groups that focus on energy policy or advancing building performance (e.g. CCHRC)
- Real estate, appraisal, and mortgage lending community
- Consumer advocates: (e.g., Office of Consumers Council, Better Business Bureau)
- Low-income advocates
- Appropriate state agencies

Secure Funding for Projects. Through its expertise and connections, the Collaborative can help secure future funding.

CRITICAL TASK: Conduct Compliance Evaluation

While Alaska has four years and a great deal of flexibility to develop a strategy that works best for its unique needs, beginning early will make that process both easier and less expensive. By beginning now, the state will have ample time to assess existing construction practices, improve its support to stakeholders, and take strategic steps to promote compliance.

The state can review the resources available and form an Energy Code Compliance Collaborative that can begin to design an appropriate evaluation study for Alaska.

The DOE provided states with millions in Recovery Act funding, with the intention of moving states to adopt and enforce updated energy codes, and to annually measure compliance with such codes.¹⁷ To save states the resources and funding that would be needed to design an energy code compliance evaluation plan from scratch, the U.S. Department of Energy's Building Technology Program (BTP) developed procedures, tools and resources to assist states in measuring energy code compliance. The procedures and resources are fully described in BTP's *Measuring State Energy Code Compliance*¹⁸ guide and the resources are summarized in the table below.

U.S. Department of Energy's energy codes website offers best practices, and web tools to help states and create a plan tailored for Alaska at www.energycodes.gov/compliance

¹⁷ The baseline energy codes against which to measure was specified as the 2009 International Energy Conservation Code for residential buildings and the ANSI/ASHRAE/IESNA Standard 90.1-2007 for commercial buildings (or equivalent codes). The excerpt below is from section 410, 2C of the Recovery Act: *A plan for the jurisdiction achieving compliance with the building energy code or codes described in subparagraphs (A) and (B) within 8 years of the date of enactment of this Act in at least 90 percent of new and renovated residential and commercial building space. Such plan shall include active training and enforcement programs and measurement of the rate of compliance each year.*

¹⁸ The *Measuring State Energy Code Compliance* guide and resources can be accessed at this website: <http://www.energycodes.gov/compliance/evaluation>.

Key BTP Resources	
Measuring State Energy Code Compliance guide	BTP’s complete directions on how states can conduct an energy code compliance study, including detailed instructions on how to use BTP resources.
State Sample Generator	An online software tool that generates a representative sample set distributed across building size and climate zones for each state.
Compliance Checklists	Available for both residential and commercial energy codes, checklists are used for conducting onsite building evaluations. Each checklist item is linked to the applicable energy code language.
Score + Store	An online software tool that collects checklist data as input by evaluators, ¹⁹ determines individual building scores, and calculates an average compliance score for the sample set.
Jurisdictional Survey	An online survey with a set of ready-made (and customizable) questions to be used to gather information on energy code implementation and common practices from local jurisdictions.
Jurisdictional Flyer and Letter	A ready-made (and customizable) flyer and letter used to inform local jurisdictions about compliance evaluation efforts, solicit their cooperation, and advise them of what to expect.

Cost

The cost will vary depending on factors including: number of buildings evaluated; method of data collection (telephone, plans-only, or in-person inspections, and the number of inspections), cooperation from code officials in capturing data and contractors cost. Additionally, the compliance evaluation may vary greatly depending on the level of detail the state desires. Due to these factors, compliance evaluation costs vary greatly. A reasonable estimate for such a study in Alaska is approximately \$100,000- \$200,000.

¹⁹ Note that throughout this report, the terminology “evaluators” refers to the individuals tasked with conducting the data collection during studies.

TIMELINE

ACTION	2013	2014	2015	2016	2017
Secure funding	X	X	X	Funding secured	
Establish adoption stakeholder group	X				
Legislature grant adoption authority	X				
Adopt state code	X				
Expand enforcement structure	X	X	X		
Provide technical support		X	X	X	X
Expand training		X	X	X	X
Consider code ambassadors		X	X	Code Ambassadors in place	
Conduct stakeholder outreach	X	X	X	X	X
Establish Compliance Collaborative		X	X	X	X
Conduct Compliance Evaluation Study			Complete baseline compliance study		Complete second compliance study

Appendix A: Elements of a Campaign

- 1. Print Media** – Reporter for print media (articles in newspapers, magazines, and newsletters) are always looking for new, interesting, and compelling stories with great visuals. Energy codes can meet all these needs when pitched the right way.
- 2. Earned Media** – Earned media refers to publicity gained through outreach efforts rather than paid advertising. This is a low-cost way to reach thousands of people via regular media outlets. States can put together stories that describe to consumers the benefits of energy codes.
- 3. Outreach to Editorial Boards** – Editorial boards are comprised of editorial writers that meet regularly to discuss the latest news, trends in public opinions, and what the newspaper (or magazine) should say about a current issue. Setting up a meeting with an editorial board to inform them about the importance of energy codes is a no-cost activity that can go a long way toward raising public awareness about energy codes.
- 4. TV and Radio Media Tour** – Prepare a spokesperson with the message the state wants to promote by giving them background information and basic talking points. Pitch to local TV and radio news broadcast outlets (e.g., morning shows or 6:00 news shows) that an expert will be available on a certain day for interviews and book back-to-back interviews with your spokesperson to share the message.
- 5. Produce a News Story with B-roll** – A state can make it easier for a TV station to cover an energy code story by providing it with ready-made interviews and video (called “b-roll”). These 1-2 minute news-style stories save TV stations time as they don’t have to travel to get good images of energy efficiency.
- 6. Podcasting** – Podcasts are comprised of a series of audio files that are distributed through an RSS feed or downloadable from a homepage or blog and generally released in chronological order. They are simple and convenient way for a host – or podcaster - to share information with their subscribers, who are able to listen to the material at their leisure after it is downloaded to their computer or MP3 player.
- 7. Public Service Advertising (PSAs)** – PSAs are advertisements that you pay to create, but don’t pay to place. PSAs can be created in any format that regular ads come in: TV, radio, Internet, billboards, and print (for newspapers, magazines) and often fill unsold advertising space. The cost is highly dependent on the type and designing of the ad. New Hampshire is willing to share their radio PSA with other states free-of-charge (the state will have to customize the call-to-action). The ad is available online at: <http://nhenergycode.wordpress.com/2011/08/29/psa-highlights-the-advantages-of-building-to-new-hampshire%E2%80%99s-energy-code/>

For more information on Alaska’s building sector:

Alaska Housing Climate Corporation

<http://www.ahfc.state.ak.us/energy/energy.cfm>



Cold Climate Housing Research Center

<http://www.cchrc.org/>



For more energy code resources:

Building Codes Assistance Program

www.bcap-ocean.org/resources



**US Department of Energy,
Building Energy Codes Program**

www.energycodes.gov

